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NEAX[®] 2400 IPX

ISDN Feature Programming Manual

OCTOBER, 2000

NEC America, Inc.

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CHAPTER 1 INTRODUCTION

1. GENERAL

The ISDN System Data Design Manual provides general information for ISDN, office data design for ISDN, and ISDN service.

2. HOW TO FOLLOW THE MANUAL

2.1 CONFIGURATION OF THIS MANUAL

This manual is comprised as follows.

CHAPTER 2 GENERAL INFORMATION

1. GENERAL
2. HARDWARE CONFIGURATION
3. BASIC KNOWLEDGE

CHAPTER 3 BASIC DATA ASSIGNMENT FOR ISDN

1. ISDN LINE ACCESS CODE ASSIGNMENT
2. ISDN TRUNK DATA ASSIGNMENT
3. CALLING NUMBERPATTERN DATA (CNP) ASSIGNMENT

CHAPTER 4 COMMANDS CONCERNING ISDN DATA ASSIGNMENT

1. GENERAL
2. COMMANDS

CHAPTER 5 GATEWAY SERVICE

CHAPTER 6 SUPPLEMENTARY SERVICE

1. ISDN Terminal (5 ESS)
2. ISDN Terminal (National ISDN1)
3. PRI station (H0)
4. PRI station (H11)

APPENDIX A ISDN FEATURE IN FUSION NETWORK

This page is for your notes.

CHAPTER 2 GENERAL INFORMATION

1. GENERAL

This chapter explains basic office data assignment procedures for ISDN and describes ISDN service features.

2. HARDWARE CONFIGURATION

The system provides PRT as a primary rate ISDN interface. DTI with DCH is available also. The hardware configuration is shown in [Figure 2-1](#).

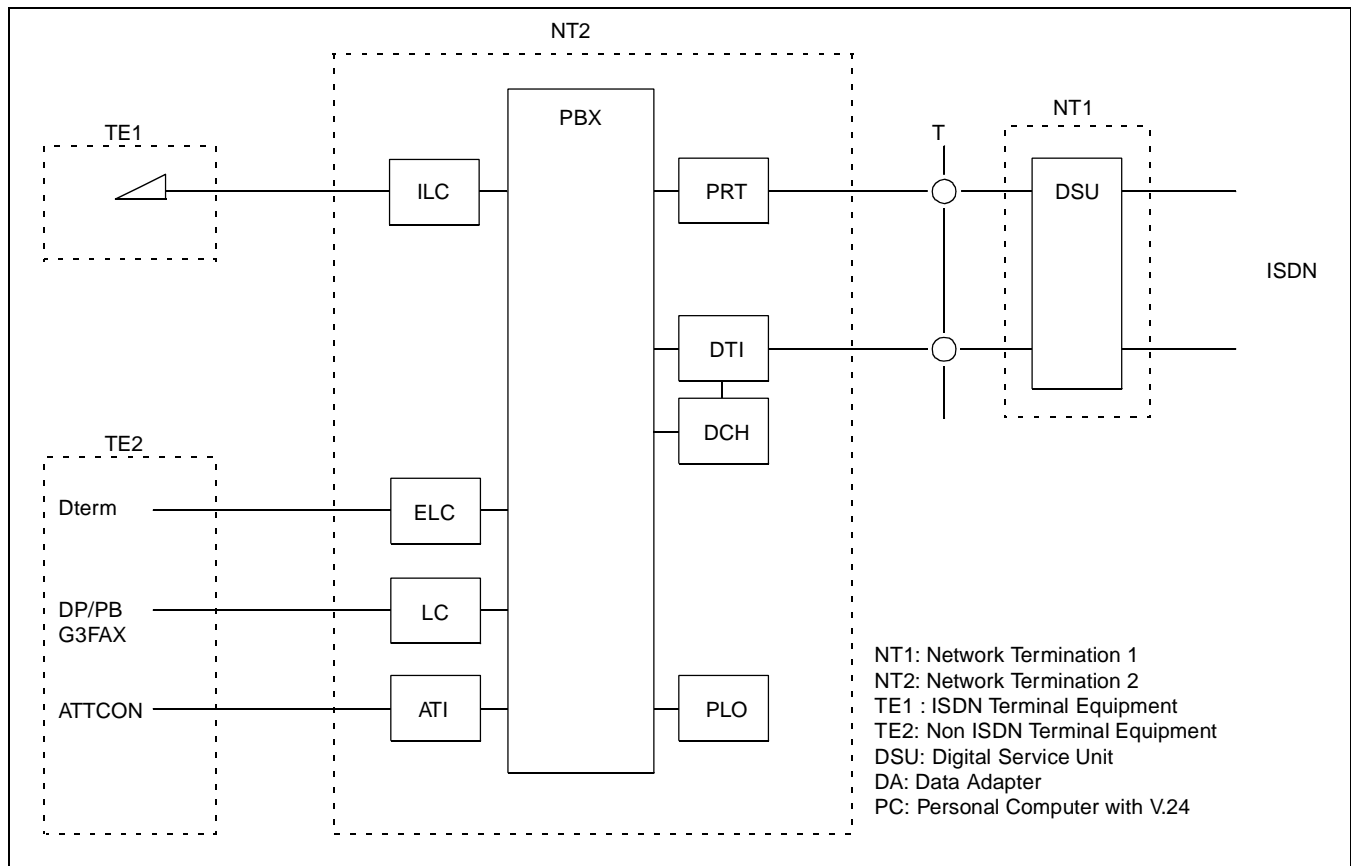


Figure 2-1 Hardware Configuration

Table 2-1 Hardware

SYMBOL	HARDWARE	REMARKS
PRT	PA-24PRTB-A	ISDN primary rate Interface
DCH	PA-2DCHA	D-channel Handler
DTI	PA-24DTR	Digital trunk interface
PLO	PA-CK16-A/17-A	Phase Lock Oscillator
ILC	PA-8ILCG	ISDN Terminal Equipment

GENERAL INFORMATION

3. BASIC KNOWLEDGE

3.1 MESSAGE SEQUENCES FOR LAYER 3

The message sequence for call establishment and clearing is shown in [Figure 2-2](#).

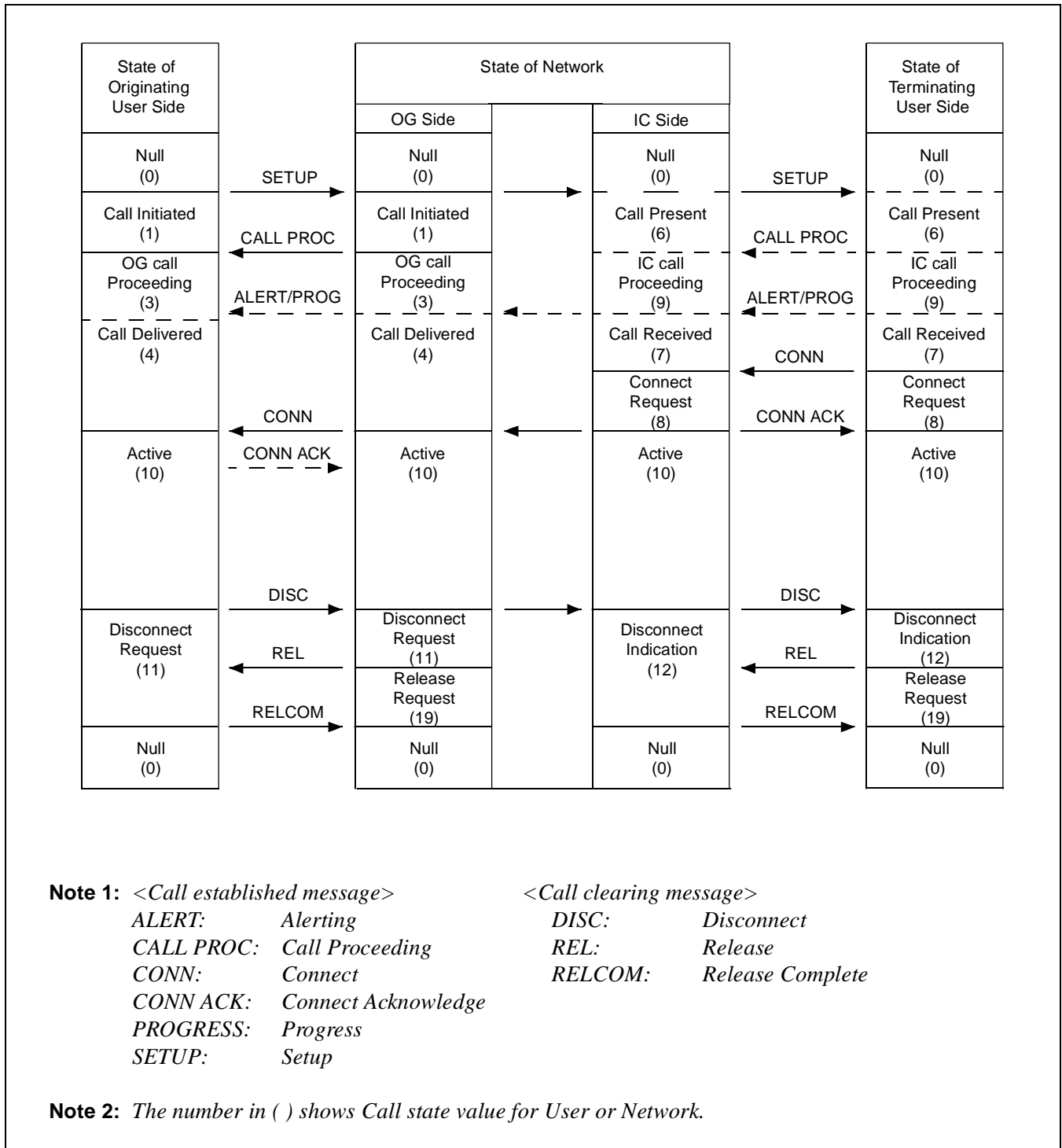


Figure 2-2 Message Sequences for Layer3

3.2 BEARER CAPABILITY (BC) INFORMATION ELEMENT

The purpose of the Bearer Capability (BC) information element is to indicate a bearer service to be provided by the network (ISDN). It contains only information which may be used by the network.

The Bearer Capability information element is used for compatibility checking in the connection as well as Low Layer (LLC)/High Layer (HLC) Capability.

The following shows the relation between a terminal and BC.

Kind of Terminal	BC
Analog single line telephone	Speech
Digital telephone (D ^{term})	Speech
G3 (Group 3) Fax	3.1 kHz audio
Modem	3.1 kHz audio
DTE via Data Module/Adaptor	Unrestricted digital
G4 (Group 4) Fax	Unrestricted digital

This page is for your notes.

CHAPTER 3 BASIC DATA ASSIGNMENT FOR ISDN

1. ISDN LINE ACCESS CODE ASSIGNMENT

To initiate seizure of an outgoing trunk, one of four methods - OGC, OGCA, LCR, LCRS - can be used in the system. Among the four methods, however, "LCR" method alone can access an ISDN line. For this reason, be sure to assign "LCR" as "Kind of service (SRV)" in the ASPA command. The following explains how to program LCR data.

STEP 1: ANPD - Assign the first digit of the LCR access code for the ISDN line.

STEP 2: ASPA - Assign the LCR access code for a dummy route number.

- Any dummy route number can be used if the route number is not duplicated.
- When Sub Address Dialing is desired, assign SUB=1. (Refer to Feature "SUB ADDRESS - PRESENT")
- An example "Sub Address Dialing" from a station is shown below.

9-00-81-35463-1111-*5650#

- International Sub Address (SA)
Access Code
- Country Code
(CC)
- Subscriber
Number (SN)

└──────────────────────────────────┘
ISDN Address

└──────────────────────────────────┘
ISDN trunk access code (LCR)

- A station user may dial the Sub Address when he/she uses the ISDN trunk access code with SUB=1. The call will be originated after Register Inter Digit Timer value if the station user does not dial Sub Address.
- The Register Inter Digit Timer is determined by ASYD SYS1 INDEX 129. (Default data = 6 seconds.)

STEP 3: AMND- Assign the Maximum Necessary Digits (MND) for each Area/Office code (DC).

- DC must include ISDN trunk access code and ISDN address but not a Sub Address (SA).
- Analog/Digital Line Data (A/D) must be assigned as data 1 (Digital) for the DC which includes ISDN trunk access code.
A/D = 1

STEP 4: ARNP - Assign the ISDN trunk access code to the ISDN Bch route number, but not a dummy route number.

STEP 5: ARTD - Assign the following CDN data for the dummy route number.

- TCL (CDN 6) = 1 or 4 (depending on the requirement)
- L/T (CDN 7) = 1
- AC (CDN 13) = 1
- The other CDNs may be left at default value (data 0) for the dummy route.

BASIC DATA ASSIGNMENT FOR ISDN

- STEP 6: AFRS - Assign Number Pattern Code (NPC) and Outgoing Route Selection Pattern Number (OPR) for the dummy route number.
- NPC may include ISDN trunk access code and ISDN address but not a Sub Address (SA).
 - OPR is a kind of intermediary between AFRS and AOPR. Therefore any number may be used from 1 through 4000. (Be careful not to assign duplicated OPR.)
- STEP 7: AOPR - Assign ISDN Bch route number to the OPR which has been assigned in the AFRS command.
- Since the system should transmit only ISDN address, skip the ISDN trunk access code.
 - Route advance is available by programming RA, E and RT. OVFT is also available.
 - ACMO is available with programming PNL.
 - ATCP and/or ASDC is available with programming TDPTN.
- STEP 8: ARSC - Assign RSC that allows RRI for both ISDN Bch trunk route and the dummy route but not for ISDN Dch trunk route.

Note: *For the Bearer Capability (BC) in ISDN;*

Caller should provide the following service class data

ASFC - SFI48 = 1 (for 3.1 kHz audio) ---- Group 3 Fax. Modem

SFI48 = 0 (for speech)

2. ISDN TRUNK DATA ASSIGNMENT

STEP 1: ASYD - Assign the following indexes.

SYSI Index 91:	Single PLO	<u>b7</u>	<u>b6</u>	<u>b5</u>	<u>b4</u>
		0	1	0	1
	Dual PLOs	<u>b7</u>	<u>b6</u>	<u>b5</u>	<u>b4</u>
		1	1	1	1
SYSI Index 186:	CCIS/ISDN in service	<u>b6</u>	<u>b6</u>		
		1	0	(When b6=1, ISDN service is invalid.)	
SYSI Index 187:	always 00 (hex)				
SYSI Index 220:	ISDN is in service	For BRI Type of Interface			

STEP 2: ARTD - Assign the route data for both Bch and Dch.

Data for Bch/ Data for Dch

2 - ONSG : 2/2	4 - INSG : 2/2	5 - TF : 3/0	6 - TCL : 1/1
7 - L/T : 1/1	8 - RLP : 2/2	10 - SMDR : 1/0	15 - LSG : 12/13
28 - ANS : 1/1	30 - PAD : 4/7	31 - OGRL : 1/0	32 - ICRL : 1/0
34 - GUARD : 1/0	45 - A/D : 1/0	50 - DPLY : 1/0	63 - LYER1 : 0
65 - INT : Note 1	66 - DC : Note 2		

The other data should be "0" (default data).

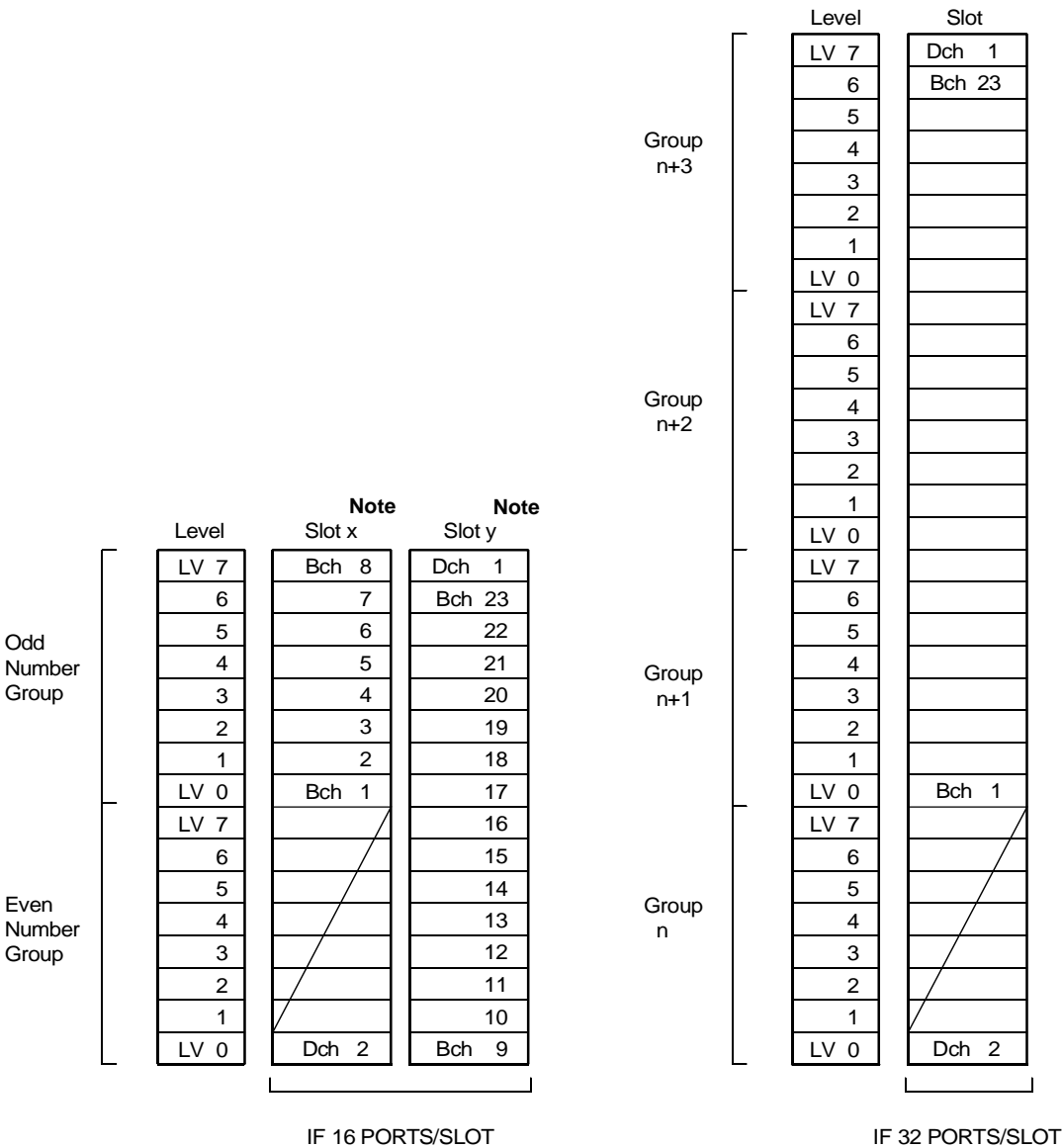
- Note 1:** *INT (CDN65):*
- 1 N-ISDN2
 - 2 Australia
 - 3 INS 1500
 - 4 ITU (CCITT), ETSI
 - 5 AT&T (#4/#5 ESS)
 - 6 INS 64
 - 7 NT DMS 100 / DMS 250
 - 8 Not used
 - 9 TTC Q931a protocol Tie Line (Japan)
 - 10 Q-SIG. (ETS 300 172)/IS-11572

- Note 2:** For "SUB ADDRESS - ADDRESSING", assign "0". (Refer to "SUB Address - Addressing" in Chapter 6.)
 For "DID ADDRESSING", refer to "DID Addressing" in Chapter 6.

BASIC DATA ASSIGNMENT FOR ISDN

- STEP 3: ATRK - Assign the trunk data for Bch only here. *Note that the data assignment for Dch must be performed after the ACSC command assignment.*
- How Bch and Dch LEN appear in PIM is shown in Figure 3-1 and Figure 3-2.
 - As seen from those Figures, the number of B-channels and D-channels are:
24 PRT (B channel \times 23, D channel \times 2)
 - Regarding the route number of the Bch assigned by the ARTD command, assign the Bch's trunk number and Line Equipment Number (LEN).

Note: *The above is for the basic (minimum) data. Refer to [Chapter 4, "Commands Concerning ISDN Data Assignment"](#) for others.*



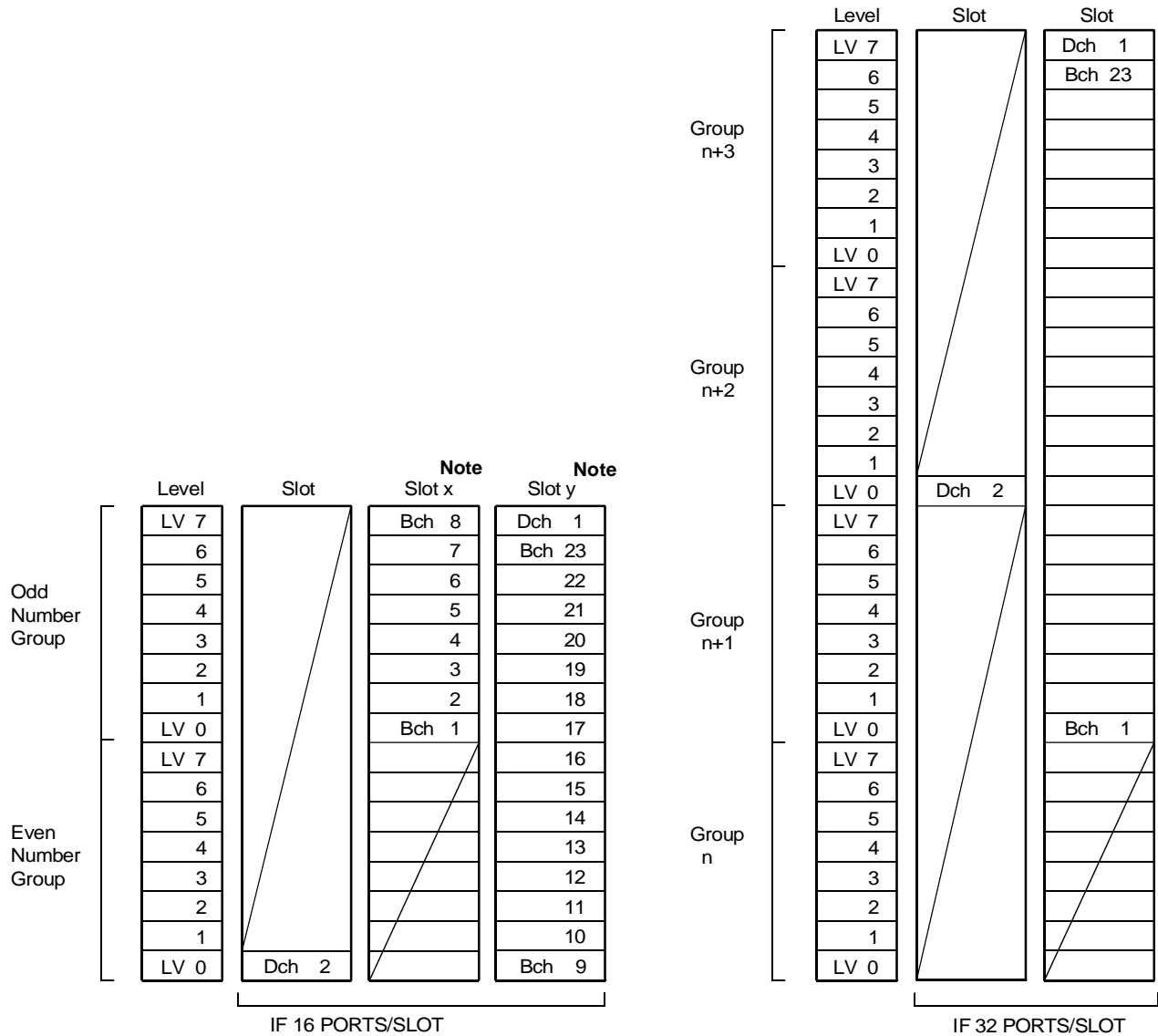
Note 1: Slot x and Slot y must be in the same HW.

Note 2: The even-numbered module group, Unit 0, Group 0 cannot be assigned as Dch LEN data.

Figure 3-1 ATRK for 24PRT

BASIC DATA ASSIGNMENT FOR ISDN

- When #0 DCH of 2DCH card is used.



Note 1: Slot x and Slot y must be in the same HW.

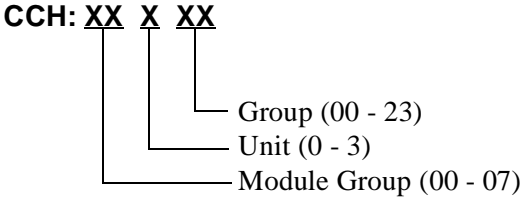
Note 2: The even-numbered module group, Unit 0, Group 0 cannot be assigned as Dch LEN data.

Figure 3-2 ATRK for 24DTR + 2DCH

STEP 4: ADPC-Assign Point Code for both Bch route and Dch route.

- The values for a Point Code is 1 through 16383. You can assign any number as the Point Code for them, however, do not duplicate the Point Code which is used for No. 7 CCIS.

- STEP 5: ACSC - Assign Dch and Bch location for CSCG.
- The values for CSCG is 130 through 255.
 - Even number CSCGs are used for Dch location and odd number CSCGs are used for Bch location. Although Bch location is the same as Dch location when PRT is used.
 - CCH, which represents Dch and Bch location, is assigned as shown below.



- CCH must be assigned as the first group in the highway to which PRT is mounted.
- CCH=00000 is prohibited.
- Assign the same LEN in CIC GROUP (0~7) for a CSCG when PRT is used for 23B+D
- Examples of ACSC assignment are shown below.

00-03	04	05	06	07	08	09
	01	03	05	07	09	11
	00	02	04	06	08	10
	HW0		HW1		HW2	

(1) Condition: When 24PRT is mounted in Slot 07 of PIM0, ACSC data is as follows.

CSCG	CCH	CIC GROUP	CSCG	CCH	CIC GROUP
130 (for Dch)	00004	0	131 (for Bch)	00004	0
	00004	1		00004	1
	00004	2		00004	2
	00004	3		00004	3
	00004	4		00004	4
	00004	5		00004	5
	00004	6		00004	6
	00004	7		00004	7

Note: The location of DCH (Dch Handler) which is built in PRT must be assigned in the parameter “CCH” of this command.

BASIC DATA ASSIGNMENT FOR ISDN

(2) Condition: 24DTR is mounted in Slot 07 of PIM0 and 2DCH is mounted in Slot 05 of PIM0, ACSC data is as follows.

CSCG	CCH	CIC GROUP
130 (for Dch)	00002	0
	00002	1
	00002	2
	00002	3
	00002	4
	00002	5
	00002	6
	00002	7

CSCG	CCH	CIC GROUP
131 (for Bch)	00004	0
	00004	1
	00004	2
	00004	3
	00004	4
	00004	5
	00004	6
	00004	7

Note 1: *The location of DCH (Dch Handler) must be assigned in the "CCH" parameter of this command.*

Note 2: *Above is an example when #0 DCH of PA-2DCH circuit card is used.*

STEP 6: ACIC1 - With respect to PC assigned in the ADPC command, assign CSCG of the Dch assigned in the ACSC command.

STEP 7: ATRK - Assign the trunk data for Dch referring to Figure 3-1 and 3-2.

STEP 8: MBTK - Cancel Make Busy Status of all B channels in the PRT card.

Note: *Circuit card must be initialized after this assignment.*

3. CALLING NUMBER PATTERN DATA (CNP) ASSIGNMENT

Calling party number can be transmitted included in the ISDN messages through ISDN network. This function provides the PBX user with a variety of ISDN services. This section describes some conditions for programming data related with this function when interworking with the Fusion link as shown [Figure 3-3](#).

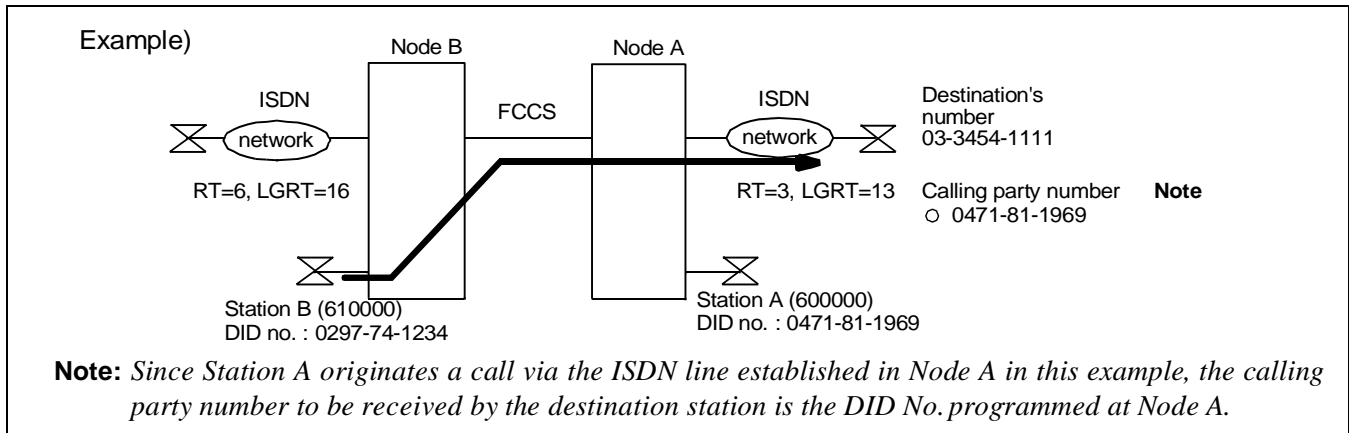


Figure 3-3 Calling Number When Interworking with FCCS Link

- (1) This data should be assigned at NCN.
- (2) Calling Number Pattern (CNP) for the outgoing call (CALLING PARTY RECOGNITION) and that for the incoming call (SID TO NETWORK-PRESENT) should be separated.
- (3) The services to be related with this feature are shown below.
 - CALL PARTY RECOGNITION SERVICE (DIRECT-IN-TERMINATION)
 - CALL PARTY RECOGNITION SERVICE (CALL FORWARDING-ALL CALLS/BUSY LINE/DON'T ANSWER)
 - SID TO NETWORK-PRESENT/SID TO NETWORK-PRIVACY

PROGRAMMING

ACNPN and ACNDN command must be used in pairs. The use of other pairs, for example ACNP and ACNDN, is not recommended.

- (1) Originating from the non-ISDN terminal

STEP 1: ACNPN - Apply the Calling Number Pattern number to the logical route to be provided SID to Network-Present.

OG/IC=O (Outgoing Call; SID to Network-Present)

LGRT=the route used for SID to Network -Present

CNP=Calling Number Pattern (1~1023)

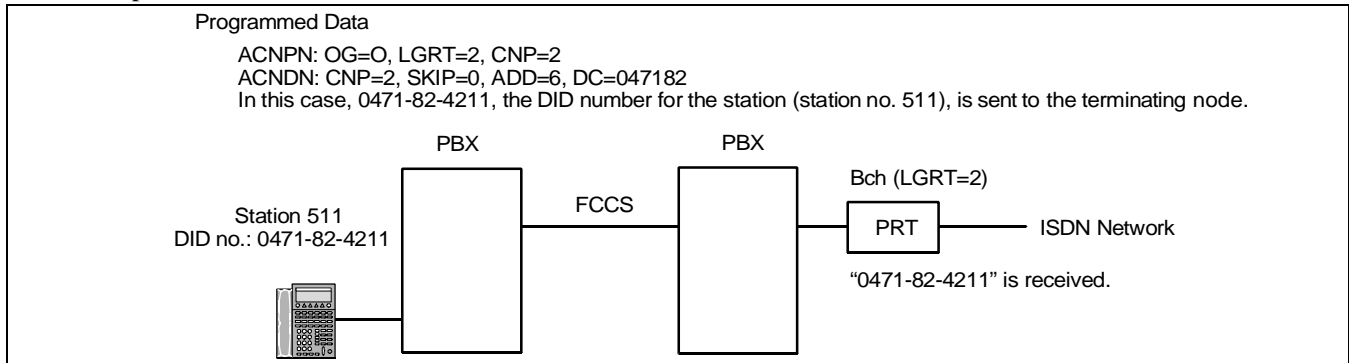
* The detail for the pattern is programmed with the ACNDN command.

BASIC DATA ASSIGNMENT FOR ISDN

STEP 2: ACNDN- Assign the number of digits to be added to or omitted from the calling party number data for each Calling Number Pattern programmed in ACNPN.
 CNP=Calling Number Pattern assigned with ACNPN command.
 SKIP=the number of digits to be skipped.
 ADD=the number of digits to be added.
 DC=the number to be skipped or added.

Note: Do not assign "0" at both "SKIP" and "ADD" parameter.

[Example Data]



(2) Originating from the ISDN terminal

STEP 1: ACNPN- Apply the Calling Number Pattern data to the logical route to be provided SID to Network-Present.

OG/IC=O (Outgoing Call; SID to Network-Present)

LGRT=the route for SID to Network -Present

CNP=Calling Number Pattern (1~1023)

*The detail for the pattern is programmed with the ACNDN command.

STEP 2: ACNDN- Assign the Calling Number data.

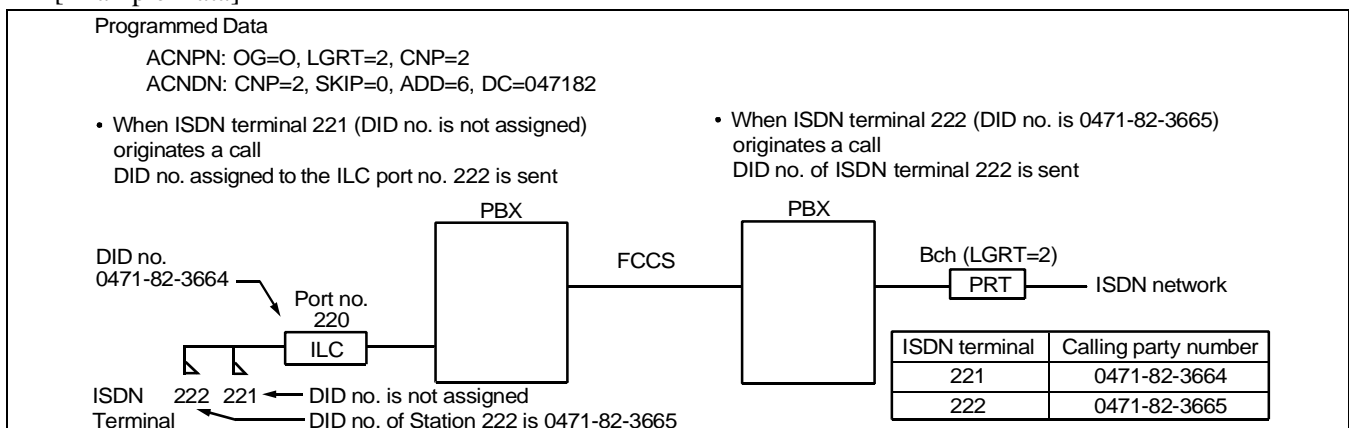
CNP=Calling Number Pattern assigned with ACNPN command.

SKIP=the number of digits to be skipped.

ADD=the number of digits to be added.

DC=the number to be skipped or added.

[Example Data]



CHAPTER 4 COMMANDS CONCERNING ISDN DATA ASSIGNMENT

1. GENERAL

This chapter explains commands concerning ISDN. Commands explained in [Chapter 3, “Basic Data Assignment for ISDN”](#) are not included in this chapter.

- ASYD: Assignment of System Data **Note**
- ASFC: Assignment of Service Feature Class Data **Note**
- ARTD: Assignment of Route Class Data **Note**
- ARTI: Assignment of Trunk Application Data

Note: *This chapter covers only Index (data) related to ISDN.*

COMMANDS CONCERNING ISDN DATA ASSIGNMENT

2. COMMANDS

2.1 ASYD: ASSIGNMENT OF SYSTEM DATA

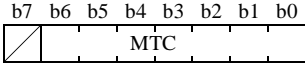
SYSTEM DATA TYPE (SYS)	SYSTEM DATA INDEX (INDEX) 0-511	DATA (DATA) 00-FF (Hex)	BIT CORRESPONDING DATA		SYSTEM DATA CONTENTS	
			DATA 0/1	BIT		
1	76		0	b ₀	Not used	Table Development: Common or Separate Day/Night Data Tables. Note: <i>When data tables are designated as "Common", the Day mode designation must be used in the respective commands.</i>
				b ₁	Same Number Special Access Code Data (ASPS command) 0/1 = Common/Separate	
				b ₂	Call Forwarding Service by Calling Number Data (AFCP command) 0/1 = Common/Separate	
			0	b ₃	Not used	
			0	b ₄		
			0	b ₅		
			0	b ₆		
			0	b ₇		
	186				b ₀	0/1 = Link Re-Connection Not Involved/Link Re-Connection Involved Note: <i>An Interoffice transfer service is available. For example, with No. 7 CCIS, a caller has called outside their own office but is actually talking with somebody in their own office. This bit is used to reconfigure links so they are not wasted in call transfer service.</i>
					b 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
				0	b ₂	0/1 = -/No. 7 CCIS Loop-Back Test in progress
				0	b ₃	Not used
					b ₄	Serial Call-Loop Release: 0/1 = Out (CCSA key)/In Service (No CCSA key)
					b ₅	Clearing of the buffer memory for use in the centralized management report (For CCIS). 0/1 = not necessary/necessary
					b ₆	CCIS or ISDN: 0/1 = Out/In Service
	b ₇	Centralized IC Billing Office Code: 0/1 = Ineffective/Effective				
187	00				Data Bus used for CCIS/ISDN cards (Assign 00 Hex)	

COMMANDS CONCERNING ISDN DATA ASSIGNMENT

SYSTEM DATA TYPE (SYS)	SYSTEM DATA INDEX (INDEX) 0-511	DATA (DATA) 00-FF (Hex)	BIT CORRESPONDING DATA		SYSTEM DATA CONTENTS	
			DATA 0/1	BIT		
1	220			b ₀	Protocol of ISDN Terminal (BRI station) 0: Japan (INS64) 1: U.S.A. (5ESS) 2: Australia (TPH 1962) 3: Not used 4: Not used 5: N-ISDN1 6-15: Not used	
				b ₁		
				b ₂		
				b ₃		
				b ₄		RA (Rate Adaptation) for ISDN Terminal 0: RA designated by ADA2 command 1: V.110/X.30 2: Not used 3: Not used
				b ₅		
			0	b ₆		ISDN service (When Index 186 bit 6 = 1) 0/1 = In Service/Out of Service
				b ₇		ISDN Trunk Layer 3 Timer 0/1 = Stop/Activate Note 1
	226			b ₀	Call Forwarding Service by Calling Number Data ("AFCP" command)	Separate or Common Tenant Data Table development for the respective commands 0/1 = Separate/Common Note: When data "1" is assigned, data must be assigned for Tenant 1 (TN = 1) in the respective commands.
			0	b ₁	Not used	
			0	b ₂		
			0	b ₃		
			0	b ₄		
			0	b ₅		
0			b ₆			
0	b ₇					

Note 1: Normally assign "0". (Only specific service needs data "1" in this bit.)
Related Layer3 Timer: T303, T310, T313.

COMMANDS CONCERNING ISDN DATA ASSIGNMENT

SYSTEM DATA TYPE (SYS)	SYSTEM DATA INDEX (INDEX) 0-511	DATA (DATA) 00-FF (Hex)	BIT CORRESPONDING DATA		SYSTEM DATA CONTENTS
			DATA 0/1	BIT	
1	230		0	b ₀ -b ₆	Not used
				b ₇	Timing for receiving or sending ISDN/CCIS message. 0/1 = 32 ms/128 ms
	248			b ₀ -b ₃	Maximum Digits for Call Forwarding External Restriction (for Australia only) 0: 12 digits A: 10 digits 1-8: 8 digits B: 11 digits 9: 9 digits C-F: 12 digits
			0	b ₄	Not used
				b ₅	Malicious call (ISDN) Service Note 1 0/1 = Out/In Service
			0	b ₆	Not used
				b ₇	Tone to be sent out when the handset has been lifted off-hook at the station on which C.F.-All Calls service is set. 0/1 = Dial Tone (DT)/Special Dial Tone (SPDT)
			478		
	479				Timer for Dch Back u p Note 2 Waiting Timer for a changeover when an ACT Dch detects Layer 2 down in a self or facing office.  Timer Value = MTC x 1sec. (Default data 00 Hex: 0 sec.)

Note 1: Available in Australia and U.A.E.

Note 2: For AT&T/Northern Telecom in U.S.A.

2.2 ASFC: ASSIGNMENT OF SERVICE FEATURE CLASS DATA

- SFI 31: For SID to Terminating User-DTE
 0 = -
 1 = SID to Terminating User-DTE
- SFI 48: For Bearer Service
 0 = Speech
 1 = 3.1 KHz Audio (Modem, G3 Fax)
- SFI 94: For SID to Network - Privacy [CLIR]
 0 = -
 1 = SID to Network - Privacy
- SFI 175: For Advice of Charge (AOC) - Receipt and Display of AOC from a Foreign Q-SIG NETWORK
 0 = Out of Service
 1 = In Service

2.3 ARTD: ASSIGNMENT OF ROUTE CLASS DATA

- H1 (CDN96) ISDN H1 Switching
 0 = -
 1 = In Service
- CI (CDN98) ISDN transmitting information
 0 = -
 1 = 16-Digit Caller Number service, Attribute Information Notification service
 (BC, LLC, HLC) and Calling Sub-Address Transfer service
 2-15 = -
- ADVPR (CDN111) ISDN PRI Failure Routing Service
 0 = -
 1 = In Service

Note: *This data is valid for dummy routes.*

- CMRT (CDN115) Common use of Route Numbers of ISDN trunks
 0 = -
 1 = In Service
- BOB (CDN118) Broad Band
 0 = 64K
 1 = N × 64K

COMMANDS CONCERNING ISDN DATA ASSIGNMENT

2.4 ARTI: ASSIGNMENT OF TRUNK APPLICATION DATA

RST (CDN1) Assignment of Restart

- 0 = Restart Send per Individual Channel
- 1 = --
- 2 = --
- 3 = Restart not Send

HMT (CDN2) When assigning this data, zero (0) should always be entered.

TRCRST (CDN3) Call Restriction by Information transfer rate in Bearer Capability Information Element

- 0 = No restriction
- 1 = Data call restriction (Unrestricted digital, Restricted digital and Video data calls are restricted.)
- 2 = Speech call restriction (Speech, 3.1 KHz audio and 7KHz audio calls are restricted.)
- 3-15 = --

TRSRST (CDN4) Call Restriction by Information transfer rate in Bearer Capability Information Element

- 0 = No restriction
- 1 = 384 kbps (H0) call is restricted
- 2 = 1536 kbps (H11)/1920 kbps (H12) call is restricted
- 3 = 384 kbps and 1536 (H11)/1920 (H12) kbps calls are restricted
- 4-15 = --

T309LNK (CDN5) Assignment of Timer T309 for Data Link Failure

- 0 = Layer 2 Alarm with T309 is Disabled
- 1 = Layer 2 Alarm [Temporary] with T309 is Enabled
- 2 = Layer 2 Alarm [Permanent] with T309 is Enabled
- 3 = --

T309CON (CDN6) Assignment of Timer T309 for Layer 1 Failure

- 0 = Layer 1 Alarm with T309 is Disabled
- 1 = Layer 1 Alarm [Temporary] with T309 is Enabled
- 2 = Layer 1 Alarm [Permanent] with T309 is Enabled
- 3 = --

LLCRST (CDN7) Call restriction by user rate in Low Layer Capability Information Element

- 0 = No restriction
- 1-31 = Call which includes this user rate value is restricted **Note 1**

Note 1: *User rate value is based on ITU-T Q-931.*

DTRT (CDN11) Detection of ALL 1 alarm signal (DTI Layer 1 alarm)

- 0 = --
- 1 = Detection of ALL 1 alarm signal as a Layer 1 alarm

TMPRT (CDN12) Temporary Route Information over CCIS

- 0 = --
- 1 = In CCIS, the route information can be transferred by the call control messages. Moreover, the call restriction can be checked referring to this route information.

IRL (CDN15) Clear call when DTI alarm is detected.
 0 = –
 1 = Clear call when DTI alarm is detected **Note 2**

Note 2: *This data should be set when there is no Dch in the physical DTI.*

MTC (CDN16) Assignment of Timer T309 Value. Restoration timer (TC×MTC) sec.
 0-15 = TC (CDN18) × MTC (Restart timer value)

TC (CDN17) Timer T309 Counter Value
 0 = –4 = 30sec.
 1 = 64 msec.5 = 5 min.
 2 = – 6 = 1 sec.
 3 = 2 sec.7 = –

DVRST (CDN20) Call restriction while Tie Line is backed up on ISDN.
 0 = No Restriction
 1 = Speech call restriction (Speech. 3.1 kHz audio, 7 kHz audio calls are restricted.)
 2 = Data call restriction (Unrestricted digital, restricted digital and Video data are restricted.)
 3 = Both Speech and Data calls are restricted.

RSCT (CDN21) Call restriction by Temporary Route Information **Note 3**
 0 = No Restriction
 1 = Restriction

Note 3: *This data is effective when TMPRT = 1.*

ROCG (CDN22) Outgoing Call Account by Temporary Route Information **Note 4**
 0 = –
 1 = Effective

Note 4: *This data is effective when TMPRT = 1.*

RICG (CDN23) Incoming Call Account by Temporary Route Information **Note 5**
 0/1 = Out of Service/In Service

Note 5: *This data is effective when TMPRT = 1.*

STSENQ (CDN24) Status Inquiry Message Send **Note 6**
 0/1 = Out of Service/In Service

Note 6: *This data is not effective in Australia.*

RETMSG (CDN30) Return Message for Connect ISDN LINE with Analog Trunk
 0 = CALL PROC. + ALERT
 1 = CALL PROC. + ALERT or CALL PROC. + PROGRESS

COMMANDS CONCERNING ISDN DATA ASSIGNMENT

ANI (CDN31) Timing to demand ANI Information
0 = There is no ANI demand at Incoming call
1 = After receiving 1st digit
2 = After receiving 2nd digit
3 = After receiving 3rd digit
4 = After receiving 4th digit
5 = After receiving 5th digit
6 = After receiving 6th digit
7 = After receiving 7th digit

SRV (CDN32) Additional Service Selection **Note 7**
Bit0: Advice of Charge (AOC)
 0 = Valid
 1 = Invalid
Bit1: Malicious Call Trace (MCT)/Malicious Call Identification (MCID)
 0 = Valid
 1 = Invalid
Bit2-Bit6: –
Bit7: For TON (CDN28) and/or NPI (CDN29)
 0 = Invalid
 1 = Valid

Note 7: *Input this data by a decimal.*

TON (CDN33) Type of Number **Note 8**
0 = Unknown
1 = International Number
2 = National Number
3 = Network Special Number
4 = Subscriber Number
5 = –
6 = Abbreviated Number
7 = Reserved for Extension

Note 8: *This data is effective when ARTD CDN65 (INT) = 4 and SRV (CDN27) bit7 = 1.*

NPI (CDN34) Numbering Plan Identification **Note 9**
0 = Unknown
1 = ISDN/Telephony Numbering Plan
2 = –
3 = Data Numbering Plan
4 = Telex Numbering Plan
5-7 = –
8 = National Standard Numbering Plan
9 = Private Numbering Plan
10-14 = –
15 = Reserved for Extension
Others = –

Note 9: *This data is effective when ARTD CDN65 (INT) = 4 and ARTI SRV (CDN27) bit7 = 1.*

L/T (CDN35) Local/Toll **Note 10**
 0 = Local
 1 = Toll

Note 10: *Only for Russia*

ECCIS (CDN36) Event Based CCIS (E-CCIS) for the public ISDN Line
 0/1 = Out of Service/In Service

ECCISTM (CDN37) Release timer for E-CCIS Line
 0 = 3 minutes (Default setting)
 1 = 15 seconds
 2 = 30 seconds
 3 = 1 minute
 4 = 2 minutes
 5 = 5 minutes
 6 = 10 minutes
 7 = 15 minutes
 8 = 30 minutes
 9 = 1 hour
 10-13 = Not used
 14 = Immediately after call completion
 15 = Not released

ECCISOB (CDN38) OG Billing for E-CCIS Line
 0/1 = Out of Service/In Service

ECCISIB (CDN39) IC Billing for E-CCIS Line
 0/1 = Out of Service/In Service

SPMET (CDN40) Meter Pulse Observation Control
 0 = –
 1 = Low to High Transition
 2 = High to Low Transition
 3 = Low to High & High to Low Transition

ECCISTD (CDN42) Addressing Information used in E-CCIS
 0 = Called DID Number
 1 = Called Sub Address

MFCG2 (CDN43) Calling Party Category
 0 = Subscriber with Priority
 1 = Subscriber without Priority

OPCC (CDN44) Optimal Call Control
 0/1 = In Service/Out of Service

INTD (CDN47) Interface Detail **Note 11**
 0 = Q-SIG
 1 = IS-11572

COMMANDS CONCERNING ISDN DATA ASSIGNMENT

JECCIS (CDN48) Common Use with E-CCIS RT **Note 11**
0/1 = Out of Service/In Service

ECCIS2 (CDN49) E-CCIS System **Note 11**
0 = Fixed Channel System
1 = Common Channel System
2 = Not used
3 = Not used

Note 11: *Valid since Series 7300 Release 4.*

CTCF (CDN52) SS-CT/SS-CF Service **Note 12**
0/1 = Out of Service/In Service

Note 12: *Valid since Series 7400 Release 8.*

RERT (CDN53) Rerouting function (used in conjunction with SS-CT/SS-CF service) **Note 13**

Note 13: *Valid since Series 7400 Release 8.*

For the other CDNs in trunk application data, zero (0) should always be entered.

CHAPTER 5 GATEWAY SERVICE

This chapter explains data assignment for ISDN gateway service. Refer to ISDN Features and Specifications for availability of each Gateway Service on the Fusion Network.

Table 5-1 Gateway Service List (1/4)

SERVICE FEATURE CODE	SERVICE FEATURE NAME	REMARKS
A-76	Alternate Routing-PRI	
A-88	Automatic Call Distribution-PRI	
A-92	Announcement Service-PRI	
A-94	Automatic Circuit Assurance-PRI	
A-96	Automatic Trunk Test-PRI	
B-19	Boss-Secretary Transfer-PRI	
B-22	Boss-Secretary Override-PRI	
C-95	Call Forwarding-All Calls-PRI	
C-95D	Call Forwarding-All Calls-D ^{term} -PRI	
C-96	Call Forwarding-Busy Line-PRI	
C-97	Call Pickup-Group-PRI	
C-97D	Call Pickup-Group-D ^{term} -PRI	
C-98	Call Transfer-Attendant-PRI	
C-99	Call Transfer-All Calls-PRI	
C-99D	Call Transfer-All Calls-D ^{term} -PRI	
C-100	Consultation Hold-All Calls-PRI	
C-100D	Consultation Hold-All Calls-D ^{term} -PRI	
C-101	Call Forwarding-Intercept/Announcement-PRI	
C-102	Call Pickup-Direct-PRI	
C-114	Call Waiting-Terminating-PRI	
C-119	Call Park-PRI	
C-123	Call Forwarding-All Calls-Announcement-PRI	
C-125	Call Forwarding-Intercept-PRI	
C-129	Call Forwarding-Don't Answer-PRI	
D-115	Distinctive Ringing-PRI	

GATEWAY SERVICE

Table 5-1 Gateway Service List (2/4)

SERVICE FEATURE CODE	SERVICE FEATURE NAME	REMARKS
D-116D	Do Not Disturb-D ^{term} -PRI	
D-117	Data Line Security-PRI	
D-118	Data Privacy on Demand-PRI	
D-119	Data Interface-Automatic Answer-PRI	
D-120	Data Transparency-PRI	
D-121	Data Communications-PRI	
D-122	Data Uniform Numbering Plan-PRI	
D-137	Direct-In Termination (DIT)-PRI	
E-14D	Elapsed Time Display-D ^{term} -PRI	
F-21	Flexible Numbering of Stations-PRI	
F-26	Faulty Trunk Report-PRI	
H-14D	Hands-Free Answer Back-D ^{term} -PRI	
H-15	Hot Line-Outside-PRI	
I-24	Incoming Call Identification-PRI	
I-25	Incoming ISDN Call to Tie Line Connection-PRI	
I-26	Indialing Through Main-PRI	
I-27	Inter-PBX Coordinated Station Numbering Plan-PRI	
I-28	ISDN Individual Calling Line Identification (ICLID)	
I-36	Inter-Office Off-Hook Queuing-PRI	
L-31	Least Cost Routing-3/6-Digit-PRI	
L-32	LCR-Time of Day Routing-PRI	
L-33	LCR-Attendant Manual Override-PRI	
L-34	LCR-Automatic Overflow to DDD-PRI	
L-35	LCR-Clocked Manual Override-PRI	
L-42	Last Number Call-PRI	
L-42D	Last Number Called-D ^{term} -PRI	
L-44	LDN Night Connection-PRI	

Table 5-1 Gateway Service List (3/4)

SERVICE FEATURE CODE	SERVICE FEATURE NAME	REMARKS
L-46	LDN Night Connection-Outside-PRI	
L-49	LCR-Special Line Warning Tone-PRI	
M-71	Miscellaneous Trunk Access-PRI	
M-72	Miscellaneous Trunk Restriction-PRI	
M-73	Music On Hold-PRI	
M-74	Modem Pooling-PRI	
M-75	Multiple Call Forwarding-All Calls-PRI	
N-20	Night Connection-Fixed-PRI	
N-21	Night Connection-Flexible-PRI	
N-22	Non-Delay Operation-PRI	
N-29	Night Connection Outside-System-PRI	
N-31	Nailed Down Connection-PRI	
O-24	Outgoing Trunk Queuing-PRI	
O-26	Outgoing Trunk Queuing-Deluxe-PRI	
O-28	Off-Hook Queuing-PRI	
O-30	Outgoing Trunk Queuing-Attendant-PRI	
O-32	Overflow-UCD-PRI	
P-37	Peg Count-PRI	
P-38	Primary Call Restriction-PRI	
P-39	PRI Trunk to Tie Line Connection with Pad Control	
P-47	Paging Transfer-PRI	
P-49	PRI Failsafe Routing	
R-35	Restriction from Outgoing Calls-PRI	
S-82	Speed Calling-System-PRI	
S-82D	Speed Calling-System-D ^{term} -PRI	
S-83	Station Message Detail Recording System-RS232C-PRI	

GATEWAY SERVICE

Table 5-1 Gateway Service List (4/4)

SERVICE FEATURE CODE	SERVICE FEATURE NAME	REMARKS
S-84	Speed Calling-Station-PRI	
S-85	Speed Calling-Group-PRI	
S-86	Simultaneous Voice and Data Transmission-PRI	
S-87	Synchronous Data Switching-PRI	
S-88	SMDR for Data Call-RS232C-PRI	
S-89	Speed Calling Override-System-PRI	
S-107	Station Individual Trunk Access-PRI	
T-37	Tandem Switching of Tie Trunk-2/4-Wire-PRI	
T-38	Three-Way Calling-PRI	
T-38D	Three-Way Calling-D ^{term} -PRI	
T-40	Toll Denial/Toll Diversion-PRI	
T-41	Toll Restriction-3/6-Digit-PRI	
U-6	Uniform Call Distribution (UCD) -PRI	

A-76 ALTERNATE ROUTING-PRI**1. General Description**

This feature is provided with LCR which automatically routes ISDN outgoing on-net calls over alternate facilities when the first-choice trunk group is busy. The user selects the first-choice route by dialing the corresponding access code, and the equipment then routes the call through alternate trunk groups only if the first is busy. The PBX will also add or delete digits, when necessary, to complete the call to the desired station.

2. Operating Procedure

No manual operation is required.

3. Programming

STEP 1: Assign "ISDN Line Access Code" data referring to [Chapter 3, "Basic Data Assignment for ISDN"](#) and the data for the alternate trunk access.

Note: *STEP 7: AOPR - Assign ISDN Bch route number and the alternate route number to the OPR*

STEP 8: ARSC - Assign RSC that allows Route Restriction Indexes (RRIs) for ISDN Bch trunk route, the dummy route and the alternate trunk route.

STEP 2: Assign "ISDN Trunk" data referring to [Chapter 3, Section 2, "ISDN Trunk Data Assignment"](#) and the data for the alternate trunk.

AUTOMATIC CALL DISTRIBUTION-PRI**A-88 AUTOMATIC CALL DISTRIBUTION-PRI****1. General Description**

This feature allows Automatic Call Distribution (ACD) features to be activated for incoming calls from ISDN trunks.

Table 5-1 ACD Features

CODE NO.	FEATURE NAME	AVAILABILITY
A-31	Abandoned Call Search	×
A-34	Assistance-ACD Agent	×
A-35	Automatic Answer	×
A-37	Availability-ACD Position	×
A-80	Announcements	×
B-21	Break Mode	Not Applicable
C-35	Call Distribution to Agents	×
C-67	Call Transfer to Split Queue	×
C-68	Call Waiting Indication-LCD Display/CW Lamp	×
C-70	Calling Party Identification	×
C-108	Call Control Vector	Not Applicable
C-127	Call Forwarding-Split	×
E-6	Emergency/Recorder	×
F-10	Function Groups (Splits)	Not Applicable
F-25	Flexible ID Codes	Not Applicable
H-20	Holidays Scheduling	Not Applicable
L-19	Logon/Logoff	Not Applicable
M-28	Monitoring-ACD Supervisor	×
M-29	Multiple Customer Groups (ACD Groups)	Not Applicable
M-79	Multiple Supervisor Groups (Splits)	Not Applicable
N-12	Night Service-ACD	×
N-14	Non-ACD Call	Not Applicable

Table 5-1 ACD Features

CODE NO.	FEATURE NAME	AVAILABILITY
O-19	Overflow Outside-ACD	×
P-21	Priority Queuing-ACD	×
P-40	Pilot Numbers	Not Applicable
P-45	Personal Emergency and Assist	×
Q-1	Queuing-ACD	×
R-19	Release-ACD Position	×
S-97	Split Display-ACD Position	Not Applicable
S-98	Split Selection	Not Applicable
T-24	Trunk Trouble Report-MIS	×
T-49	Tally Count	×
T-50	Time of Day/Week Routing	Not Applicable
Z-1	Zip Tone-ACD Position	×

Note 1: *The features indicated “Not Applicable” are features not related to trunks.*

Note 2: *ACD features are not available for incoming data calls from ISDN trunk.*

Note 3: *When an incoming call placed in a queue, the call is automatically released in 90 seconds.*

2. Operating Procedure

Refer to ACD System Manual.

3. Programming

STEP 1: Assign the Basic Data for ISDN. (Refer to [Chapter 3, “Basic Data Assignment for ISDN”](#).)

STEP 2: Assign ACD Data (Refer to ACD System Manual.)

ANNOUNCEMENT SERVICE-PRI

A-92 ANNOUNCEMENT SERVICE-PRI

1. General Description

This feature allows a user from the ISDN trunk to hear a prearranged announcement when the user dials a predetermined access code.

Note: *This feature requires an announcement machine or a Digital Announcement Trunk (DAT).*

2. Operating Procedure

1. The system receives the announcement trunk access code.
 - (a) If a multiple connection is made, the announcement is repeatedly sent out.
 - (b) If a single connection is made, the announcement is sent out only once and then the announcement trunk is released. If the system data specifies "Ringback Tone is to be sent", Ringback Tone is returned to the caller after the announcement finishes.
2. The office data is checked for the following.
 - (a) Multiple or single connection.
 - (b) 30-second forced disconnection.
 - (c) Ringback Tone to be sent or not to be sent after the announcement finishes.
 - (d) Remote office answer signal sending to be sent or not to be sent.
3. The call is connected to the Announcement Trunk, and the caller hears the announcement.
4. If 30-sec. forced disconnection is specified, the Announcement Trunk is released 30 seconds after the call has been connected to the Announcement Trunk, and the caller receives the Busy Tone. Otherwise, the call remains connected to the Announcement Trunk until the caller hangs up.

3. Programming

STEP 1: Assign the Basic Data for ISDN (Refer to [Chapter 3, "Basic Data Assignment for ISDN"](#)).

STEP 2: Assign the announcement data (Refer to "[A-15] ANNOUNCEMENT SERVICE" in Feature Programming Manual.)

A-94 AUTOMATIC CIRCUIT ASSURANCE-PRI**1. General Description**

When a call connection time is less than or greater than a pre-determined time period, the system can display or print a reference to it using this feature.

Note 1: *This feature cannot be activated without Station Message Detail Recording System-RS232C[S-10].*

Note 2: *This feature is not activated for Station-to-Station or Station-to-Attendant calls under the following conditions:*

- *When the station performs a switchhook flash.*
- *When the station presses the D^{term} line/feature key (“HOLD”, “SHF”, or “TRF”).*
- *When the Attendant presses “HOLD” key.*
- *When the call is overridden by another call.*
- *When the station answers Call Waiting or Attendant Camp-On call.*

2. Operating Procedure

No manual operation is required.

3. Programming

STEP 1: Assign the Basic Data for ISDN (Refer to [Chapter 3, “Basic Data Assignment for ISDN”](#)).

STEP 2: Assign SMDR data.

STEP 3: ASYD - System Data 1, Index 44 : bit 0=1 (Automatic Circuit Assurance is in service)
 Index 45 : Short Duration Timer
 Index 46 : Long Duration Timer

AUTOMATIC TRUNK TEST-PRI

A-96 AUTOMATIC TRUNK TEST-PRI

1. General Description

The AUTOMATIC TRUNK TEST capability provides a functional test on a large number of ISDN trunks at a prearranged time. The results of the test are reported at the MAINTENANCE ADMINISTRATION TERMINAL (MAT) [M-18]. The test can include: Ringback Tone Test, 1 kHz Tone Test and Trunk Selection Test, by having the proper Test Trunk termination at the distant office.

2. Operating Procedure

Refer to “[A-21] AUTOMATIC TRUNK TEST” in Feature Programming Manual.

3. Service Conditions

1. One LTST (PH-M23) card is required as additional hardware.
2. Trunks are tested in conjunction with the connecting office through the selected trunk, on a one at a time basis. The following different trunk functions can be tested on all trunks in a specified group:
 - Trunk selection
 - Detection of Ringback Tone sent back from the connecting office after test number outpulsing.
 - Detection of test tone (1 kHz) returned from Automatic Answer Trunk facility, if provided at the connecting office.
3. As part of the AUTOMATIC TRUNK TEST facility, an Automatic Answer Trunk (AAT) is provided at the PBX to answer incoming test calls. Upon terminating the incoming test call from the originating office through a selected test trunk, the AAT generates a 1 kHz tone to the originating office as an acknowledgement signal.
4. When ordering the execution of this feature via the MAT, the system will prompt for either “Immediate or Scheduled Execution” of the AUTOMATIC TRUNK TEST. If Scheduled execution is chosen, the time when the test begins is entered via the MAT. From the time the test is ordered until the completion of the test, the MAT is dedicated to the AUTOMATIC TRUNK TEST function.
5. INDIVIDUAL TRUNK ACCESS [I-4] must be available when activating this feature.
6. Trunk test data must be assigned by “ATTD” command.
7. This service is available to trunks that can receive PB signals.

4. Programming

Refer to “[A-21] AUTOMATIC TRUNK TEST” in Feature Programming Manual.

B-19 BOSS-SECRETARY TRANSFER-PRI**1. General Description**

This service feature allows a secretary to voice-announce a call to a boss when the secretary answers a call from an ISDN trunk on the boss' line.

2. Operating Procedure

1. Call terminates to boss' line.
2. Secretary answers the call on Boss' line of Secretary's D^{term}.
3. Secretary presses boss' line key; incoming call is placed on hold, a signal tone is transmitted over the speaker of boss' D^{term}, and boss and secretary can talk by VOICE CALL-D^{term} [V-2D]. **Note 1**
The LCD displays (Boss and Secretary):

ICM	XXXX
(Time Display)	

4. If the "MIC" key of boss' D^{term} is on, Boss can converse HANDS FREE-D^{term} [H-4D].
5. Secretary hangs up (**Note 2**); a signal tone is transmitted over the speaker of boss' D^{term} again, and boss' line is placed on hold. At this time, boss' line of Secretary's D^{term} is placed on hold, too, and secretary can answer the held call at any time. (**Note 3**)
6. Boss lifts the handset, presses the boss' line key, and answers the call. The LCD is displayed:

[D ^{term} Series III]	[D ^{term} Series E]								
<table style="width: 100%; text-align: center;"> <tr> <td style="width: 50%;">XFR</td> <td style="width: 50%;">XXXX</td> </tr> <tr> <td colspan="2">(Time Display)</td> </tr> </table>	XFR	XXXX	(Time Display)		<table style="width: 100%; text-align: center;"> <tr> <td style="width: 50%;">TRANSFER</td> <td style="width: 50%;">XXXX</td> </tr> <tr> <td colspan="2">(Time Display)</td> </tr> </table>	TRANSFER	XXXX	(Time Display)	
XFR	XXXX								
(Time Display)									
TRANSFER	XXXX								
(Time Display)									

Note 1: *If the boss is talking on another line or has a single line telephone, boss' station rings and VOICE CALL [V-2D] cannot be activated.*

Note 2: *If the boss answers before the secretary hangs up, the boss will talk to the secretary. At this time, the secretary can talk to the incoming call, to the boss by pressing the boss' line key or the transfer key.*

Note 3: *If the boss doesn't answer the held call in a specific time, secretary will be recalled by the held call.*

3. Programming

STEP 1: ASFC - Assign SFI 51=1 (Boss-Secretary is in service) to the secretary station.

STEP 2: AKYD - Boss' My-line must be assigned as a sub-line on the secretary's phone.

Note: *Secretary must have D^{term} for this operation. Boss may have a single line telephone.*

BOSS-SECRETARY OVERRIDE-PRI

B-22 BOSS-SECRETARY OVERRIDE-PRI

1. General Description

This feature enables a secretary to voice-announce a call from an ISDN trunk to a boss when he is currently on his My-line.

2. Operating Procedure

Example: Station 200, Boss
Station 201, Secretary

Boss is currently connected to Trunk "A". Call from an ISDN trunk (Trunk "B") terminates to Station 201, intended for 200.

1. Secretary answers station 201.
2. Secretary asks caller to hold and presses "CALL HOLD" [C-6] feature key or "TRANSFER" key and dials CALL HOLD [C-6] code (CALL WAITING-ORIGINATING [C-31] key can also be used). Secretary hears Dial Tone.
3. Secretary presses "SPEED CALLING-ONE TOUCH" [S-26D] key on which BOSS-SECRETARY OVERRIDE tone code, RECALL key and Boss' station number (200) has been programmed.
4. Secretary hears Ringback Tone; Boss receives three bursts of Waiting Tone.

<BOSS' RESPONSE OPTIONS>

Operations when the boss converses with Trunk "A" while talking with trunk "B".

1. Boss presses the "TRANSFER" key. If Boss has a single line telephone, flashes hook switch.
2. Boss converses with Trunk "A" and Trunk "B" receives hold tone (MUSIC ON HOLD [M-7]).
3. Boss presses the "TRANSFER" key again. If a single line telephone, flashes hook switch again.
4. Boss converses with Trunk "B". (THREE-WAY CALLING [T-2] is not available).

Other operations while Boss and Secretary are talking.

Case 1:

1. Boss or secretary presses the "TRANSFER" key.
2. The Boss and Secretary are disconnected; Boss converses with Trunk "A", Secretary converses with Trunk "B" respectively.

Case 2:

1. Boss hangs up and secretary converses with Trunk "B" again.
2. Boss' station rings and Trunk "A" receives Ringback Tone.
3. Boss lifts the handset and converses with Trunk "A" again.

Operations when the boss answers the secretary.**Case 1:**

1. Boss presses the: "ANSWER" key or "TRANSFER" key. If Boss has a single line telephone, flashes hook switch.
2. Boss converses with Secretary (Trunk "A" is placed on hold).
3. Secretary hangs up, Boss is speaking with Trunk "B".

Case 2:

1. Boss presses the "ANSWER" key or "TRANSFER" key. If Boss has a single line telephone, flashes hook switch.
2. Boss converses with Secretary (Trunk "A" is placed on hold).
3. Boss presses 201 key and converses with Trunk "A", Secretary hears ReorderTone.

Case 3:

1. Boss hangs up, Boss' station rings and Secretary hears Ringback Tone.
2. Boss lifts the handset and converses with Secretary.
3. The rest of operations are same as Item 3 of Case 1 or Case 2.

Case 4:

If Boss does not respond to 3 bursts of Waiting Tone:
Secretary presses "CALL HOLD" key to resume talking to Trunk "B".

3. Programming

STEP 1: ASYD - System Data 2, Index 10, bit4: 1 = Dialing "ACC Code + Station No." is available.
(Call Waiting-Originating)
bit7: Call Waiting Tone 0/1=Once/At Intervals.

STEP 2: ANPD - Assign a number level for feature access code.

STEP 3: ASPA - Assign an access code to BOSS SECRETARY OVERRIDE, SRV=SSCA, SIDA=53

STEP 4: ASFC - Allows following restriction; SFI5, 6, 10, 11 and 51.

STEP 5: AKYD - Boss' My-line must be assigned as a sub-line on the secretary's phone.

CALL FORWARDING-ALL CALLS-PRI

C-95 CALL FORWARDING-ALL CALLS-PRI

1. General Description

This feature permits all calls from an ISDN network destined for a particular station to be routed to another station (or to the Attendant) regardless of the busy or idle status of the called station. Activation and cancellation may be accomplished by either the individual station user or the Attendant.

2. Operating Procedure

To activate CALL FORWARDING-ALL CALLS-PRI from an Individual Station:

1. Lift the handset; receive Dial Tone.
2. Dial the CALL FORWARDING-ALL CALLS-PRI access code; receive Special Dial Tone.
3. Dial the desired target station number; receive Service Set Tone.

To cancel CALL FORWARDING-ALL CALLS-PRI from an Individual Station:

1. Lift the handset; receive Dial Tone.
2. Dial the CALL FORWARDING-ALL CALLS-PRI cancellation code; receive Service Set Tone.

To activate CALL FORWARDING-ALL CALLS-PRI from the ATTENDANT CONSOLE [A-3].

1. Press an idle "LOOP" key.
2. Dial the CALL FORWARDING-ALL CALLS-PRI access code; receive Special Dial Tone.
3. Dial the TENANT [T-12] number (2/3 digits).
4. Dial the originating station number.
5. Dial the desired target station number; receive Service Set Tone.

To cancel CALL FORWARDING-ALL CALLS-PRI from the ATTENDANT CONSOLE [A-3].

1. Press an idle "LOOP" key.
2. Dial the specific CALL FORWARDING-ALL CALLS-PRI cancellation code; receive Special Dial Tone.
3. Dial the TENANT [T-12] number (2/3 digits).
4. Dial the originating station number; receive Service Set Tone.

3. Programming

- STEP 1: ASYD - System Data 1, Index 4, bit 6: One burst of ringing at the forwarding station when CALL FORWARDING-ALL CALLS is in service? 0/1: No/Yes. (single-line station only)
- Index 248, bit 7: Dial Tone to be sent out when a station on which CALL FORWARDING-ALL CALLS is set, goes off-hook to place and outgoing call 0/1: DialTone/Special DialTone.
- Index 69, bit 1: A burst of Ringback Tone to alert the person receiving a call that this is a CALL FORWARDING-ALL CALLS call. In service? 0/1: No/Yes. Normally assigned as data "0".
- bit 2: Send short tone when a recalled C.F.-All Calls call is answered. 0/1: Not Required/Required.
- System Data 2, Index 6, bit 4: Call Origination Restriction of a station upon setting CALL FORWARDING-ALL CALLS.
0/1=Restricted/Allowed.
- STEP 2: ANPD - Reserve a number level for feature access and cancel. Assign Connection Index, CI = N; Normal. Assign NND in accordance with a predetermined numbering plan.
- STEP 3: ASPA - Assign an access code to CALL FORWARDING-ALL CALLS entry SID = 8. And to CALL FORWARDING-ALL CALLS cancel SID = 9. Assign Connection Status Index (CI) for Normal service.
- STEP 4: ASFC - Assign a Service Feature Class that allows SFI = 7 to the Class of stations which will activate CALL FORWARDING-ALL CALLS.
- STEP 5: AKYD - For D^{term} sets, CALL FORWARDING-ALL CALLS may be assigned to a programmable line/feature key. Assign KYI = 1 and FKY = 2.
- STEP 6: 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 TRI = 3, via the Attendant Console. Also allow TRI = 0, station-to-station calling.

C-95D CALL FORWARDING-ALL CALLS-D^{term}-PRI

1. General Description

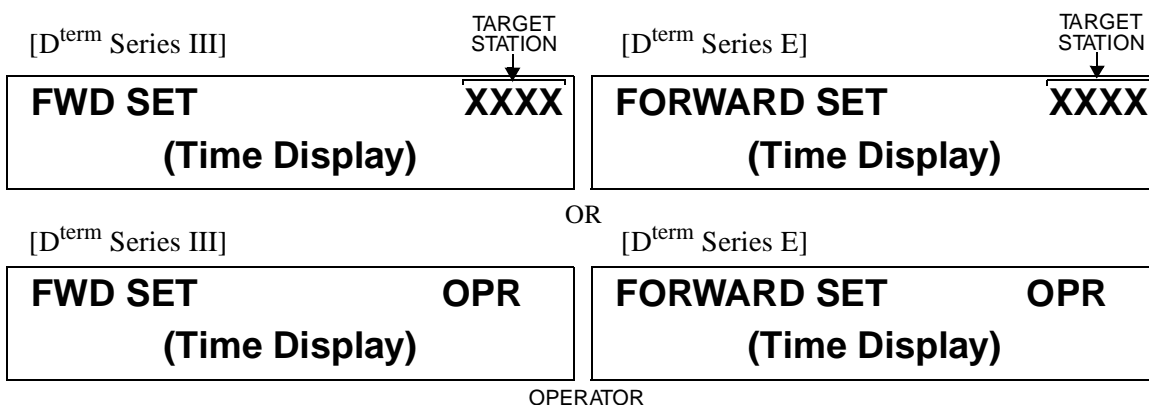
This feature permits all calls from an ISDN network destined for a particular station to be routed to another station or to the Attendant, regardless of the busy or idle status of the called station. Activation and cancellation may be accomplished by the station user or the Attendant.

CALL FORWARDING-ALL CALLS-D^{term}-PRI [C-95D] may be set or canceled by the station user for all multi-line appearances on the D^{term}. In this way, a single station user may set CALL FORWARDING-ALL CALLS-D^{term}-PRI [C-95D] for all sub-lines on the D^{term}.

2. Operating Procedure

To set CALL FORWARDING-ALL CALLS-D^{term}-PRI from My-line:

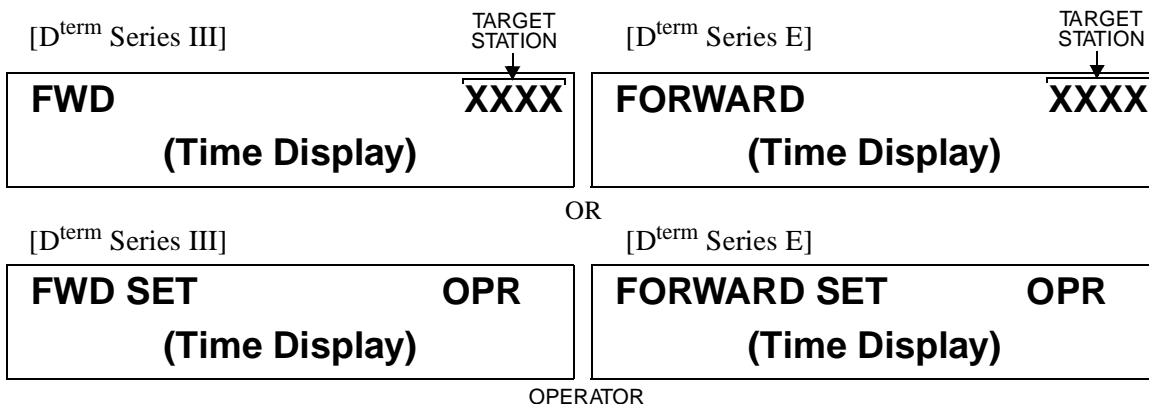
1. Lift the handset or press the “SPEAKER” button; receive Dial Tone.
2. Press the CALL FORWARDING-ALL CALLS-D^{term}-PRI feature key; receive Special Dial Tone.
3. Dial the desired target station number; receive Service Set Tone. The LED will light. The LCD displays:



4. Replace the handset or press the “SPEAKER” key.

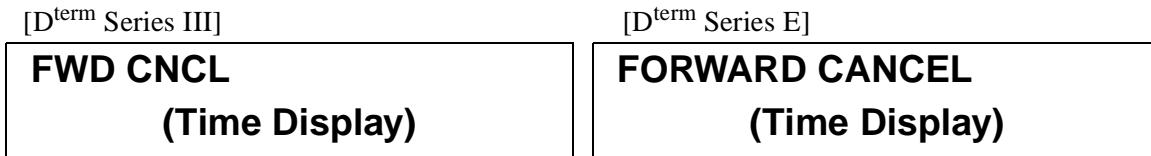
To monitor CALL FORWARDING-ALL CALLS-D^{term}-PRI from My-line:

1. Press the CALL FORWARDING-ALL CALLS-D^{term}-PRI feature key. The LCD displays:



To cancel CALL FORWARDING-ALL CALLS-D^{term}-PRI from My-line:

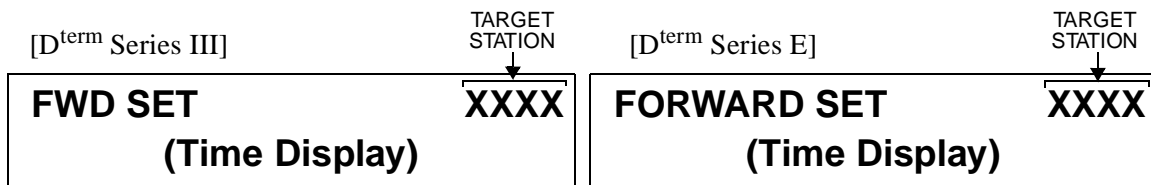
1. Lift the handset or press the “SPEAKER” key; receive Dial Tone.
2. Press the CALL FORWARDING-ALL CALLS-D^{term}-PRI feature key; receive Service Set Tone. The LED of the associated feature key will go out. The LCD displays:



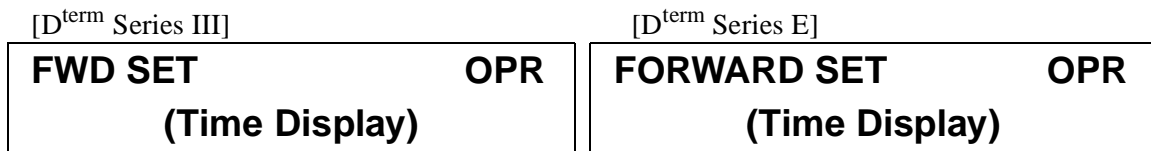
3. Replace the handset or press the “SPEAKER” key.

To set CALL FORWARDING-ALL CALLS-D^{term}-PRI for multi-line appearance other than the My-line:

1. Lift the handset or press the “SPEAKER” key.
2. Press the multi-line appearance; receive Dial Tone. Then press CALL FORWARDING-ALL CALLS-D^{term}-PRI feature key; receive Special Dial Tone.
3. Dial the desired target station number; receive Service Set Tone. The LED of the associated feature key does not light at the station setting the service. If the multi-line appearance is another D^{term}'s My-line, that station's feature key LED will light. The setting station's LCD displays:

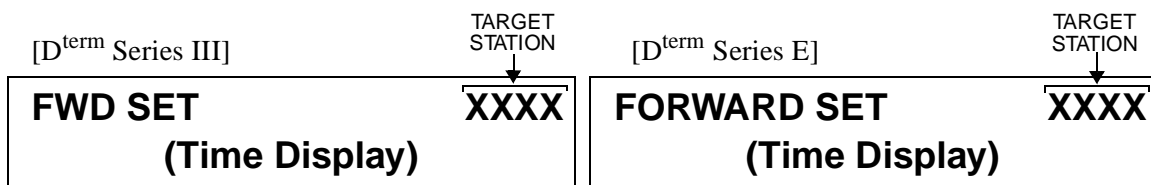


4. Replace the handset or press the “SPEAKER” key.
5. If the target station is the Attendant, the LCD displays:



To monitor CALL FORWARDING-ALL CALLS-D^{term}-PRI for a multi-line appearance other than the My-line:

1. Press the multi-line appearance. Then press the CALL FORWARDING-ALL CALLS-D^{term}-PRI feature key. The LCD displays:



CALL FORWARDING-ALL CALLS-D^{term}-PRI

To cancel CALL FORWARDING-ALL CALLS-D^{term}-PRI for a multi-line appearance other than the My-line:

1. Lift the handset or press the “SPEAKER” key; receive Dial Tone.
2. Press the multi-line appearance; receive Dial Tone. Then press the CALL FORWARDING-ALL CALLS-D^{term}-PRI feature key; receive Service Set Tone. The LCD displays:

[D^{term} Series III]

FWD CNCL
(Time Display)

[D^{term} Series E]

FORWARD CANCEL
(Time Display)

The associated LED that is lit at another station goes out.

3. Replace the handset or press the “SPEAKER” key.

3. Programming

Refer to [C-5] CALL FORWARDING-ALL CALLS”.

C-96 CALL FORWARDING-BUSY LINE-PRI**1. General Description**

This feature permits a call to a busy station to be immediately forwarded to a predesignated station or to the ATTENDANT CONSOLE [A-3].

If a called station is in a hunt group and forwards calls to another hunt group, it can be determined by system data, whether the calling party is directed to the called parties hunt group or the terminating parties hunt group when all of the forwarded stations are busy.

2. Operating Procedure

To set CALL FORWARDING-BUSY LINE-PRI from an Individual Station:

1. Lift the handset; receive Dial Tone.
2. Dial the specific CALL FORWARDING-BUSY LINE-PRI access code; receive Special Dial Tone.
3. Dial the desired target station number; receive Service Set Tone.

To cancel CALL FORWARDING-BUSY LINE-PRI from an Individual Station:

1. Lift the handset, receive Dial Tone.
2. Dial the specific CALL FORWARDING-BUSY LINE-PRI cancel code; receive Service Set Tone.

To set CALL FORWARDING-BUSY LINE-PRI from the ATTENDANT CONSOLE [A-3]:

1. Press an idle "LOOP" key.
2. Dial the specific CALL FORWARDING-BUSY LINE-PRI access code; receive Special Dial Tone.
3. Dial the TENANT SERVICE [T-12] number (2 digits).
4. Dial the originating station number.
5. Dial the desired target station number; receive Service Set Tone.

To cancel CALL FORWARDING-BUSY LINE-PRI from the ATTENDANT CONSOLE [A-3]:

1. Press an idle "LOOP" key.
2. Dial the specific CALL FORWARDING-BUSY LINE-PRI cancel code.
3. Dial the TENANT SERVICE [T-12] number (2 digits).
4. Dial the originating station number; receive Service Set Tone.

3. Programming

STEP 1: ASYD - System Data 1, Index 5, bit 0: Access codes for CALL FORWARDING-BUSY LINE and CALL FORWARDING-DON'T ANSWER are same or separate? 0/1: Same/Separate.

- bit 5: Hunting Group when transferred party is busy (Station Hunting after C.F.-Busy Line) 0/1: Hunt in Transferring Party's Group/Hunt in Transferred Party's Group
- bit 7: Multiple Call Forwarding Service 0/1: Out/In Service

STEP 2: ANPD - Reserve a number level for feature access and cancel. Assign Connection Index, CI=N; Normal. Assign NND in accordance with a predetermined numbering plan.

CALL FORWARDING-BUSY LINE-PRI

- STEP 3: ASPA - Assign an access code to CALL FORWARDING-BUSY LINE Entry, SID=10 and to CALL FORWARDING-BUSY LINE Cancel, SID=11. Assign Connection Status Index (CI) for Normal service.
- STEP 4: ASFC - Assign the stations to receive CALL FORWARDING-BUSY LINE a Service Feature Class that allows SFI=9.
- STEP 5: AKYD - For D^{term} sets, CALL FORWARDING-BUSY LINE may be assigned to a programmable line/feature key. Assign KYI=1 and FKY=1.
- STEP 6: 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 assignment, assign TRI=3 for Inter- and Intra-tenant connection via the Attendant Console. This allows a station in one tenant to be Call Forwarded to a station in the same or different tenant. Also assign TRI=0, station-to-station calling.
- STEP 7: ACFO - For tenant-wide CALL FORWARDING-BUSY LINE of an incoming DID and DIT calls,
Note Assign CF=1 for a destination (CFI) of either the Attendant Console or a station.

Note: *Step 7 is necessary for CALL FORWARDING on a system basis only.*

C-97 CALL PICKUP-GROUP-PRI**1. General Description**

This feature permits a station user to answer ISDN Network calls directed to other lines in a preset CALL PICKUP-GROUP simply by dialing a pickup code.

2. Operating Procedure

Picking up an incoming ISDN call:

1. A call from the ISDN network terminates to a trunk.
2. Stations within the same CALL PICKUP-GROUP-PRI ring.
3. Lifts the handset; receives Dial Tone.
4. Dials the call pickup code; the call is connected to the station.

Picking up an incoming call (Consultation Hold):

1. A call from the ISDN network terminates to a trunk.
2. The station within the same CALL PICKUP-GROUP-PRI ring.
3. The station flashes the switchhook; receives special Dial Tone.
4. Dials the call pickup code; the call is connected to the station.
5. The first party is put on CALL HOLD [C-6] status.

3. Programming

STEP 1: ANPD - Reserve a number level for feature access and cancel. Assign Connection Index, CI=N, H; Normal, Hooking. Assign NND in accordance with a predetermined numbering plan.

STEP 2: ASPA - Assign an access code for the CALL PICKUP GROUP, SID = 7 for Connection Status Index (CI) of Normal and Hooking.

STEP 3: ACPG - Assign members of CALL PICKUP GROUP. If two stations are ringing simultaneously, the station that was programmed first will be picked up first.

Note: *Maximum 100 stations per group.*

- *No limit to the number of Groups per system.*
- *Stations must belong to the same tenant.*

CALL PICKUP-GROUP-D^{term}-PRI

C-97D CALL PICKUP-GROUP-D^{term}-PRI

1. General Description

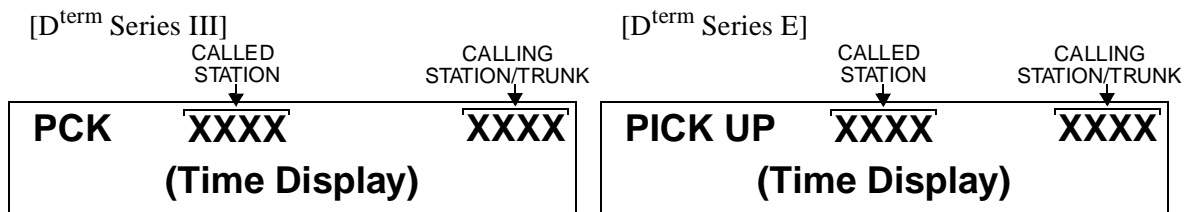
This feature permits a station user to answer an ISDN network call directed to another line in a preset CALL PICKUP-GROUP by using a programmable line/feature key.

CALL PICKUP-GROUP-D^{term}-PRI may be used by seizing Dial Tone from any multi-line appearance on the D^{term}.

2. Operating Procedure

Picking up an incoming call:

1. An incoming call from the ISDN network terminates to a trunk.
2. The stations within the same call pickup group ring.
3. Lifts the handset; receives Dial Tone.
4. Press the call pickup group feature key; the call is connected to the station. The LCD displays:



Picking up an incoming call (consultation Hold):

1. An incoming call from the ISDN network terminates to a trunk.
2. The stations within the same call pickup group ring.
3. Press the "TRANSFER"/"CALL HOLD" feature key; receives Special Dial Tone.
4. Press the call pickup group feature key; the call is connected to the station.
5. The first party is put on CALL HOLD [C-6] status.

3. Programming

STEP 1 ~ STEP 3: Refer to [\[C-97\] "CALL PICKUP-GROUP-PRI"](#) in this manual.

STEP 4: AKYD - Optional. Assign a programmable Line/Feature key as a CALL PICKUP key. Assign KYI = 1 and FKY = 12.

C-98 CALL TRANSFER-ATTENDANT-PRI**1. General Description**

This feature permits a station user, while connected to an ISDN network call, to signal the Attendant and have the Attendant transfer the call to another station within the system.

2. Operating Procedure

Calling the Attendant:

1. While engaged in a PRI trunk call, press the switchhook; receive Special Dial Tone.
2. Dial the operator/access code.
3. a. ATTENDANT CONSOLE [A-3] "RCL" lamp flashes and buzzer sounds.
b. The station receives Ringback Tone.

Answering by the Attendant:

1. Refer to "ATTENDANT CONSOLE USER'S GUIDE".

If the station wishes to return to the Central Office trunk call while the Attendant is being called:

1. Press the switchhook; the "RCL" lamp goes out; the buzzer stops.
2. Ringback Tone stops; the station returns to PRI trunk call.

3. Programming

STEP 1: ASYD - System Data 2, Index 1, bit 0 and 1: Assign a data to allow CONSULTATION HOLD. All types of connections.

STEP 2: ATNR - Allow tenant restriction. Assign Tenant Restriction Index (TRI) 0, and 4 on an intra-and Inter-tenant basis.

CALL TRANSFER-ALL CALLS-PRI

C-99 CALL TRANSFER-ALL CALLS-PRI

1. General Description

This feature permits a station user to transfer incoming or outgoing ISDN calls to another station within the system without Attendant assistance.

2. Operating Procedure

To transfer a call in progress:

1. While connected with the first party; press the switchhook; receive Special Dial Tone.
2. Dial the third party; receive Ringback Tone.
3. At this point, the station user can either:
 - (a) Hang up before the third party answers. The first and third parties will be connected when third party answers.
 - (a) Wait for third party answer and announce the transfer while keeping the first party in a CONSULTATION HOLD-ALL CALLS-PRI [C-100] condition. When the station user hangs up, the first and third parties will be automatically connected.

3. Programming

- STEP 1: ASYD - System Data 1, Index 69, bit 0: Return transferred call to transferring party after the elapse of the Recall Timer. Only applicable to blind transfers.
bit 2: Short tone on recall of CALL TRANSFER-ALL CALLS. Ringback Tone is briefly heard by the person answering the recall.
- Index 140: (if ASFC SFI 103 = 0)/Index 247 (if ASFC SFI 103 = 1).
Assign the Recall Timer for a station-to-station CALL TRANSFER-ALL CALLS. For 30 seconds, assign data 00H. (TC3 = 2 sec, TC7 = 8 sec.) RAM data 3FH for 30 seconds.
- System Data 2, Index 1, bits 0 & 1: Assign a data to allow CONSULTATION HOLD [C-17, C-17D].
- STEP 2: ATNR - Allow tenant-to-tenant connection for Intra- and Inter-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.

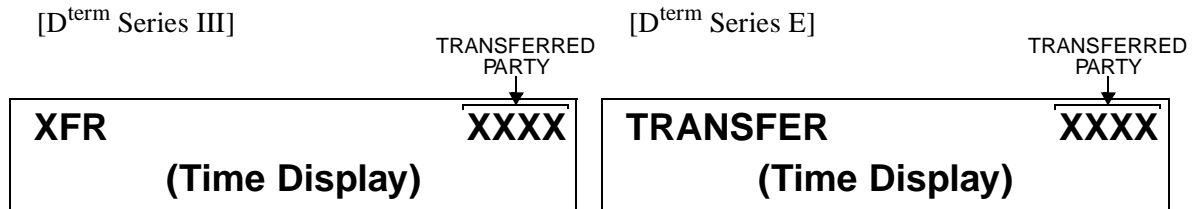
C-99D CALL TRANSFER-ALL CALLS-D^{term}-PRI**1. General Description**

This feature permits a station user to transfer incoming or outgoing ISDN calls without Attendant assistance.

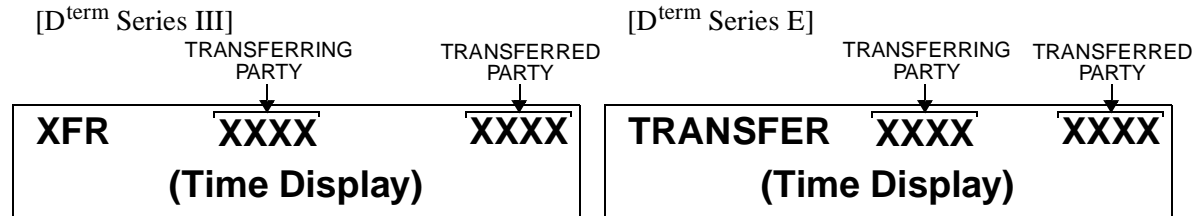
2. Operating Procedure

To transfer a call in progress:

1. While connected with the first party, press the “TRANSFER” key; receive Special Dial Tone.
2. Dial the third party; receive Ringback Tone.
3. At this point, the station user can either wait and announce the call or hang up before the transfer is completed. The LCD display for an announced transfer will be:



The LCD display for an unannounced transfer will be:

**3. Programming**

Refer to [\[C-99\] “CALL TRANSFER-ALL CALLS-PRI”](#) in this manual.

CONSULTATION HOLD-ALL CALLS-PRI

C-100 CONSULTATION HOLD-ALL CALLS-PRI

1. General Description

This feature permits a station user to hold any incoming or outgoing ISDN network call or any intraoffice call while originating a call to another station within the system.

2. Operating Procedure

To hold the original call and place the second call:

1. Press the switchhook; receive Special Dial Tone.
2. The original call is held.
3. Dial the second station number; receive Ringback Tone.
4. The second station answers; the consultation hold state has been entered.

To return to the original call:

1. In any of the following cases, the calling station can return to the original call by pressing the switchhook:
 - (a) The Second station called for consultation is busy.
 - (b) The Calling station cannot access to second station due to restriction or any other reason.
 - (c) Second station does not answer.
2. If the second party hangs up, the calling station will automatically be returned to the original call.

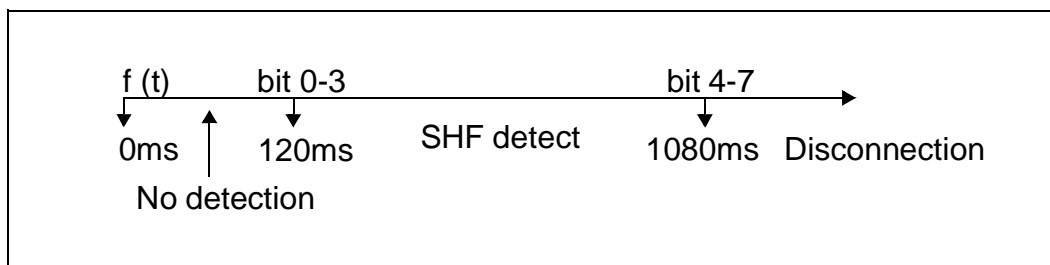
If the originating station flashes the switchhook, THREE-WAY CALLING [T-2] will be initiated.

3. Programming

STEP 1: ASYD - System Data 2, Index 1, bits 0 & 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: Switchhook flash starts timer. To calculate this value:
 $(1-FH) \times 120 \text{ msec} = \text{Timer}$.

bits 4-7: Switchhook flash ends timer. To calculate this value: $(1-FH) \times 120 \text{ msec} = \text{Timer}$. For both beginning and ending timers, assign 91H for 120-1080 msec.



C-100D CONSULTATION HOLD-ALL CALLS-D^{term}-PRI**1. General Description**

This feature permits a D^{term} station user to hold any incoming or outgoing ISDN network calls while originating a call to another station within the system.

2. Operating Procedure

To hold the original call and place second call from a D^{term}:

1. Press the “TRANSFER” key; receive Special Dial Tone.
2. The original call is held.
3. Dial the second station number; receive Ringback Tone.
4. The Second station answers; the consultation hold state has been entered.

To return to the original call from a D^{term}:

1. In any of the following cases, the calling station can return to the original call by pressing the “TRANSFER” key:
 - (a) Second station called for consultation is busy.
 - (b) Calling station cannot access to the second station due to a restriction or some other reason.
2. If the second station hangs up, the calling station will automatically be returned to the original call.
3. If the second station stays on, pressing the “TRANSFER” key returns the original call to the D^{term} while the second call is being held.

Press the “CONF” key to initiate THREE-WAY CALLING [T-2].

3. Programming

Refer to [\[C-100\] “CONSULTATION HOLD-ALL CALLS-PRI”](#) in this manual.

C-101 CALL FORWARDING-INTERCEPT/ANNOUNCEMENT-PRI

1. General Description

This feature provides for the interception of a called party number received via ISDN by DIRECT INWARD DIALING [D-8] calls which cannot be completed (unassigned station, level, etc.). These calls are automatically routed to a recorded announcement, informing the caller that an inoperative number was reached and giving the listed directory number for information.

This feature permits a station originated call, upon encountering a restricted outgoing number, to automatically be routed to a recorded announcement informing the caller that the dialed number is restricted for this station.

This feature permits a station originated call, upon encountering a trunk busy condition, to automatically be routed to a recorded announcement informing the caller that all the outgoing trunks are busy.

Note: *This feature requires an announcement trunk and an announcement machine or a Digital Announcement Trunk (DAT).*

2. Operating Procedure

No manual operation is required.

3. Programming

STEP 1: ACFO - Enable this feature by allowing CF = 3: CALL FORWARDING-INTERCEPT/ANNOUNCEMENT. The CFI parameter will come up for assignment. An Attendant Console may be programmed so that intercepted calls can terminate at the CALL FORWARD INTERCEPT key. If no assignment is made, the PBX program goes to the AAED command for announcement trunk information because the destination of the transfer is a trunk and not a station or Attendant Console.

STEP 2: ARTD - Assign the announcement route (in the case of DAT) as shown below:

RT: 1
1-OSGS :2 2-ONSG :2 6-TCL :4 7-L/T :1 15-LSG :0*

*If a PA-8TL

The other data than above must be set "0" (default data).

STEP 3: ATRK - Assign the LENs, Announcement Trunk Route Number, Trunk Number, and Tenant Number.

STEP 4: MBTK - Assign the Make Idle status to the Announcement Trunk.

STEP 5: ARRC - If TIE Line or REMOTE ACCESS TO PBX [R-2] connection to the ANNOUNCEMENT SERVICE Trunk is required, allow trunk-to-trunk connection using ARI: D, Direct Connection.

STEP 6: AAED - Used to assign Announcement equipment. Assign:

- TN: Tenant Number;
- EQP: Announcement Equipment Number
 - 0: Dead Level
 - 1: Unused Number (LCR OPR not programmed)
 - 2: Available
 - 3: Available
 - 4: Outgoing Trunk Group Busy Announcement
 - 5: Available
 - 6: Available
 - 7: Outgoing Route Restriction Announcement
- 8-15: Available for ANNOUNCEMENT SERVICE [A-15] applications.
- RT, TK: Route & Trunk number of the trunk connected to the Announcement Equipment;
- 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 CO. 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.

STEP 7: ACFR - Assignment of Call Forwarding Restriction. Upon determining which types of Call Class Indexes (CCI) will be answered via CALL FORWARDING-INTERCEPT; for example, DID call; allow that CCI a Transfer Service Feature Index of 1, for CALL FORWARDING-ALL CALLS, DON'T ANSWER, BUSY.

CALL PICKUP-DIRECT-PRI

C-102 CALL PICKUP-DIRECT-PRI

1. General Description

This feature allows a station user to pick up an ISDN call to any other station in the system by dialing a specific call pickup code.

2. Operating Procedure

To pick-up an incoming call:

1. Lift the handset; receive Dial Tone.
2. Dial the CALL PICK UP-DIRECT-PRI code; receive Second Dial Tone.
3. Dial the specific station number to be picked up; the incoming call is connected to your station.

3. Programming

STEP 1: ASYD - System Data 2, Index 1, bits 0 & 1: CONSULTATION HOLD-ALL CALLS [C-17] allowed or denied. 00: Denied; 01: Originating and Terminating Calls allowed, Tandem Call Denied; 11: All calls allowed.

STEP 2: ANPD - Reserve a number level for feature access. Assign for normal.

STEP 3: ASPA - Assign an access code to CALL PICKUP-DIRECT, SRV = SSC, SID = 35 for Connection Status Index (CI) of Normal.

STEP 4: ASFC - Assign a Service Feature Class that allows SFI 29 to the stations.

C-114 CALL WAITING-TERMINATING-PRI

1. General Description

This feature enables a busy station to receive a second incoming call from DID trunk of ISDN network. A Call Waiting Tone is sent to the busy station, the user can use CALL HOLD [C-3] to answer the second call. CALL HOLD [C-3] may be used to alternate between the two calls.

2. Operating Procedure

To activate CALL WAITING-TERMINATING on an incoming ISDN trunk call:

- 1. The system receives the called station number.
- 2. If the called station is busy, CALL WAITING-TERMINATING is automatically set; calling station receives Call Waiting Ringback Tone. Call Waiting Tone (2 beeps) is sent to the busy station. If the called station is a D^{term} LED of "ANSWER" key flashes.

To answer a CALL WAITING-TERMINATING call:

- 1. Call Waiting Tone is heard during the call in progress.
- 2. Flashing the switchhook or pressing the "ANSWER" key on the D^{term} will hold the existing call.
- 3. CALL WAITING-TERMINATING is automatically connected.
- 4. Another switchhook flash or pressing the "ANSWER" key on the D^{term} will return to the original call and hold the second call.

OR

- 1. Call Waiting Tone is heard during call in progress.
- 2. The called station hangs up; priority ringing is sent.
Priority ringing = 0.4 sec. ON 0.2 sec. OFF 0.8 sec. ON
 0.2 sec. OFF 0.4 sec. ON 0.4 sec. OFF
- 3. Lift the handset to answer.

3. Programming

- STEP 1: Assign the Basic Data for ISDN. (Refer to Chapter 3, "Basic Data Assignment for ISDN".)
- STEP 2: ASYD - System Data 2 Index 10, bit 6: Call Waiting-Terminating Service 0/1=Out/In Service.
- STEP 3: ASFC - Assign SFI6=1 (Call Waiting-Terminating Service is allowed.). Also SFI11=1 (Data Line Security is OFF.).
- STEP 4: ARTD - For DID Trunk (Bch) of ISDN, assign CDN46 (CW)=1.

CALL PARK-PRI

C-119 CALL PARK-PRI

1. General Description

This feature enables the Attendant(s) or station users to “Park” calls from the ISDN network against their own station numbers. Calls can easily be retrieved from any station within the system.

2. Operating Procedure

When an ISDN trunk party and ATTENDANT CONSOLE [A-3] are talking:

1. The Attendant presses the “CALL PARK” key; the CALL PARK number is automatically selected and displayed at the ATTENDANT CONSOLE [A-3].
2. The Attendant receives Service Set Tone.
3. The Attendant presses either the “RELEASE” or “CANCEL” key.

Note: *If no CALL PARK numbers are available, Attendant receives Busy Tone and no number is displayed.*

When an ISDN trunk party and a station user are talking:

1. The station user momentarily presses the switchhook; receives Special Dial Tone.
2. Dial the CALL PARK access code, the ISDN trunk connects to the called station is placed into call park state; receives Service Set Tone.
3. Replace the handset.

To retrieve a Parked Call from the Setting Station:

1. Dial the CALLPARK local retrieval code; the parked call is reconnected.

To retrieve a Parked Call from a Different Station:

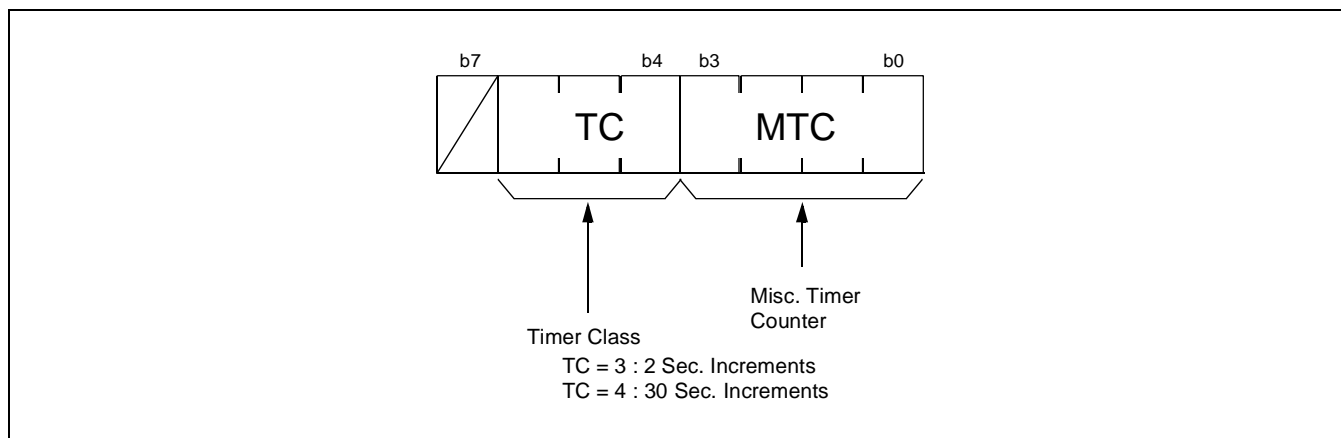
1. Dial the CALL PARK remote retrieval code and the number of the station which has parked the call; the parked call is reconnected.

To retrieve a Parked Call set by ATTENDANT CONSOLE [A-3] from the station user.

1. Dial the CALLPARK remote retrieval code and call park number; the parked call is reconnected.

3. Programming

STEP 1: ASYD - System Data 1, Index 142: For CALL PARK recall, the Miscellaneous Timer Counter is assigned in bits 0-3. The Timer Class is assigned in bits 4-6. Timer Class of 3 = 2 seconds. Timer Counter of 4 = 30 seconds. (Default: 450 seconds.)



System Data 2, Index 1, bits 0&1: CONSULTATION HOLD-ALL CALLS [C-17] allowed or denied.

00: Denied: 01:Originating and Terminating Calls allowed, 10:Tandem Call Denied 11:All calls allowed.

STEP 2: ANPD - Reserve a number level for feature access and retrieval. Assign for normal and hooking. Assign NND in accordance with a predetermined numbering plan.

STEP 3: ASPA - Assign an access code to:

- (a) CALL PARK access code, SRV = SSC, SID = 61, Connection Index of Hooking.
- (b) CALL PARK local retrieval code, SRV = SSC, SID = 62, Connection Index of Normal.
- (c) CALL PARK remote retrieval code, SRV = SCC, SID = 63, NND = number of digits in the access code, and assign a Connection Index of Normal.

STEP 4: ASFC - Assign a Service Feature Class that allows SFI 67 to the applicable stations. This allows the station to park a call and to retrieve a parked call. Assign stations a Service Feature Class the allows SFI 68, CALL PARK called. This allows a station to be parked by another station or Attendant Console.

STEP 5: ASAT - This command must be assigned to designate a specific station number to the Attendant Console. This number is used to identify the Attendant Console when parking a call.

CALL FORWARDING-ALL CALLS-ANNOUNCEMENT-PRI

C-123 CALL FORWARDING-ALL CALLS-ANNOUNCEMENT-PRI

1. General Description

This feature permits all calls from ISDN trunks destined for a particular station to be routed to a recorded announcement. Activation and cancellation may be accomplished either by the individual station user or the ATTENDANT CONSOLE [A-3].

Note: *This service feature requires “Digital Announcement Trunk (DAT)”*

2. Operating Procedure

To activate CALL FORWARDING-ALL CALLS-ANNOUNCEMENT from an Individual Station:

1. Lift the handset: receive Dial Tone.
2. Dial the CALL FORWARDING-ALL CALLS-ANNOUNCEMENT access code (same as CALL FORWARDING-ALL CALLS [C-5]): receive Special Dial Tone.
3. Dial the desired announcement trunk access code (same as ANNOUNCEMENT SERVICE [A-15]): receive Service Set Tone.
(If activation is not possible, receive the Busy Tone.)

To cancel CALL FORWARDING-ALL CALLS-ANNOUNCEMENT from an Individual Station:

1. Lift the handset: receive Dial Tone.
2. Dial the CALL FORWARDING-ALL CALLS-ANNOUNCEMENT cancel code (same as CALL FORWARDING-ALL CALLS [C-5]): receive Service Set Tone.

3. Programming

CALL FORWARDING-ALL CALLS

STEP 1: ASYD - System Data 1, Index 4, bit 6: One burst of ringing at forwarding station when CALL FORWARDING-ALL CALLS [C-5] is in service? 0/1: No/Yes. (for a single line station only)

Index 69, bit 1: A burst of Ringback Tone to alert the person receiving a call that this is a CALL FORWARDING-ALL CALLS [C-5] call. In service? 0/1: No/Yes. Normally assigned as data “0”.

System Data 2, Index 6, bit 4: Enable station set for CALL FORWARDING-ALL CALLS [C-5] to 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 permanent basis.

STEP 2: ANPD - Reserve a number level for service feature access and cancel. Assign for normal. Assign NND in accordance with a predetermined numbering plan.

STEP 3: ASPA - Assign an access code to CALL FORWARDING-ALL CALLS [C-5] entry SID = 8, and to CALL FORWARDING-ALL CALLS [C-5] cancel SID = 9. Assign Connection Status Index (CI) for normal service.

CALL FORWARDING-ALL CALLS-ANNOUNCEMENT-PRI

- STEP 4: ASFC - Assign the stations to activate CALL FORWARDING-ALL CALLS [C-5] a Service Feature Class that allows SFI = 7.
- STEP 5: AKYD - For D^{term} sets, CALL FORWARDING-ALL CALLS [C-5] may be assigned to a programmable line/feature key. Assign KYI = 1 and FKY = 2.
- STEP 6: ATNR - Allow tenant-to-tenant connection for Inter-and Intra-tenant connections. Assign Tenant Restriction Index (TRI) = 1. For this service feature to be set by the Attendant Console, assign Inter- and Intra-Tenant connection via the Attendant Console TRI = 3. Also allow TRI = 0, station-to-station calling.

ANNOUNCEMENT SERVICE

- STEP 1: ANPD - Reserve a number level for Trunk Access. Assign for Connection Indexes for Normal. Assign NND values in accordance with a predetermined numbering plan.
- STEP 2: ASPA - Assign an access code to the announcement trunk. Assign SRV = ANNC and the EQP number assignment should be as assigned with the AAED command.
- STEP 3: ARTD - Assign the announcement route (in the case of DAT) as shown below.

RT: 1

1-OSGS :2 2-ONSG :2 6-TCL :4 7-L/T :1

The other data must be set "0" (default data).

- STEP 4: ATRK - Assign the LENSs, Announcement Trunk Route Number, Trunk Number, and Tenant Number. Assign one or more trunks to a specific route used as an announcement trunk.
- STEP 5: MBTK - Assign the Make Idle status to the announcement trunk.
- STEP 6: ARRC - Allow trunk-to-trunk connection (Bch route (ISDN) to Announcement Trunk route) using ARI: D, Direct Connection.

CALL FORWARDING-ALL CALLS-ANNOUNCEMENT-PRI

STEP 7: AAED - Assign announcement equipment.

TN: Tenant Number

EQP: Announcement Equipment Number

0: Dead Level

1: Unused Number (LCR OPR not programmed)

2: Available

3: Available

4: Outgoing Trunk Group Busy Announcement

5: Available

6: Available

7: Outgoing Route Restriction Announcement

8-15: Available for ANNOUNCEMENT SERVICE [A-15] applications.

RT, TK: Route and trunk number of the trunk connected to the announcement equipment;

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 C.O. 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.

C-125 CALL FORWARDING-INTERCEPT-PRI**1. General Description**

This feature provides for interception of incoming calls from ISDN trunk which cannot be completed (unassigned station, level, etc.). These calls are automatically routed to a predetermined station or Attendant.

2. Operating Procedure

No manual operation is required.

3. Programming

Refer to [\[C-101\] “CALL FORWARDING-INTERCEPT/ANNOUNCEMENT-PRI”](#) in this manual.

CALL FORWARDING-DON'T ANSWER-PRI

C-129 CALL FORWARDING-DON'T ANSWER-PRI

1. General Description

This feature permits a call from an ISDN network to an unanswered station to be forwarded to a predesignated station or to the Attendant when the called station doesn't answer after a predetermined time interval.

2. Operating Procedure

To set CALL FORWARDING-DON'T ANSWER-PRI from an individual station:

1. Lift the handset; receive Dial Tone.
2. Dial the specific CALL FORWARDING-DON'T ANSWER-PRI access code; receive Special Dial Tone.
3. Dial the desired target station number; receive Service Set Tone.

To cancel CALL FORWARDING-DON'T ANSWER-PRI from an individual station:

1. Lift the handset; receive Dial Tone.
2. Dial the specific CALL FORWARDING-DON'T ANSWER-PRI cancel code; receive Service Set Tone.

To set CALL FORWARDING-DON'T ANSWER-PRI from the ATTENDANT CONSOLE [A-3]:

1. Press an idle "LOOP" key.
2. Dial the specific CALL FORWARDING-DON'T ANSWER-PRI access code; receive Special Dial Tone.
3. Dial the TENANT SERVICE [T-12] number (2 Digits).
4. Dial the originating station number.
5. Dial the desired target station number; receive Service Set Tone.

To cancel CALL FORWARDING-DON'T ANSWER-PRI from the ATTENDANT CONSOLE [A-3]:

1. Press an idle "LOOP" key.
2. Dial the specific CALL FORWARDING-DON'T ANSWER-PRI cancel code; receive Special Dial Tone.
3. Dial the TENANT SERVICE [T-12] number (2 Digit).
4. Dial the originating station number; receive Service Set Tone.

3. Programming

- STEP 1: ASYD - System Data 1, Index 5, bit 0: Are the access codes for CALL FORWARDING-BUSY LINE [C-2] and CALL FORWARDING-DON'T ANSWER the same or separate? 0/1: Same/Separate.
 Index 69, bit 1: Send short tone when a call forwarded via C.F.-ALL Calls service is answered. 0/1: Not Required/Required
 bit 2: Send short tone when a recalled C.F.- All Calls call is answered. 0/1: Not Required/Required
 Index 139: Assign the No Answer timer for station-to-station, DID and TIE Line calls. Default data is 30sec.
 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 SYS1, Index 145 timer. Default data is 10sec.
 Index 145: Assign the time an incoming call via the Attendant Console will ring at the CALL FORWARD-DON'T ANSWER station before recalling to the Attendant Console. Default data is 32sec.
- STEP 2: ANPD - Reserve a number level for feature access and cancel. Assign Connection Index, CI = N; Normal. Assign NND in accordance with a predetermined numbering plan.
- STEP 3: ASPA - Assign an access code to CALL FORWARDING-DON'T ANSWER entry, SID = 12, and to CALL FORWARDING-DON'T ANSWER cancel, SID = 13. Assign Connection Status Index (CI) for Normal service.
- STEP 4: ASFC - Assign the stations to receive CALL FORWARDING-DON'T ANSWER a Service Feature Class that allows SFI = 8.
- STEP 5: AKYD - For D^{term} sets, CALL FORWARDING-DON'T ANSWER may be assigned to a programmable line/feature key. Assign KYI = 2 and FKY = 22.
- STEP 6: ATNR - Allow tenant-to-tenant connection for Inter- and Intra-tenant connections. Assign Tenant Restriction Index (TRI) = 1. For this service feature to be set by the Attendant Console, assign Inter- and Intra-Tenant connection via the Attendant Console, TRI = 3. Also assign TRI = 0, station-to-station calling.
- STEP 7: ACFO - For tenant-wide CALL FORWARDING-DON'T ANSWER assign CF = 2 for a destination
Note (CFI) of either the Attendant Console or a station.
- STEP 8: ACFS - CALL FORWARDING-DON'T ANSWER can also be assigned via the ACFS command.
- Note:** Step 7 is necessary for Call Forwarding on a system basis only.

DISTINCTIVE RINGING-PRI

D-115 DISTINCTIVE RINGING-PRI

1. General Description

This feature provides distinctive station ringing patterns so that the station user can distinguish between internal and external incoming calls.

2. Operating Procedure

No manual operation is required.

3. Programming

STEP 1: Assign the Basic Data for ISDN. (Refer to [Chapter 3, “Basic Data Assignment for ISDN”](#).)

STEP 2: ASYD - System Data 1, Index 72, bit 6: Is DISTINCTIVE RINGING applied to calls handled via the Attendant Console? 0/1: No/Yes. Otherwise these calls will ring as station-to-station calls.

RINGER PATTERN 0

Normally used for C.O. Calls.

System Data 3, Index 0. Assign data 21H for C.O. calls to ring 1 second ON, 2 seconds OFF. Assign 42H for 2 seconds on, 4 seconds off, on a per-route basis. Go to ARTD CDN 12.

System Data 3, Index 3, bit 0. Should Ringer Pattern 0 be assigned interrupted ringing capability? 0/1: No/Yes.

RINGER PATTERN 1

Normally used for Station-to-Station Calls.

System Data 3, Index 1. Assign data 42H for station-to-station calls to ring for 2 seconds ON and 4 seconds OFF.

System Data 3, Index 3, bit 1. Should ringer pattern 1 be assigned interrupted ringer pattern 1 ringing capability? 0/1: No/Yes.

RINGER PATTERN 5

System Data 3, Index 3, bit 5. Enable ringer pattern 5? 0/1: No/Yes. This ringer pattern is applicable to CALL BACK [C-1], OUTGOING TRUNK QUEUING [O-2], and CALL WAITING-ORIGINATING [C-31].

System Data 3, Index 7. Assign data 24H for 4 seconds ON, 2 seconds OFF. (Ringer pattern 5.)

STEP 3: ARTD - To provide a distinctive ring to specific routes, assign data “1” to CDN 12, Distinctive Ring (DR).

STEP 4: ASFC - Assign a Service Feature Class that allows SFI48, Burst Ringing, to PA-16LC port stations that will not operate using DISTINCTIVE RINGING. With this feature, the system does not look at ASYD, System Data 3, Index 3 bits 0 and 1 to determine how this telephone will ring. Telex, FAX machines, and OPX stations may require a longer ringing signal. Digital D^{term}s will not respond to this feature.

D-116D DO NOT DISTURB-D^{term}-PRI**1. General Description**

This feature allows a station user to set Do Not Disturb status. Incoming ISDN calls will be denied access to the My-line while DND status is in effect.

2. Operating Procedure

To set Do Not Disturb:

Press the Do Not Disturb (“DND”) Key. The associated LED will light. The LCD displays:

DND SET XXXXXXXX (Time Display)

To cancel Do Not Disturb:

Press the Do Not Disturb (“DND”) Key. The LED will go out. The LCD displays:

[D^{term} Series III]

DND CNCL XXXXXXXX (Time Display)
--

[D^{term} Series E]

DND CANCEL XXXXXXXX (Time Display)
--

3. Programming

STEP 1: AKYD - Assign the following key data for the D^{term}.

TN: 1
 STN: Station Number
 TP: Type of D^{term} (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: Function Key Number
 FKY=50, DO NOT DISTURB.

STEP 2: ASFC - Select an indication type (RST/DND) on the display of a D^{term} when it terminates to a station which has been set DO NOT DISTURB.

SFI= 114 Calling Party DND Indication (D^{term})
 0/1: RST/DND

DATA LINE SECURITY-PRI

D-117 DATA LINE SECURITY-PRI

1. General Description

This feature allows those line circuits used for ISDN DATA transmission to be protected from interruptions such as ATTENDANT CAMP-ON [A-1], BUSY VERIFICATION [B-3], EXECUTIVE RIGHT OF WAY [E-1], and ATTENDANT OVERRIDE [A-7].

2. Operating Procedure

No manual operation is required.

3. Programming

STEP 1: ASFC - Set the Data Line Security to a data terminal.
SFI 11=0

D-118 DATA PRIVACY ON DEMAND-PRI**1. General Description**

This feature allows a station user to prevent interruptions to ISDN data calls by ATTENDANT CAMP-ON [A-1], BUSY VERIFICATION [B-3], CALL WAITING-TERMINATING [C-12], or ATTENDANT OVERRIDE [A-7] by dialing a DATA PRIVACY feature code. This feature is set automatically when a data connection is established.

2. Operating Procedure

To activate DATA PRIVACY ON DEMAND-PRI from a single line:

1. Lift handset; receive Dial Tone.
2. Dial desired number.
3. Before beginning data communications, flash switchhook; receive Special Dial Tone.
4. Dial DATA PRIVACY ON DEMAND-PRI access code; receive Service Set Tone.
5. Flash switchhook to return to original connection, or wait 30 seconds to return automatically.
6. To cancel Data Privacy, flash switchhook; receive Special Dial Tone.
7. Dial DATA PRIVACY ON DEMAND-PRI cancel code; receive Service Set Tone.
8. To return to original connection, flash switchhook momentarily, or wait 30 seconds to return automatically.

To activate DATA PRIVACY ON DEMAND-PRI from a D^{term}.

1. Lift handset; receive Dial Tone.
2. Dial desired number.
3. Before beginning data communications, press the "DND" key.
4. The display shows "PRV SET" for 3 seconds and returns to original connection. The "DND" lamp flashes as long as DATA PRIVACY ON DEMAND-PRI is set.
5. If the DND key is pressed again, "PRV CNCL" is displayed for three seconds and DATA PRIVACY ON DEMAND-PRI will be canceled.

Data connection (D^{term}/Data Adapter).

1. No manual operation is required. When a Data Call (Data Adapter) is originated, DATA PRIVACY ON DEMAND-PRI is set automatically. When the data call is disconnected, DATA PRIVACY ON DEMAND-PRI is canceled automatically.

3. Programming

STEP 1: ANPD - Reserve a number level for access code.

STEP 2: ASPA - Assign CI=H SRV=SSCA SIDA=48 (Data Privacy on Demand; Entry)
Assign CI=H SRV=SSCA SIDA=49 (Data Privacy on Demand; Cancel)

STEP 3: AKYD - Assign FKI=1, FKY=50 (Do Not Disturb)

DATA INTERFACE-AUTOMATIC ANSWER-PRI

D-119 DATA INTERFACE-AUTOMATIC ANSWER-PRI

1. General Description

This feature enables incoming ISDN Data Calls to be answered automatically by a D^{term}/Data Adapter.

2. Operating Procedure

To set DATA INTERFACE AUTOMATIC ANSWER-PRI, select the Attribute Data Entry or change the switch setting for Auto Answer. Refer to ATTRIBUTE DATA ENTRY [A-39] for details.

The D^{term}/Data Adapter may be set in two ways:

Setting the D^{term} Data Adapter for Auto Answer by changing the Terminal Attribute Data II

1. Press the "DATA" key; The DATA lamp lights steadily and the display shows 'D'.
2. Press the "DTX" key (or "ANSWER" key). The "DTX" lamp (or ANSWER lamp) lights steadily.
3. The display shows 'DATA SET'.
4. Key in '00'; the display shows 'ER CHECK XX YY'; press the "#" key.
5. The display shows 'AUTO ANS 01 YY'.
6. Key in '01'; the display shows 'AUTO ANS 01 01'.
7. Press the "#" key, and Service Set Tone (2 beeps) is heard; press the "DATA" key.
8. Auto Answer Setup is complete.

Setting the D^{term} Data Adapter for Auto Answer by pressing the "DSPY/AUTO" key:

1. Press the "DSPY/AUTO" key. The "DSPY/AUTO" lamp lights steadily.
2. Auto Answer Setup is complete.

Note: ER=DTR

3. Programming

STEP 1: ARSC - Allow the restriction for an incoming call from ISDN trunk (Bch).

STEP 2: ASDT - Assign an Data Terminal (DTE).
TEC=13 (Data Terminal via Data Adaptor)
TEC=16 (Data Terminal via Data Module)

STEP 3: AKYD - Assign the Data key on D^{term}.
FKI=1, FKY=29 (DATA)
FKI=1, FKY=30 (DSPY/AUTO)
FKI=1, FKY=31 (DTX)

D-120 DATA TRANSPARENCY-PRI**1. General Description**

This feature provides a completely transparent switched data path between two connected Data Terminals via PRI.

2. Operating Procedure

Establish a data call using the procedures described in the ASYNCHRONOUS DATA SWITCHING [A-24] and SYNCHRONOUS DATA SWITCHING [S-29] feature descriptions.

When the data connection has been established, information transfer between the two connected DTEs is completely transparent at speeds up to 9.6 kbps asynchronous and 56 kbps synchronous. The system does not alter the data in any manner.

3. Programming

No programming is required.

D-121 DATA COMMUNICATIONS-PRI

1. General Description

This feature enables data communication between two systems, through PRI over ISDN (Digital Line Link). The ISDN link can be accessed through various connections.

Note: *Unrestricted Data:*

- *The following communication speeds are supported:*

<u>Asynchronous</u>	<u>Synchronous</u>
50-9600 bps	2.4K, 4.8K, 9.6K, and 48K bps

2. Operating Procedure

1. Modem-to-Modem.

(Figure 5-1 illustrates a typical Modem-to-Modem connection.)

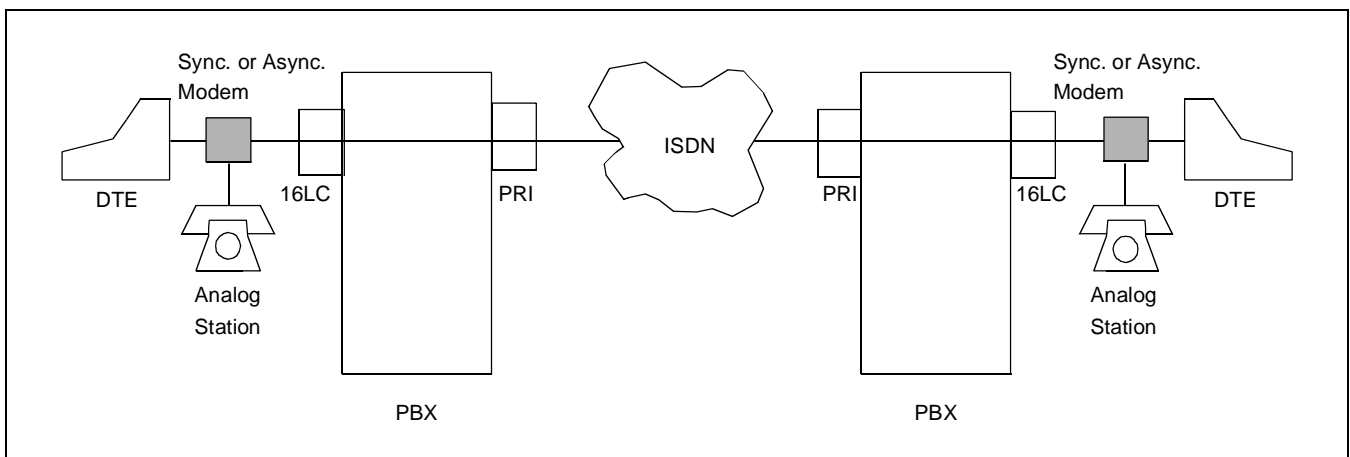


Figure 5-1 Typical Modem-to-Modem Connection

- An analog telephone user with a modem dials a remote extension which also has a modem.
- The remote modem rings and is manually or automatically answered.
- The remote modem returns answer tone (modem tone).
- Both modems exchange carrier signals.
- A data communications path is established.

2. Modem Pool to Modem Pool. (Illustrated in Figure 5-2.)

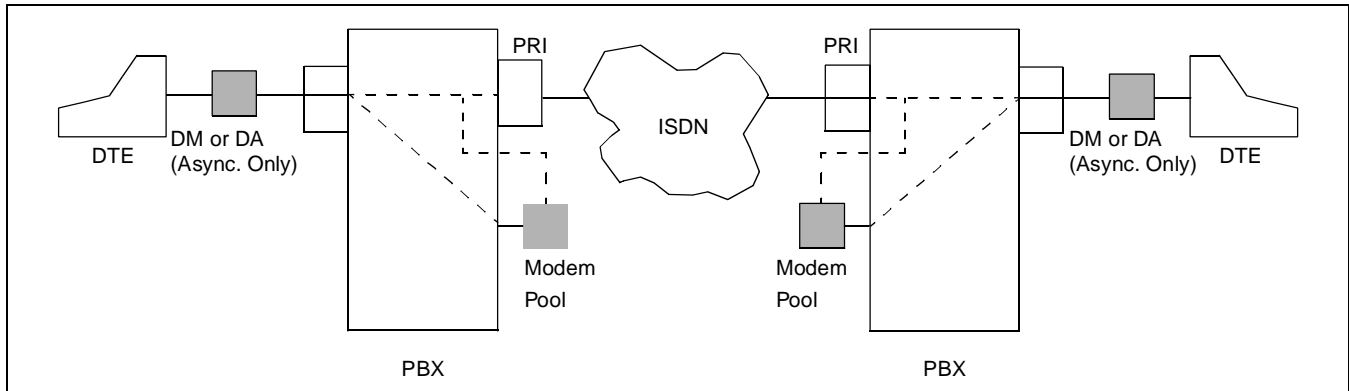


Figure 5-2 Modem Pool to Modem Pool

- Asynchronous Data Terminal connected to a Data Module;
 1. Enter “DM CALL <ENTER>” on the DTE keyboard; “READY” is returned.
 2. Enter the number of the remote DTE: “DIAL XXXXX <ENTER>”.
 3. “CALLING” is returned and the local modem pool is transferred to ISDN.
 4. “WAITING” will be displayed until the call is answered.
 5. The remote Data Module or Data Adapter manually or automatically answers the data call and the remote modem pool is connected between the called station and the ISDN network.
 6. “OPEN” is returned to the calling Data Module.
 7. The remote modem pool sends answer tone.
 8. Both modems exchange carrier signals.
 9. Data transmission can begin.
 10. To terminate the data call, enter “<ESC>-DM <ENTER>”.
 11. “ACK” is returned; enter “RLS <ENTER>” to disconnect from the Data Module.
 12. “RELEASED” is returned when the data path is disconnected.
- Asynchronous data terminal connected to a Data Adapter via a D^{term};
 1. Press the “VOICE LINE” key to originate.
 2. Dial the number of the terminal you want to call, “XXXXXX”.
 3. “XXX YY” is displayed on the D^{term} and the LED of the voice key lights (XXX=trunk type, YY=trunk number). For example, DDD 36.
 4. The remote Data Module or Data Adapter manually or automatically answers the data call and the remote modem pool is transferred in between the called station and the ISDN channel.
 5. The remote modem sends answer tone.
 6. On receipt of the answer tone, the D^{term} user presses the “DTX” key.
 7. “WAIT D XXX YY” is displayed when the called terminal is idle (XXX=trunk type, YY=trunk number).
 8. The local modem pool is transferred in between the D^{term} Data Adapter and the local PRI channel.
 9. Both modems exchange carrier signals.
 10. “RDY D XXX YY” (for D^{term} Series III)/“READY D XXX YY” (for D^{term} Series E) is displayed on calling D^{term} (XXX=trunk type, YY=trunk number).
 11. Data transmission can begin.

DATA COMMUNICATIONS-PRI

3. Unrestricted Data.

- Asynchronous DTE Connected to a Data Module;

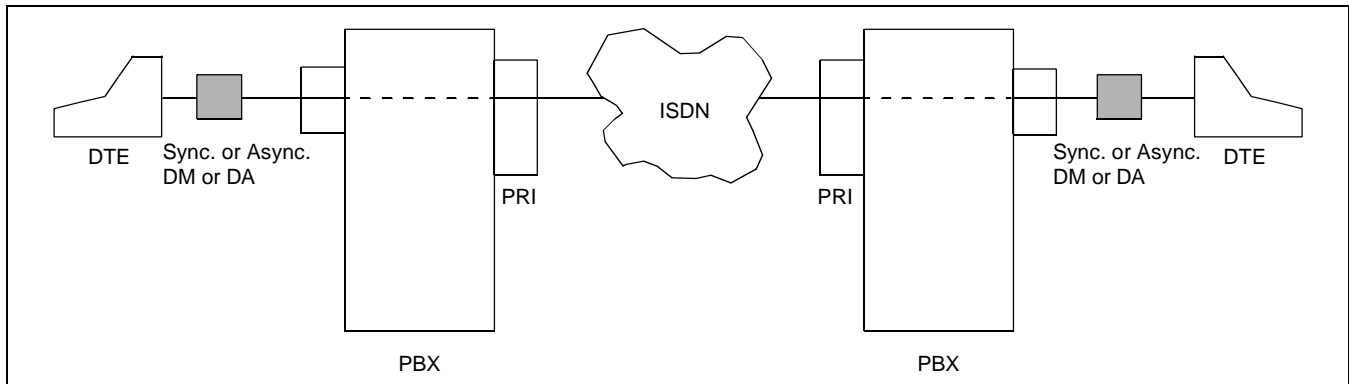


Figure 5-3 Asynchronous DTE Connected to a Data Module

1. Enter "DM CALL <ENTER>" on the DTE keyboard; "READY" is returned.
 2. Enter the number of the remote DTE: "DIAL XXXXX <ENTER>".
 3. "CALLING" is returned.
 4. "WAITING" will be displayed until the call is answered.
 5. "OPEN" is returned when the called DTE answers.
 6. Data transmission can begin.
 7. To terminate the data call, enter "<ESC>-DM <ENTER>".
 8. "ACK" is returned; enter "RLS <ENTER>" to disconnect from the Data Module.
 9. "RELEASED" is returned when the data path is disconnected.
- Asynchronous or Synchronous DTE Connected to a D^{term}/Data Adapter (either a straight digital connection or a modem pool connection);
 1. Press the "DATA" key to originate.
 2. "D" appears on the LCD (D^{term}); the DATA key LED illuminates.
 3. Dial the remote DTE number: "XXXXX".
 4. "WAIT D DTE XXX YY" (D^{term}) will be displayed until the called terminal answers.
 5. "RDY D DTE XXX YY" (for D^{term} Series III)/"READY D XXX YY" (for D^{term} Series E) is displayed when the called terminal answers.
 6. Data transmission can begin.
 7. Press the "DATA" key to disconnect.
 8. The data path is disconnected; the LED of the "DATA" key switches off.

3. Programming

STEP 1: Assign the Basic Data for ISDN. (Refer to [Chapter 3, “Basic Data Assignment for ISDN”](#).)

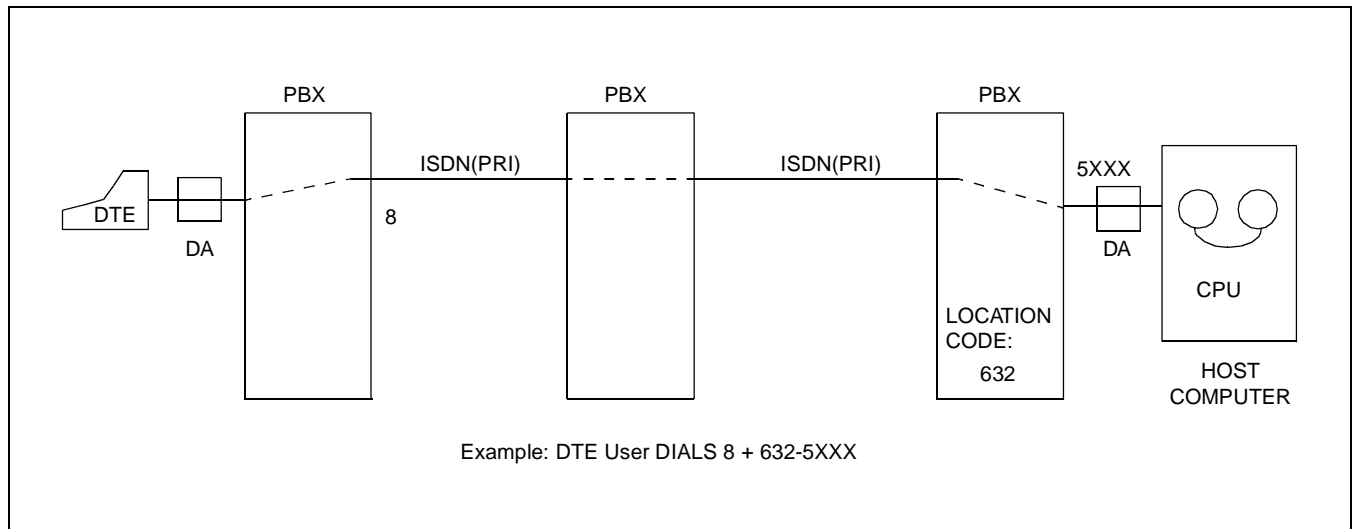
Note: *Pooled modems and modems connected to analog stations may be used on PRI channels when a straight digital data connection is not required. With PRI, modem pooling will always be automatic when accessing a PRI channel by setting the “AMND” command (Parameter A/D) to 0. If “AMND” (Parameter A/D) is set to 1, the channel will either use modem pooling or a straight digital path depending on the number dialed. This number is compared with the PRI link to the other end switch to determine if an analog or digital extension is being called.*

DATA UNIFORM NUMBERING PLAN-PRI

D-122 DATA UNIFORM NUMBERING PLAN-PRI

1. General Description

This feature enables data stations to be assigned a set of UNIFORM NUMBERS to distinguish data extensions from voice extensions.



2. Operating Procedure

Originating a Data Adapter call using uniform numbering:

1. Dial the private line access code (Usually "8").
2. Dial the Interoffice number (location code uniform number) and the desired DTE number; RDX (Interoffice number)-XXXX (Desired DTE number).
3. When the called DTE answers, data communication can begin.

Originating a Data Adapter call using Inter-office coordinate numbering plan:

1. Dial the Interoffice number (location code uniform number).
2. Dial the desired DTE number.
3. When the called DTE answers, data communication can begin.

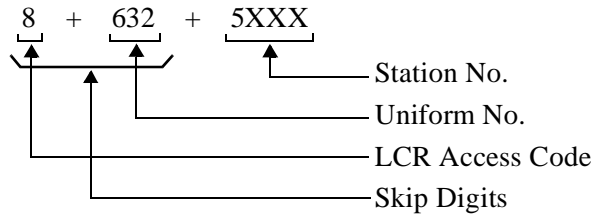
3. Programming

STEP 1: Assign the Basic Data for ISDN. (Refer to Chapter 3, “Basic Data Assignment for ISDN”)

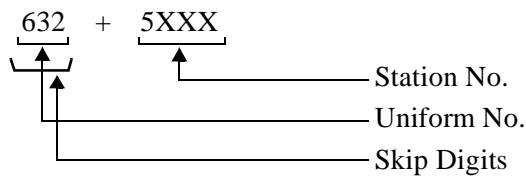
STEP 2: AUNE - Assign Uniform Numbering Data in a terminating office.

<Example>

Uniform Numbering



Inter-office coordinate Numbering



STEP 3: AMND- Assign DC (Destination Code) including ACC and/or Uniform No. and MND (Necessary Number of digits)

STEP 4: RRC - Allow the restriction between Incoming PRI and Dummy route.
A/D=D

DIRECT-IN TERMINATION (DIT)-PRI

D-137 DIRECT-IN TERMINATION (DIT)-PRI

1. General Description

This feature automatically routes incoming network exchange calls from an ISDN network and Public/Private Telecommunication network directly to a preselected station without Attendant assistance. The call can then be processed by the called party. THREE-WAY CALLING [T-2], CALL TRANSFER [C-10], etc., are handled in the same manner as any normal trunk call.

2. Operation Procedure

The calling party, outside the system, dials the telephone number as usual. However, the call is answered directly at a predetermined station, bypassing the ATTENDANT CONSOLE [A-3].

3. Programming

STEP 1: Assign the Basic Data for ISDN. (Refer to [Chapter 3, "Basic Data Assignment for ISDN"](#).)

STEP 2: ASYD - System Data 1, Index 147: DIT supervisory timer for a busy station.
Note: *This index works when System Data 2, Index 11, bit 7=1.*
System Data 2, Index 11, bit 7: Will the DIT call to a busy station be routed to ATT or queue to the busy station?
0/1=ATT/Queue
Note: *If the call goes to ATT, it will ring in on the BUSY or ICPT key.*

STEP 3: ARSC - The DIT target station receiving the call must be assigned a Route Restriction Class (RSC), allowing the station to be connected to the trunk. The DIT route must be allowed via Route Restriction Indexes (RRI) 0 & 1.

STEP 4: ACFR - Designate the type of incoming Call Class Indexes (CCI) which require a Transfer Service Feature Index (TSFI) = 3, DIRECT-IN TERMINATION. The type of CCI must match CDN 6 of the DIT route. For Night DIT (NIGHT CONNECTION-FIXED [N-1]), allow the CCI a TSFI = 2, NIGHT CONNECTION-FIXED [N-1].

For Day and Night DIT Service-Same Station

STEP 5: ACSI - Assign the Route Number, Trunk Number, and Connection Service Index = 3 for DIT. Then assign the Tenant Number and Station Number to serve as the DIT station.

For Day DIT Service

STEP 6: ACSA - Assign the Route Number, Trunk Number, Connection Service Index A = 2 for DIT. Then assign the Tenant Number and Station Number to serve as the DIT station.

For Day and Night DIT service-Different Stations

- STEP 7: ACSA - Assign the Route Number, Trunk Number, Connection Service Index A = 2 for DIT. Then assign the Tenant Number and Station Number to serve as the DIT station.
- ACSI - Assign the Route Number, Trunk Number, Connection Service Index = 4 for NIGHT CONNECTION-FIXED (DIT) [N-1]. Then assign the Tenant Number and Station Number to serve as the DIT station.

Night DIT Only

- STEP 8: ACSI - Assign the Route Number, Trunk Number, Connection Service Index = 4 for NIGHT CONNECTION-FIXED (DIT) [N-1]. Then assign the Tenant Number and Station Number to serve as the DIT station.

ELAPSED TIME DISPLAY-D^{term}-PRI

E-14D ELAPSED TIME DISPLAY-D^{term}-PRI

1. General Description

This feature provides an LCD display of the time elapsed while a D^{term} is connected to a PRI trunk.

2. Operating Procedure

No manual operation is required.

3. Programming

No programing is required.

F-21 FLEXIBLE NUMBERING OF STATIONS-PRI

1. General Description

This feature provides the ability to assign voice station numbers and data station numbers, to any corresponding instrument location depending solely upon numbering plan limitations.

2. Operating Procedure

No manual operation is required.

3. Programming

STEP 1: ASYD - System Data 1, Index 16: Enable one- to five-digit station numbering for the system. Assign 3FH.

Index 92, bit 3: Must be assigned as data "1".

STEP 2: ANPD - Reserve an access code for station numbering. Only the stations with the NND assigned here will appear on the BLF.

STEP 3: ASPA - Assign the station numbering in such a way that the system will differentiate the station numbering via the access codes programmed here. For the example shown, the following data is programmed:

For station 31;	For station 321;	For station 322;
TN: 1	TN: 1	TN: 1
ACC: 31	ACC: 321	ACC: 322
CI: N, H.	CI: N, H.	CI: N, H.
SRV: STN	SRV: STN	SRV: STN
NND: 2	NND: 3	NND: 4

STEP 4: ASDT - Assign the station number.

FAULTY TRUNK REPORT-PRI

F-26 FAULTY TRUNK REPORT-PRI

1. General Description

This feature allows a station to report a noisy or faulty ISDN trunk number by dialing a special access code before hanging up. The FAULTY TRUNK REPORT consists of Trunk number, Station number, associated Time Division Switch and reported time. This information is displayed at the MAINTENANCE ADMINISTRATION TERMINAL [M-18] and/or fault printer.

2. Operating Procedure

To enter a FAULTY TRUNK REPORT:

1. Switchhook flash before disconnecting; receive Special Dial Tone.
2. Dial the FAULTY TRUNK REPORT access code; receive Service Set Tone.
3. The MAT [M-18] records the FAULTY TRUNK REPORT and returns the line to the original connection.

3. Programming

STEP 1: ANPD - Reserve a number level for feature access code.
CI=H, NND=Number of digits for an access code.

STEP 2: ASPA - Assign an access code.
CI=H, SRV=SSC, SID=46 (FAULTY TRUNK REPORT)

STEP 3: ASFC - Allow this service restriction. SFI46=1

H-14D HANDS-FREE ANSWER BACK-D^{term}-PRI

1. General Description

This feature allows the station user to respond to a VOICE CALL-D^{term} [V-2D] without lifting the handset.

2. Operating Procedure

To answer a VOICE CALL [V-2D]:

1. Press the “MIC” key; the LED lights.
2. Respond to call hands-free.

3. Programming

No programming is required.

HOT LINE-OUTSIDE-PRI

H-15 HOT LINE-OUTSIDE-PRI

1. General Description

This feature allows a station user to access an outside ISDN destination party in the HOT LINE [H-1] service.

2. Operating Procedure

To place a HOT LINE-OUTSIDE-PRI call using a single line telephone:

1. Station A lifts the handset; Station A hears Sender Tone first, and then Ringback Tone.
2. Outside party B lifts the handset; the conversation proceeds.

To place a HOT LINE-OUTSIDE-PRI call using BROKERAGE HOT LINE [B-12]:

1. Station A presses the BROKERAGE HOT LINE key.
2. Station A lifts the handset or presses the "SPKR" key; Station "A" hears Sender Tone first, and then Ringback Tone.
3. Outside party B lifts the handset; the conversation proceeds.

3. Programming

STEP 1: ASYD - System Data 2, Index 1, bit 7: Does TOLL RESTRICTION apply to SPEED CALLING-SYSTEM [S-3]? 0/1: Yes/No. If TOLL RESTRICTION applies, construct an RSC that will allow the station access to the outgoing number.

STEP 2: ASFC - Construct a Service Feature Class that allows Service Feature Index (SFI) 12; SPEED CALLING-SYSTEM [S-3]. Assign this SFC to the Hotline station.
If using a Virtual Circuit (TEC = 18) for the hotline, SFI: 36 (Special Common Battery/Hotline) must be set to "1" for the Virtual Circuit's SFC.

STEP 3: ASDT - Assign the HOTLINE-OUTSIDE station as a TEC = 18, Virtual Circuit, or TEC = 14, Hotline.

TN: Tenant Number
STN: Station Number
LENS: Line Equipment Number (6 digits)
TEC: Telephone Class (1-31)
1:DP (10pps)
2:PB
3:DP/PB
12:D^{term}
13:Data terminal Via D^{term}
14:Hotline
15:CAS Line
16:Data Terminal Via Data Module
18:Virtual Circuit
RSC: Route Restriction Class (0-15)
For assignment of RSC, ARSC command.
SFC: Service Feature Class (0-15)
For assignment of SFC, ASFC command.

STEP 4: ASPD - Assign the Tenant Number, the Abbreviated Digit Code-ADC, and the CD-Telephone Number to the sent. Include in the CD the access code of the route.

STEP 5: AHLS - Assign the HOTLINE-OUTSIDE station with the following parameters:

HOT TN: HOTLINE-OUTSIDE Tenant

STN: HOTLINE-OUTSIDE Station

TYPE: 2 (ADC)

CON TN: Connecting Stations Tenant.

Assign same TN # as in HOT TN:

ADC: Abbreviated Digit Code of Corresponding Outside Number.

INCOMING CALL IDENTIFICATION-PRI

I-24 INCOMING CALL IDENTIFICATION-PRI

1. General Description

This feature allows an ATTENDANT CONSOLE [A-3] to visually identify the type of service and/or trunk group which is arriving or waiting to be answered.

2. Operating Procedure

No manual operation is required.

3. Programming

STEP 1: ASYD - System data 2, Indexes 8 & 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: Special Common Battery Station
- bit 3: Interposition Transfer

* System Data 2, Index 8, bits 6 & 7, and System Data 2, Index 9, bits 0-3 can be assigned different meanings via the AAKP command.

STEP 2: ARTD - Flag the type of route in CDN 6, Trunk Class (TCL).

- 0: Not used
- 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

STEP 3: AAKP - This command may be used to change the meaning of the top six keys of the Call Identification keys of the Attendant Console. (See System Data 2, Indexes 8 & 9.)
The Following functions may be assigned to Key Numbers (KYN) 1-6.

Function:

- a: CAS
- b: Off-Hook Alarm
- c: Priority Call 1
- d: Priority Call 2
- e: Priority Call 3

INCOMING ISDN CALL TO TIE LINE CONNECTION-PRI

I-25 INCOMING ISDN CALL TO TIE LINE CONNECTION-PRI

1. General Description

This feature permits an Attendant to connect an incoming ISDN network call, via a tie line, to a station at a distant PBX.

2. Operating Procedure

To Connect an Incoming Call:

1. The Attendant presses the "LDN" key and answers the incoming PRI trunk call.
2. Dial the Tie Line access code; receive Dial Tone from distant PBX. (in the case of 2nd DT signaling)
3. Dial the distant PBX extension number.
4. Press the "RELEASE" key.
5. The Tie line and trunk call are connected.

3. Programming

STEP 1: ARTD - Assign Tie Line route data.

<Example>

RT : 1

1-OSGS	: 2	2-ONSG	: 3	3-ISGS	: 2	4-INSG	: 3	5-TF	: 3
6-TCL	: 4	7-L/T	: 1	8-RLP	: 2	15-LSG	: Note	28-ANS	: 1

Note: *CDN15 (LSG)=4 (for LDT), 5 (for E&M)*

The other data must be set "0" (default data).

STEP 2: ATRK - Assign the LENs, TIE Line Route Number, Trunk Number, and Tenant Number.

STEP 3: MBTK - Assign the Make Idle status to the trunks.

STEP 4: ANPD - Reserve a number level for trunk access. Assign Connection Indexes (CI) for Normal and Hooking. Number of Necessary Digits is usually 1 or 2. Busy Lamp Field is not activated.

STEP 5: ASPA - Assign the access code as assigned in ANPD above. Type of Service, SRV = OGC/LCR Outgoing Trunk. Assign the route number associated with this access code.

STEP 6: ARSC - For the incoming PRI (Bch) route, allow for RRI: 0, Incoming Call via the Attendant Console (with Call Transfer). This Route Restriction Class (RSC) is to be assigned for the Attendant Console in ATRK. (RSC 0).

For outgoing TIE Line route and for RSC 0, allow for RRI: 2 Outgoing Call via the ATTCON (with Call Transfer). RSC 0 is to be assigned to the ATTCON in ATRK.

INCOMING ISDN CALL TO TIE LINE CONNECTION-PRI

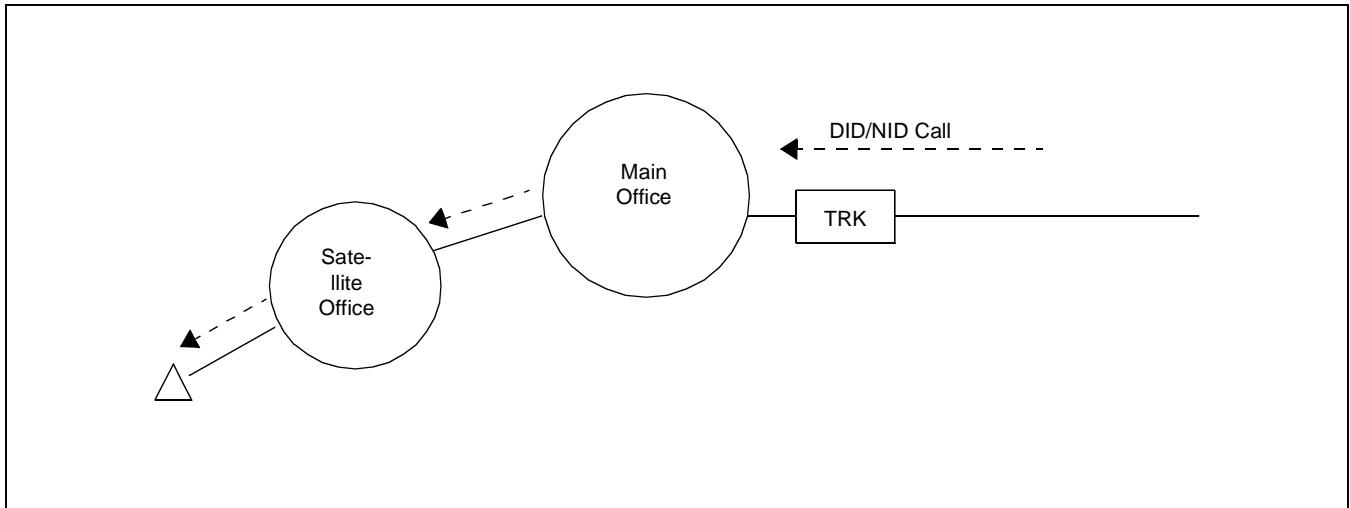
STEP 7: ARRC - Assign for Alternative Route Index (ARI): A, Incoming Route to Outgoing Route via the ATTCON/station. Allow the Incoming Route Number (ICRT) of the incoming PRI (Bch) route to be connected to the Outgoing Route Number (OGRT) of the Outgoing TIE Line route.

Note: *When the tie line is CCIS No.7 link, assign CDN98 (CI)=1 of the ARTD command to all speech route of CCIS No.7 link.*

I-26 INDIALING THROUGH MAIN-PRI

1. General Description

With this feature a call destined for a satellite PBX via DID or Network Inward Dialing (NID) will automatically be routed to the satellite station by the main PBX over a tie trunk.



2. Operating Procedure

1. A 4-digit number is received via DID or NID at a main PBX.
2. One or more sets of one thousand digits or more are designated for each satellite location. A main PBX checks the digits and routes the call over a tie trunk to the appropriate satellite.
3. The other three digits are then transmitted to the satellite, where the call is switched to the proper station.
4. When a satellite PBX is assigned more than one thousand digits, each set of a thousand digits will refer to a separate trunk group, while each trunk group will be assigned to a separate incoming switch.
5. When a PBX is used as a main PBX, the thousands of digits may be deleted or left intact when the dialed digits are pulsed out to the satellite. All four digits may be transmitted to a satellite. A system may also employ separate trunk groups for each thousand digits assigned to a satellite.

3. Programming

STEP 1: ANPD - Reserve a number level for LCR/LCRS Access Code.

STEP 2: ASPA - Assign an access code for LCR/LCRS.
RT=Dummy Route

STEP 3: AMND- Assign Destination Code and the necessary number of digits.

STEP 4: ARNP - Assign Reversed Numbering plan data.
You don't need this data for the dummy route.

- STEP 5: ARTD - Assign Tie Line route data and the dummy route data.
For Dummy RT, CDN 6 (TCL)=4, CDN 7 (L/T)=1 and CDN 13 (AC)=1 are necessary.
- STEP 6: ATRK - Assign the LENS data of each trunk.
- STEP 7: MBTK - Make idle the trunks.
- STEP 8: AFRS - Assign NPC (Number Pattern Code) and OPR (Outgoing Route selection pattern Number) to the dummy route.
- STEP 9: AOPR - Make the route selection data using the parameter OPR, SKIP, etc.
- STEP 10: ARSC - Allow the route restriction for each trunk.
For Dummy RT, the data assignment of only RRI3 is necessary.
- STEP 11: ARRC - Release the tandem connection restriction between the Main Office and the satellite office.
- Note:** *When the satellite office is connected to Main office via CCIS No.7, assign CDN98 (CI)=1 of the ARTD command to the speech route of CCIS No.7 link. (Refer to [T-44] Transfer Message (TRM))*

INTER-PBX COORDINATED STATION NUMBERING PLAN-PRI

I-27 INTER-PBX COORDINATED STATION NUMBERING PLAN-PRI

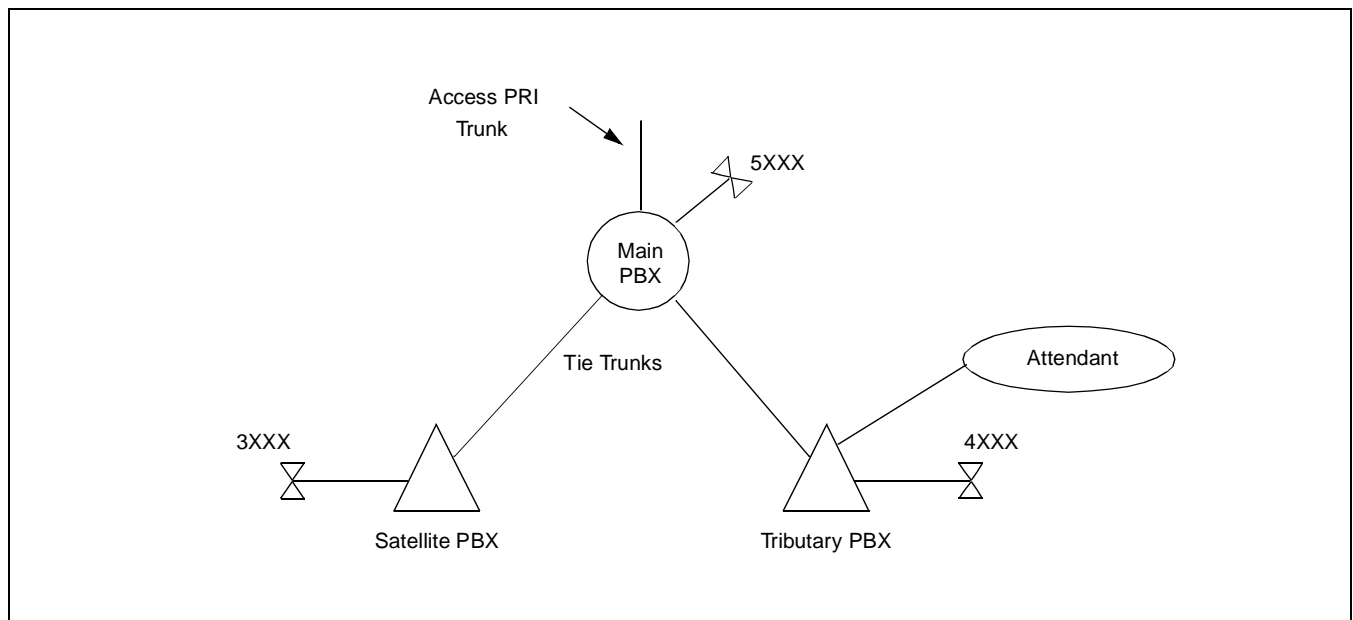
1. General Description

The INTER-PBX COORDINATED STATION NUMBERING PLAN-PRI [I-27] feature enables the Main-Satellite network to coordinate the numbering plan for stations in the network. This feature allows a station at one switch to call a station at another switch by dialing a unique 3- to 7-digit number with no access codes or pauses for Dial Tone.

This feature can also be arranged to provide a centralized exchange network capability, which channels access to and from the public network through a single system switch in the coordinated group.

2. Operating Procedure

This feature is used for the Main/Satellite configuration and may also be provided with main/tributary configuration. Stations at the main and satellite may dial each other without an intervening Dial Tone. The dialing plan for an inter-PBX call is the same as for an intra-PBX call. With this arrangement different initial digits are assigned to stations on different systems.



All switches have a coordinated station numbering feature.

Example 1: A station user at the satellite switch dials 5XXX to call a station at the Main switch.

Example 2: A station user at the Main switch dials 3XXX to call a station at the Satellite switch and 4XXX to call a station at the Tributary switch.

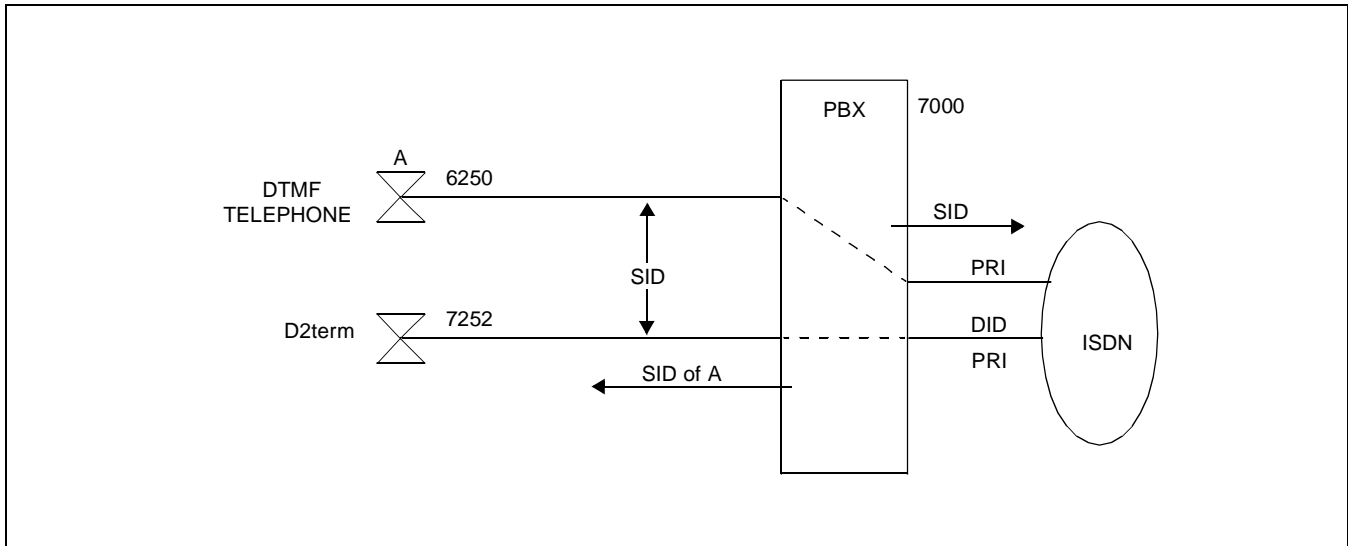
3. Programming

Refer to [I-26] "INDIALING THROUGH MAIN-PRI" in this manual.

I-28 ISDN INDIVIDUAL CALLING LINE IDENTIFICATION (ICLID)

1. General Description

The ICLID feature is used to deliver a calling-party's number through the Public ISDN network to a called-party in the same PBX.



2. Operating Procedure

No manual operation is required.

3. Programming

STEP 1: Assign the Basic Data for ISDN. (Refer to [Chapter 3, "Basic Data Assignment for ISDN"](#))

STEP 2: Refer to "When the originating PRI employs "DID" for the terminating call" in "[SID TO NETWORK - PRESENT/SID TO NETWORK - PRIVACY](#)" in [Chapter 6](#).

I-36 INTER-OFFICE OFF-HOOK QUEUING-PRI

1. General Description

This feature can be employed in a Main-Satellite configuration to allow a satellite station user to queue for LEAST COST ROUTING-3/6-DIGIT-PRI [L-31] at the main location. This feature can also be used when all outgoing ISDN trunks are concentrated at the main location.

Note 1: *There are a maximum of 32 “Queuing” per Module Group (MG) available in the system. Therefore, only 32 stations/MG may utilize OFF-HOOK QUEUING [O-7],-PRI [O-28], OUTGOING TRUNK QUEUING [O-2], and-PRI [O-24] simultaneously.*

Note 2: *The connecting patterns available for this service are shown below:*

- *Non-ISDN trunk to ISDN trunk*
- *CCIS trunk to ISDN trunk*
- *ISDN trunk to Non-ISDN trunk*
- *ISDN trunk to CCIS trunk*
- *ISDN trunk to ISDN trunk*

2. Operating Procedure

Operation at the Main location:

1. The Main location receives dialed digits from the Satellite location via ISDN trunk (a TANDEM TIE TRUNK [T-1]).
2. The Main location determines that no ISDN trunks are available and places the call in an available “Hold on Queue”.
3. The Main location returns Service Set Tone to the Satellite caller.
4. The Satellite caller remains off-hook, and waits for the call to be completed. (When an ISDN trunk becomes available, the Satellite caller will be connected.) **Note**
5. If there are no “Hold on Queue” available, the Main location will return Reorder Tone to the Satellite caller.
6. If the Satellite caller goes on-hook (ISDN trunk releases) while in queue, the assigned “Hold on Queue” is cleared.

Note: *If the Incoming Tie trunk is a “Loop” signal trunk, the caller will hear Service Set Tone while waiting in queue for a maximum of three minutes. After this period, the trunk will automatically be released.*

3. Programming

STEP 1: ASYD - System Data 1, Index 42, bit 7: This bit must be assigned as data "0", continuous Service Set Tone.

STEP 2: ARTD - Assign the incoming TIE Line route.

<Example of 2 - WIRE E&M/4 - WIRE E&M>

RT : 2

1-OSGS :7/6 2-ONSG :3 3-ISGS :7/6 4-INSG :3 5-TF :3
 6-TCL :4 7-L/T :1 8-RLP :2 15-LSG :5 41-TDMQ :1

Data other than the above should be set "0" (default data).

<LCR (S) DUMMY ROUTE>

RT : 31

6-TCL :4 7-L/T :1 9-TQ :1 13-AC :1 41-TDMQ :1

Data other than the above should be set "0" (default data).

STEP 3: ARRC - Allow trunk-to-trunk connection between the incoming route and the outgoing route in which INTER-OFFICE OFF-HOOK QUEUING will apply. Also allow trunk-to-trunk connection between the incoming route and the LCR (S) dummy route. Assign both of these for ARI: D. The outgoing route and the LCR (S) dummy route must be programmed to allow OUTGOING TRUNK QUEUING [0-2]. Ensure that CDN 9, TQ = 1 (Trunk Queuing) is set for that outgoing route.

L-31 LEAST COST ROUTING-3/6-DIGIT-PRI

1. General Description

This feature allows the system to be programmed to route outgoing calls over the most economical facility (DDD). Based on the area code and office code dialed (6-digit analyzing), the system examines the programming tables and chooses the facilities in the order specified. This service is the only way to access PRI interface into ISDN.

2. Operating Procedure

To operate:

1. Lift the handset; receive Dial Tone.
2. Dial the access code (usually "9"); receive Second Dial Tone. (When you assigned "2nd DT=1" in the ASPA command.)
3. Dial the area code, office code and telephone number.
4. The system automatically completes the call via the most economical route.

3. Programming

STEP 1: Assign the Basic Data For ISDN. (Refer to Chapter 3, "Basic Data Assignment for ISDN".)

STEP 2: ASYD - System Data 1, Index 6, bit 0: Should special Sender Tone be sent to station when connected to a sender? 0/1: No/Yes. (Optional)

bit 2: Should special Sender Tone be sent to the Attendant Console when connected to a sender? 0/1: No/Yes. (Optional)

Index 65: Assign the number of routes in the system.

System Data 2, Index 2, bit 0: What is the sender type for an OG trunk connection to a station? 0/1: Dial Pulse/Push Button. This data is valid only when CDN 2, ONSG of Route data is assigned as data "3", PB/DP.

bit 1: What is the sender type for an OG trunk to the Attendant Console?
0/1=Dial Pulse /PB(DTMF)
(This data is valid only when CDN2 (ONSG) of ARTD is "3". (PB/DP.)

STEP 3: ARTD - Assign the LCR (S) route as shown below. In CDN 13, include the LCR (S) access code in LCR (S) development.

Assign the LCR (S) Dummy route as shown below:

RT : 31

6-TCL : 4 7-L/T : 1 13-AC : 1

Data other than the above should be set "0" (default data).

STEP 4: ATRK - Set Originating Register Trunks (ORT) to the system in a quantity calculated from expected traffic. Registers are located on levels 0-3 of any 8RST circuit card. Senders must be assigned to the system in a quantity calculated from expected traffic. Senders are located on levels 4-7 of any 8RST circuit card.

RT: Route Number
 Trunk Route Number
 Intraoffice Route Number (901-931)

901-ATT	912-ORT for ATT
902-ORT	913-TCFT for ATT
903-IRT	915-
905-Sender	916-MFCR
909-DCFT	917-MFCR
919 to 926-Modem	

TK: Trunk Number
 TN: Tenant Number
 RSC: Route Restriction Class
 SFC: Service Feature Class

STEP 5: MBTK - Set the Make Idle status to all register sender trunks.

STEP 6: ANPD - Reserve a level, usually "9", for LCR or LCR (S) access. Assign Connection Indexes, CI=N, H; Normal and Hooking (hookswitch). Number of Necessary Digits is 1. Busy Lamp Field is not activated.

STEP 7: ASPA - Assign the LCR (S) access code, Type of Service, SRV = LCR or SRV = LCRS. Assign route number for a dummy route associated with this access code.

STEP 8: Assign Connection Indexes, CI = N, H; Normal and Hooking (hookswitch). Assign data "1" for second Dial Tone, parameter (2nd DT). Assign data "1" to AH parameter if Procedure II is used for AUTHORIZATION CODE [A-20].

STEP 9: ARNP - Assign the physical route numbers as assigned in ARTD and relate these routes to the LCR (S) access code as assigned in ASPA for SRV = LCR (S). The LCR (S) access code is usually "9". The routes to be assigned will be those routes listed in the various OPRs of the AOPR command.

Note: *These same routes may also be listed in ASPA for SRV = OGC. In that case, these routes may also be available via direct dial access codes. In ARNP, these access codes are not assigned to implement the LCRS service in this command. This digit code is the first digit used when assigning ATDP table.*

STEP 10: ARSC - LCR (S) utilizes only Bothway or Outgoing Only routes. For these routes, construct allow, deny, or Toll Restriction applicable tables (Route Restriction Index RRI 2 & 3). Toll Restriction will be applied to the available route chosen by the LCR (S) selection. Therefore, if a station user dials a long distance number and is restricted in Toll Restriction for a DDD and the only available route is a DDD, the call will be denied. Toll Restriction acts upon the LCR (S) selection. Also, remember to allow the dummy route, the LCR (S) Dummy Route to all RSCs. Do not toll restrict the dummy route.

STEP 11: AMND- Assign the Maximum Necessary Digit (MND) the system must translate for a proper route selection.

LEAST COST ROUTING-3/6-DIGIT-PRI

STEP 12: AFRS - List the dialing patterns in groups that will be served by a specific sequence of routes. This determination of routes is labeled as an Outgoing Pattern Route (OPR). In AFRS, program the Tenant, Route Number (Dummy Route), The Number Code or dialing patterns, and the OPR to be chosen when these digits are dialed.

STEP 13: AOPR - The AFRS command designates the dialing sequence and the OPR to be selected. The AOPR defines the routes and in what order these routes will be selected. Assign the following:

TDPTN No. : Time of Day Pattern Change. If an AFRS assignment, different OPRs will be required as a function of time. Designate 1-7 for the Time-of-Day Pattern Change Number (TDPTN) to which this OPR is assigned.

OPR No. : 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).

Route Advance End Display (E) : The last route in the route advance group is indicated with data "0". All others are indicated with data "1".

Route Number : The physical Route Number to be selected as programmed in ARTD.

Skip Digits : The digits to be skipped when translating the dialed digits in AFRS.

Pattern Number Location : If digits are to be added after translating the dialed digits in AFRS, assign a PNL. The digits to be added are programmed to the respective PNLs in the AADC command. If no digits are to be added, PNL = 0 should be assigned.

Overflow Tone : Assign if a tone is wanted for the Last Choice Route. If so, assign data "1" for DDD.

Priority Restriction Class : Refer to PRIORITY RESTRICTION CLASS in the "EPN Feature and Specification". If this is required, assign PRSC here, using classes 1-15. For all other systems, always assign PRSC as data "0".

STEP 14: AADC - If additional digits are required, assign the digits of a Pattern Number Location (PNL) here. For additional digits totaling 24, use PNL 1-999.

STEP 15: ATCP - A maximum of eight Time-of-Day Pattern changes (0-7) are available whereby the system will refer to different OPR assignments as a function of time.

Times Setting

TO:

FROM: (In Military Time, and only on the half-hour and hour.)

PATTERN NUMBER: (0-7).

L-32 LCR-TIME OF DAY ROUTING-PRI**1. General Description**

This feature provides automatic routing of outgoing ISDN calls over alternative customer facilities based on the DDD number. The system will select the most economical route available at the time of connection. The pattern of alternate routing can be changed up to 8 times per day based on a pre-arranged time schedule.

2. Operating Procedure

1. Lift the handset; receive Dial Tone.
2. Dial the access code (usually “9”); receive Second Dial Tone. (When you assigned “2nd DT=1” in the ASPA Command.)
3. Dial the area code, office code, and telephone number.
4. The system automatically completes the call via the most economical route available.

3. Programming

Refer to [\[L-31\] “LEAST COST ROUTING-3/6-DIGIT-PRI”](#) in this manual.

LCR-ATTENDANT MANUAL OVERRIDE-PRI

L-33 LCR-ATTENDANT MANUAL OVERRIDE-PRI

1. General Description

This service feature provides an ATTENDANT CONSOLE [A-3] to override the LCR-TIME OF DAY ROUTING-PRI [L-32] pattern and then an alternate routing pattern group will be selected.

2. Operating Procedure

To set LCR-ATTENDANT MANUAL OVERRIDE-PRI:

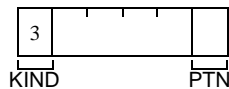
1. Press an idle "LOOP" key.
2. Dial the LCR-ATTENDANT MANUAL OVERRIDE-PRI access code; receive Special DialTone.
3. Dial the LCR-TIME OF DAY ROUTING-PRI [L-40] pattern number (1 to 7) **Note 1**; receive Service Set Tone.
4. Press the "RELEASE" key.

To cancel LCR-ATTENDANT MANUAL OVERRIDE-PRI:

1. Press an idle "LOOP" key.
2. Dial the LCR-ATTENDANT MANUAL OVERRIDE-PRI access code; receive Special Dial Tone. The display of the LCR-TIME OF DAY ROUTING-PRI [L-32] pattern number is shown.
3. Dial 0 to cancel; receive Service Set Tone.
4. Press the "RELEASE" key.

Note 1: *TDPTN of the AOPR/PTN of the ATCP command.*

Note 2: *During this operation, the following is displayed on the display of the ATTCON.*



KIND: 3 is displayed in this service.
PTN: 0=Cancel
1-7=PTN

3. Programming

STEP 1: Assign the Basic Data for ISDN. (Refer to [Chapter 3, "Basic Data Assignment for ISDN"](#).)

STEP 2: ANPD - Reserve a number level for an access code for this service.

STEP 3: ASPA - Assign Access Code, CI=N (Normal), SRV=SSC and SID=60

STEP 4: ATCP - Assign the Time of Day Pattern data.

L-34 LCR-AUTOMATIC OVERFLOW TO DDD-PRI

1. General Description

This feature provides optional routing of ISDN network calls via off-network facilities from a point on the network where all on-network routes are busy or none are provided.

2. Operating Procedure

No manual operation is required.

3. Assignment Procedure

Refer to [\[L-31\] “LEAST COST ROUTING-3/6-DIGIT-PRI”](#) in this manual.

LCR-CLOCKED MANUAL OVERRIDE-PRI

L-35 LCR-CLOCKED MANUAL OVERRIDE-PRI

1. General Description

This feature permits the system to override the LCR-TIME OF DAY ROUTING-PRI [L-32] pattern during the pre-determined time assigned through the MAT.

2. Operating Procedure

No manual operation is required.

3. Assignment Procedure

STEP 1: Assign the Basic Data for ISDN. (Refer to [Chapter 3, "Basic Data Assignment for ISDN"](#))

STEP 2: ACMO- Assign the specific data and time.

L-42 LAST NUMBER CALL-PRI**1. General Description**

When a station user originates an ISDN trunk call, this service feature allows the calling station user to recall the same destination by dialing only the special code instead of dialing all the digits of the number.

Note: *The maximum number of dial digits to which this service is applicable is 18.*

2. Operating Procedure

To operate:

1. Lift the handset; receive Dial Tone.
2. Dial the desired party's number.
3. The call has not been established; Busy Tone or Recorder Tone is heard.
4. Lift the handset; receive Dial Tone.
5. Dial the LAST NUMBER CALL access code (max. 3 digits).
6. The system will automatically redial the last number dialed from that station.

3. Assignment Procedure

STEP 1: ANPD - Reserve a number level for feature access and cancel. Assign Connection Indexes, CI = N; Normal. Assign NND in accordance with a predetermined numbering plan.

STEP 2: ASPA - Assign an access code to LAST NUMBER CALLED, SID = 44. Assign Connection Status Index (CI) for Normal service.

STEP 3: ASFC - Assign the stations to receive the feature LAST NUMBER CALLED a Service Feature Class that allows SFI = 44.

L-42D LAST NUMBER CALLED-D^{term}-PRI

1. General Description

This feature allows a D^{term} user to redial the telephone numbers previously dialed from the terminal. With this feature, the D^{term} user can choose any destination out of the latest five calls, which have been stored in the memory of the system, and place a call without having to redial the full number.

Note: *The maximum digits of the destination is 32 digits.*

2. Operating Procedure

1. How to check the dialed numbers stored in the memory (up to 5 destinations):

- (a) Press the LINE/SPD key on a D^{term}.
 - The Prime Line lights Green.
 - The Speaker Lamp lights Green.
 - Receive Dial Tone from the speaker with the following display on the D^{term}.

[D^{term} Series III]

LNR [#]/SPD [] – 1 811625643
--

[D^{term} Series E]

LNR [#]SPEED [] – 1 811625643

- (a) Press the LINE/SPD key on the D^{term} again.
 - The Prime Line lights Green.
 - The Speaker Lamp lights Green.
 - Receive Dial Tone from the speaker with the following display on the D^{term}.

[D^{term} Series III]

LNR [#]/SPD [] – 2 25191
--

[D^{term} Series E]

LNR [#]/SPEED [] – 2 25191
--

Note: *The indication on the display is changed in sequence by pressing the LINE/SPD key. Once the stored telephone number display reaches “LNR[#]/SPD[]-5”, “LNR[#]/SPD[]-1” appears again by pressing the LINE/SPD key.*

2. How to originate a call:

(a) Press the LINE/SPD key on a D^{term}.

- The Prime Line lights Green.
- The Speaker Lamp lights Green.
- Receive Dial Tone from the speaker with the following display on the D^{term}.

[D^{term} Series III]

LNR [#]/SPD [] – 1
811625643

[D^{term} Series E]

LNR [#]/SPEED [] – 1
811625643

(a) Repeat the above procedure until you reach your desired destination.

[D^{term} Series III]

LNR [#]/SPD [] – 4
82625191

[D^{term} Series E]

LNR [#]SPEED [] – 4
82625191

(a) Press # to originate your call while the desired destination is being displayed on the D^{term}.

- The Prime Line lights Green.
- The Speaker Lamp lights Green.
- Receive Ringback Tone from the speaker with the following display on the D^{term}.

82625191
10:24 AM FRI 15

(a) The called party answers the call.

- The Prime Line lights Green.
- The Speaker Lamp is OFF.

82625191
10:24 AM FRI 15

3. Programming

STEP 1: ASDT - Assign a D^{term} with TEC (= Telephone Equipment Class) 12.

STEP 2: AKYD - Assign a programmable line/feature key as the LAST NUMBER CALLED key, if necessary.

KYI: Service Index 1 (= Feature Key)

FKY: Function Key Number 8 (= LAST NUMBER CALLED)

LDN NIGHT CONNECTION-PRI

L-44 LDN NIGHT CONNECTION-PRI

1. General Description

This service feature routes Listed Directory Number (LDN) calls from both ISDN/non-ISDN network to a preselected station within the system, when the Night mode has been entered.

2. Operating Procedure

To answer LDN NIGHT CONNECTION calls:

1. An incoming LDN call in Night mode is automatically routed to a preselected LDN NIGHT CONNECTION station within the system.
2. The calling party receives Ringback Tone.
3. The ringing signal is sent to the LDN NIGHT CONNECTION station.
4. The LDN NIGHT CONNECTION station goes off-hook to answer the incoming call. If necessary, this station can transfer the incoming call to another station within the system using the CALL TRANSFER-ALL CALLS [C-11] service.

3. Programming

STEP 1: ALDN - Assign LDN number and its transfer destination.

TN: Tenant Number

LDN: Listed Directory Number (must match station numbering plan)

Night Transfer: Y/N

If no, then LDN will only go to Attendant.

If yes, then the following parameters will be enabled:

Type: Night Transfer Type

1: Station number

2: Outside (up to 8 digits)

3: ADC (when more than 8 digits are required)

For Type 1, assign station number here.

STEP 2: ACFR - Assign the TSFI: 2 (Night Connection-Fixed) to be allowed CCI: 1 (LDN). This allows LDN to go to night transfer destination.

L-46 LDN NIGHT CONNECTION-OUTSIDE-PRI**1. General Description**

This feature routes Listed Directory Number (LDN) calls from both ISDN/non-ISDN network to a preselected station outside the system when the system is in Night mode.

2. Operating Procedure

To answer LDN NIGHT CONNECTION calls:

1. An incoming LDN call in Night mode is automatically routed to a preselected LDN NIGHT CONNECTION station outside the system.
2. The calling party receives Ringback Tone.
3. The call is sent out to the outside station.
4. The outside station answer the call.

3. Programming

STEP 1: ALDN - Assign LDN number and its transfer destination.

TN: Tenant Number

LDN: Listed Directory Number (must match station numbering plan)

Night Transfer: Y/N

If no, then LDN will only go to Attendant.

If yes, then the following parameters will be enabled:

TYPE: Night Transfer Type

1: Station number

2: Outside (up to 8 digits)

3: ADC (when more than 8 digits are required)

STN: For Types 1&2.

For type 2, assign access code and outside number here.

(A CCIS remote office station number can be input here also).

ADC: For Type 3.

Input ADC number desired as assigned in ASPD command.

STEP 2: ASPD - Assign an access code and outside number to an ADC (000-999). This step is required only if access code and outside number are greater than eight digits.

STEP 3: ACFR - Assign TESFI:2 (Night Connection-Fixed) to be allowed CCI:1(LDN). This allows LDN to go to Night transfer destination.

STEP 4: ARRC - The incoming route of the LDN must allow trunk-to-trunk connection to the outgoing destination route and to the LCR dummy route: ARI: D. (Direct Connection.)

LCR-SPECIAL LINE WARNING TONE-PRI

L-49 LCR-SPECIAL LINE WARNING TONE-PRI

1. General Description

This feature allows a station user or an Attendant to receive a Warning Tone that indicates an expensive ISDN trunk line is in use.

2. Operating Procedure

No manual operation is required.

3. Assignment Procedure

Refer to “[L-16] LCR-SPECIAL LINE WARNING TONE” in NEAX2400 IPX Feature Programming Manual.

STEP 1: Assign the Basic Data for ISDN. (Refer to [Chapter 3, “Basic Data Assignment for ISDN”](#).)

Note: *AOPR - Assign OVFT = 1 to PRI (Bch) route.*

M-71 MISCELLANEOUS TRUNK ACCESS-PRI**1. General Description**

This feature provides access to all types of external and customer provided equipment/facilities such as Tie [T-3], and Exchange Network along with PAGING [P-1].

2. Operating Procedure

MISCELLANEOUS TRUNK ACCESS-PRI is accomplished via System Data at the Maintenance Administration Terminal (MAT).

3. Assignment Procedure

STEP 1: ARTD - Refer to the Feature listing for the type of trunk route to be accessed.

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. Assign Connection Indexes (CI) for Normal and Hooking service. 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 indicated by the level assigned in ANPD. Type of Service, SRV = OGC for Outgoing trunks.

STEP 6: ARSC - Assign a Route Restriction Class (RSC) that is allowed in Route Restriction Indexes (RRI) 0, 1, 2 and 3 to the station that is allowed access to these trunks.

STEP 7: ASDT - Assign an RSC to the stations which allows access to these trunks.

MISCELLANEOUS TRUNK RESTRICTION-PRI

M-72 MISCELLANEOUS TRUNK RESTRICTION-PRI

1. General Description

This feature provides for incoming PRI trunks to be denied access to particular trunk groups such as Tie [T-3], Exchange Network, or PAGING [P-1].

2. Operating Procedure

MISCELLANEOUS TRUNK RESTRICTION-PRI is accomplished via System Data at the MAINTENANCE ADMINISTRATION TERMINAL (MAT) [M-18].

3. Programming

STEP 1: ASYD - System Data 2, Index 1, bits 4&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]. By assigning the ARSC command, restrict RSCs from receiving certain routes. PRI 3: RES must be "2" if call restriction to go to ATTCON. Then assign the restricted RSCs to stations via the ASDT or ASCL command. When assigning the ARRC command, restrict incoming TIE lines from accessing certain routes.

M-73 MUSIC ON HOLD-PRI

1. General Description

This feature allows a party to hear music while in the HOLD [C-6], TRANSFER [C-10,C-11], or CAMP-ON [A-1] conditions.

2. Operating Procedure

No manual operation is required for this software-controlled feature.

3. Programming

STEP 1: ASYD - System Data 1, Index 64, bit 7 = 1 (MUSIC-ON-HOLD is in service.)

MODEM POOLING-PRI

M-74 MODEM POOLING-PRI

1. General Description

The MODEM POOLING-PRI [M-74] feature allows any synchronous or asynchronous data station (DTE) connected to a D^{term} Data Adapter to have access to off-premise devices (other terminals, mainframes, personal computers, etc.) using Modem Pools. Also, off-premise devices can gain access to the Data Adapters through incoming Modem Pools. Modem pools provide the capability to share modems among users for outgoing and incoming communications.

DATA LEAST COST ROUTING-3/6-DIGIT [D-49] and other standard features can be utilized for long distance data calls.

2. Service Conditions

1. Up to eight Modem Pool Groups can be assigned: eight bothway, four incoming, four outgoing, or any combination thereof.
2. One modem in the group is selected by the DTE at the time of connection.
3. LEAST CALL ROUTING can be used for optimization of long distance data calls.
4. Incoming MODEM POOLING capabilities are also provided via DIT, DID, or the Attendant.
5. Modems must be compatible.
6. NEC Modems tested and certified to work with the MODEM POOLING-PRI [M-74] feature are:
 - NEC 212 AE 300/1200 bps
 - NEC DSP2420 300/1200 bps
 - NEC DATAX SP2424 AA

Consult NEC for other types of Modems.

7. Modems can be selected by the user. Refer to MANUAL MODEM POOL SELECTION [M-32] and ATTRIBUTE DATA ENTRY [A-39].
8. MODEM POOLING-PRI is also for Digital-to-Analog/Analog-to-Digital translation. Refer to INTRA MODEM POOLING [I-15].
9. Acoustically Coupled Modems, Limited Distance Modems, Line Drivers, and DSUs cannot be attached to the Modem Pooling card.
10. Consideration should be given to the Modems capability to recognize a distinctive ringing pattern when defining incoming trunk ringing.
11. Speed Select via pin 24 on the EIA RS-232C connector is not implemented.
12. Auto Dial or Intelligent Modems must be strapped for manual operation to work on the Modem Pooling card.

3. Operating Procedure

Refer to “[M-21] MODEM POOLING” in Feature Programming Manual.

4. Assignment Procedure

Refer to “[M-21] MODEM POOLING” in Feature Programming Manual.

MULTIPLE CALL FORWARDING-ALL CALLS-PRI

M-75 MULTIPLE CALL FORWARDING-ALL CALLS-PRI

1. General Description

This feature permits a call from the ISDN network to a station set to CALL FORWARDING-ALL CALLS-PRI [C-95] to be forwarded multiple times to a predesignated idle station.

2. Operating Procedure

To set CALL FORWARDING-ALL CALLS-PRI[C-95] from an individual station:

1. Lift the handset; receive Dial Tone.
2. Dial the specific CALL FORWARDING-ALL CALLS-PRI access code; receive Special Dial Tone.
3. Dial the desired target station number; receive Service Set Tone.

To cancel CALL FORWARDING-ALL CALLS-PRI[C-95] from an individual station:

1. Lift the handset; receive Dial Tone.
2. Dial the specific CALL FORWARDING-ALL CALLS-PRI cancel code; receive Service Set Tone.

To set CALL FORWARDING-ALL CALLS-PRI[C-95] from the ATTENDANT CONSOLE [A-3]:

1. Press an idle "LOOP" key.
2. Dial the specific CALL FORWARDING-ALL CALLS-PRI access code; receive Special Dial Tone.
3. Dial the TENANT [T-12] number (2 or 3 Digits).
4. Dial the originating station number.
5. Dial the desired target station number; receive Service Set Tone.

To cancel CALL FORWARDING-ALL CALLS-PRI[C-95] from the ATTENDANT CONSOLE [A-3]:

1. Press an idle "LOOP" key.
2. Dial the specific CALL FORWARDING-ALL CALLS-PRI cancel code; receive Special Dial tone.
3. Dial the TENANT [T-12] number (2 or 3 Digits).
4. Dial the originating station number; receive Service Set Tone.

3. Programming

STEP 1: ASYD - System Data 1, Index 4, bit 6: One burst of ringing at forwarding station when MULTIPLE CALL FORWARDING-ALL CALLS is in service?
0/1: No/Yes.

Index 69,bit 1: A burst of Ringback Tone to alert the person receiving a call that this is a MULTIPLE CALL FORWARDING-ALL CALLS call. In service? 0/1: No/Yes. Normally assigned as data "0".

System Data 2,Index 6,bit 4:Enable stations set for MULTIPLE CALL FORWARDING-ALL CALLS 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.

MULTIPLE CALL FORWARDING-ALL CALLS-PRI

- STEP 2: ANPD - Reserve a number level for feature access and cancel. Assign for Normal. Assign NND in accordance with a predetermined numbering plan.
- STEP 3: ASPA - Assign an access code to MULTIPLE CALL FORWARDING-ALL CALLS entry, SID = 8 and to MULTIPLE CALL FORWARDING-ALL CALLS cancel SID = 9. Assign a Connection Status Index (CI) for Normal service.
- STEP 4: ASFC - Assign the stations to activate MULTIPLE CALL FORWARDING-ALL CALLS a Service Feature Class that allows SFI = 7.
- STEP 5: AKYD - For D^{term} sets, MULTIPLE CALL FORWARDING-ALL CALLS may be assigned to a programmable line/feature key. Assign KYI = 1 and FKY = 2.
- STEP 6: ATNR - Allow tenant-to-tenant connection for Inter- and Intra-tenant connections. Assign Tenant Restriction Index (TRI) = 1. For this service feature to be set by the Attendant Console, assign Inter- and Intra-Tenant connection via the Attendant Console TRI = 3. Also allow TRI = 0, station-to-station calling.

NIGHT CONNECTION-FIXED-PRI

N-20 NIGHT CONNECTION-FIXED-PRI

1. General Description

This feature routes ISDN calls normally directed to the ATTENDANT CONSOLE [A-3] to a preselected common station within the system when the Night mode has been entered.

2. Operating Procedure

To answer NIGHT CONNECTION-FIXED-PRI calls:

1. Incoming calls to the ATTENDANT CONSOLE [A-3] in the Night Mode are automatically transferred to a preselected NIGHT CONNECTION-FIXED-PRI station.
2. Calling party hears Ringback Tone.
3. Ring signal is sent to the NIGHT CONNECTION-FIXED-PRI station.
4. NIGHT CONNECTION-FIXED-PRI station goes off-hook to answer incoming call. If necessary, this station can transfer the incoming call to another station within the system using CALL TRANSFER-ALL CALLS [C-11] feature.

3. Programming

STEP 1: ASYD - System Data 1, Index 147: DIT supervisory timer for a busy station. How often will the CPU look at the Idle/Busy status of the station for rerouting the DIT call to the destination? Always leave this index as 00H.

STEP 2: ACSI - Assign Route Number, Trunk Number, Connection Service Index of "4" for NIGHT CONNECTION-FIXED, and the Tenant Number and Station Number to serve as the NIGHT CONNECTION FIXED station.

STEP 3: ACFR - Allow a Transfer Service Feature Index of 2, NIGHT CONNECTION-FIXED, for the types of incoming calls listed in Call Class Index (CCI).

N-21 NIGHT CONNECTION-FLEXIBLE-PRI**1. General Description**

This feature provides arrangements to route ISDN calls normally directed to the ATTENDANT CONSOLE [A-3] to a preselected station on a flexibly assignable basis within the system, when the Night mode has been entered.

2. Operating Procedure

Answering operation is the same as that for NIGHT CONNECTION-FIXED-PRI [N-20].

Each evening, before placing the ATTENDANT CONSOLE [A-3] into the Night Connection mode, the Attendant programs CALL FORWARDING-ALL CALLS [C-5] from the NIGHT CONNECTION-FIXED [N-20] station to the desired station.

3. Programming

STEP 1: NIGHT CONNECTION-FLEXIBLE is a combination of CALL FORWARDING-ALL CALLS [C-5] and NIGHT CONNECTION-FIXED [N-1] features.

STEP 2: CLASS OF SERVICE-INDIVIDUAL [C-15]-The station chosen as the Night Connection-Flexible station should be assigned a CLASS OF SERVICE-INDIVIDUAL [C-15] capable of performing the Night station functions.

NON-DELAY OPERATION-PRI

N-22 NON-DELAY OPERATION-PRI

1. General Description

This feature allows the ATTENDANT CONSOLE [A-3] to place any calling party on hold, dial the call, and connect the calling and called parties.

2. Operating Procedure

To operate:

1. The Attendant answers an operator call by pressing the “ANSWER” or “ATND” key.
2. Press the “START” key.
3. Dial the exchange network access code.
4. Dial the desired telephone number.
5. Press the “RELEASE” key.
6. The parties are connected.

3. Programming

STEP 1: ARSC - Allow restriction RRI2 = 1 (Route Restriction via the Attendant).

STEP 2: ASDT - Assign a Route Restriction Class (RSC) that allows outgoing access to the route via the Attendant Console to station.

N-29 NIGHT CONNECTION OUTSIDE-SYSTEM-PRI**1. General Description**

This is a night transfer service on a system basis enabling a ring down call to be transferred to a preselected station outside the PBX via ISDN network when Night mode has been set.

2. Operating Procedure

1. The Attendant sets Night mode.
(Night key, PB, Jack Extraction, MB)
2. Ring down call terminates from a trunk.
3. The call is transferred to another station in accordance with NIGHT CONNECTION OUTSIDE-SYSTEM-PRI data.

3. Programming

STEP 1: ASYD - System Data 1, Index 77, bit 0: DAY/NIGHT mode Changeover via handset jack 0/1: Not Required/Required.

STEP 2: ALDN - Assign LDN, allow night transfer, assign TYPE = 3, and the ADC number assigned in ASPD.

STEP 3: ASPD - Assign abbreviated digit code (ADC) and access code to the dialed (000-999). This step is required only if the access code and outside number are greater than eight digits.

STEP 4: ACFO - Assign call forwarding data, CF = 4: Night Connection, and the ADC assigned in ASPD.

STEP 5: ARRC - Allowing incoming route to out-going route. Use Alternative Route Index (ARI) D for Direct Connection. Three possible restriction (RES) may be assigned; data "0" = connection is restricted; data "1" = connection is allowed; or data "2" = toll restriction is required. For NIGHT CONNECTION-OUTSIDE-SYSTEM, toll restriction is not required.

STEP 6: ACFR - Assign Transfer Service Feature Index (TSFI) = 2: Direct In Termination Night Only, to be allowed CCI: 1 (LDN). This allows LDN to go to Night transfer destination.

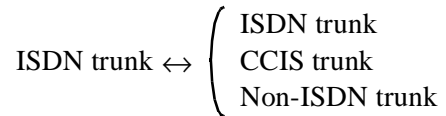
NAILED DOWN CONNECTION-PRI

N-31 NAILED DOWN CONNECTION-PRI

1. General Description

This service feature provides the logical equivalence of a hardware connection between ISDN trunk and station/trunk. A NAILED DOWN CONNECTION is constantly maintained in the system's software. NAILED DOWN CONNECTION data is programmed via the Maintenance Administration Terminal (MAT).

Note: *The Following connections are supported by this service.*



2. Operating Procedure

No manual operation is required.

3. Programming

STEP 1: ASYD - System Data 1, Index 60, bit 4 =1 (Nailed Down Connection is in service)

STEP 2: AFCD - Assign the LENS of two pieces of equipment to be connected by Nailed Down Connection.

O-24 OUTGOING TRUNK QUEUING-PRI**1. General Description**

This feature allows a station user, upon encountering an ISDN trunk busy signal, to dial a specified access code and enter a first-in, first-out queue. As soon as an ISDN outgoing trunk becomes available, stations in the queue will be called back on a first-come, first-served basis.

2. Operating Procedure

1. Dials the desired number to the ISDN trunk; receives Busy Tone.
2. Press the switchhook; receives Special Dial Tone.
3. Dials the OUTGOING TRUNK QUEUING access code and receives Service Set Tone.
4. Replaces the handset.

When an ISDN trunk becomes available, a station in the queue is called back.

To cancel

1. Lifts the handset; receives Dial Tone.
2. Dials the OUTGOING TRUNK QUEUING cancel code; receives Service Set Tone.

3. Programming

STEP 1: ASYD - System Data 1, Index 68, bit 3: Enables automatic cancel timer as set in System Data 1, Index 159. 0/1: -/Enable.

Index 159: OUTGOING TRUNK QUEUING (OGQ) release timer. Standard data of 00H for 30 minutes may be assigned.

System Data 2, Index 4, bit 0: Should the access code for CALL BACK and OUTGOING TRUNK QUEUING be the same? 0/1: No/Yes.

bit 1: Enable Automatic OUTGOING TRUNK QUEUING?
0/1: No/Yes.

bit 2: Enable OFF-HOOK OUTGOING TRUNK QUEUING for the Attendant Console? 0/1: No/Yes.

STEP 2: ANPD - Reserve a number level for service feature access and cancel. Assign Connection Indexes, CI = B. Assign NND in accordance with a predetermined numbering plan.

OUTGOING TRUNK QUEUING-PRI

- STEP 3: ASPA - If System Data 2, Index 4, bit 0 is assigned for separate access codes, assign an access code to OUTGOING TRUNK QUEUING assign, SRV = SSC, SID = 19 and to OUTGOING TRUNK QUEUING cancel, SRV = SSC, SID = 20. Assign SID = 19 for a Connection Index of Busy and SID = 20 for a Connection Index of Normal. If the access codes are the same, either the access codes for OUTGOING TRUNK QUEUING or the access codes for CALL BACK may be assigned.
- STEP 4: ASFC - Assign SFI1=1.
- STEP 5: ARTD - Routes to be used for OUTGOING TRUNK QUEUING must be flagged in CDN 9, TQ. Trunk Queuing Service. Always allow queuing to the LCR (S) Dummy route.
- STEP 6: AKYD - Set the following data to assign CALL BACK Key on a D^{term}. KYI: 1 FKY: 5 (= CALL BACK)

O-26 OUTGOING TRUNK QUEUING-DELUXE-PRI**1. General Description**

This feature allows station users according to their Service Feature Class to queue for an outgoing ISDN trunk when all call routes are busy. This feature allows specific routes to be queued in a timed interval depending on the user's Service Feature Class (SFC). If on-hook queuing is used, the system will send a Ringback Tone to the station when a trunk becomes available. On or off-hook queuing may be assigned to stations within a tandem network, as well as stations at main and satellite PBXs.

The system provides an off-hook queuing capability to Attendants and an optional priority queuing feature.

2. Operating Procedure**1. Outgoing trunk**

The Busy Tone will be sent to the calling station, when no ISDN trunks are available.

The user presses the switchhook, and receives Special Dial Tone.

Dials the OUTGOING TRUNK QUEUING access code, receives the Service Set Tone and replaces the handset.

To cancel on-hook queuing, the user must go off-hook and dial the OUTGOING TRUNK QUEUING cancel code. User receives the Service Set Tone and replaces the handset.

If the calling party does not answer the ringback within thirty seconds, the call will be removed from queue.

2. Off-Hook trunk Queuing:

When off-hook queuing is used, the Service Set Tone will be sent to the calling station when no outgoing ISDN trunks are available. The Service Set Tone indicates that the calling station has been placed in an off-hook queue.

To cancel off-hook queuing from a station or tie line, the user merely goes on-hook.

OUTGOING TRUNK QUEUING-DELUXE-PRI

3. Programming

- STEP 1: ASYD - System Data 1, Index 68, bit 3: OG Trunk Queuing (On-Hook) Automatic Cancel
0/1=Out/In Service
Index 159: Assign the OG-Trunk Queuing Automatic Cancel Timer, when System Data 1, Index 68, bit 3 is "1". (Default data=30 min.)
System Data 2, Index 4, bit 0: Call Back and OG Trunk Queuing access code.
0/1=Separate/Common
bit 1: Automatic Setting of OG Trunk Queuing
0/1=Not Required/Required.

Note: *For OG Trunk (ON HOOK) Queuing, bit 1=0
For Off Hook Queuing, bit 1=1*

- System Data 3, Index 3, bit 5: 3-Burst for Ringer Pattern 5
0/1=Not required/Required
Index 7: Ringer Pattern 5 for this service.

- STEP 2: ANPD - Reserve a number level for OG Trunk (ON-HOOK) Queuing.
CI=N and B.

- STEP 3: ASPA - Assign the access code for OG Trunk (ON-HOOK) Queuing.
CI=B, SRV=SSC, SID=19 (To set)
CI=N, SRV=SSC, SID=20 (To Cancel)

- STEP 4: ARTD - Assign the OG Trunk Queuing-Deluxe service for the OG route.
CDN9 (TQ)=1
CDN41 (TDMQ)=1 (for Tandem Queuing)

- STEP 5: ASFC - Allow OG Trunk Queuing-Deluxe to the SFC of the station.
SFI62 (OG Trunk Queuing-Deluxe)=1

Note: *For Off-Hook Queuing, the following data is required as well as above.
SFI21 (Off-Hook OG Queuing)=1*

O-28 OFF-HOOK QUEUING-PRI**1. General Description**

This service allows a station user encountering busy ISDN trunk to remain off-hook and automatically enter a first-in, first-out queue. As soon as an outgoing ISDN trunk becomes available, the switch connects the next call to this trunk.

2. Operating Procedure

To operate:

1. When no trunks are available, the call automatically enters an available queue.
2. The caller receives Service Set Tone.
3. When a trunk becomes available, the dialed number is automatically sent forward.
4. If the caller goes on-hook while in queue, the assigned queue is cleared.

3. Programming

STEP 1: ASYD - System Data 2, Index 4, bit 1: Automatic Setting of OG Trunk Queuing
0/1 = Not required/Required.

STEP 2: ARTD - Assign the following data for the Queuing route and the dummy route CDN9 (TQ) = 1

STEP 3: ASFC - Allow a service restriction as follows.
SFI21 (Off-Hook Queuing) = 1

OUTGOING TRUNK QUEUING-ATTENDANT-PRI

O-30 OUTGOING TRUNK QUEUING-ATTENDANT-PRI

1. General Description

This feature allows an ATTENDANT CONSOLE [A-3] encountering a busy ISDN trunk to remain off-hook and automatically enter a first-in, first-out queue. As soon as an outgoing ISDN trunk becomes available, the switch connects the next call to that trunk.

2. Operating Procedure

To operate:

1. Dial the access code and the desired ISDN trunk number.
2. When no trunks are available, the call automatically enters an available queue slot.
3. The Attendant receives Service Set Tone.
4. When a trunk becomes available, the dialed number is automatically sent forward.
5. If the Attendant goes on-hook while in queue, the assigned queue slot is cleared.

3. Programming

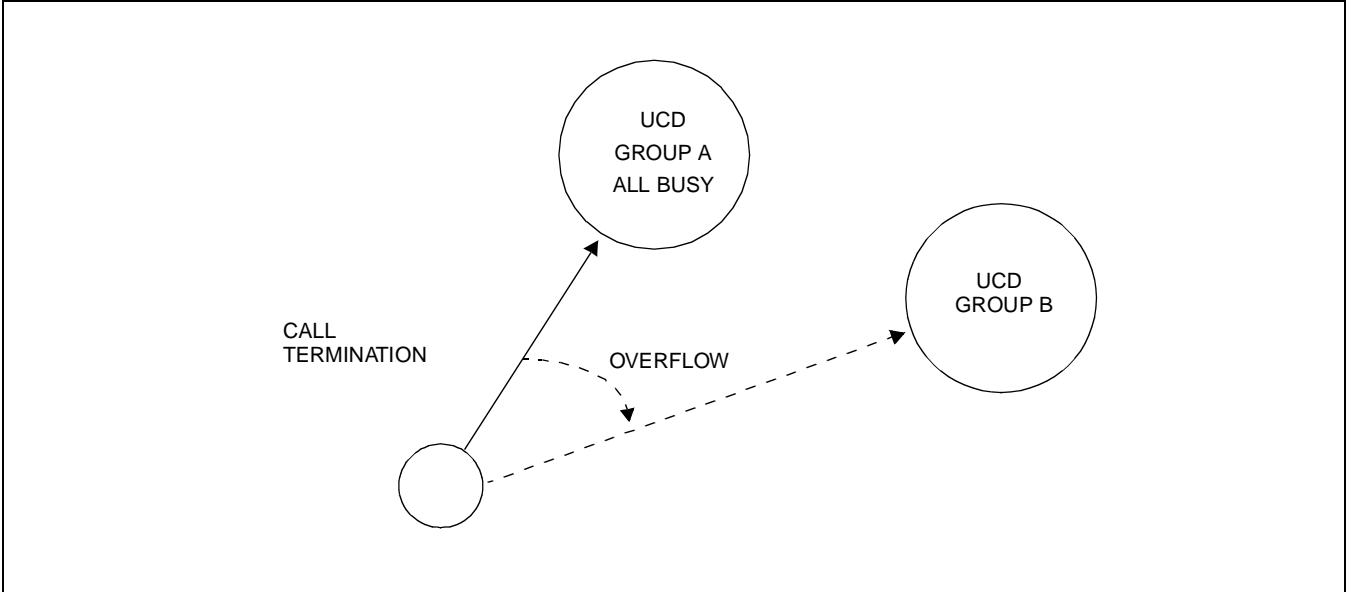
STEP 1: ASYD - System Data 2, Index 4, bit 2: Off-Hook OG Queuing for Attendant.
0/1 = Out/In Service.

STEP 2: ASFC - Assign 1 (= Allowed) in SFI21 (= Off-Hook OG Queuing) for SFC0.

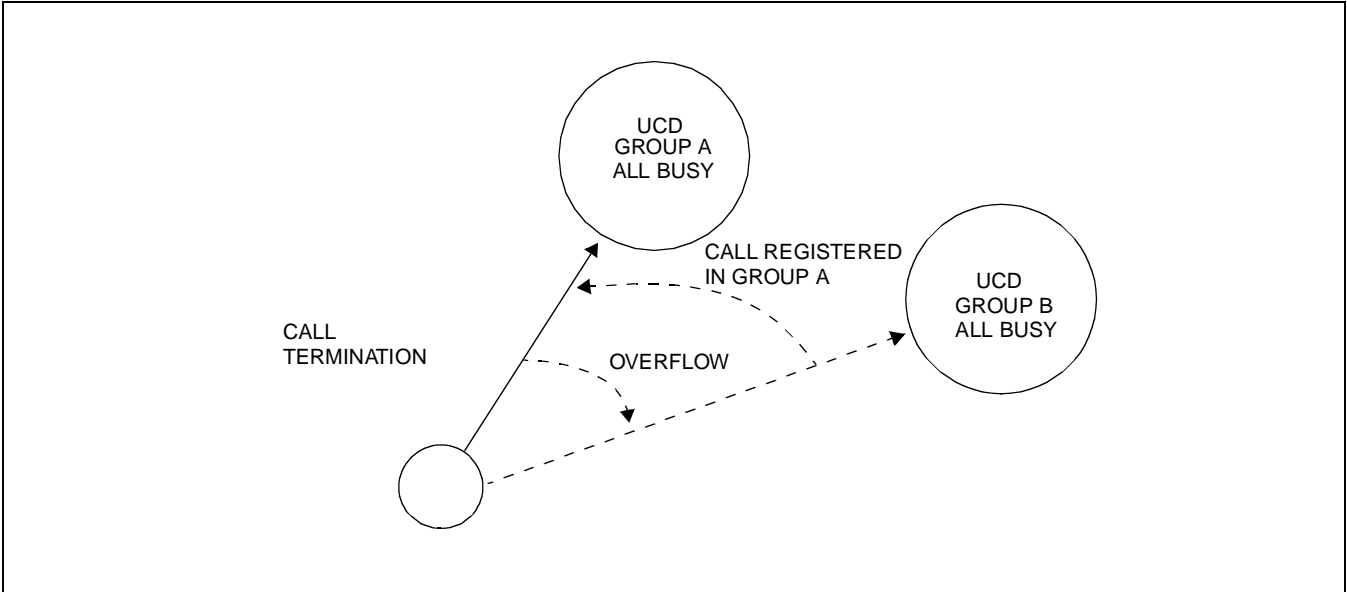
O-32 OVERFLOW-UCD-PRI

1. General Description

- 1. When a call from an ISDN trunk has terminated to UCD [U-1] Group A and this incoming call has encountered all stations busy in Group A, the call is transferred to UCD [U-1] Group B if Group B is registered as the overflow destination.



- 2. If all stations in Group B to which the call has been transferred by the OVERFLOW-UCD service are busy, the call is registered in the queue in UCD [U-1] Group A.



2. Operating Procedure

No manual operation is required.

3. Programming

STEP 1: ASHU - Assign the required data for the UCD Group:

TN: Tenant Number

STN: Station Number

CNT: Number of stations to be entered (recommended maximum of 100 stations).

ADD: Number of station to be added (recommended maximum of 100 stations).

STN: Station Numbers of the stations included in the UCD group.

STEP 2: AUOG - Assign the UCD OVERFLOW data via this command. Assign the following:

TN-A, STN-A: Tenant Number and Station Number which belong to a UCD group.

TN-B, STN-B: Tenant Number and Station Number of a member station in a UCD group to be hunted in the case where the UCD group designated by TN-A and STN-A happens to be busy.

TRANSLATION: When UCD group A is busy, calls will overflow to UCD group B.

P-37 PEG COUNT-PRI

1. General Description

This feature permits traffic studies and traffic analysis information to be accessed from the MAINTENANCE ADMINISTRATION TERMINAL [M-18] and to be printed out.

2. Operating Procedure

Refer to System Operation and Maintenance Manual.

3. Programming

Refer to System Operation and Maintenance Manual.

PRIMARY CALL RESTRICTION-PRI

P-38 PRIMARY CALL RESTRICTION-PRI

1. General Description

This feature allows the system to restrict outgoing ISDN calls according to the specific called number. This restriction is controlled on the basis of the first seven, eight, nine, or all ten digits dialed.

2. Operating Procedure

The system checks the dialed number and the restricted numbers and if these numbers match the call is restricted.

3. Programming

STEP 1: APCR - Assign the number to be restricted and the condition of restriction (Allow or Restricted) to each RSC.

P-39 PRI TRUNK TO TIE LINE CONNECTION WITH PAD CONTROL

1. General Description

This feature provides a switchable transmission pad for PRI trunks, which allows tandem connections. Necessary PAD CONTROL is activated to protect against echo.

2. Operating Procedure

No manual operation is required.

3. Programming

STEP 1: APAD - Assign the Pad data required for the Tandem connection. Assign the following:

KIND: T (Tandem Connection) or S (Station)
ICRT: Incoming Route Number
OGRT: Outgoing Route Number
SFC: Service Feature Class
IC PAD: Incoming PAD Data (1-15)
OG PAD: Outgoing PAD Data (1-15)
RT: Route Number
PAD DATA: **Note**

Note: See "Circuit Card Manual".

PAGING TRANSFER-PRI

P-47 PAGING TRANSFER-PRI

1. General Description

This feature will allow a station user to transfer a paged call to a party that has been placed on hold.

2. Operating Procedure

While a station user is engaged in a C.O. line call:

1. The Station user presses the switchhook flash key; receives Special Dial Tone.
2. Station user dials the PAGING access code; receives continuous Ringback Tone for approximately one second.
3. Station user pages the desired party.

Following two are the methods that the paged user answers:

1. Non-Delay System; On dialing the PAGING Answer access code, the party paged is immediately connected to the PAGING station.
2. PAGING TRANSFER Supervision; The PAGING station user replaces the handset after the page. By dialing the PAGING Answer access code, the paged party is directly connected to party on hold.

For Non-Delay Systems; when a PAGING station replaces the handset after talking with the paged party, the held party is directly connected to the paged party.

3. Programming

- STEP 1: ASYD - System Data 1, Index 73, bits 0&1: b1 b0
- | | | |
|---|---|---|
| 0 | 1 | For MEET-ME PAGE. Non-Delay service. |
| 1 | 0 | For MEET-ME PAGE. Delay service. |
| 1 | 1 | For MEET-ME PAGE. Delay service with Call Transfer. |
- bit 3: Are PAGE cancel codes provided for each route?
0/1: Per route/Common to all routes.
- Index 74, bits 0&3: Assign the cancel timer for unanswered page.
Assign data 00H for 30 seconds.
(0-F+1)×30 = Cancel Timer.
- System Data 2, Index 1, bits 0&1: Consultation Hold allowed or denied. 00: Denied;
01: Originating and Terminating Calls allowed;
Tandem Call Denied; 11: All calls allowed.

STEP 2: ARTD - Assign the paging route as shown below:

RT : 1

1-OSGS : 2 2-ONSG : 3 5-TF : 1 6-TCL : 8 7-L/T : 1
 8-RLP : 2 15-LSG : 0

Data other than the above should be set "0" (default data).

STEP 3: ATRK - Assign the LENSs, Paging Trunk Route Number, Trunk Number, and Tenant Number.

STEP 4: MBTK - Assign the Make Idle status to the Paging trunks.

STEP 5: ANPD - Reserve levels for trunk access and for PAGE answer and cancel codes. Assign the trunk access level for a Connection Indexed (CI) of Normal and momentary switchhook flash (Hooking) service. Number of Necessary Digits is Max.3. Busy Lamp Field is not activated.

If the PAGE answer and cancel codes reside in a level reserved for features, then assign according to a predetermined numbering plan. If the PAGE answer and cancel codes reside in a separate level, then assign for a Connection Index (CI) of Normal only. The number of Necessary Digits is usually two and the Busy Lamp Field is off.

STEP 6: ASPA - Assign Paging Route access code. Type of Service, SRV = OGC. Assign the proper route number that is associated with this Paging trunk access code. Assign for CI = normal and Hooking.

Assign the PAGE answer and cancel access code. Type of Service, SRV = PAGA and SRV = PAGC. Assign the proper route number that is associated with this access code. Assign for CI = normal.

STEP 7: ARSC - Allow RRI: 2 & 3 access to this route for the RSCs assigned to stations given access to the paging routes. Allow RRI: 0 & 1 on the incoming route to be transferred to the RSCs given access to the page answer.

STEP 8: ASFC - Assign station to receive PAGING TRANSFER a Service Feature Class that allows SFI = 38. This allows a station to dial PAGE answer codes.

PRI FAILSAFE ROUTING

P-49 PRI FAILSAFE ROUTING

1. General Description

When call origination via ISDN network is not available due to failure, etc., this feature allows the call to be placed via alternative route (Public Switched Network.)

2. Operating Procedure

No manual operation is required.

3. Programming

STEP 1: ARTD - Assign the expansion route class data for dummy route. The expansion route class data of the dummy routed is ADVPRA (CDN : 111) = 1.

R-35 RESTRICTION FROM OUTGOING CALLS-PRI**1. General Description**

This feature automatically denies preselected station lines within the system the ability to place outgoing ISDN calls without Attendant assistance.

2. Operating Procedure

Operation is fully automatic in that restricted stations; will receive Reorder Tone upon attempting to place a restricted call.

3. 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 command for Day/Night?

Bit 3-Develop ATDP command for Day/Night?

System Data 2, Index 1, bits 4&5: Should a Toll-Restricted station be routed to the Attendant Console or receive ReorderTone?

Reorder Tone: bit 4 = "0", bit 5 = "0".

Attendant Console: bit 4 = "0", bit 5 = "0".

ROUTE RESTRICTION CLASS

STEP 2: ARSC - Sixteen different Route Restriction Classes may be constructed to either allow, deny, or toll restrict access to the various routes of the system. Assign the RSC using Route Restriction Indexes 2 (outgoing via the Attendant Console) and 3 (Outgoing Direct).

STEP 3: ASDT - Assign Tenant No., Station No., LENs, and the Telephone Equipment Class (TEC) to the station. This is used in regular Business systems. The Service Feature Class (SFC) and Route Restriction Class (RSC) are also assigned to the telephone.

TN: Tenant Number

STN: Station Number

LEN: Line Equipment Number (6 digits)

TEC: Telephone class (1-31)

1 - DP (10pps)

2 - BP

3 - DP/PB

4 - DP (20pps)

12 - D^{term}

13 - Data terminal Via D^{term}

14 - Hot Line

15 - CAS Line

18 - Virtual Circuit

23 - ISDN Terminal

27 - 8 Conference Equipment

RSC: Route Restriction Class (0-15) For assignment of RSC, ARSC command.

SFC: Service Feature Class (0-15) For assignment of SFC, ASFC command.

S-82 SPEED CALLING-SYSTEM-PRI

1. General Description

This feature allows a station user or ATTENDANT CONSOLE [A-3] to call frequently dialed ISDN numbers using fewer digits (abbreviated call codes) than would normally be required.

2. Operating Procedure

To operate:

1. Dial the Speed Calling access code (one to three digits).
2. Dial the abbreviated call code (maximum four digits).
3. The call is completed.

3. Programming

STEP 1: ASYD - System Data 2, Index 1, bit 7: Does TOLL RESTRICTION [T-7] apply to SPEED CALLING-SYSTEM? 0/1:Yes/No.

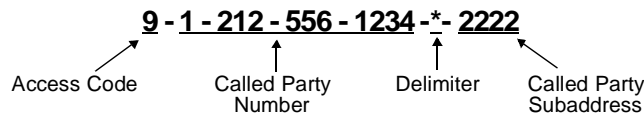
STEP 2: ANPD - Reserve a number level for feature access. Assign Connection Indexes of Normal. Assign NND in accordance with a predetermined numbering plan.

STEP 3: ASPA - Assigning an access code to SPEED CALLING-SYSTEM, assign SRV = SSC, SID 15. Program for normal. NND = Access code plus ADC (Abbreviated Digit Code). See ASPD. Example: 6+010 (1 digit+3 digits) = NND = 4

STEP 4: ASFC - Assign a Service Feature Class that allows SFI 12 to stations that will have SPEED CALLING-SYSTEM.

STEP 5: ASPD - Assign the Tenant Number, the Abbreviated Digit Code-ADC, and the CD-Telephone Number to be sent. Include the access code of the route in the CD.

- Each abbreviated call code can store a maximum of 24 digits, including access codes.
- A maximum of 1,000 codes can be assigned per system.
- Called party subaddress may be stored by MAT. For example:



S-82D SPEED CALLING-SYSTEM-D^{term}-PRI**1. General Description**

This feature allows a D^{term} station user to call frequently dialed ISDN numbers using fewer digits (abbreviated call codes) than would normally be required.

2. Operating Procedure

To operate (D^{term}):

1. Press the SPEED CALLING-SYSTEM [S-3] (SPEED-SYS) feature key.
2. Dial the abbreviated call code (two or three digits). The LCD displays:



3. The Call is completed.
4. If the D^{term} set does not have the SPEED CALLING SYSTEM [S-3] (SPEED-SYS) feature key, dial the SPEED CALLING SYSTEM [S-3] access code.

To operate from a "ONE TOUCH-SPEED CALLING" key:

1. Press a "ONE TOUCH-SPEED CALLING" key, the LCD displays previously stored digits.
2. Dial the SPEED CALLING-SYSTEM [S-3] access code.
3. Press the SPEED CALLING-ONE TOUCH-D^{term} [S-26D] key. The LCD will display:

[D^{term} Series III]



D^{term} Series E]



4. To access, press the SPEED CALLING ONE TOUCH-D^{term} [S-26D] key.

The abbreviated Calling Code may be stored with the access code in the SPEED CALLING-ONE TOUCH-D^{term} [S-26D] key. Add a pause between access code and calling code.

3. Programming

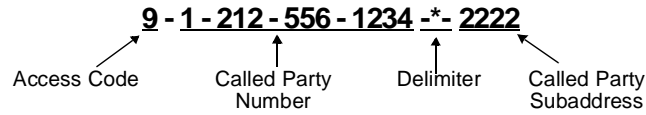
STEP 1: ASYD - System Data 2, Index 1, bit 7: Does TOLL RESTRICTION [T-7] apply to SPEED CALLING-SYSTEM? 0/1: Yes/No.

STEP 2: ASFC - Assign a Service Feature Class that allows SFI 12 to stations that will have SPEED CALLING-SYSTEM.

SPEED CALLING-SYSTEM-D^{term}-PRI

STEP 3: ASPD - Assign the Tenant Number, the Abbreviated Digit Code-ADC, and the CD-Telephone Number to be sent. Include the access code of the route in the CD.

- Each abbreviated call code can store a maximum of 24 digits, including access codes.
- The following is the maximum number of Speed Calling numbers that can be stored in the system:
1000calls/system
- Called party subaddress may be stored by MAT. For example:



STEP 4: AKYD - Assign SPEED CALLING to D^{term} key. Assign FKY 15 to the D^{term} key.

S-83 STATION MESSAGE DETAIL RECORDING SYSTEM-RS232C-PRI**1. General Description**

This feature provides a “call record” for all outgoing station-to-PRI trunk calls and incoming PRI trunk-to-station calls. When the system is equipped with this feature an RS232C output port is provided, permitting direct interface with a customer-owned computer system. All output is in the ASCII format, and includes the following:

- Calling Station Number
- Called Station Number (24 digits maximum)
- Route Number
- Start of Call Time
- Disconnect Time
- Year, Month and Date
- Attendant Handled
- ACCOUNT CODE [A-18]
- FORCED ACCOUNT CODE [F-7] /AUTHORIZATION CODE [A-28]
- AUTHORIZATION CODE-EPN [A-22] (8 digits maximum)

2. Operating Procedure

No manual operation is required.

3. Programming

STEP 1: ASYD - System Data 1, Index 20, bit 7: Charging to a call transferred by CALL FORWARDING-OUTSIDE

0=Charging is made to the caller of the transferred call.

1=Charging is made to the station which has set CALL FORWARDING-OUTSIDE service.

Index 32, bit 1: 1=Record the tenant information

bit 2: 1=Record the route taken

bit 5: Is the Route Access code recorded? 0/1=No/Yes.

bit 6: Is the number sent or number dialed recorded in SMDR?
0/1=Number to be sent/Number to be dialed.

bit 7: 1=SMDR is in service

Index 33:

- Data 00 Hex=Split Billing
- When bit 5=1 (Total Billing for incoming calls) and/or bit 6=1 (Total Billing for outgoing calls), the following data can be assigned.

b4 b3

0 0 = Telephone called first

0 1 = Telephone called last

1 0 = Next Telephone receiving call from ATT/Station.

1 1 = Last Telephone receiving call form ATT/Station.

Index 34, bit 0: 1=Enables RS-232C transmission.

bit 5: Is the converted number sent? 0/1=No/Yes.

STATION MESSAGE DETAIL RECORDING SYSTEM-RS232C-PRI

System Data 1, Indexes 288-295: Designation of the attributes of the SMDR.

SMDR output port will be designated. For this designation, the attributes of the terminal which outputs the detail call information should have been designated by the AIOC command.

Also for detecting a fault of the SMDR, set the SMDR fault detect timer.

Index 288 = Charging information port of SMDR A.

Index 289 = SMDR fault detect timer of SMDR A.

Index 290 = Charging information port of SMDR B.

Index 291 = SMDR fault detect timer of SMDR B.

Index 292 = Charging information port of SMDR C.

Index 293 = SMDR fault detect timer of SMDR C.

Index 294 = Charging information port of SMDR D.

Index 295 = SMDR fault detect timer of SMDR D.

System Data 2, Index 3, bit 0: 1=SMDR registration per tenant is valid.

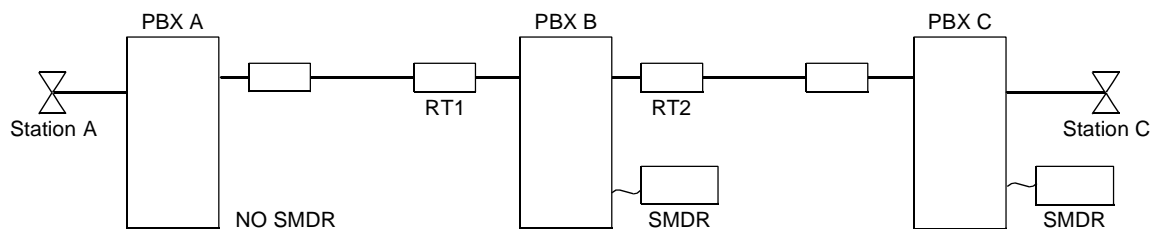
bit 7: 0/1=-/SMDR Output (STN-STN) is in service.

STEP 2: AIOC - Assign the function and attribute data of the IOC ports.

STEP 3: ARTD - CDN 10. Enable outgoing routes to be included for SMDR registration. CDN 16, Determination on a per-route basis what type of connection will be registered by SMDR. For outgoing only routes, assign data "0". For incoming routes, assign data "2". For bothway trunk routes, assign data "1" only.

CDN56. Detailed billing for outgoing (tandem). CDN69. Detailed billing for incoming (tandem). Regarding DN56 and CDN69, see [Figure 5-4](#).

<Reference>



In the network shown above, PBX B functions as a tandem switch. In this example, parameters SMDR3 and SMDR4 for RT1 of PBX B should be assigned as 1 for the following reasons.

When Station C places a call to Station A:

Since SMDR collects billing information on the outgoing trunk at PBX C, billing information on the outgoing trunk of RT1 is not required at PBX B (SMDR3=1).

When Station A places a call to Station C:

At PBX B, SMDR collects billing information on the outgoing trunk of RT2, and therefore billing information on the incoming trunk of RT1 is not required (SMDR4=1).

Figure 5-4 Example of SMDR Assignments

- STEP 4: ASFC - Assign data "1" to SFI14 of a Service Feature Class whose traffic is to be registered on SMDR (Trunk Basis). Assign data "1" to SFI58 of a Service Feature Class whose traffic is to be registered on SMDR (STN to STN Basis).
- STEP 5: ARNP - For the routes flagged for SMDR in ARTD, list the Physical route number and the LCR access code.
- STEP 6: AMND- Assign the number of digits the register is to receive for every dialing code. List the Toll Number ID Data code for the system to distinguish the Toll Dialing patterns for SMDR registration.

SPEED CALLING-STATION-PRI

S-84 SPEED CALLING-STATION-PRI

1. General Description

This feature allows a station user to dial frequently called ISDN network numbers using fewer digits (abbreviated call codes) than normally required. With this feature a station user can establish personal abbreviated codes.

2. Operating Procedure

To operate:

1. Dial the speed calling access code (one or two digits).
2. Dial the abbreviated call code (one or two digits).
3. Call is completed.

3. Programming

STEP 1: ASYD - System Data 2, Index 1, bit 3: Does TOLL RESTRICTION apply to SPEED CALLING-STATION? 0/1: Yes/No. (If yes, refer to TOLL RESTRICTION-3/6 DIGIT [T-7]).

STEP 2: ANPD - Reserve a number level for feature access. Assign Connection Indexes, CI = N (Normal). Assign NND in accordance with a predetermined numbering plan.

STEP 3: ASPA - Two access codes must be assigned for this feature.
For the individual station speed calling number entry, assign the tenant and access code (ACC). Assign for a Connection Index of Normal. For SRV = SSC, assign SID 14.
For individual station speed calling access, assign the tenant and access code (ACC). Assign for a Connection Index of Normal. For SRV = SSC, assign SID 21.

STEP 4: ASFC - Assign a Service Feature Class that allows SFI 19 to the stations to receive SPEED CALLING-STATION.

STEP 5: AISA - Program the tenant, station, type of station, and the number of SPEED CALLING blocks to be assigned to the Master station.

TN: Tenant Number

STN: Station Number

MST/SLV: Master/Slave

M-Master Station

S-Slave Station

BLOCK: Number of Blocks

STN: When assigning Slave Station, assign the Master Station number.

STEP 6: AKYD - KYI = 1 FKY = 26 (SPEED CALLING-STATION)

STEP 7: AISD - This command is used to assign, delete and display the destination number of Individual Speed Calling.

S-85 SPEED CALLING-GROUP-PRI**1. General Description**

This feature allows a station user to share a group of common ISDN network Speed Calling numbers with other members in the group.

2. Operating Procedure

To operate:

1. Dial the speed calling access code (one or two digits).
2. Dial the abbreviated call code (one or two digits).
3. Call is completed.

3. Programming

STEP 1: ASYD - System Data 2, Index 1, bit 3: Does TOLL RESTRICTION apply to SPEED CALLING-STATION? 0/1: Yes/No. (If yes, refer to TOLL RESTRICTION-3/6 DIGIT [T-7]).

STEP 2: ANPD - Reserve a number level for feature access. Assign Connection Indexes, CI = N; Normal. Assign NND in accordance with a predetermined numbering plan.

STEP 3: ASPA - Two access codes must be assigned for this feature.
For the individual station speed calling number entry, assign the tenant and access code (ACC). Assign for a Connection Index of Normal. For SRV = SSC, assign SID 14.
For individual station speed calling access, assign the tenant and access code (ACC). Assign for a Connection Index of Normal. For SRV = SSC, assign SID 21.

STEP 4: ASFC - Assign a Service Feature Class that allows SFI 19 to the stations to receive SPEED CALLING-STATION.

STEP 5: AISA - Program the tenant, station, type of station, and the number of SPEED CALLING blocks to be assigned to the Master station.
TN: Tenant Number
STN: Station Number
MST/SLV: Master/Slave
M-Master Station
S-Slave Station
BLOCK: Number of Blocks
STN: When assigning Slave Station, assign the Master Station number.

STEP 6: AKYD - KYI = 1 FKY = 26 (SPEED CALLING-STATION)

STEP 7: AISD - This command is used to assign, delete and display the destination number of Individual Speed Calling.

S-86 SIMULTANEOUS VOICE AND DATA TRANSMISSION-PRI

1. General Description

This feature is provided by NEC's proprietary digital D^{term} family of terminal equipment. A 64 kbps digital voice signal and a data signal of up to 56 kbps can be transmitted simultaneously over the same wire. Voice and data calls can be placed to different locations via PRI.

2. Operating Procedure

To place a voice communication.

1. Go off-hook or press the D^{term}'s "SPEAKER" key.
2. The Prime Line LED flashes and Dial Tone is received. If the "SPEAKER" key is used, the SPEAKER LED will illuminate steadily.
3. Dial a voice extension of the distant PBX.
4. When the called party answers, voice communication can begin.

To initiate a data call while the voice communication is in progress:

1. While a voice communication is progress, user 'A' presses the "DTX" key.
2. On user A's D^{term}, the DTX LED illuminates, the DATA LED flashes and the LCD is displayed as

D DTE XXXX (Time Display)

3. When user 'B' answers, both parties 'DATA LED's illuminate steadily, both LCDs display:

RDY D DTE XXXX (Time Display)

 for D^{term} Series III or

READY D DTE XXXX (Time Display)

 for D^{term} Series E, and data communication can begin.

4. The voice communication is not interrupted during this process. After five seconds, the voice call display returns.

The "DISP/AUTO" key may be pressed to return the following displays

RDY D DTE XXXX (Time Display)

 for D^{term} Series III or

READY D DTE XXXX (Time Display)

 for D^{term} Series E.

To place a data call to a different location or while voice communication is not in progress:

1. Press the "DATA" key on the D^{term}. The LED above the key will illuminate and "D" will appear on the LCD.
2. Use the keypad to dial the desired DTE extension.

D XXXX (Time Display)

 will appear on the display.
 ("XXXX" refers to the called extension number).

3. The DATA LED will flash and,

D DTE XXXX (Time Display)

 will appear (flashing) on the LCD.

4. When the called DTE answers, the display is changed as follows:

RDY D DTE XXXX (Time Display)

 for D^{term} Series III or

READY D DTE XXXX (Time Display)

 for D^{term} Series E

5. Data communication can begin.

3. Programming

STEP 1: ASYD - System Data 1, Index 16, bits 0-4: Place one - to five-digit station numbers in service.

STEP 2: ASDT - Assign Tenant No., Station No., LEN, and the Telephone Equipment Class (TEC) to the station. Also, assign the Service Feature Class and Route Restriction Class.

TN: Tenant Number

STN: Station Number

LEN: Line Equipment Number (6 digits)

The LEN of the data extension is assigned as TEC 13. The voice LEN is assigned as a TEC 12. The voice and data LENs are associated as follows:

VOICE					DATA				
LEN	xx	x	xx	0	LEN	xx	x	xx	4
LEN	xx	x	xx	1	LEN	xx	x	xx	5
LEN	xx	x	xx	2	LEN	xx	x	xx	6
LEN	xx	x	xx	3	LEN	xx	x	xx	7
	MG	U	GP	LV		MG	U	GP	LV

TEC: Telephone Class (1-31)

1 - DP (10pps)

2 - PB

3 - DP/PB

---> 12 - D^{term}

---> 13 - Data Terminal via D^{term}

14 - Hotline

15 - CAS Line

18 - Virtual Circuit

(For Data Terminals, assign RSCs that allow access to the routes to be used for data transmission, and the SFC of the data terminal should include SFI 11 = 0, Data Privacy.)

RSC: Route Restriction Class (0-15)

For assignment of RSC, ARSC command.

SFC: Service Feature Class (0-15)

For Assignment of SFC, ASFC command.

STEP 3: ANPD - Reserve a number level for station access. Assign for normal and hooking. Assign NND in accordance with a predetermined numbering plan. BLF is on.

STEP 4: ASPA - For a Connection Index as Normal and Hooking, assign the SRV = STN, assign Tenant (TN).

SIMULTANEOUS VOICE AND DATA TRANSMISSION-PRI

STEP 5: AKYD - Assign the station according to the following parameters:

(The data extension number is automatically assigned to the key programmed as DATA.)

TN: 1

STN: Station Number

TP: Type of D^{term}

KYN: Key Number

KYI: Service Index

0-Key Not Used

--> 1-Feature Key

2-Multi-line Key

KD: Not assigned for Feature Key

FKY: Function Key Number

---> FKY = 29, DATA

---> FKY = 30, AUTO (Optional)

---> FKY = 31, DTX

Note: See “Data Adapter Operation Manual” to refer the installation and SW settings.

See “Data Communication Command Guide” to refer Hayes/V25bis commands.

S-87 SYNCHRONOUS DATA SWITCHING-PRI

1. General Description

A synchronous DTE connected to a D^{term}/Data Adapter can communicate via the PBX with a synchronous DTE connected to a Synchronous D^{term}/Data Adapter.

2. Operating Procedure

To originate a data call from the sync./async. D^{term}/Data Adapter:

1. Press the "DATA" key on the D^{term}. The LED above the key will illuminate and "D" will appear on the LCD.
2. Use the keypad to dial the desired DTE extension.

D XXXX (Time Display)

 will appear on the display ("XXXX" refers to the called extension number).
3. The DATA LED will flash an

D DTE XXXX d (Time Display)

, will appear (flashing) on the LCD.
4. When the called DTE answers, the display is changed as follows,

RDY D DTE XXXX (Time Display)

 for D^{term} Series III or

READY D DTE XXXX (Time Display)

 for D^{term} Series E.
5. A transparent data path is established, and data communication can begin.

To terminate the data call, either user may press the "DATA" key. The other party's LCD will display as shown below for five seconds.

RLS D DTE XXXX (Time Display)

 (D^{term} Series III) or

RELEASE D DTE XXXX (Time Display)

 (D^{term} Series E).

Both parties' DATA and DTX LEDs will be extinguished.

3. Programming

See [\[S-86\] "SIMULTANEOUS VOICE AND DATA TRANSMISSION-PRI"](#).

S-88 SMDR FOR DATA CALL-RS232C-PRI

1. General Description

This feature provides a call record of all outgoing station-to-trunk and incoming PRI trunk-to-station data calls. When this feature is provided, an RS232C output port is utilized, permitting direct interface with a customer-owned computer system. All output is in ASCII format and includes the following:

- Calling Station Number
- Called Station Number (24 digits maximum)
- Route Number
- Start of Call Time
- Disconnect Time
- Year, Month and Date
- Attendant Handled

2. Operating Procedure

No manual operation is required.

3. Programming

Refer to [\[S-83\] "STATION MESSAGE DETAIL RECORDING SYSTEM-RS232C-PRI"](#).

S-89 SPEED CALLING OVERRIDE-SYSTEM-PRI**1. General Description**

This feature allows a station with restriction on outgoing ISDN and/or certain miscellaneous trunk calls by the station CLASS OF SERVICE-INDIVIDUAL [C-15] to place such calls by using the prefixed digits (abbreviated call code) registered beforehand in SPEED CALLING-SYSTEM-PRI [S-82]. A station may use this feature if it has been assigned the appropriate SFC (Service Feature Class).

2. Operating Procedure

1. Lift the handset (includes "SPEAKER" key operation on D^{term}). Listen for Dial Tone.
2. Dial the speed calling access code (one or two digits).
3. Dial the abbreviated call code (two or three digits).
4. If the station is allowed this call, the call is completed, if not, the station will hear Reorder Tone.

3. Programming

STEP 1: ASYD - System Data 2, Index 1, bit 6: Is SPEED CALLING OVERRIDE (on a SFC basis) to be enabled? 0/1: No/Yes.
 bit 7: Is SPEED CALLING OVERRIDE (on a system basis) to be enable? 0/1 = No/Yes.

Note: Assign the data "1" in either bit 6 or bit 7.

STEP 2: ANPD - Reserve a number level for feature access. Assign for Normal. Assign NND in accordance with a predetermined numbering plan.

STEP 3: ASPA - Assigning an access code to SPEED CALLING-SYSTEM, assign SRV = SSC, SID = 15. Program for Normal. NND = Access code plus ADC (Abbreviated Digit Code). See ASPD.
 Example: 6 (ACC) + 010 (ADC)
 1 digit + 3digits = NND = 4

STEP 4: ASFC - Assign a Service Feature Class that allows SFI 12 to stations that will have SPEED CALLING-SYSTEM.

STEP 5: ASPD - Assign the Tenant Number, the Abbreviated Digit Code (ADC), and the CD-Telephone Number to be sent. Include the access code of the route in the CD.

STEP 6: AABD - Assign the Tenant (TN); and the Abbreviated Speed Calling Code, (ADC); as assigned in the ASPD command. Assign the Service Feature Class (SFC) and Restriction Data (RES).
 RES 0: Connection is restricted.
 RES 1: Connection is allowed.

Note: This step can be skipped when System Data 2, Index 1, bit 6=0 in ASYD.

STEP 7: AKYD - Assign SPEED CALLING-SYSTEM to a programmable Line/Feature key. Assign KYI = 1 and FKI = 15.

STATION INDIVIDUAL TRUNK ACCESS-PRI

S-107 STATION INDIVIDUAL TRUNK ACCESS-PRI

1. General Description

This feature permits a station to access an individual ISDN trunk via dial access.

2. Operating Procedure

To access:

1. Lift the handset; receive the Dial Tone
2. Dial the feature access code, trunk route number, trunk number, and desired station number; receive the Ringback Tone.
3. When the called party answers, communication can begin.

3. Programming

STEP 1: ASYD - System Data 1, Index 68, bit 1: Designates the method the Attendant Console must use to operate INDIVIDUAL TRUNK ACCESS. 0/1: Route & Trunk Number/Listed Directory Number (Central Office Code, ACOC)
System Data 1, Index 68, bit 4: Is Trunk Select Key in service? 0/1: No/Yes. Assign data 1.

STEP 2: ANPD - Reserve a number level for this access code. CI=N.

STEP 3: ASPA - Assign an access code for this service. CI=Normal, SRV=SSC, SID=17.

Optional

STEP 4: ARTD - If the Central Office Code option is assigned, assign data "1" in CDN 25.

STEP 5: ACOC - If the Central Office Code option is assigned, trunks in the system must be programmed to have an associated Central Office Code. This code is dialed after pressing the Attendant Console's Trunk Select key.

STEP 6: ASFC - Allow the restriction. SFI39=1.

T-37 TANDEM SWITCHING OF TIE TRUNKS-2/4-WIRE-PRI**1. General Description**

This feature allows PRI trunk-to-Tie-trunk connections through the PBX without the need for any Attendant assistance or control. The major use of this feature is in association with the Dial Tandem Tie Line Network to allow Tie line connections and incoming Tie line calls automatic access to and completion of local central office calls.

2. Operating Procedure

1. Lift the handset; receive Dial Tone from the distant office.
2. Dial the Tie Trunk access code; receive Dial Tone from the PBX.
3. Dial "9"; receive Dial Tone from the distant PBX or local Central Office.
4. Dial the Central Office exchange number (local or toll).

3. Programming

STEP 1: ARTD - Assign the TIE Line routes as shown below:

<Example of BOTHWAY TIE-LINES>

RT : 1

1-OSGS	: 2	2-ONSG	: 3	3-ISGS	: 2	4-INSG	: 3	5-TF	: 3
6-TCL	: 4	7-L/T	: 1	8-RLP	: 2	15-LSG	: 4	28-ANS	: 1

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

STEP 2: ATRK - Assign the LENs, TIE Line Route Number, Trunk Number, and Tenant Number.

STEP 3: MBTK - Assign the Make Idle status to the TIE Line Trunks.

STEP 4: ANPD - Reserve a number level for trunk access. Assign Connection Indexes, CI = N, H; Normal and Hooking (hookswitch). Assign NND in accordance with a predetermined numbering plan. Busy Lamp Field is not activated.

STEP 5: ASPA - Assign the access code as assigned in ANPD above. Assign Connection Indexes, CI = N, H; Normal and Hooking (hookswitch). Type of Service, SRV = OGC, Outgoing Trunk. Assign the route number associated with this access code.

TANDEM SWITCHING OF TIETRUNKS-2/4-WIRE-PRI

STEP 6: ARRC - Assign to the system trunk-to-trunk connection. Use Alternative Route Index (ARI) D for Direct Connection. Three possible Restrictions (RES) may be assigned; data "0", Connection is Restricted; data "1", Connection is Allowed; or data "2", Toll Restriction is required. For TANDEM SWITCHING OF TIE TRUNKS-2/4 WIRE, TOLL RESTRICTION is not required.

STEP 7: APAD - Assign any Pad data that may be required for desired quality of service. (Optional, see TIE LINE CONNECTION WITH PAD CONTROL [T-5]).

Note: *In the network including CCIS No.7, assign data CDN98 (CI)=1 (of the ARTD command) to all speech routes of CCIS No.7 network.
Refer to [T-44] TRANSFER MESSAGE (TRM).*

T-38 THREE-WAY CALLING-PRI**1. General Description**

This feature enables any station user to add another party to an existing ISDN network connection, establishing a Three-Way conference.

2. Operating Procedure

1. Place the original party on hold.
2. Press the hookswitch; receive Special Dial Tone.
3. Dial the desired number; receive an answer.
4. Announce the conference and press hookswitch again.
5. THREE-WAY CALLING-PRI is now established.

3. Programming

STEP 1: ASYD - System Data 2, Index 1, bits 0 & 1: Consultation Hold allowed or denied. 00: Denied; 01: Originating and Terminating Calls allowed, Tandem Call Denied; 10: Only Terminating Calls Allowed; 11: All calls allowed.

Index 6, bit 2: This bit remains as data "0". CALL TRANSFER-ALL CALLS [C-11].

bit 3: Enable add-on ability. This bit remains as data "0" to allow THREE-WAY CALLING.

System Data 3, Index 2: Assign data 91H for Normal, hookswitch (Hooking) values.

STEP 2: ATRK - Assign these LENs as Route 909, Digital Conference Trunk. The LEN consists of the following:

XX	X	XX	X
Module Group	Unit	Group	Level

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

STEP 3: MBTK - Make idle the Digital Conference Trunk.

STEP 4: ARRC - Allow for trunk-to-trunk connections between any two routes that may be used in THREE-WAY CALLING. Assign these routes for ARI = A: This connection is for a station and two trunks.

ARI = D: If the originating party hangs up, the remaining two parties will stay connected.

STEP 5: ARSC - The Route Restriction Class must be constructed so as to allow the station access to the involved routes.

THREE-WAY CALLING-D^{term}-PRI

T-38D THREE-WAY CALLING-D^{term}-PRI

1. General Description

This feature enables a D^{term} station user to establish a Three-Way conference by connecting an additional party to an already existing conversation.

2. Operating Procedure

To operate a D^{term}:

1. Press the “TRANSFER” key; receive Special Dial Tone; the original party is placed on hold.
2. Dial the desired number; receive an answer.
3. Announce the conference and press the “CONF” key.
4. THREE-WAY CALLING-D^{term}-PRI is now established. The LCD displays:

[D^{term} Series III]

CNF
(Time Display)

[D^{term} Series E]

CONF
(Time Display)

3. Programming

See [\[T-38\] “THREE-WAY CALLING-PRI”](#).

T-40 TOLL DENIAL/TOLL DIVERSION-PRI**1. General Description**

This feature prohibits station users from placing long distance calls over specific ISDN network trunks. Restricted calls are routed to either an ATTENDANT CONSOLE [A-3] (diversion) or to an Reorder Tone (denial).

2. Operating Procedure

No manual operation is required.

3. Programming

STEP 1: ASYD - System Data 1, Index 75: Should the following commands be developed for Day/Night: 0/1: No/Yes. See DAY/NIGHT CLASS OF SERVICE [D-15] for details.

-Bit 0- Develop ARSC command for Day/Night?

-Bit 3- Develop ATDP command for Day/Night?

System Data 2, Index 1, bits 4 & 5: If TOLL DENIAL is required, assign these bits as data "00". If TOLL DIVERSION is required, assign these bits as "01". Calls are then diverted to the Attendant Console. Assigned on a per-tenant basis.

STEP 2: ARSC - Assign Route Restriction Classes. When these are assigned to stations, classes will determine whether or not a station will be allowed access to a specific route or specific dialing sequence. See TOLL RESTRICTION-3/6 DIGIT [T-7]. 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/station

1-IC Restriction Direct Connection

2-OG Restriction via Attendant Console/station

3-OG Restriction Direct Connection

RES: Restriction Data

0-Connection is Restricted

1-Connection is Allowed

2-Connection is Toll Restricted (See "TOLL RESTRICTION-3/6-DIGIT", [T-7])

STEP 3: ASDT - When assigning the data to specific stations, assign the proper RSC to each station.

TOLL RESTRICTION-3/6-DIGIT-PRI

T-41 TOLL RESTRICTION-3/6-DIGIT-PRI

1. General Description

This feature allows the system to be programmed to restrict outgoing ISDN calls according to specific area and/or Central Office codes.

2. Operating Procedure

No manual operation is required.

3. Programming

STEP 1: ASYD - System Data 1, Index 75: Should the following commands be developed for Day/Night? 0/1: No/Yes. See DAY/NIGHT CLASS OF SERVICE [D-15] for more details.

- Bit 0- Develop ARSC command for Day/Night?
- Bit 3- Develop ATDP command for Day/Night?

System Data 2, Index 1, bit 3: Does TOLL RESTRICTION apply to SPEED CALLING-STATION [S-21]? 0/1: Yes/No.

bits 4 & 5: If TOLL DENIAL is required, assign these bits as data "00". If TOLL DIVERSION is required, assign these bits as "01".

bit 7: Does TOLL RESTRICTION apply to SPEED CALLING-SYSTEM [S-3]? 0/1: Yes/No.

STEP 2: ARSC - Assign Route Restriction Classes. When these are assigned to stations, 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/station

1-IC Restriction Direct Connection

2-OG Restriction via Attendant Console/station

3-OG Restriction Direct Connection

RES: Restriction Data

0-Connection is Restricted

1-Connection is Allowed

2-Connection is Toll Restricted

STEP 3: AMND- This command indicates the total number of digits to expect, based upon the first digits dialed. A “9” plus a local call will equal 8 digits, “9” plus 1 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; data “1”, or a local call; data “0”

1 + DIALING

(N = 2-9, P = 0 or 1, A/X = 0-9)

CALL TYPE	DIGITS DIALED	DIGITS NEEDED	MND	TOLL
Local Calls	<u>9</u> - <u>NNX</u> -XXXX	9-N	8	0
Near Distance Calls	<u>9</u> - <u>1</u> - <u>NNX</u> -XXXX	9-1-NN	9	1
Long Distance Calls	<u>9</u> - <u>1</u> - <u>NPA</u> - <u>NXX</u> -XXXX	9-1-NP	12	1

WITHOUT 1 + DIALING

(N = 2-9, P = 0 or 1, A/X = 0-9)

CALL TYPE	DIGITS DIALED	DIGITS NEEDED	MND	TOLL
Local Calls	<u>9</u> - <u>NNX</u> -XXXX	9-N	8	0
Long Distance Calls	<u>9</u> - <u>NPA</u> - <u>NXX</u> -XXXX	9-NP	11	1

Note: *The digits underlined are to be listed in the DC (Digit Code) parameter. Overseas or Operator-assisted calls should be listed with an MND equal to the calculated number of required digits. Special dialing sequences such as “911” with an MND = 4 should also be listed.*

STEP 4: ATDP - Assign the following:

DAY/NIGHT: Day/Night Mode

D: Day Mode

N: Night Mode

TDM/OG: Tandem Connection/Outgoing Connection

T: Tandem Connection

O: Outgoing Connection

ICRT: Incoming Route Number (Tandem Connection Only)

RSC: Restriction Class (0-15)

OGRT: 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

3: C.O. Operator Call (9+0)

NND: Necessary Digits (1-12)

This parameter is available only when TDI=2 (3/6 Digit Toll Restriction)

UNIFORM CALL DISTRIBUTION (UCD)-PRI

U-6 UNIFORM CALL DISTRIBUTION (UCD)-PRI

1. General Description

This feature distributes incoming calls from ISDN trunk to a specified group. Calls are distributed to idle stations, in a circular pattern, in the order they arrive.

2. Operating Procedure

No manual operation is required.

3. Programming

STEP 1: ASHU - Assign the required data for the UCD group:

TN: Tenant Number

STN: Station Number

CNT: Number of stations to be entered (Recommended Max. of 20 stations for the release 1/2, Max. of 100 stations for the release 3 or higher)

STN: Station Numbers of the stations included in the UCD group.

(The order in which stations are programmed is the order in which they will be hunted.)

STEP 2: ANPD - Reserve a number level for feature access. Assign Connection Indexes of Normal and momentary switchhook flash (Hooking). Assign NND in accordance with a predetermined numbering plan.

STEP 3: ASPA - Assign an access code to UCD BUSY OUT. SRV = SSCA, SIDA = 50 BUSY OUT set, SRV = SSCA, SIDA = 51 BUSY OUT cancel. Connection Status Indexes CI = N, Normal and CI = H, hooking.

STEP 4: AKYD - Assign BUSY OUT set/cancel key (same key does both; toggles function on/off). Assign KYI = 1, FKY = 19. Assign UCD Call Waiting Indication key. Assign KYI-1, FKY-47.

STEP 5: ATRF - Assign Traffic Measurement Order.

TYPE: Type of Traffic Measurement (1-16)

INTERVAL: Output Interval must be assigned in units of ten minutes (range is from 30-120 minutes), or data "0" must be assigned, which is the instruction for assigning output time.

FROM-TO-: Measurement time is to be designated.

TIME: Output Time

TYPE: 1-10

1: Terminal Traffic Measurement

2: Route Traffic Measurement

3: Station Peg Count

4: Attendant Console Peg Count

5: Route Peg Count

6: Service Peg Count

7: Terminal Peg Count

8: UCD Route Peg Count

9: UCD Group Peg Count

10: UCD Station Peg Count

STEP 6: DTF3 - Display of Traffic Data 3
TYPE: Type of Traffic Measurement
8: UCD Route Peg Count
9: UCD Group Peg Count
10: UCD Station Peg Count

Note: *STEP 5 and STEP 6 are necessary only for measuring the UCD Traffic.*

This page is for your notes.

CHAPTER 6 SUPPLEMENTARY SERVICE

This chapter explains the data assignment of ISDN station and supplementary services of ISDN. Contents of this section are as follows. Refer to “ISDN Features and Specifications” for availability of each Supplementary Service on Fusion Network.

Table 6-1 ISDN Station

CONTENTS	
Data Assignment of ISDN station	(1) ISDN Terminal (5ESS)
	(2) ISDN Terminal (National ISDN1)
	(3) PRI station (H0)
	(4) PRI station (H11)

Table 6-2 Supplementary Service List

TYPE	SERVICE FEATURE CODE	SERVICE FEATURE
Service for IC call	C-103	Calling Party Recognition Service (Call Forwarding-All Calls/Busy Line/Don't Answer)
	C-104	Calling Party Recognition Service [Direct-In-Termination (DIT)]
	C-170	Call Redirection (for AT&T #4ESS)
	D-123	Direct Inward Dialing (DID) Addressing
	S-93	SID to Terminating User-Display
	S-136	SID to Terminating User (Call-by-Call)-Display for AT&T (#4ESS)
	S-94	SID to Terminating User-DTE
Service for OG call	S-95	Sub Address-Addressing
	A-77	ACCUNET Access154
	B-27	B-Channel Service Control
	C-106	Call-by-Call Pool Management
	C-105	Call-by-Call Service Selection
	C-164	CCIS Tandem Call-Calling Party Number (CPN) Delivery to ISDN & Q-SIG Networks Note 5
	D-152	D-Channel Backup-PRI
	M-76	MEGACOM Access
	M-77	MEGACOM 800 Service
	N-40	Non-Facility Associated Signaling-PRI
	Q-5	Q-SIG/ISDN International Gateway Switching Note 5
S-90	SDN Access	

SUPPLEMENTARY SERVICE

Table 6-2 Supplementary Service List

TYPE	SERVICE FEATURE CODE	SERVICE FEATURE
Service for OG call	S-91/S-92	Sid To Network-Present/SID To Network-Privacy
	S-96	Sub Address-Present
	T-42	Trunk Provisioning Service Selection
	W-9	Wide Band Switching for AT&T #4ESS
Service for Network	C-112/T-44	Calling Party Information Transfer/ Transfer Message (TRM)
	N-42	National-ISDN2-PRI
	N-47	Network Name Display (NI-2 PRI) Note 5
Special Network	V-18	Virtual Tie Line
	E-23	Event Based CCIS-ISDN Transport
	E-24	Event Based CCIS-Q-SIG Transport Note 5
Private Network	C-152	Call Completion on No Reply (CCNR) Note 3
	C-148	Call Completion to a Busy Subscriber (CCBS) Note 3
	C-153	Calling Name Identification Presentation (CNIP)/ Connected Name Identification Presentation (CONP) Note 4
	C-158	Call Forwarding Supplementary Service (SS-CF) with Rerouting Note 5
	C-159	Call Transfer Supplementary Service (SS-CT) with Rerouting Note 5
	I-42	IS-11572 (Layer 3 specifications for inter-PBX signalling protocol)
	Q-4	Q-SIG Circuit Switched Basic Call-ETSI Version
Supplement	A-136	Advice of Charge (AOC)-Receipt and Display of AOC from a Foreign Q-SIG Network Note 5

Note 1: Available since Series 7400 (Release 9) software.

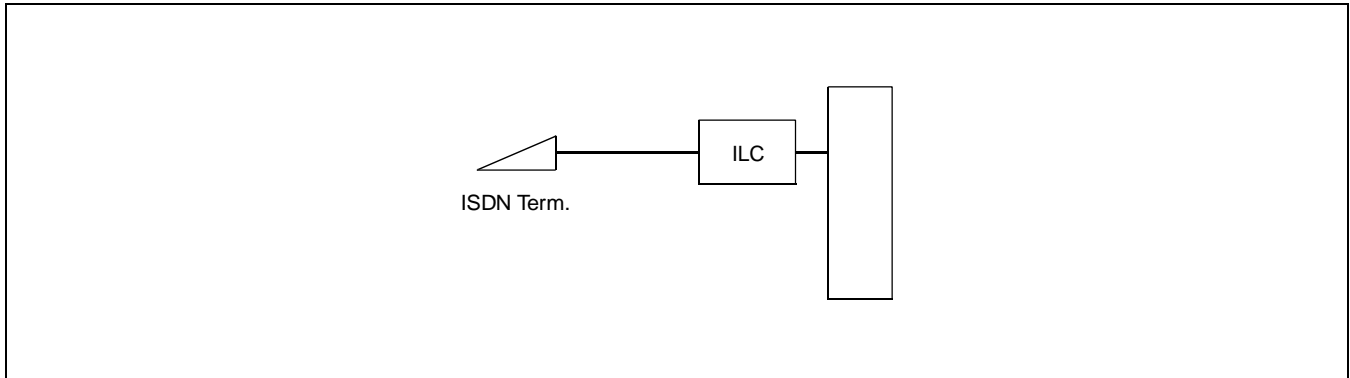
Note 2: Available since Series 7300 (Release 4) software.

Note 3: Available for Q-SIG network since the Series 7300 (Release 2) software and for IS-11572 network since the Series 7400 (Release 8) software.

Note 4: Available for Q-SIG network since the Series 7300 (Release 2) software and for IS-11572 network since the Series 7300 (Release 7.5) software.

Note 5: Available since Series 7400 (Release 8) software.

1. ISDN TERMINAL (5 ESS)



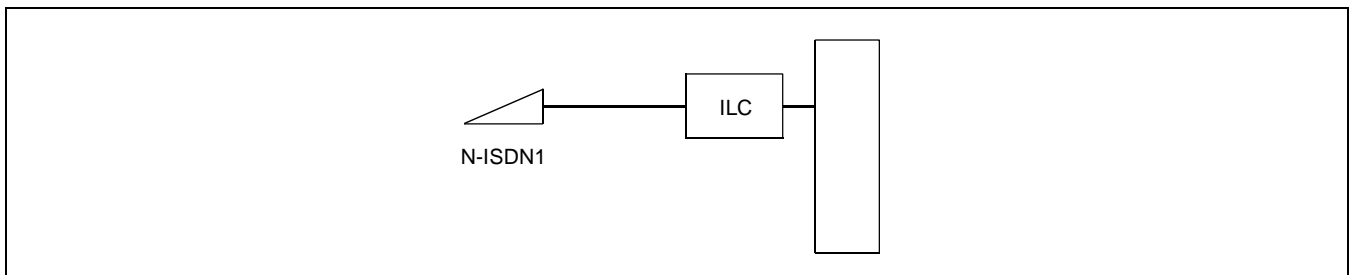
STEP 1: ASYD - Assign the protocol type of ISDN Terminal.
SYS 1 Index 220 bit 0-bit 3: 1 (5 ESS)

STEP 2: ANPD - Reserve a number level for a station number.

STEP 3: ASPA - Assign Access Code for a station.

STEP 4: ASDT - Assign a station number to B1 and B2 channel.
TEC:23 (ISDN Terminal)

2. ISDN TERMINAL (NATIONAL ISDN1)



STEP 1: ASYD - Assign the protocol type of ISDN terminal.
SYS 1 Index 220 bit 0-bit 3=5 (N-ISDN)

STEP 2: ANPD - Reserve a number level for a station number.

STEP 3: ASPA - Assign Access Code for a station.

STEP 4: ASDT - Assign a station number to B1 and B2 channel.
TEC: 23 (ISDN terminal)

STEP 5: AITD - Assign ISDN terminal data and FID to only B1 channel **Note 2**

Note 1 *FUNC: 1 (Terminal Data)*
TN:

SUPPLEMENTARY SERVICE

STN:
TYPE: 1 (*N-ISDN1*)
FIDP: 1-31 (*FID Pattern*)

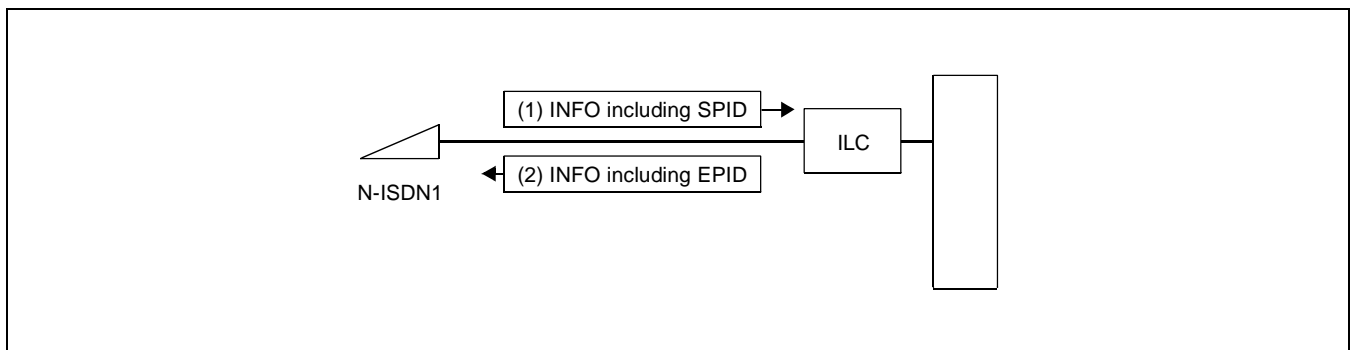
FUNC: 2 (*Feature Identifier Data*)
FIDP: 1-31 (*FID Pattern*)
1 Transfer: **Note 3**

Note 1: A PBX may send EPID (Endpoint Identification), for the terminal initialization, by receiving SPID (Service Profile Identification) from N-ISDN terminal, and may perform the supplementary service (Transfer) by FID (Feature Identifier) which has been set to each terminal.

Note 2: If you assign (AITD) data to B2 channel, this feature will not work.

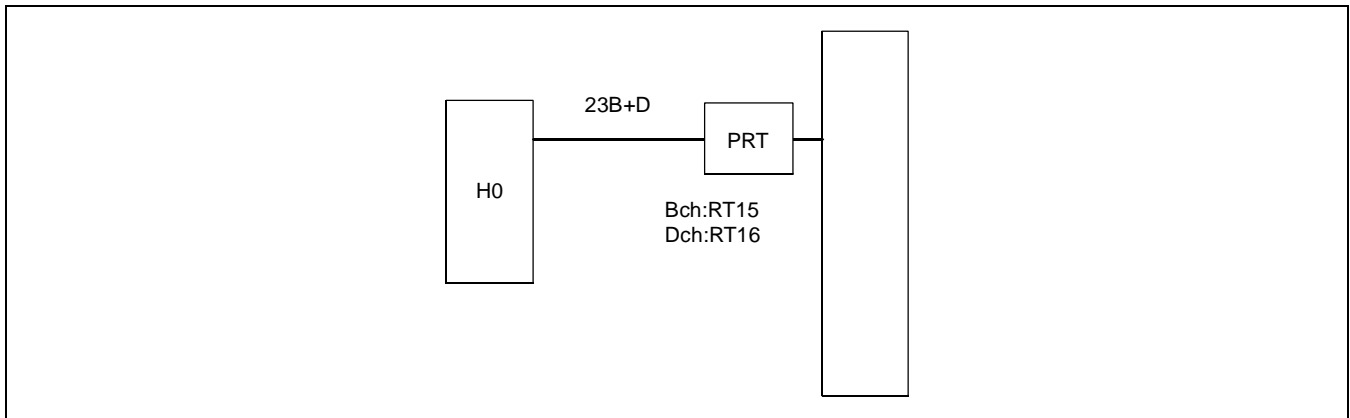
Note 3: Assign "FID number" (Maximum two digits).

Terminal Initial



- (1) A PBX receives INFO including SPID which was set by the terminal.
SPID allows the user to be executed an automatic allocation by USID (User Service Identifier) and TID (Terminal Identifier).
2. After creating EPID, the PBX sends INFO including EPID.
EPID including USID and TID is necessary for the identification of the terminal.

3. PRI STATION (H0)



STEP 1: Assign the numbering (LCR) data to access to H0 terminal.

STEP 2: ARTD - Assign the same route data as the data for [Chapter 3](#), and arrange the following specific data to Bch and Dch route.

CDN64 (NET)= 1
CDN65 (INT)= 5 (AT&T)/7 (NT)
CDN66 (DC)= 15
CDN118(BOB)= 1

STEP 3: ATRK - Assign the trunk data for Bch. Note that the data setting for Dch is performed after STEP 6: ACIC1 command assignment. (Refer to [Chapter 3](#).)

STEP 4: ADPC - Assign PC (Point Code) to Bch route and Dch route. (Refer to the following example)

RT=15 (Bch) PC=11
RT=16 (Dch) PC=11

SUPPLEMENTARY SERVICE

STEP 5: ACSC - Assign the location of DCH (Dch handler) and Bch. (Refer to the following example)

PIM0	24 P R T	CSCG	CICG	DCH/CCH	Dch
		CSCG=132	0	00008	
			1	00008	
			2	00008	
			3	00008	
			4	00008	
			5	00008	
			6	00008	
Group No.	09 11 08 10	CSCG	CICG	DCH/CCH	Bch
		CSCG=133	0	00008	
			1	00008	
			2	00008	
			3	00008	
			4	00008	
			5	00008	
			6	00008	
	7	00008			

STEP 6: ACIC1 - Assign CSCG corresponding to PC (Point Code). (Refer to the following example)
PC=11 CSCG=132

STEP 7: ATRK - Assign the trunk data for Dch.

STEP 8: ARTI - Assign the Trunk Application data.

If the H0 terminal does not provide the initial setup procedure conforming to Q931 protocol, assign the following data.

CDN 2 (RST)=3

Assignment of Restart

0: Restart Send per Individual Channel

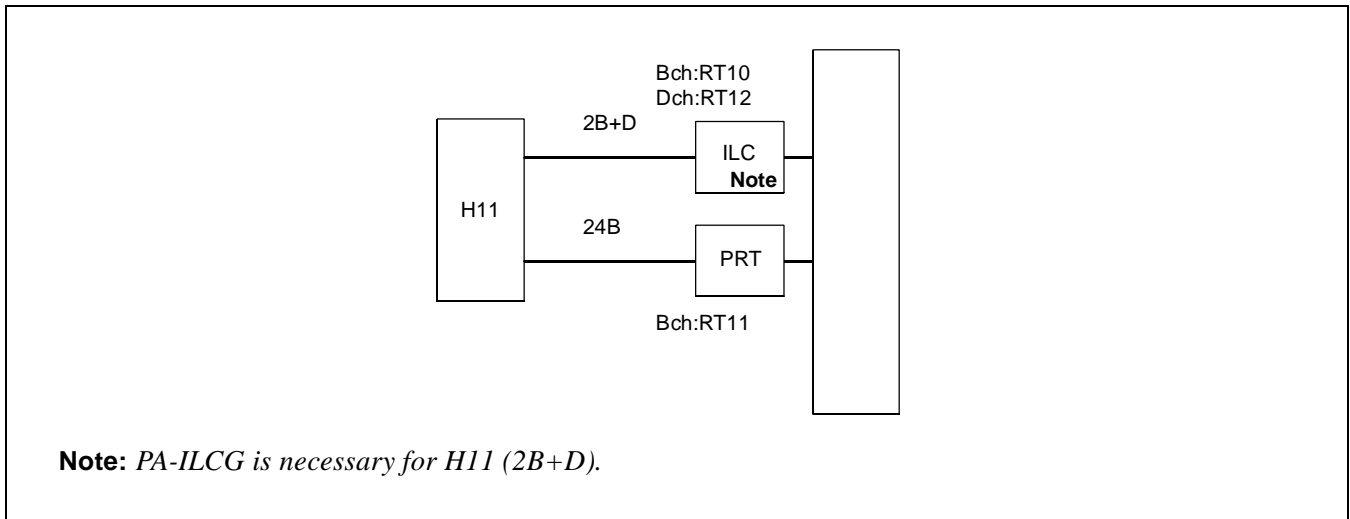
1: -

2: -

3: Restart not Send

Note: *Circuit Card must be initialized after these assignment.*

4. PRI STATION (H11)



STEP 1: Assign the numbering (LCR) data to access to H11 terminal.

STEP 2: ARTD - Assign the same route data as the data for Chapter 3, and arrange the following specific data to Bch and Dch route.

- CDN64 (NET)= 1
- CDN65 (INT)= 5 (AT & T)/7 (NT)
- CDN66 (DC)= 15
- CDN96 (H1)= 1
- CDN118 (BOB)= 1

Note: Give the separate RT NO. to Bch of PRT and ILC respectively.

STEP 3: ATRK - Assign the trunk data for Bch referring to the example below. Note that the trunk data for Dch is assigned after Step 6: ACIC1 command assignment.

PIM0	I	24
	L	P
	C	R
	G	T

Group No.	03	05	07
	02	04	06

LENS			
ILCG (2B+D)	B1	=000030	RT10 TK1
	B2	=000031	RT10 TK2
	Dch	=000020	RT12 TK1
PRT (24B)	B1	=000050	RT11 TK1
		}	}
	B24	=000077	RT11 TK24

SUPPLEMENTARY SERVICE

STEP 4: ADPC - Assign PC (Point Code) to Bch route and Dch route. (Refer to the following example)

RT=10 (Bch) PC=10
RT=11 (Bch) PC=10
RT=12 (Dch) PC=10

STEP 5: ACSC - Assign the location of DCH (Dch handler) and Bch. (Refer to the following example)

PIM0	I		24	<u>CSCG</u>	<u>CICG</u>	<u>DCH/CCH</u>	
	L		P	CSCG=130	0	00002	} Dch (ILCG)
	C		R		1	00002	
	G		T		2	00002	
					3	00002	
					4	00002	
					5	00002	
					6	00002	
				7	00002		
Group	03	05	07				
No.	02	04	06	CSCG=131	0	00003	— Bch (ILCG)
					1	00004	— Bch (PRT)
					2	00003	} Bch (ILCG)
					3	00003	
					4	00003	
					5	00003	
					6	00003	
					7	00003	

STEP 6: ACIC1 - Assign CSCG corresponding to PC (Point Code). (Refer to the following example)

PC=10 CSCG=130

STEP 7: ATRK - Assign the Trunk data for Dch.

STEP 8: ARTI - Assign the Trunk Application data. **Note**

If the H11 terminal does not provide the initial setup procedure conforming to Q931 protocol, assign the following data.

CDN 2 (RST)=3

Assignment of Restart

0: Restart Send per Individual Channel

1: -

2: -

3: Restart not Send

Note: *Circuit Card must be initialized after this assignment.*

**C-103 CALLING PARTY RECOGNITION SERVICE
(CALL FORWARDING-ALL CALLS/BUSY LINE/DON'T ANSWER)**

1. General Description

This feature enables the PBX to transfer a direct incoming call from the ISDN network, when the called party has been set CALL FORWARDING-ALL CALLS/BUSY LINE/DON'T ANSWER, to the designated destination by identifying the calling subscriber number. For this feature, the calling subscriber number and the transfer destination must be assigned in advance. This feature is available for the analog station, D^{term} and ISDN terminal.

Note: *The available CALL FORWARDING types are: CALL FORWARDING-ALL CALLS/BUSY LINE/DON'T ANSWER. The CALL FORWARDING destination can be determined according to the BC (Bearer Capability).*

Bearer Capability [*Speech*
3.1 kHz audio

- *Unrestricted Digital Data is not available.*

2. Operating Procedure

To set/cancel CALL FORWARDING from a station.

1. Lift a handset.
2. The station receives DT (Dial Tone).
3. Dial the access code of CALL FORWARDING-ALL CALLS/BUSY LINE/DON'T ANSWER.
4. The station receives SPDT (Special Dial Tone).
5. Dial its own station number.
6. The station receives SST (Service Set Tone).

To set/cancel CALL FORWARDING from an ATT console.

1. Press a loop key on the console.
2. Enter the CALL FORWARDING access code.
3. Enter the tenant number of the station.
4. Enter the transferring station number.
5. Enter the transferring station number again.
6. Press the Release key.

3. Programming

STEP 1: Assign the Basic Data for ISDN. (Refer to [Chapter 3](#).)

STEP 2: ASYD - System Data 1, Index 76, bit 0: Day/Night Table Development for CALLING PARTY RECOGNITION SERVICE.
0: Not Required (Common)
1: Required (Separate)

STEP 3: ANPD - Assign the minimum necessary number of digits for the first number of the access code for CALL FORWARDING-ALL CALLS/BUSY LINE/DON'T ANSWER.

CALLING PARTY RECOGNITION SERVICE (CALL FORWARDING-ALL CALLS/BUSY LINE/DON'T ANSWER)

STEP 4: ASPA - Assign an access code for CALL FORWARDING.

- CI: Common Status Index (N)
- SRV: Kind of Service (Type in SSC)
- SID: Service Feature Index
 - 8- CALL FORWARDING-ALL CALLS (ENTRY)
 - 9- CALL FORWARDING-ALL CALLS (CANCEL)
 - 10- CALL FORWARDING-BUSY LINE (ENTRY)
 - 11- CALL FORWARDING-BUSY LINE (CANCEL)
 - 12- CALL FORWARDING-DON'T ANSWER (ENTRY)
 - 13- CALL FORWARDING-DON'T ANSWER (CANCEL)

STEP 5: ACNP - Assign Calling Party Number Pattern Information

- OG-IG: Outgoing/Incoming (Type in I = Incoming)
- RT: Route Number
- CNP: Calling Number Pattern (1~255)

STEP 6: ACND - Assign the Digit Code of the Additional Number.

- CNP: Calling Number Pattern (1~255)
Enter the same value which has been assigned in the ACNP command.
- SKIP: Skip Digit (0~24)-Number of digits for SID.
- ADD: Number of Digits of the Additional Number (0~24)
Enter the number of digits (Number of digits for an access code to PRI) of the next parameter (= DC).
- DC: Digit Code of the Additional Number (0~24)
Enter the access code which is used to initiate seizure of the ISDN trunk.

STEP 7: AFCP - Assign the Call Forwarding Destination. (For More information, see the example on the next page).

- CALLING PARTY: (Max. 32 digits) Called Station Number (**Note 1**) + ACC (**Note 2**) + Calling Party Number
- CFSI: CALL FORWARDING Service Feature (0~3)
 - 0-CALL FORWARDING-ALL CALLS
 - 1-CALL FORWARDING-BUSY LINE
 - 2-CALL FORWARDING-DON'T ANSWER
 - 3-DIRECT-IN TERMINATION
- ITC: Information Transfer Capacity (0~2)
 - 0-Speech
 - 1-Unrestricted (Digital Data) **Note 3**
 - 2-Audio (Modem)
- CFD: Call Forwarding Destination (0~3)
 - 0-Station
 - 1-ATT
 - 2-External
 - 3-Not used
- STN: Station Number of Call Forwarding Destination (Max. 5 digits) **Note 4**
- ADC: Abbreviated Digit Code (Max. 3 digits) **Note 5**

CALLING PARTY RECOGNITION SERVICE (CALL FORWARDING-ALL CALLS/BUSY LINE/DON'T ANSWER)

STEP 8: ASFC - Enter Service Feature Restriction Data
SFI: Service Feature Index (1~127)
7-CALL FORWARDING ALL CALLS
8-CALL FORWARDING DON'T ANSWER
9-CALL FORWARDING BUSY LINE
RES: Restriction Data 0/1 = Restricted/Allowed.

STEP 9: ATNR - Enter Tenant Restriction Data between the transferring station and the transferred station.
TRI: Tenant Restriction Index (0~15)
1-Assignment of CALL FORWARDING-ALL CALLS from a station
RES: Restriction Data 0/1 = Restricted/Allowed.

Note 1: Assign Called Station Number by the physical station number. PCS terminal's number cannot be assigned here.

Note 2: Enter the Access Code assigned in the ACND command (DC).

Note 3: This data (=1) can be assigned when the CFSI is DIT (=3).

Note 4: This parameter appears when the input data in the CFD is 0.

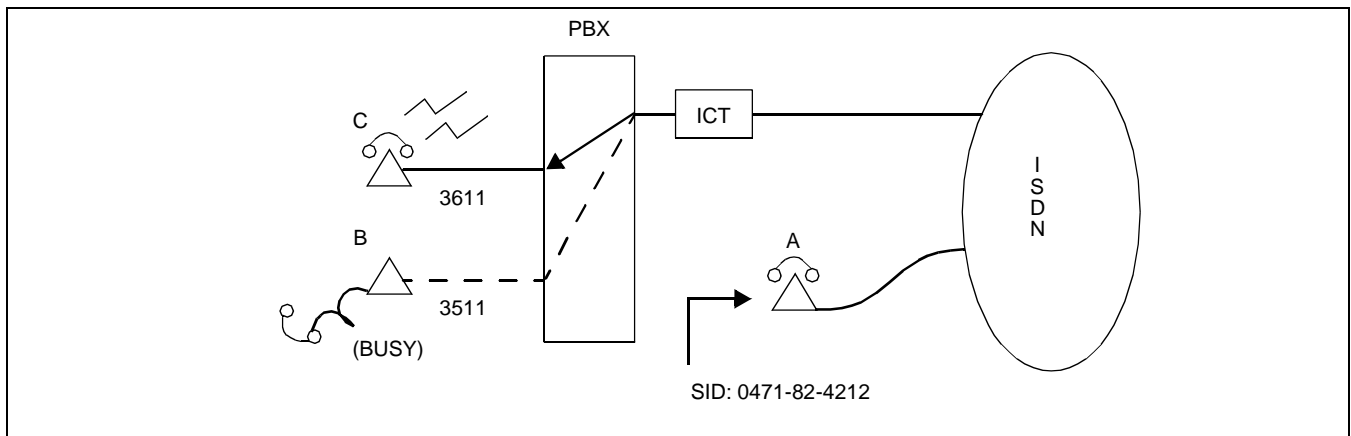
Note 5: This parameter appears when the input data in the CFD is 2.

Example:

AFCP DAY/NIGHT: D

TN: 1
CALLING PARTY 3511 + ACC 0471-82-4212
CFSI: 1
ITC: 0
CFD: 0
STN: 3611

↑
SID



* In this example, this feature is executed as follows: When the calling subscriber places call to station B, his/her call will be transferred to station C if station B is BUSY.

CALLING PARTY RECOGNITION SERVICE [DIRECT-IN TERMINATION (DIT)]

C-104 CALLING PARTY RECOGNITION SERVICE [DIRECT-IN TERMINATION (DIT)]

1. General Description

An Incoming Call from the ISDN network can be connected to the specific station, which can be assigned as a destination in advance, on a calling subscriber number basis without any assistance of an operator.

This feature is automatically executed when no information has been received from the calling subscriber for addressing a specific terminal in the PBX.

Note: *The destination can be determined according to the BC (Bearer Capability).
This feature is available for the analog station, D^{erm} and ISDN terminal*

2. Operating Procedure

No manual operation is required once feature has been programmed.

3. Programming

STEP 1: Assign the Basic Data for ISDN. (Refer to [Chapter 3](#).)

STEP 2: ASYD - System Data 1, Index 76, b2: Day/Night Table Development for Call Forwarding Service by Calling Number Data
0: Not required (Common)
1: Required (Separate)

STEP 3: ACOC - Assign the Central Office Code
RT: Route Number
TK: Trunk Number
DC: Digit Code (4 digits)

STEP 4: ACNP - Assign the Calling Number Pattern (CNP)
OG/IC: Outgoing/Incoming (Enter = Incoming)
RT: Route Number
CNP: Calling Number Pattern (1~255)

STEP 5: ACND - Assign the Digit Code of the Additional Number
CNP: Calling Number Pattern (1~255)
Enter same value which has been assigned in the ACNP command.
SKIP: Skip Digit (0~24)-Number of digits for SID.
ADD: Number of Digits of the Additional Number (0~24)
Enter the number of digits (Number of digits for an access code to PRI) of the next parameter (=DC).
DC: Digit Code of the Additional Number (0~24)
Enter the access code which is used to initiate seizure of the ISDN trunk.

CALLING PARTY RECOGNITION SERVICE [DIRECT-IN TERMINATION (DIT)]

STEP 6: AFCP - Assign the transfer destination.

(For more information, see [Figure 6-1.](#))

DAY/NIGHT: Day mode/Night mode

TN: TENANT NUMBER

CALLING PARTY: (Max. 32 digits) Called Station Number ([Note 1](#)) + ACC ([Note 2](#)) +
Calling Party Number

CFSI: Call Forwarding Service Feature (0~3)

0-CALL FORWARDING-ALL CALLS

1-CALL FORWARDING-BUSY LINE

2-CALL FORWARDING-DON'T ANSWER

→ 3-DIRECT-IN TERMINATION

ITC: Information Transfer Capacity (0~2)

0-Speech

1-Unrestricted (Digital Data) [Note 3](#)

2-Audio (Modem)

CFD: Call Forwarding Destination (0~3)

0-Speech

1-ATT

2-External

3-Not used

STN: Station Number of the Destination (Max. 5 digits) [Note 4](#)

ADC: Abbreviated Digit Code (Max. 3 digits) [Note 5](#)

Note 1: Assign Called Station Number by the physical station number PCS terminal's number cannot be assigned here.

Note 2: Enter the Access Code assigned in the ACND command (DC).

Note 3: This data (=1) can be assigned when the CFSI is DTI (=3).

Note 4: This parameter appears when the input data in the CFD is 0.

Note 5: This parameter appears when the input data in the CFD is 2.

CALLING PARTY RECOGNITION SERVICE [DIRECT-IN TERMINATION (DIT)]

Example:

AFCP DAY/NIGHT: D

TN: 1
CALLING PARTY 2222 + ACC 0471272991
CFSI: 3 ↑ ↑
 COC Number SID
CFD: 0
STN: 3501

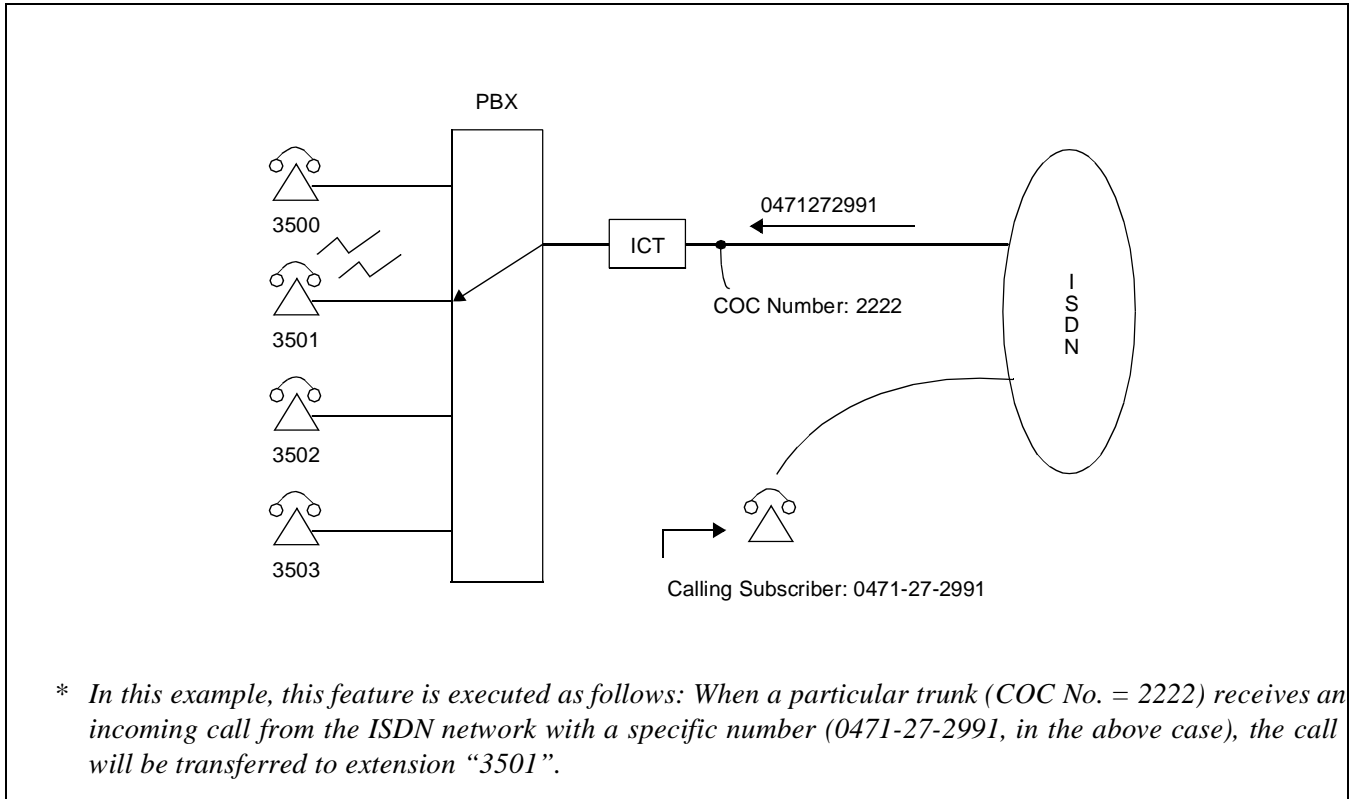


Figure 6-1 Assigning Transfer Destination

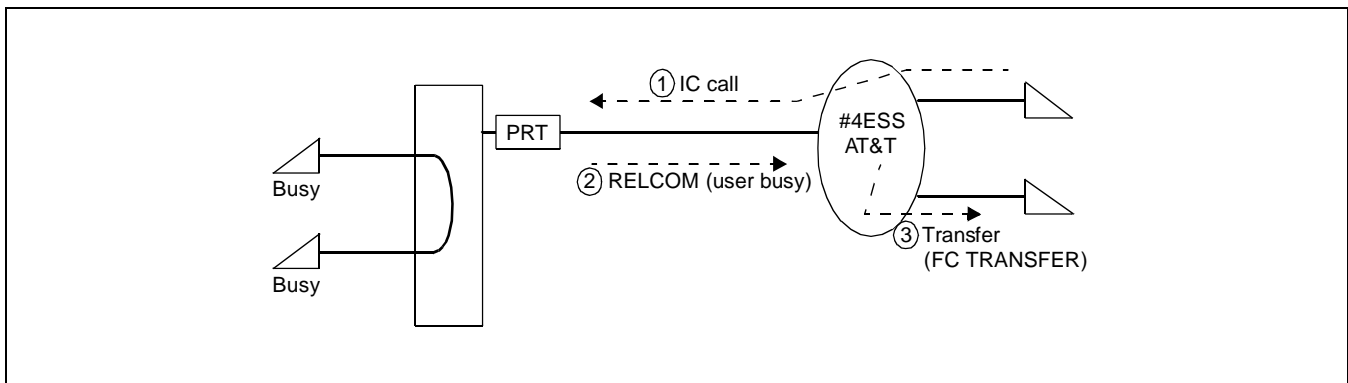
C-170 CALL REDIRECTION (FOR AT&T #4ESS)

1. General Description

ISDN (AT&T-#4ESS) enables the call to a busy station in a PBX to transfer (FC TRANSFER) to a predetermined destination in its network.

In CALL REDIRECTION, a PBX has to send RELCOM message including “user busy” or “resource unavailable” (Cause) information.

Note 1: *Whether this service is available or not depends on ISDN service provider and needs to be provisioned on a contract with a network for ISDN line.*



2. Operating Procedure

No manual operation is required.

3. Programming

STEP 1: Assign the Basic Data for ISDN. (Refer to [Chapter 3](#).)

DID ADDRESSING

D-123 DID ADDRESSING

1. General Description

This feature provides for a called-party number received via ISDN to be used to designate the station at which the call is to terminate.

2. Operating Procedure

No manual operation is required.

3. Programming

1. When the called party number and terminating station number are the same.

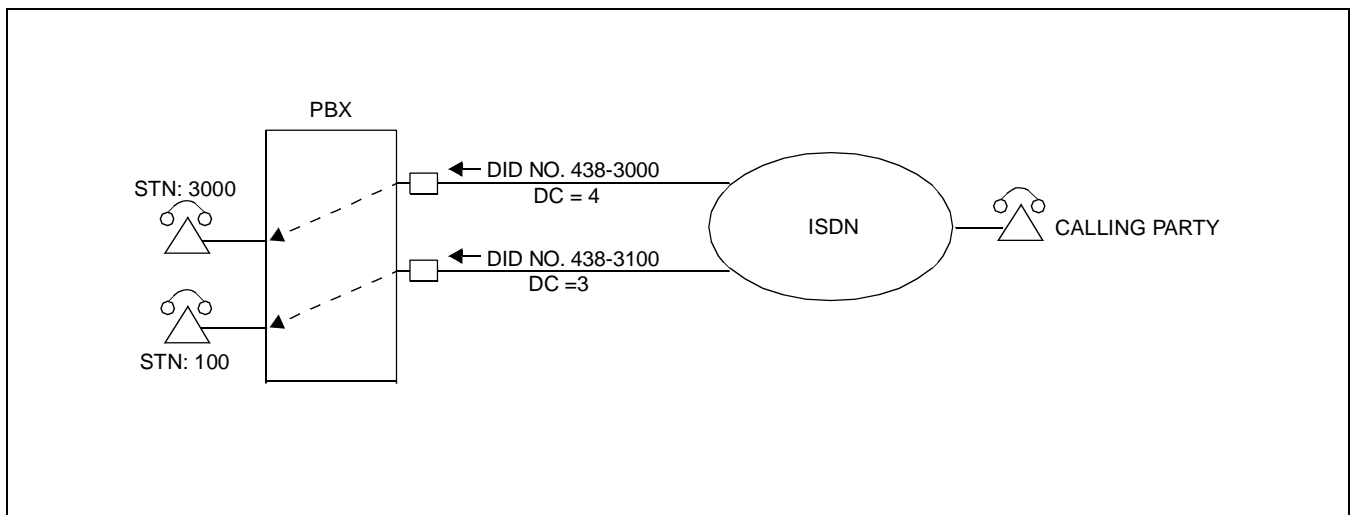
STEP 1: Assign the Basic Data for ISDN (Refer to [Chapter 3](#).)

STEP 2: ARTD - Assign the number of digits of the called line to the parameter DC (CDN 66) of the routes of the B-channel and D-channel of the 24 PRT which interfaces with the ISDN line with DID Addressing.

Note: Specify "DC" on a route basis.

Example of Office Data Assignment for DID Line (No Digit Conversion)

CALLED PARTY NUMBER	TERMINATING STATION No.	DC	REMARKS
438-3000	3000	4	<i>When the number of digits for the station number is 4.</i>
438-3001	3001		
438-3100	100	3	<i>When the number of digits for the station number is 3.</i>
438-3101	101		



2. When the called party number and terminating station number are different (Number Conversion).

STEP 1: Assign the Basic Data for ISDN (Refer to [Chapter 3.](#))

STEP 2: ARTD - Assign the number of digits to be decoded in the System to the parameter DC (CDN=66) of the Route of the B-channels and D-channel of a 24PRT which interfaces with the ISDN line with DID addressing.

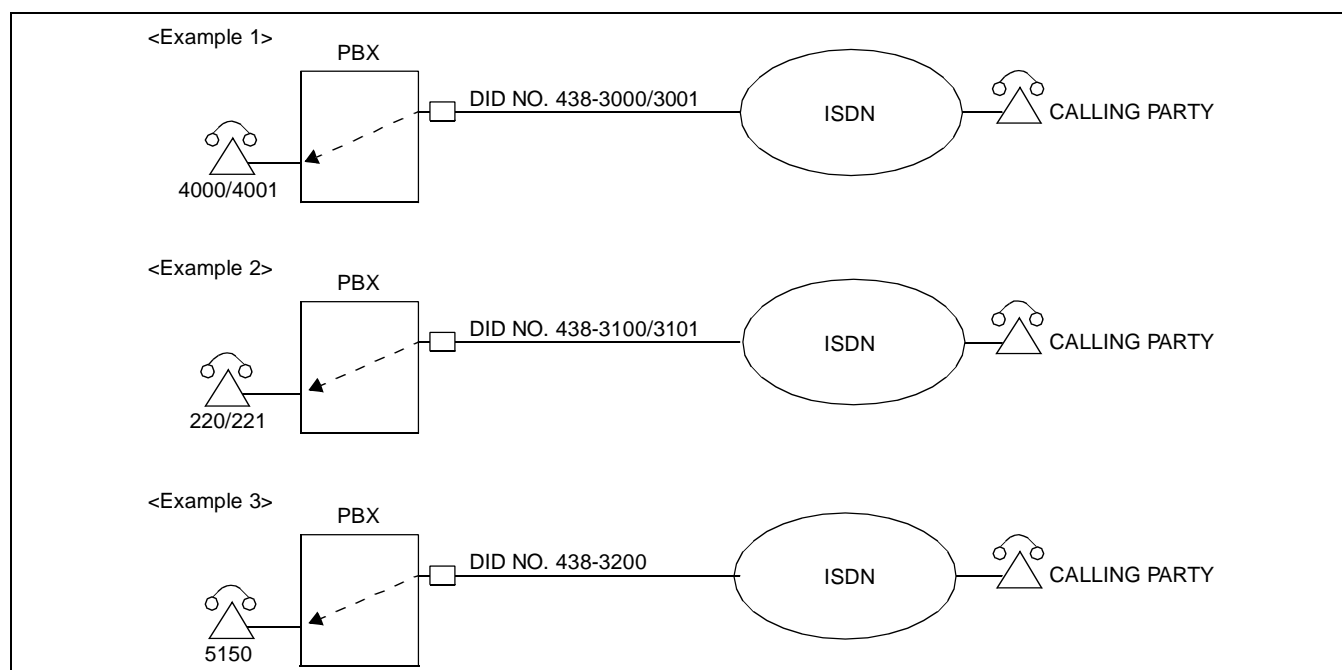
Note: Specify "DC" on a route basis.

STEP 3: ACDD - Assign a Conversion Number for the Route of the B-channels in which the number of decoding digits has been assigned with the ARTD command.

- Assign "0" to the parameter "AD".
- If there are no attendant consoles in the system, set the DAY/NIGHT parameter to "N" (Night Mode). The system functions as if in Night Mode.

Example of Office Data Assignment for DID Line (Digit Conversion)

CALLED PARTY NUMBER	TERMINATING STATION NO.	ARTD	ACDD		REMARKS
		DC	DC	CDC	
438-3000	4000	4	3000	4000	See Example 1
438-3001	4001	4	3001	4001	
438-3100	220	3	100	220	See Example 2
438-3101	221	3	101	221	
438-3200	5150	4	3200	5150	See Example 3



NETWORK NAME DISPLAY (NI-2 PRI)

N-47 NETWORK NAME DISPLAY (NI-2 PRI)

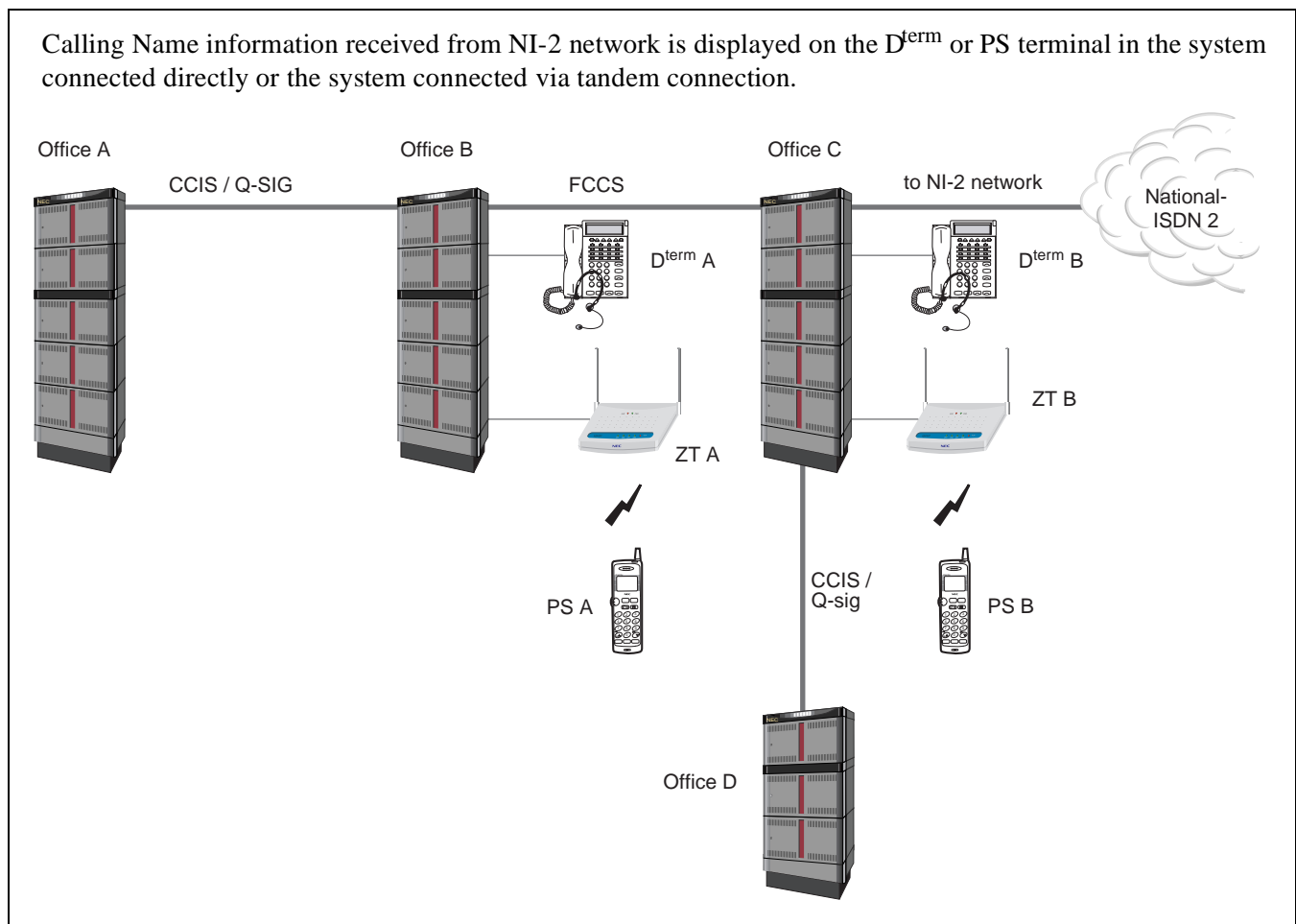
1. General Description

This feature provides the Name Display service between NEAX2400 IPX system and National-ISDN 2 network (NI-2 network or NI-2).

Note: Name Display service supports the followings.

- (a) When the call is terminated directly from NI-2 network, it displays the received Calling Name information on the D^{term} /PS.
- (b) When the call from NI-2 network is terminated via tandem connection, it transmits the received Calling Name information through an intermediate network and displays the information on the destination D^{term} /PS.

This service is realized in the following case or network. See the illustration below.



2. Operating Procedure

No manual operation is required.

3. Service Conditions

1. This feature is available since Series 7400 Release 9 software.
2. This feature is available on condition that the system data is assigned to allow OAI service (see PROGRAMMING).
3. This feature is not provided for Calling Name information transmission to NI-2 network.
4. Calling Name information received from NI-2 network can be displayed on D^{term} or PS terminal only.
5. A maximum of 15 digits of Calling Name information received from NI-2 network is included in the facility information element. The number of digits may depend on the system data assignment (see “Programming”).
6. The system does not check the contents of Calling Name information received from NI-2 network.
7. (The system displays or transmits Calling Name information as received from NI-2 network.)
8. When the Calling Name information received from NI-2 network is the information of intermediate party (when NI-2 is the intermediate interface of the tandem connection), the information is not displayed on the terminal nor transmitted to the destination.
9. When the destination sets the call forwarding service, the Calling Name information is also transmitted (forwarded) to the forwarded destination (This condition is applied to both cases the forwarded destination is in the same network and in other networks such as CCIS or Q-SIG, FCCS).
10. Calling Name information received as FACILITY message is not transmitted to CCIS or Q-SIG line (Calling Name information in SETUP message only).
11. When the Calling Name information is not sent from NI-2 network (if the information notification is rejected), no Calling Name information is displayed on terminals or transmitted to the destination.

4. Programming

STEP 1: ASYD - SYS1, Index78, bit5=1: Name Display service is provided

bit3: Dialed number display is;
0/1=Not available/Available

Index79, bit6=0: OAI service is provided

Index241, bit1: Maximum number of digits displayed for Name Display service
0/1 = 8 digits/16 digits of the first part

STEP 2: ARTD/ARTDN- Assign the route class data of NI-2 trunk.

DPLY (CDN50): 1 = Connected party number is displayed on D^{term} for
inter-office connection

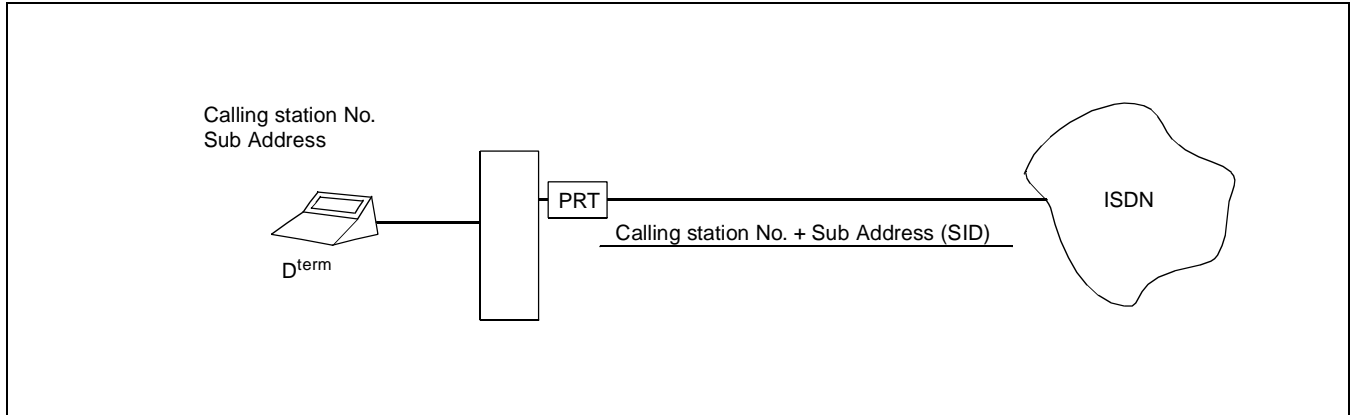
IND (CDN112) : 1 = Inter-office Name Display service is in service

SID TO TERMINATING USER - DISPLAY

S-93 SID TO TERMINATING USER - DISPLAY

1. General Description

This ISDN feature provides a visual display of the calling station's number and sub address information on a D^{term} for incoming ISDN calls. This provides the terminal user with a quick and accurate way to identify the calling station's number (Station Identification Number, SID).



2. Operating Procedure

No manual operation is required.

3. Programming

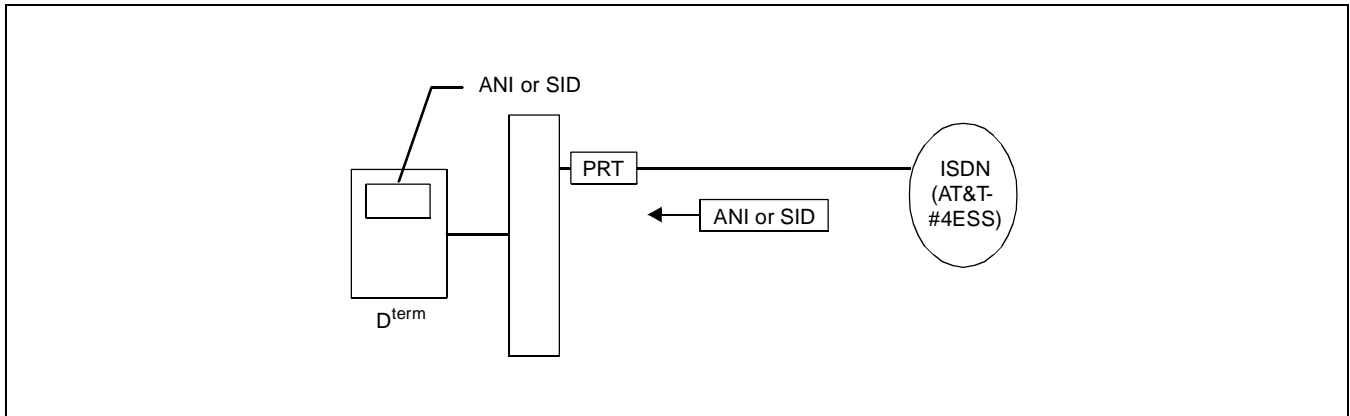
None.

S-136 SID TO TERMINATING USER (CALL-BY-CALL) - DISPLAY FOR AT&T (#4ESS)

1. General Description

This feature allows a PBX to request either ANI or SID for each incoming call (Call-by-Call) by using a Facility message to the ISDN (AT&T). When a PBX receives ANI or SID by a Facility Acknowledge, a D^{term} shows it (maximum eight digits) on the display.

Note: During requesting ANI or SID (for a maximum of four seconds) any OG and IC call will not be allowed. Call Associated TSC will not covered in a PBX.



2. Operating Procedure

No manual operation is required.

3. Programming

STEP 1: ASFC - SFI97=0/1 (-/ANI only)
 SFI98=0/1 (-/SID only)

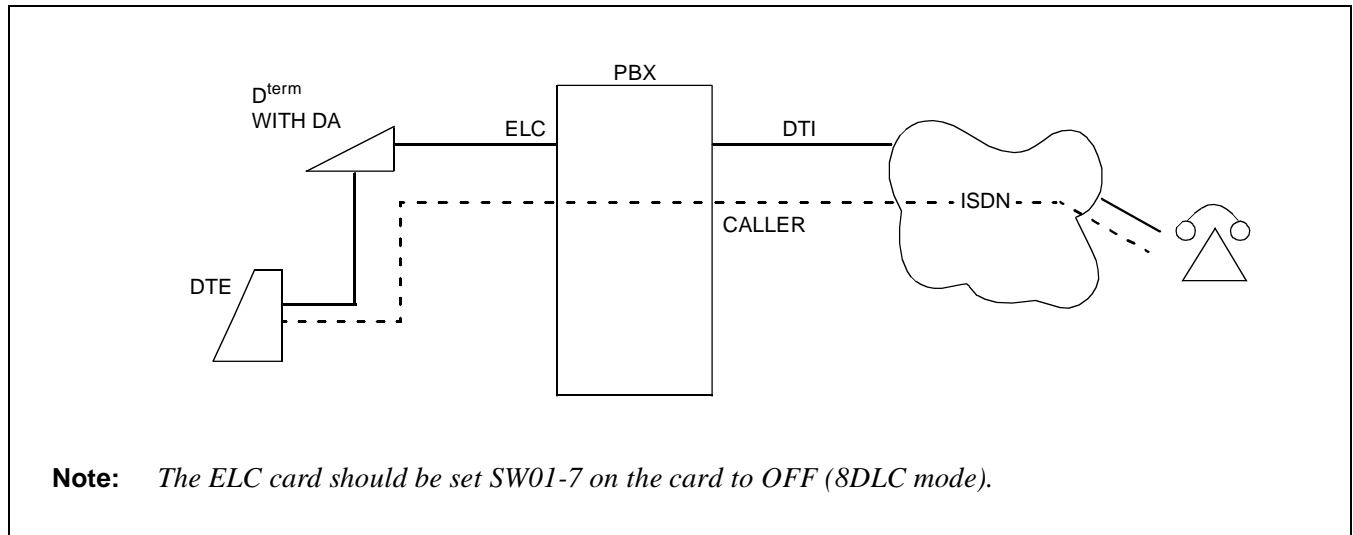
Note: When SFI 97=0 and SFI 98=0, a PBX receives SID of SETUP message.
 When SFI 97=1 and SFI 98=1, a PBX receives ANI only.

SID TO TERMINATING USER - DTE

S-94 SID TO TERMINATING USER - DTE

1. General Description

This ISDN feature permits a DTE connected to terminating D^{term} via a data adapter to receive the originating station number sent from the ISDN network.



2. Operating Procedure

No manual operation is required.

3. Programming

STEP 1: ASFC - Allows SID to Terminating User-DTE (SFI = 31) to the SFC of the station (D^{term}).

S-95 SUB ADDRESS - ADDRESSING

1. General Description

This ISDN feature permits an incoming call to be directed to a designated station by using called-party sub-address information.

2. Operating Procedure

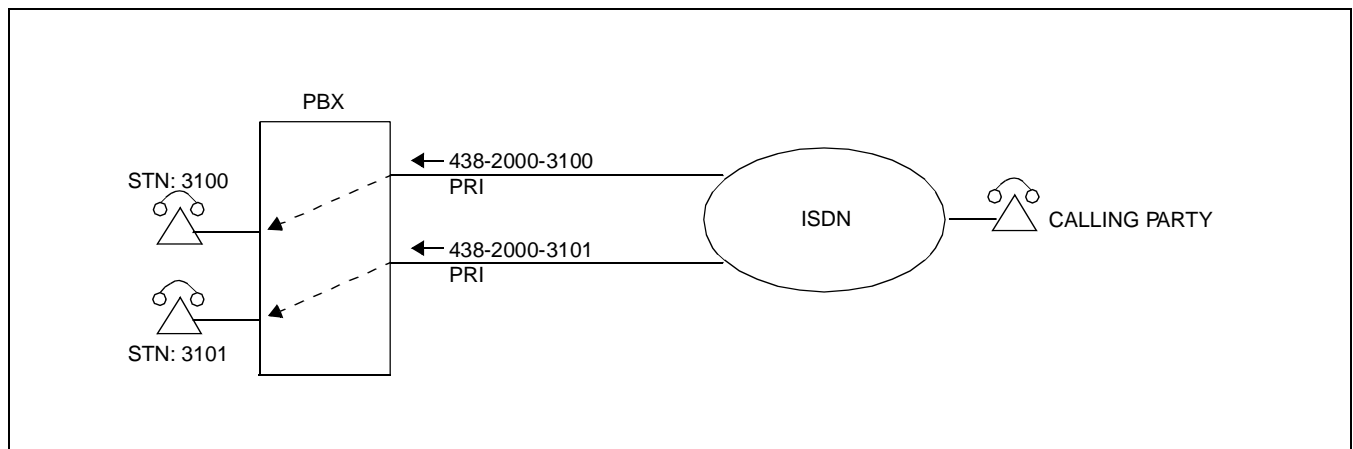
No manual operation is required.

- Note:**
- When ISDN Address information arrives from the ISDN line assigned for Sub Address-Addressing and it does not contain the Sub Address information, the call is routed to an Attendant Console.
 - When a D^{term} is designated as the destination of an incoming call, the calling party number is automatically presented on the display of the D^{term} .

3. Programming

STEP 1: Assign the Basic Data for ISDN (Refer to [Chapter 3](#).)

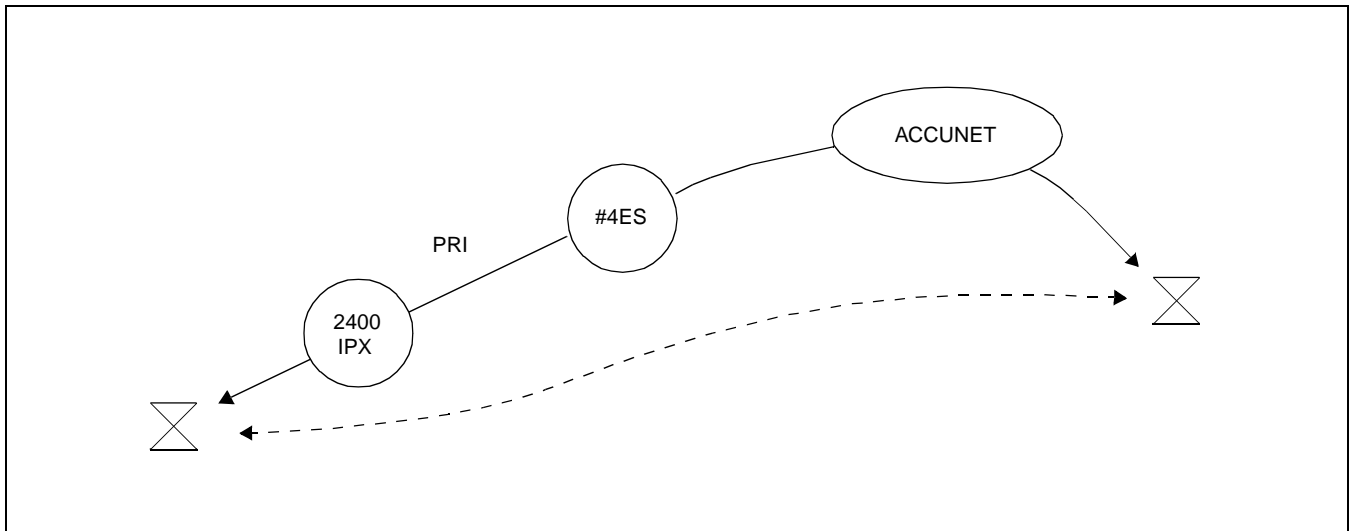
STEP 2: ARTD - For the Route of the B-channels and D-channel of a 24PRT, which interfaces with the ISDN line of Sub Addressing, assign DC (CDN 66)="0".



A-77 ACCUNET ACCESS154

1. General Description

Communication using 56 kbps, 64 kbps (restricted) or 64 kbps (unrestricted) is possible with terminals connected to AT&T's ACCUNET network. The ACCUNET service needs to be provisioned by CO.



Note 1: *The system does not determine communication compatibility; that is dependent on the terminal types.*

Note 2: *Data terminals that can be accommodated by the PBX are basically terminals with a transmission speed of 64 kbps. Communication by terminals with other transmission speeds is not guaranteed.*

2. Operating Procedure

No manual operation is required.

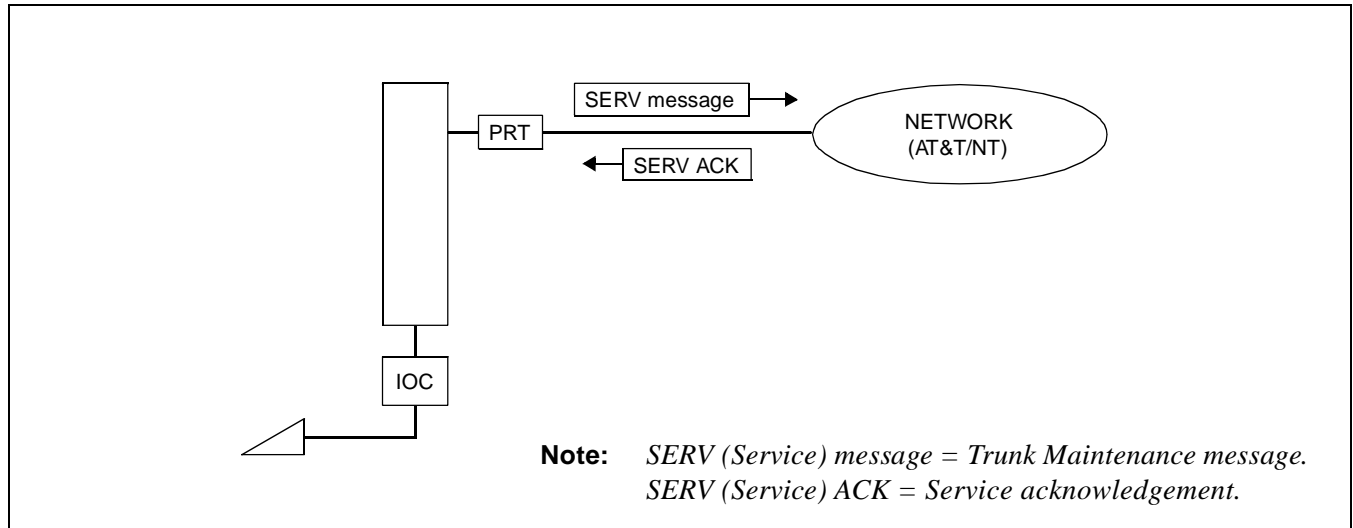
3. Programming

STEP 1: ACBC - Select CODE 6 (= ACCUNET) in this command.

B-27 B-CHANNEL SERVICE CONTROL

1. General Description

A PBX can send a trunk maintenance (SERVICE) message to the ISDN (AT&T-#4ESS, NT-DMS100/250) when setting or cancelling a trunk make busy using the MBTK command. This function is not provided by NI-2 protocol.



Whether “In Service” mode or “Out of Service” mode of a PBX is determined by a trunk maintenance message from the network. (Even if a PBX sent a trunk maintenance message setting the PBX to “Out of Service” mode, the PBX would be set “In Service” when the PBX receives a trunk maintenance message for “In Service” from the network.)

<For AT&T>

When a PBX has been set to “Out of Service” mode after receiving a trunk maintenance message from the network, incoming calls from the network would not be allowed.

<For NT>

Even if a PBX has been set to “Out of Service” mode after receiving a trunk maintenance message from the network, incoming calls from the network would be allowed.

2. Operating Procedure

Using MBTK,

Set make busy to a bothway call (MB=2): A PBX sends a trunk maintenance message.
 Cancel the bothway make busy (MB=0): A PBX sends a trunk maintenance message.

3. Programming

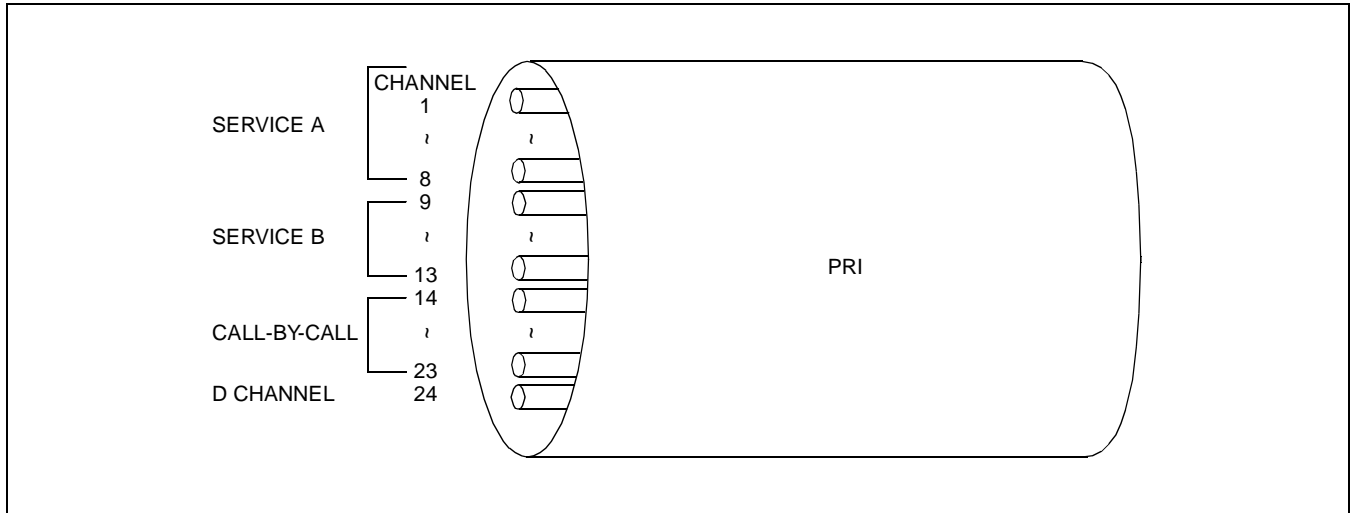
None.

CALL-BY-CALL POOL MANAGEMENT

C-106 CALL-BY-CALL POOL MANAGEMENT

1. General Description

A single PRI interface can be used in common by TRUNK PROVISIONING [T-42] and CALL-BY-CALL SERVICE SELECTION [C-105]. If all the channels that are used by TRUNK PROVISIONING SERVICE SELECTION are busy, it is possible to select the channels as used by CALL-BY-CALL SERVICE SELECTION [C-105].



Note 1: *The services that can be designated include the following: ACCUNET, MEGACOM, MEGACOM800, and SDN.*

Note 2: *Channel selection is possible by the LCR function only.*

2. Operating Procedure

No manual operation is required.

3. Programming

In addition to the Basic Office Data for ISDN, the following data should be assigned.

STEP 1: AFRS - Assign the different OPR (Outgoing Route Selection Pattern Number) on a service type (such as ACCUNET, MEGACOM, etc.) basis. Therefore, the OPR should be determined according to the NPC (Number Pattern Code).

STEP 2: AOPR - Assign the common Route Number to all services (ACCUNET, MEGACOM, etc.).

STEP 3: ACBC - Select a desired service on an OPR basis.

C-105 CALL-BY-CALL SERVICE SELECTION**1. General Description**

Services can be selected on a call-by-call basis to all channels of a single PRI interface according to applications. That is, unlike Trunk Provisioning Service in which services are assigned to specific channels, services may be used on any available channel.

Note 1: *The services that can be designated include the following: ACCUNET, MEGACOM, MEGACOM800, and SDN.*

Note 2: *Channel selection is possible by the LCR function only.*

Note 3: *To identify a terminal to which a call has terminated, data must be registered using the "ACDD" command so that a call-terminating terminal can be identified by a terminating number.*

Note 4: *During call termination, there is no indication of which service is being used.*

2. Operating Procedure

No manual operation is required.

3. Programming

In addition to the Basic Office Data for ISDN, the following data should be assigned.

STEP 1: AFRS - Assign the different OPR (Outgoing Route Selection Pattern Number) on a service type (such as ACCUNET, MEGACOM, etc.) basis. Therefore, the OPR should be determined according to the NPC (Number Pattern Code).

STEP 2: AOPR - Assign the common Route Number to all services (ACCUNET, MEGACOM, etc.).

STEP 3: ACBC - Select desired service on an OPR basis.

C-164 CCIS TANDEM CALL-CALLING PARTY NUMBER (CPN) DELIVERY TO ISDN & Q-SIG NETWORKS

1. General Description

This feature is provided for the call from tie line (CCIS line or Q-SIG) or a station, attendant console for INDIVIDUAL ATTENDANT ACCESS [I-6] is sent to the public ISDN network (AT&T, NT, NI-2) or Q-SIG network since Series 7400 software. With this feature, the calling party number can be changed as programmed and sent to the ISDN network/Q-SIG network. Since the data can be set to designate the received number in addition to the outgoing route to ISDN network, a variety of calling party number assignment is available.

2. Operating Procedure

No manual operation is required.

3. Service Conditions

1. This feature programmed by ACPNCL/ACPNCN command is effective when:
 - Calls are originated from CCIS/Q-SIG line to AT&T, NT, NI-2 or Q-SIG network.
 - Calls are originated from the station to AT&T, NT, NI-2 or Q-SIG network.
 - Calls are originated from the attendant console which is assigned the individual attendant identification number to AT & T, NT, NI-2 or Q-SIG network.
2. This feature is not effective when calls are originated from AT&T, NT, NI-2 network to AT&T, NT, NI-2 network.
3. When the registered calling party number is received from CCIS line and sent to AT&T, NT, NI-2 network by this feature, the access code and the office code, programmed as ACC for RT=0 (self-office) in ARNP, are not deleted automatically as normal operation (take this into consideration when programming. See the example data in [Figure 6-2](#)).
4. ACPN/ACND or AANDE command data are ineffective when the call corresponding to ACPNCL/ACPNCN command data is originated to AT&T, NT, NI-2 or Q-SIG network.
5. If number of digits of registered number (RCPN in ACPNCL/ACPNCN data) is less than that of calling party number sent from CCIS/Q-SIG line, this feature is effective when the first part of the received calling party number is identical with the registered number.
6. When assigning more than eight digits' (includes the office code of the self office programmed in ARNP, RT=0) number to be received from CCIS line, the number (RCPN in ACPNCL/ACPNCN data) must be assigned as Physical Station Number since Physical Station Number is sent as the calling party number.
7. After the system is upgraded from non-fusion system to fusion system, Physical Station Number and Telephone Number written in LDM that are programmed in ACPNCL command should be deleted and assign the new Telephone Number using ACPNCN command unless those numbers are identical with Telephone Numbers to be written in NDM. If the numbers are not deleted, the system gets the wrong number data or does not get any number data since the fusion system reads out the NDM data.
8. The fusion system reads out the ACPNCN data. However, if there is no data in ACPNCN, the system reads the ACPNCL data. The non-fusion system reads out the ACPNCL data only.
9. This feature is not available for the call originated using OAI/ACD feature.

CCIS TANDEM CALL-CALLING PARTY NUMBER (CPN) DELIVERY TO ISDN & Q-SIG NETWORKS

4. Programming

1. When programmed at non-fusion PBX (stand-alone system):

STEP: ACPNCL -

OGRT: Originating RT number

RCPN: Calling party number changed by this service (1~24 digits.)

* Not necessary to assign the whole digits of numbers. See item (5) in Service Conditions.

SKIP: Number of digits to be skipped from the calling party number (0~24)

ADD: Number of digits to be added to the calling party number (0~24)

ACPN: Number to be added (up to number of digits assigned at "ADD", maximum 24 digits)

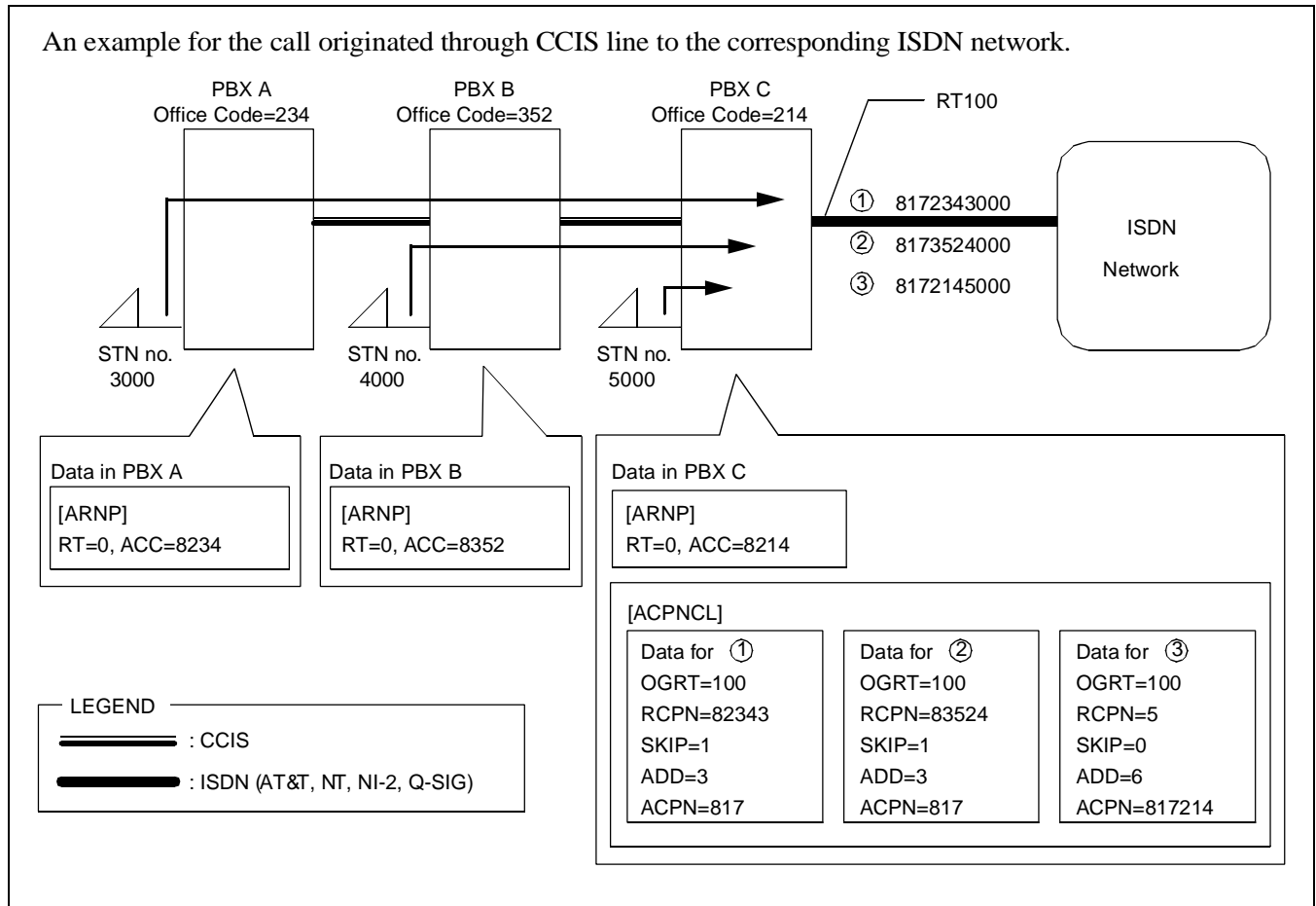


Figure 6-2 Example of a Call Originated through CCIS Line to Corresponding ISDN Network

CCIS TANDEM CALL-CALLING PARTY NUMBER (CPN) DELIVERY TO ISDN & Q-SIG NETWORKS

2. When programmed at fusion node:

STEP : ACPNCN -

OGLGRT: Originating RT number (Logical RT number)

RCPN: Calling party number changed by this service (1~24 digits.)

* Not necessary to assign the whole digits of numbers. See Item (5) in Service Conditions.

SKIP: Number of digits to be skipped from the calling party number (0~24)

ADD: Number of digits to be added to the calling party number (0~24)

ACPN: Number to be added (up to number of digits assigned at "ADD", maximum 24 digits)

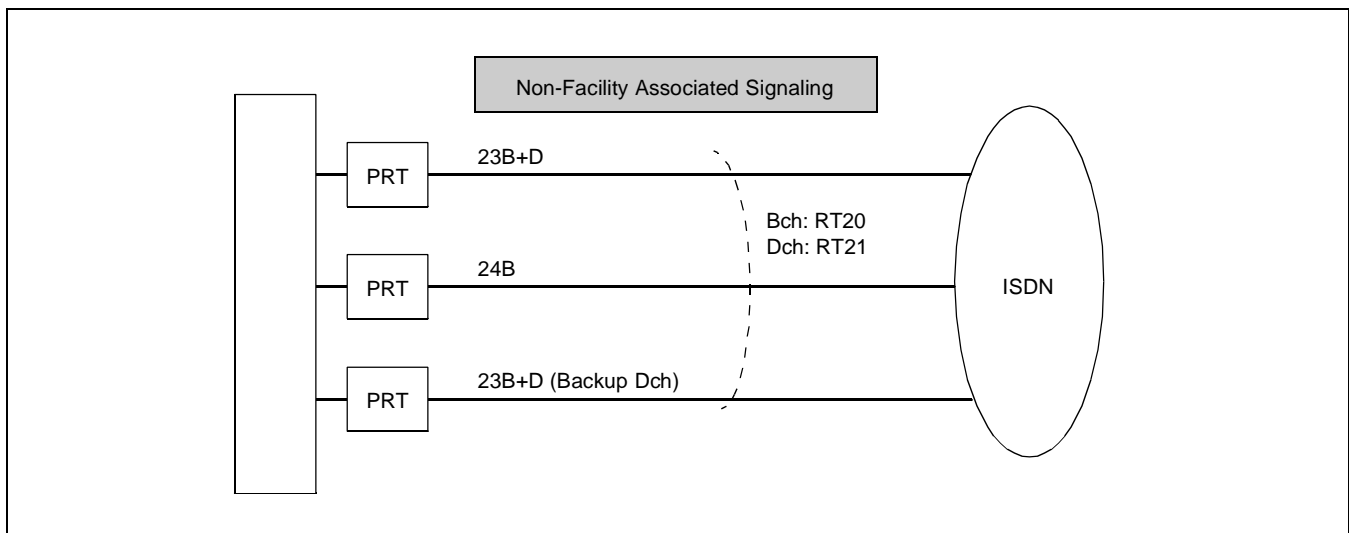
D-152 D-CHANNEL BACKUP - PRI

1. General Description

D-channel Backup feature is available in Non-Facility Associated Signaling (for AT&T/NT/N-ISDN2).

- Changeover to Backup D-channel automatically executes when a link of ACT D-channel is down.
- You can change D-channel from ACT to Backup by using MAT (The command CDBU).
- Both Primary D-channel and Backup D-channel must be located in the same LP.

Note: Primary Dch must be given the interface ID=0 and Backup Dch must be given the interface ID=1 by the ISDN provider (CO.)



2. Operating Procedure

- No manual operation is required. (Automatic changeover)
- By the command CDBU of MAT.

Note: When a changeover, a System Message “23-P” or “23-Q” is output.

3. Programming

STEP 1: Assign the numbering (LCR) data to access to ISDN.

STEP 2: ARTD - Assign the route data. (Refer to “[Chapter 3](#)”)
 - CDN115 (CMRT)=1 to both Bch and Dch.

Note: This step is necessary when you give a common route number to all B-channels.
 The circuit cards used to assign a Common Route should be accommodated in the same LP.

D-CHANNEL BACKUP - PRI

STEP 3: ATRK - Assign the trunk data of Bch. (Refer to “Chapter 3”)

<For example> RT=20 TK1-TK70 (Bch)

STEP 4: ADPC - Assign PC (Point Code) to Bch route and Dch route.

<For example> RT=20 (Bch) PC=20

RT=21 (Dch) PC=20

STEP 5: ACSC - Assign the location of DCH (Dch Handler) and Bch.

<For example>

PIM0					
		PRT ① (23B+D)		PRT ② (23B+D)	PRT ③ (24B)

Note: Backup Dch is Located on PRT② .

Group No.	05	07	09	11	13	15
	04	06	08	10	12	14

CSCG=140 (Even No.)	CICG No. = 0	CCH= 00004	Dch (DCH)
	1	00008	Backup Dch (Backup DCH)
	2	00004	Dch (DCH)
	3	00004	
	4	00004	
	5	00004	
	6	00004	
	7	00004	

CSCG=141 (Odd No.)	CICG No. = 0	CCH= 00004	Bch (PRT ①) INT 0
	1	00008	Bch (PRT ②) INT 1
	2	00012	Bch (PRT ③) INT 2
	3	00004	Bch (PRT ①)
	4	00004	
	5	00004	
	6	00004	
	7	00004	

Note that the circuit card needs to be initialized after changing data.

STEP 6: ACIC1 - Assign CSCG corresponding to PC (Point Code).

<For example> PC=20 CSCG=140

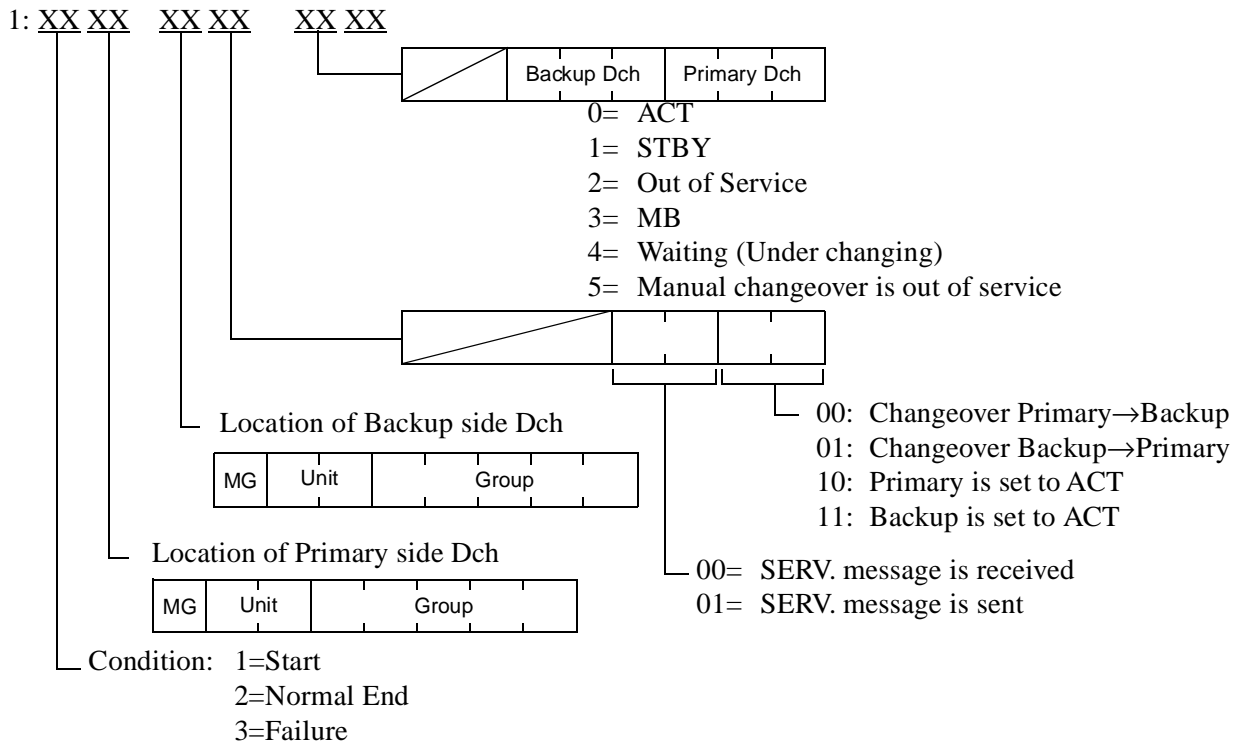
STEP 7: ATRK - Assign the trunk data of Dch.

<For example> RT=21 TK1-TK2 (Dch)

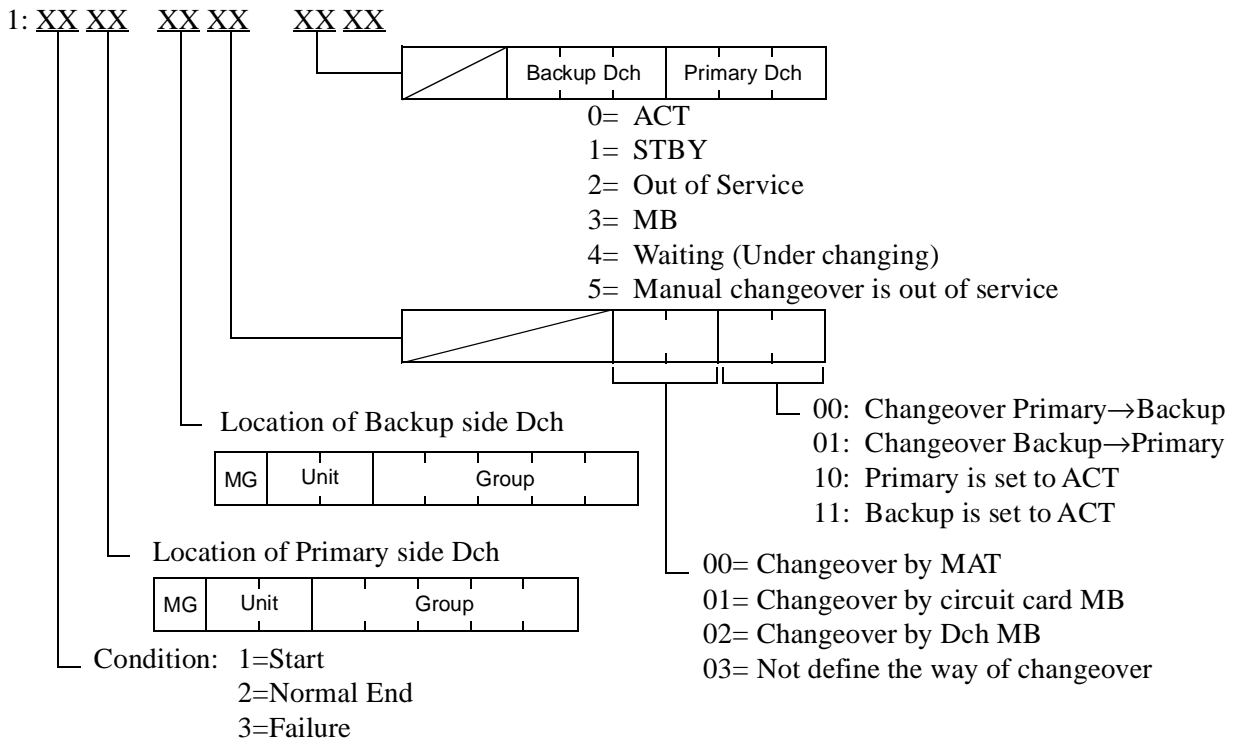
RT=21 TK3-TK4 (Backup Dch)

4. System Message

1. "23-P" Automatic changeover for Dch Backup



2. "23-Q" Manual changeover for Dch Backup

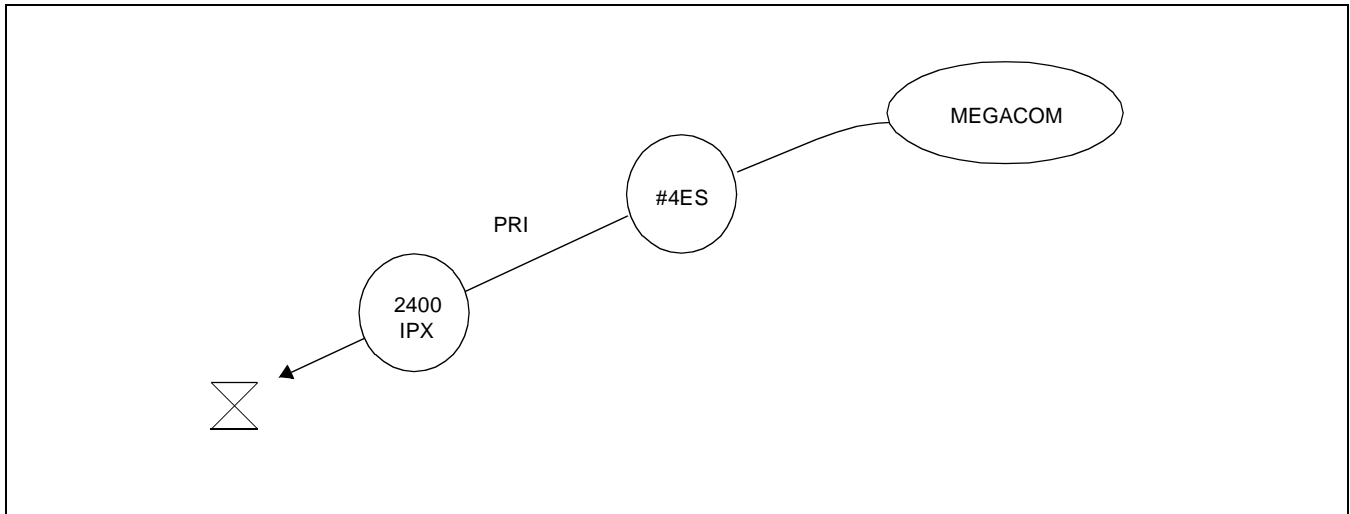


MEGACOM ACCESS

M-76 MEGACOM ACCESS

1. General Description

AT&T's MEGACOM (WATS) network can be used.



Note 1: *The available WATS service is limited to MSB (Maximal Subscribed WATS Band).*

Note 2: *The parameter band service where zone is specified on a call-by-call basis is provided by the #5ESS only.*

2. Operating Procedure

No manual operation is required.

3. Programming

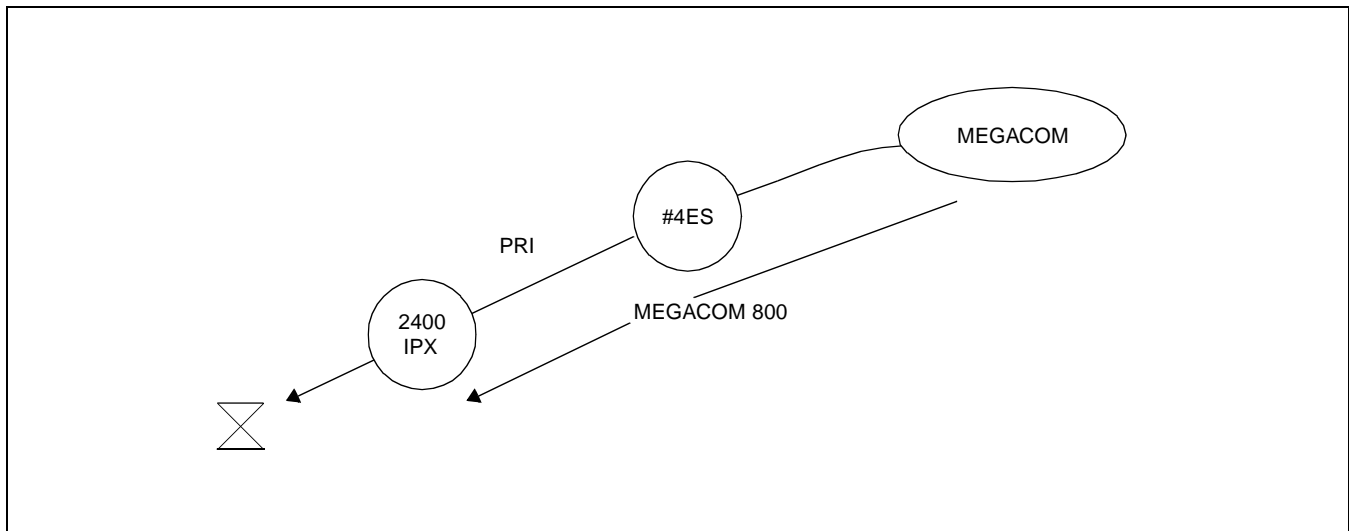
In addition to the Basic Office Data for ISDN, the following data should be assigned.

STEP 1: ACBC - Select CODE3 (=MEGACOM) in this command.

M-77 MEGACOM800 SERVICE

1. General Description

AT&T's MEGACOM 800 (INWARD WATS) network can be used.



Note 1: When a call has terminated by the *CALL-BY-CALL SERVICE SELECTION [C-105]*, no indication to distinguish it from a call termination by other services is made to a terminating terminal.

Note 2: To identify a terminal to which a call has terminated, data must be registered using the "ACDD" command so that a call-terminating terminal can be identified by a terminating number.

2. Operating Procedure

No manual operation is required.

3. Programming

In addition to the Basic Office Data for ISDN, the following data should be assigned.

STEP 1: ACBC - Select CODE2 (=MEGACOM 800) in this command.

NON-FACILITY ASSOCIATED SIGNALING - PRI

N-40 NON-FACILITY ASSOCIATED SIGNALING - PRI

1. General Description

A single D-channel can control more than the 23 bearer channels (23 B-channels) resident on the same T1 facility.

Capacity: Max. 167B + D (1-IMG system) 7 Circuit Cards (1-24 PRT + 6-24DTRS)
Max. 191B + D (4-IMG system) 8 Circuit Cards (1-24 PRT x 7-24 DTR)

Note: Please use this feature with D-CHANNEL BACKUP to improve reliability.

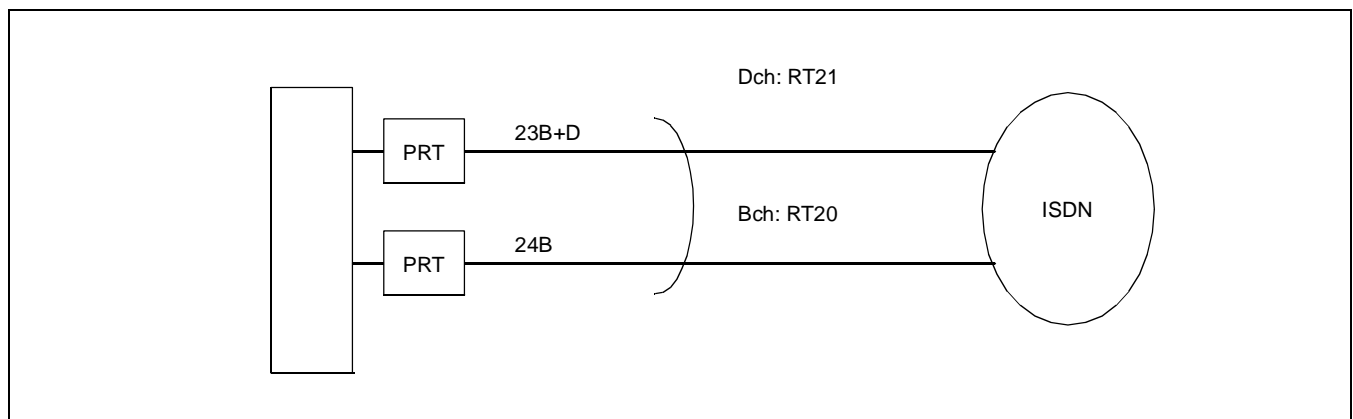
2. Operating Procedure

No manual operation is required.

3. Programming

1. All B-channels use the Common Route Number.

Note: Circuit cards used for the Common Route should be accommodated in the same IP.



STEP 1: Assign the numbering (LCR) data to access to ISDN.

STEP 2: ARTD - Assign the route data. (Refer to "CHAPTER 3")

STEP 3: ARTD - Assign CDN115 (CMRT)=1 to both Bch and Dch.

STEP 4: ATRK - Assign the trunk data for B-ch. Note that the trunk data for Dch is set after STEP 7: ACIC1 command assignment. (Refer to "Chapter 3")
Assign 47 Bch to RT20 in this example.

STEP 5: ADPC - Assign PC (Point Code) to Bch route and Dch route.
<For example> RT=20 (Bch) PC=20
RT=21 (Dch) PC=20

STEP 6: ACSC - Assign the location of DCH (Dch Handler) and Bch.
 <For example>

PIM0	PRT (23B+D)		PRT (24B)	

Group	05	07	09	11
No.	04	06	08	10

CSCG=140 (Even No.)	CICG No. = 0	CCH= 00004	Dch (DCH)
	1	00004	
	2	00004	
	3	00004	
	4	00004	
	5	00004	
	6	00004	
	7	00004	

CSCG=141 (Odd No.)	CICG No. = 0	CCH= 00004	— Bch (PRT for 23B+D)
	1	00008	— Bch (PRT for 24B)
	2	00004	Bch (PRT for 23B+D)
	3	00004	
	4	00004	
	5	00004	
	6	00004	
	7	00004	

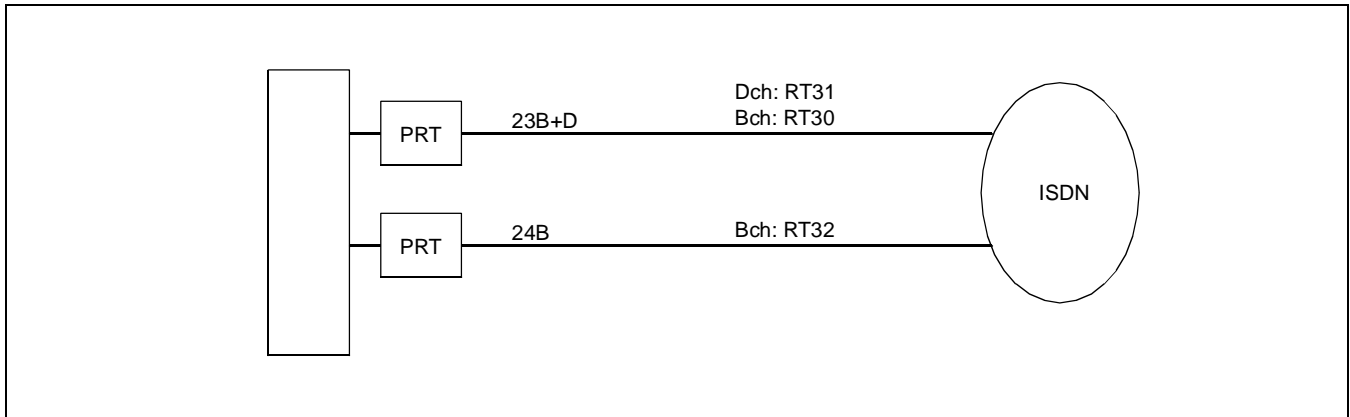
Note that the circuit card initial is required after changing data.

STEP 7: ACIC1 - Assign CSCG corresponding to PC (Point Code).
 <For example> PC=20 CSCG=140

STEP 8: ATRK - Assign the trunk data of Dch.

NON-FACILITY ASSOCIATED SIGNALING - PRI

- Each B-channel uses the Individual Route Number.



STEP 1: Assign the numbering (LCR) data to access to ISDN.

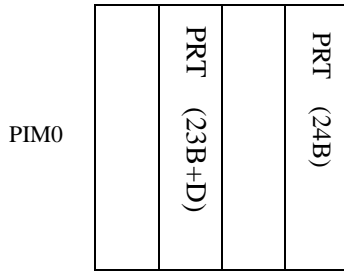
STEP 2: ARTD - Assign the route data. (Refer to “[Chapter 3](#)”)

STEP 3: ATRK - Assign the trunk data of Bch. (Refer to “[Chapter 3](#)”)
Assign 23 Bch to RT30, 24 Bch to RT32 in this example. Note that trunk data assigned in this step is for Bch only. Dch’s trunk data should be set after STEP 6: ACIC1 command assignment.

STEP 4: ADPC - Assign PC (Point Code) to Bch route and Dch route.

<For example> RT=30 (Bch) PC=20
RT=31 (Dch) PC=20
RT=32 (Bch) PC=20

STEP 5: ACSC - Assign the location of DCH (Dch Handler) and Bch.
 <For example>



Group No.	05	07	09	11
	04	06	08	10

CSCG=140 (Even No.)	CICG No. = 0	CCH= 00004	Dch (DCH)
	1	00004	
	2	00004	
	3	00004	
	4	00004	
	5	00004	
	6	00004	
	7	00004	

CSCG=141 (Odd No.)	CICG No. = 0	CCH= 00004	Bch (PRT for 23B+D)
	1	00008	Bch (PRT for 24B)
	2	00004	Bch (PRT for 23B+D)
	3	00004	
	4	00004	
	5	00004	
	6	00004	
	7	00004	

Note that the circuit card initial is required after changing data.

STEP 6: ACIC1 - Assign CSCG corresponding to PC (Point Code).
 <For example> PC=20 CSCG=140

STEP 7: ATRK - Assign the trunk data for Dch.

Q-SIG/ISDN INTERNATIONAL GATEWAY SWITCHING

Q-5 Q-SIG/ISDN INTERNATIONAL GATEWAY SWITCHING

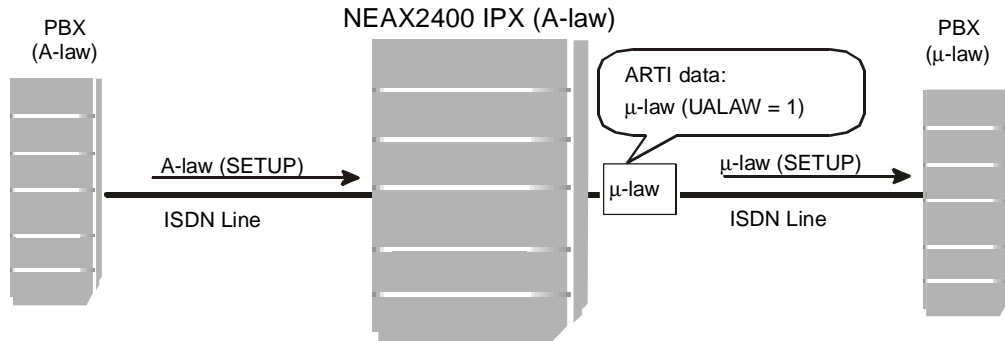
1. General Description

This feature allows converting a User Information Layer 1 Protocol (μ -law/A-law) of call originated to ISDN line according to the office data. See the figure below for examples.

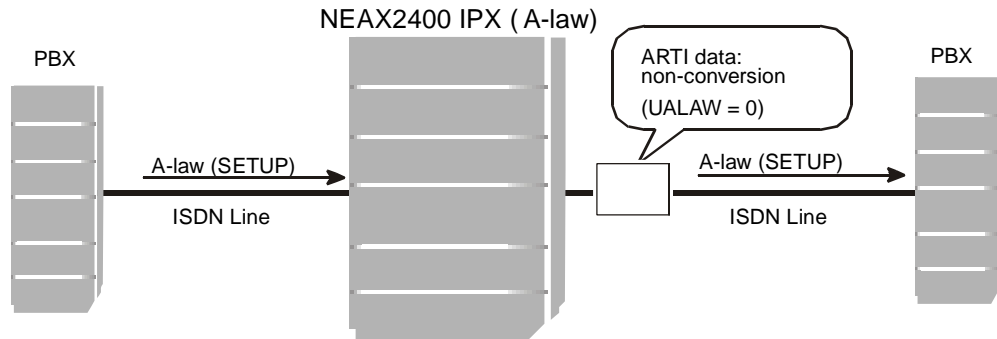
[Case 1: Conversion in tandem office]

(a) Incoming Call from ISDN line (SETUP message is received)

When μ -law is selected as output Layer 1 protocol to outgoing trunk.

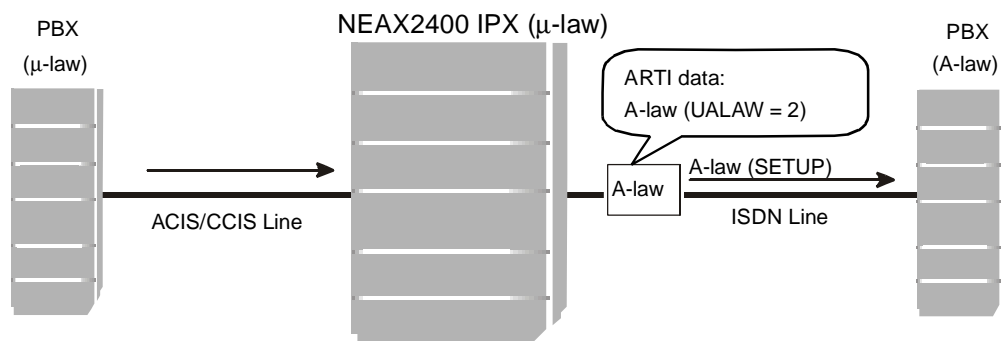


When non-conversion is selected to outgoing trunk (the Layer 1 protocol is output as received).



Incoming Call from ACIS/CCIS line (SETUP message is not received)

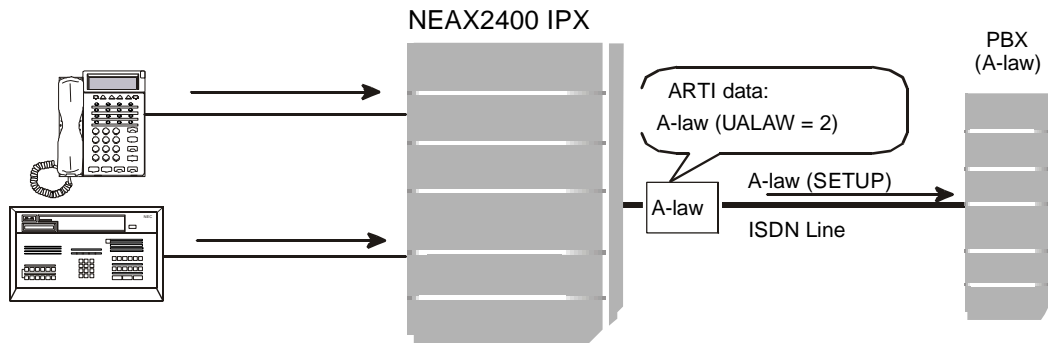
When A-law is selected as output Layer 1 protocol to outgoing trunk.



[Case 2: Conversion in Originating Office]

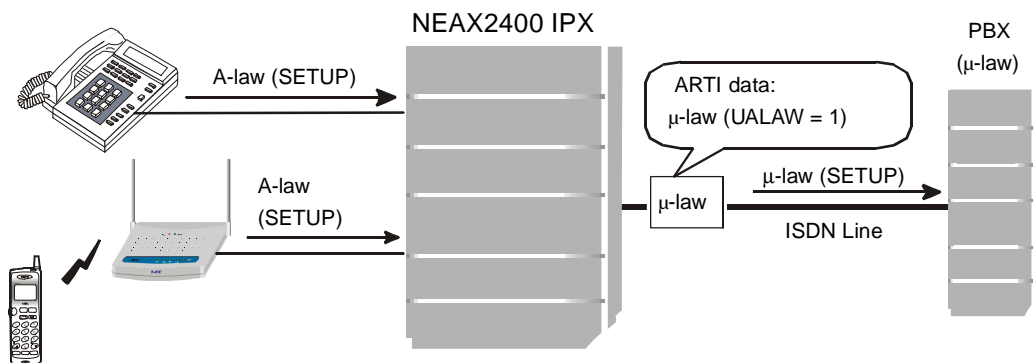
(a) Outgoing Call from D^{term}/ATT (SETUP message is not sent)

When A-law is selected as output Layer 1 protocol to an outgoing trunk.



(b) Outgoing Call from ISDN terminal/PS (SETUP message is sent)

When μ -law is selected as output Layer 1 protocol to an outgoing trunk.



2. Operating Procedure

No manual operation is required.

3. Service Conditions

1. This feature is available since Series 7400 Release 9 software.
2. This feature is available for a call to ISDN line (This feature does not support the station-to-station call nor an outgoing call to CCIS line).
3. Only user information Layer 1 protocol included with Bearer Capability (BC) information element is converted. Layer 1 protocol included with Low Layer Capability (LLC) and the other information element are not applied.

Q-SIG/ISDN INTERNATIONAL GATEWAY SWITCHING

4. When the protocol is selected as AUSTRALIA in the route class data (assigned in ARTD, CDN65: INT) and the coding standard is "00" in BC information element, call in A-law only can be connected (call in μ -law is disconnected).
5. This feature is activated when SETUP message is sent.
6. This feature is available only when user information Layer 1 protocol is A-law or μ -law (JT-V110/X30 or JT-X31, etc. cannot be converted).
7. The user information Layer 1 protocol is not added to SETUP message if the received BC information element does not contain the Layer 1 protocol.
8. Law conversion rule varies depending on the kind of outgoing trunk/terminal and incoming trunk/terminal in the office where the law conversion is activated. See [Table 5-1](#).

Table 5-1 Reference: Output Layer 1 Protocol

- : Not Applicable

OG \ IC		TRUNK					TERMINAL		
		ISDN trunk			CCIS trunk	ACIS trunk	ISDN terminal (ILC), PS	PRI terminal	D ^{term} /Analog station, ATT
		ARTI: non-conversion	ARTI: μ -law	ARTI: A-law					
ISDN trunk	ARTI: non-conversion	Non-Conversion	Non-Conversion	Non-Conversion	Non-Conversion	Note 1	Non-Conversion	Non-Conversion	Note 1
	ARTI: μ -law	μ	μ	μ	μ	μ	μ	μ	μ
	ARTI: A-law	A	A	A	A	A	A	A	A
CCIS trunk		Non-Conversion	Non-Conversion	Non-Conversion	Non-Conversion	Note 1	Non-Conversion	Non-Conversion	Note 1
ACIS trunk		-	-	-	-	-	-	-	-
ISDN terminal (ILC)		Note 2	Note 2	Note 2	Note 1	Note 1	Non-Conversion	Non-Conversion	Note 1
PRI terminal	ARTI: non-conversion	Non-Conversion	Non-Conversion	Non-Conversion	Non-Conversion	Note 1	Non-Conversion	Non-Conversion	Note 1
	ARTI: μ -law	μ	μ	μ	μ	μ	μ	μ	μ
	ARTI: A-law	A	A	A	A	A	A	A	A
PS		Note 3	Note 3	Note 3	Note 3	Note 3	Note 3	Note 3	Note 3
D ^{term} /Analog station, ATT		-	-	-	-	-	-	-	-

Note 1: Follows the system data assignment (SYS1, INDEX64, b0: 0/1= μ -law/A-law).

Note 2: Non-conversion except when the ISDN terminal interface specification is assigned as N-ISDN1 by the system data assignment (In this case, the output Layer 1 protocol is fixed as μ -law).

Note 3: Varies depending on the terminal type.

4. Interactions

This feature is applied for H0/H11 terminal when the service conditions described in Item 3 under [Service Conditions](#) are satisfied.

5. Programming

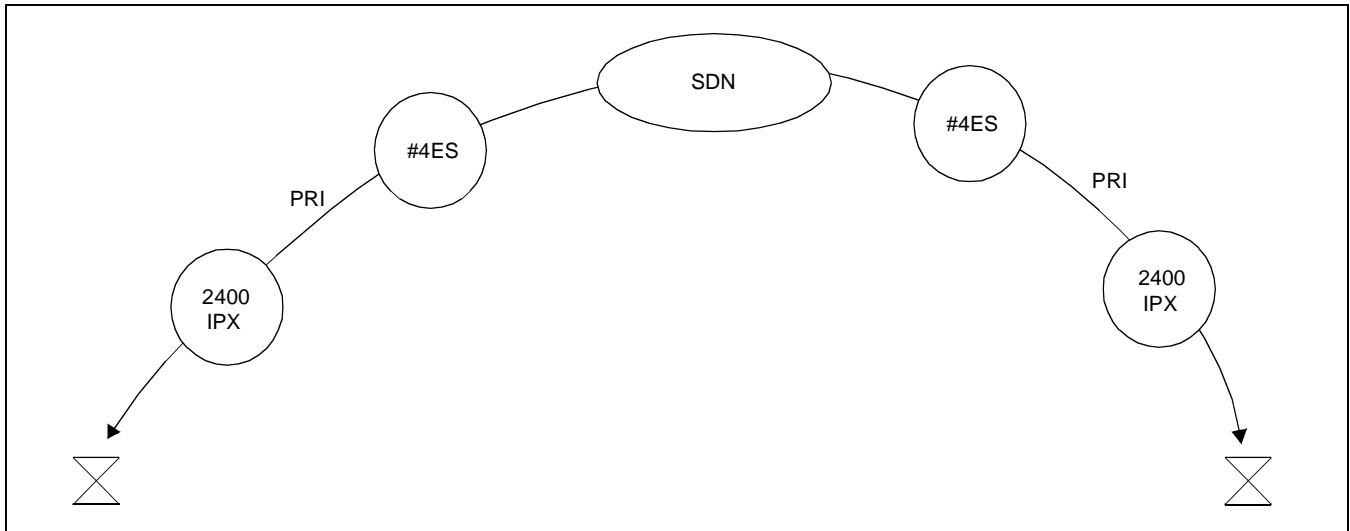
STEP 1: ARTI - Assign the Trunk Application data to the outgoing ISDN trunk.
CDN 57: UALAW (User information Layer 1 protocol designation)
0 = No Conversion
1 = μ -law
2 = A-law
3 = Not used

SDN ACCESS

S-90 SDN ACCESS

1. General Description

AT&T's SDN (Software Defined Network) can be used.



Note 1: When a call has terminated by the *CALL-BY-CALL SERVICE SELECTION [C-105]*, no indication to distinguish it from a call termination by other services is made to a terminating terminal.

Note 2: To identify a terminal to which a call has terminated, data must be registered using the "ACDD" command so that a call-terminating terminal can be identified by a terminating number.

2. Operating Procedure

No manual operation is required.

3. Programming

In addition to the Basic Office Data for ISDN, the following data should be assigned.

STEP 1: ACBC - Select CODE1 (=WATS BAND/SDN) in this command.

S-91/S-92 SID TO NETWORK - PRESENT/SID TO NETWORK - PRIVACY

1. General Description

<SID TO NETWORK-PRESENT>

This feature allows SID (Station Identification Number) to be delivered to the ISDN when a call originates from a terminal connected to the PBX.

<SID TO NETWORK-PRIVACY>

In addition, the originating station user may control the transfer of SID to the network via AUTHORIZATION CODE dialing through the PBX.

2. Operating Procedure

1. Lift the handset and receive Dial Tone.
2. Dial an access code for "Authorization Code". (For *SID TO NETWORK-PRIVACY*)
3. Dial "Authorization Code". (For *SID TO NETWORK-PRIVACY*)
4. Dial an originating call number to ISDN.

Note: Without dialing the authorization code, SID is sent to the destination.

3. Programming

STEP 1: Assign the Basic Data for ISDN. (Refer to [Chapter 3](#).)

Note: When two or more DID numbers are assigned to a station, the last DID number assigned will be delivered to the ISDN as a Station Identification Number (SID). However, when the last DID number assigned has been deleted [even if the other number(s) still exist], any DID number is not transferred to the network (no SID is transferred to a destination). In this case, reassignment of the DID number(s) is necessary for sending SID to the network.

STEP 2: ACNP - Assign the pattern number for Bch route.

OG/IC=O (Select "OG")

RT=Bch Route number

CNP=Pattern Number

STEP 3: ACND - Assign the information for the pattern.

CNP=Pattern Number (Must be same pattern No. as one of ACNP).

SKIP=Skip digits of station number. [Note 1](#), [Note 2](#)

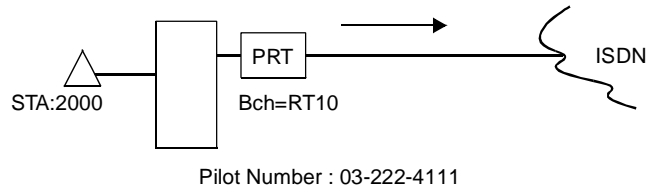
ADD=Number of additional digit (Pilot number)

DC=Pilot Number

SID TO NETWORK - PRESENT/SID TO NETWORK - PRIVACY

Note 1

When the originating PRT employs "Sub addressing" for the terminating call.

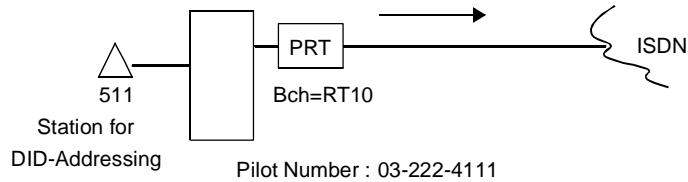


ACNP: OG/IC=0 ACND: CNP=1
 RT=10 SKIP=4
 CNP=1 ADD=9
 DC=032224111

Digits "032224111" are sent as SID.

Note 2

When the originating PRT employs "DID-Addressing" for the terminating call.



ACNP: OG/IC=0 ACND: CNP=2
 RT=10 SKIP=0
 CNP=2 ADD=5
 DC=03222

- *Digits "03222 + DID No." are sent as SID.*
- *When the station that does not require the digit conversion (in the ACDD command) for a incoming call originates a call to ISDN, the network will send a pilot number as SID.*

<For SID TO NETWORK-PRIVACY>

STEP 4: ASFC - Allow SID to Network-Privacy (SFI 94) to the SFC of the station.
 SFI94=0/1=-/SID is not transfer to a destination.

Note: *This data is necessary for the temporary class to be converted by Authorization code.*

STEP 5: Assign "Authorization Code" data.

S-96 SUB ADDRESS - PRESENT**1. General Description**

This ISDN feature allows a PRIMARY RATE INTERFACE ISDN trunk to transfer the called-party sub-address information to a destination ISDN station when the call is originated via the PBX. This feature requires dialing of the called-party station number and the called-party sub-address.

2. Operating Procedure

1. The calling station dials the ISDN subscriber number (including access code) followed by an asterisk (*), then dials the called-party sub-address followed by a pound (#).
2. ISDN will automatically recognize the sub-address and transfer this information to the destination party.

3. Programming

STEP 1: Assign the Basic Data for ISDN. (Refer to [Chapter 3](#).)

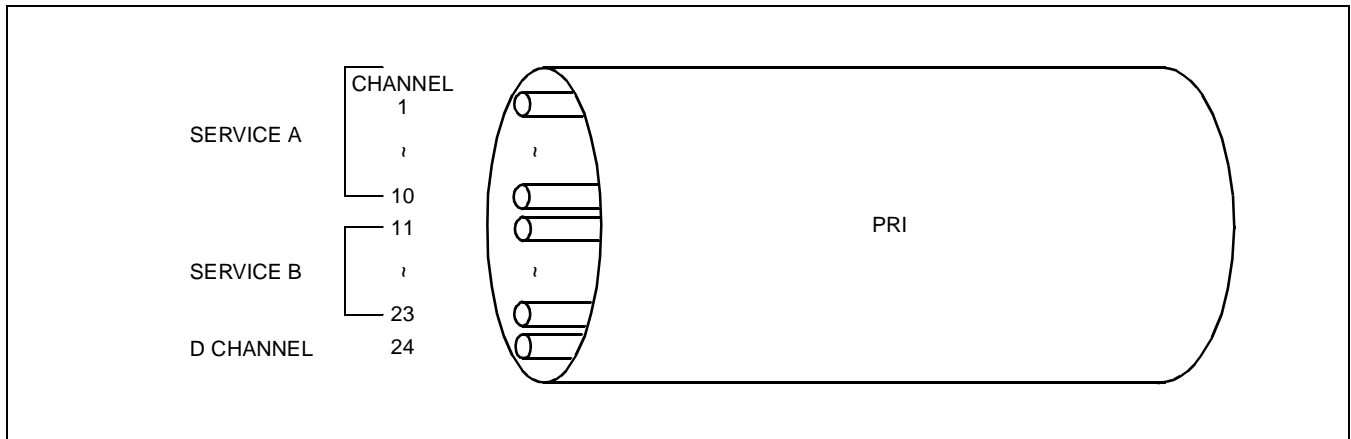
Note: *ASPA- Assign SUB=1.*

TRUNK PROVISIONING SERVICE SELECTION

T-42 TRUNK PROVISIONING SERVICE SELECTION

1. General Description

Each channel of a PRI interface can be dedicated to a particular service. Services are designated to specific channels; once designated, a channel can only be used for that service.



Note 1: *The services that can be designated include the following: ACCUNET, MEGACOM, MEGACOM800, and SDN.*

Note 2: *Channel selection is possible by the LCR function only.*

2. Operating Procedure

No manual operation is required.

3. Programming

In addition to the Basic Office Data for ISDN, the following data should be assigned.

STEP 1: AFRS - Assign the different OPR (Outgoing Route Selection Pattern Number) on a service type (such as ACCUNET, MEGACOM, etc.) basis. Therefore, the OPR should be determined according to the NPC (Number Pattern Code).

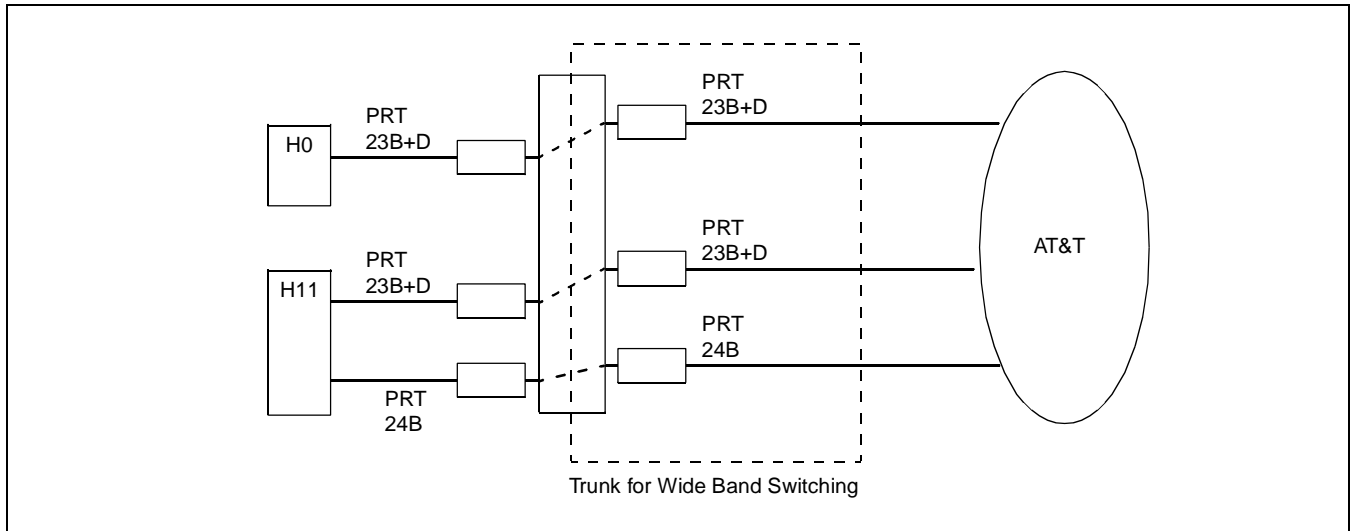
STEP 2: AOPR - Assign the different Route Number to each service (ACCUNET, MEGACOM, etc.).

STEP 3: ACBC - Select a desired service on an OPR basis.

W-9 WIDE BAND SWITCHING FOR AT&T #4ESS

1. General Description

This feature allows a PBX to support the H0 (384 kbps)/H11 (1.5 Mbps) switching by using AT&T #4ESS.



2. Operating Procedure

No manual operation is required.

3. Programming

STEP 1: Assign the Basic Data for ISDN/Non-Facility Associated Signaling Data.

Note ARTD - CDN63 (LYER1)=0
 CDN65 (INT)=5
 CDN96 (H1)=1
 CDN118 (BOB)=1

STEP 2: ACBC - Assign the Call by Call Service Data
 CODE=1 (SDN) or 6 (ACCUNET)

Note: *If H0 switching, the continuous six channels are required.
 Separate the Bch route (for H0 switching) from others.*

CALLING PARTY INFORMATION TRANSFER/TRANSFER MESSAGE (TRM)

C-112/T-44 CALLING PARTY INFORMATION TRANSFER/TRANSFER MESSAGE (TRM)

1. General Description

<CALLING PARTY INFORMATION TRANSFER>

When attribute data (BC, LLC, HLC) arrives from the ISDN or an ISDN terminal, this service notifies the received attribute data to another office which is connected through CCIS.

This service guarantees transparent transmission of attribute data between an office and another through CCIS.

<TRANSFER MESSAGE (TRM)>

When a station calls another station performing CALL TRANSFER-ALL CALLS-CCIS, this feature allows the originating station number (SID) to be sent to the destination station via Transfer Message (TRM) signal.

CALLER	DIRECT OG CALL TO ISDN			OG CALL TO ISDN VIA CCIS		
	BEARER	LOW LAYER	HIGH LAYER	BEARER	LOW LAYER	HIGH LAYER
Telephone	Speech	–	–	Speech	–	–
ATT-CON	Speech	–	–	Speech	–	–
FAX	3.1 kHz	3.1 kHz	G2/G3FAX	3.1 kHz	3.1 kHz	G2/G3FAX
DATA (DTE)	Unrestricted	Unrestricted	–	Unrestricted	Unrestricted	–
ISDN Station/ Trunk	Transparent	Transparent	Transparent	Transparent	Transparent	Transparent
CCIS Trunk	Transparent	Transparent	Transparent	Transparent	Transparent	Transparent
ACIS Trunk	3.1 kHz	–	–	3.1 kHz	–	–

2. Operating Procedure

No manual is operation required.

3. Programming

STEP 1: Assign the Basic Data for ISDN.

STEP 2: ASYD - Assign the following system data for CCIS **Note**

- SYS-1 Index 4, b4: Temporary Class Conversion
0/1=Not Required/Required. (always assign "1")
- Index 82, b4-b7: Station Number Display Pattern on theATTCON
- Index 180&181: Originating Point Code
- Index 182&183: Centralized Billing Point Code
- Index 184&185: Centralized Management Report Point Code
- Index 186: Service Check
- Index 187: Number of CCH/DCH cards
(always assign 00 Hex)
- Index 188, b0: No. 7 CCIS Control System Interoffice Audit Test
0/1=Not Required/Required.
- Index 189, b4-b7 ACM, UBM Signal "No-Receiving" Timer (Normally assign F0 Hex.)

Note: ISDN transmitting information service is necessary for the transparency of ISDN information between ISDN and CCIS No. 7 network.

STEP 3: ARTD - Assign the following route class data for CCIS Trunk
(Signal Channel & Speech Channel)

ROUTE FOR SIGNAL CHANNEL	ROUTE FOR SPEECH CHANNEL
• OSGS = 0	• OSGS = 0
• ONSG = 2	• ONSG = 2
• ISGS = 0	• ISGS = 0
• INSG = 2	• INSG = 2
• TCL = 4	• TCL = 4
• L/T = 1	• L/T = 1
• RLP = 2	• RLP = 2
• LSG = 13	• LSG = 12
• ANS = 0	• ANS = 1
• PAD = 7	• PAD = 4
• BT = 0	• BT = 1
• DPLY = 0	• DPLY = 1
• LYER1 = 0	• LYER1 = 0
• NET = 0	• NET = 0
• INT = 0	• INT = 0

STEP 4: ARTD - Assign a following data to the speech route of CCIS No. 7.
CDN98 (CI) ISDN transmitting information.

- 0= Out of service
 - 1= 16-Digit Caller Number Service, Attribute Information Notification service,
and Calling Sub-Address Transfer Service.
 - 2-15= Not used.
- Assign data "1" in this CDN.

CALLING PARTY INFORMATION TRANSFER/TRANSFER MESSAGE (TRM)

STEP 5: ADPC - Assignment of Determinate Point Code Data. **Note**

Setting of the counter office point code

RT: Route Number

PC: Determinate Point Code (1-16367)

STEP 6: ATRK - Assignment of Trunk Data **Note**

Assign of the LENS of the trunks to be used in CCIS

LENS: Line Equipment Number (6 digits)

STEP 7: ACSC - Assignment of CSC Data **Note**

Setting of CCH/CSE Number of the route to be used in CCIS

CSCG: CSC Group Number (130~255)

CIC GROUPIX: Circuit Identification Code Group Number (0~7)

CCH: Accommodation location of the Common Channel Handler

CCH: XX X XX

*a *b *c

*a: Module Group Number (00~07)

*b: Unit Number (0~3)

*c: Group Number (0~23)

STEP 8: ACIC1 - Assignment of CIC Data **Note**

Setting of CIC of each trunk to be used in CCIS

PC: Determinate Point Code (1-16367)

CSCG: Common Channel Signalling Controller Group Number (130~255)

STEP 9: ACIC2 - Assignment of CIC Data 2 **Note**

PC: Determinate Point Code

CIC: Circuit Identification code Number (1~999)

LENS: Line Equipment Number (6 Digits)

LENS: XX X XX X

*a *b *c *d

*a: Module Group Number (00~07)

*b: Unit Number (0~3)

*c: Group Number (0~23)

*d: Level Number (0~7)

STEP 10: ARNP - Assignment of Reverse Numbering Plan Data

Assignment of the office code of the self office if necessary.

RT: Route Number (RT=0)

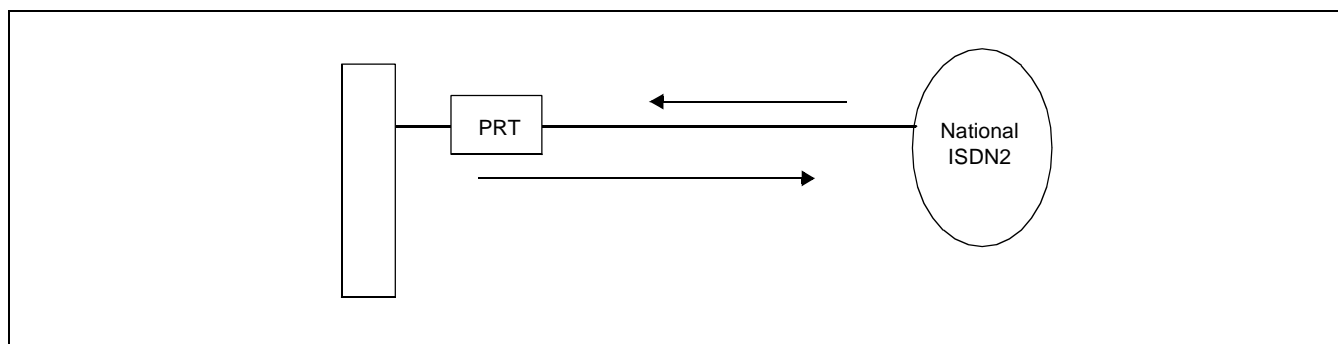
ACC: Access Code (maximum 3 digits)

Note: For details, see "No. 7 CCIS System Manual".

N-42 NATIONAL - ISDN2 - PRI

1. General Description

This feature allows the system to connect with N-ISDN2 network. NON-FACILITY ASSOCIATED SIGNALING and D-CHANNEL BACKUP are also available.



Note 1: Network-side services, VIRTUAL TIE LINE, and B-ISDN services are not available.

Note 2: The following issues of firmwares are required.

CIRCUIT CARD	FIRMWARE	ISSUE
PA-24PRTB-A	SP-3029 24PRT PROG-B	9 or later
PA-24DTR	SP-3010 24DTI PROG-A	6 or later

2. Operating Procedure

No manual operation is required.

3. Programming

STEP 1: ARTD - Assign the following CDN data for the N-ISDN2 route.
CDN65 (INT): 1(N-ISDN2)

STEP 2: ACBC - Assign Call by Call data for each OPR.
NET: 2(N-ISDN2)
SERV: 1 (SERVICE)
CODE: Facility Coding Value
1: INWATS
2: OUTWATS
3: FX
4: Tie Trunk

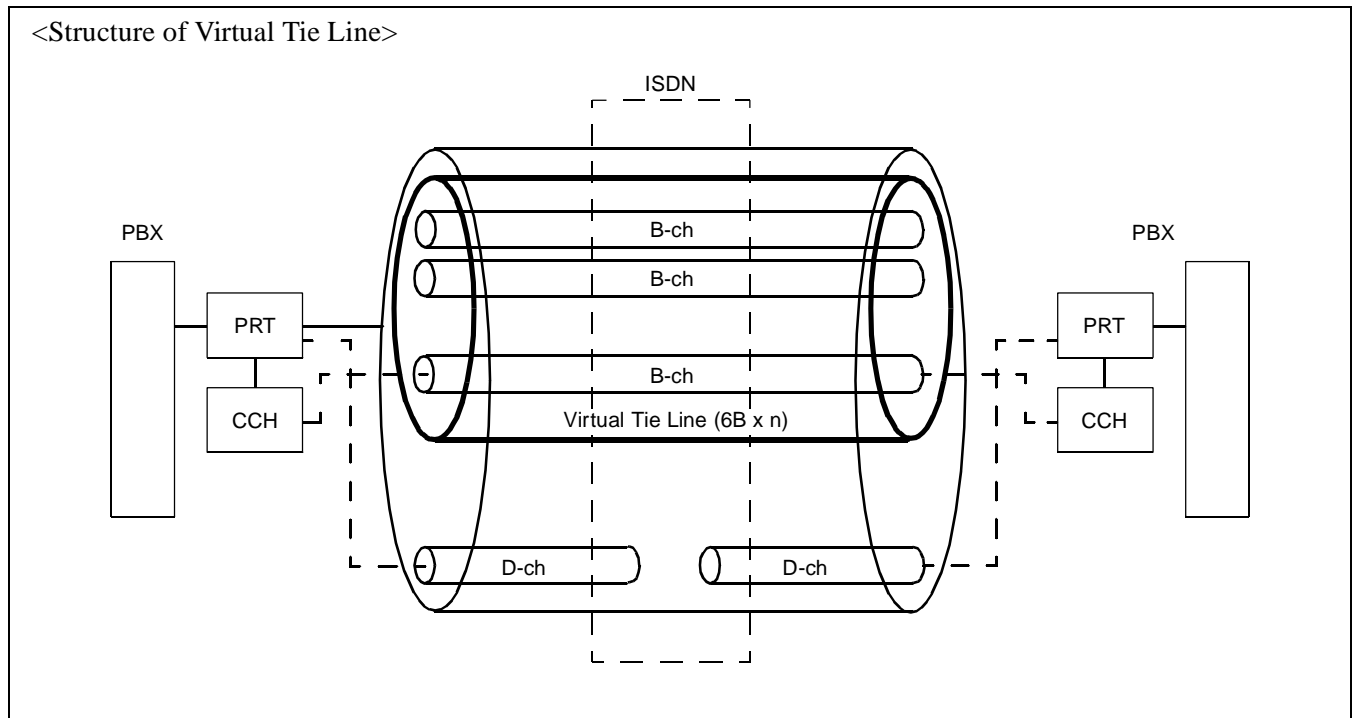
VIRTUAL TIE LINE

V-18 VIRTUAL TIE LINE

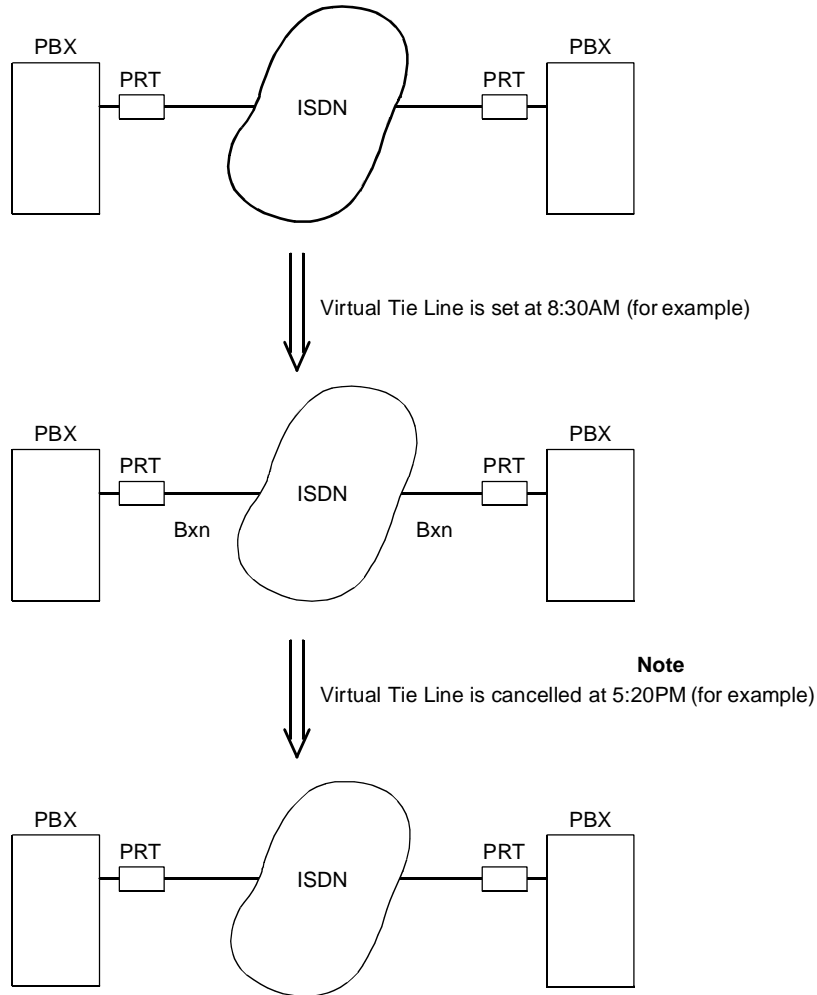
1. General Description

This service feature provides the virtual tie line service by setting up a connection between a PBX and another via ISDN network during the designated period of time.

While the virtual tie line is set, one of the B-channels on the setup connection is used as a CCIS No. 7 signal channel and other B-channels as CCIS No. 7 voice channels.



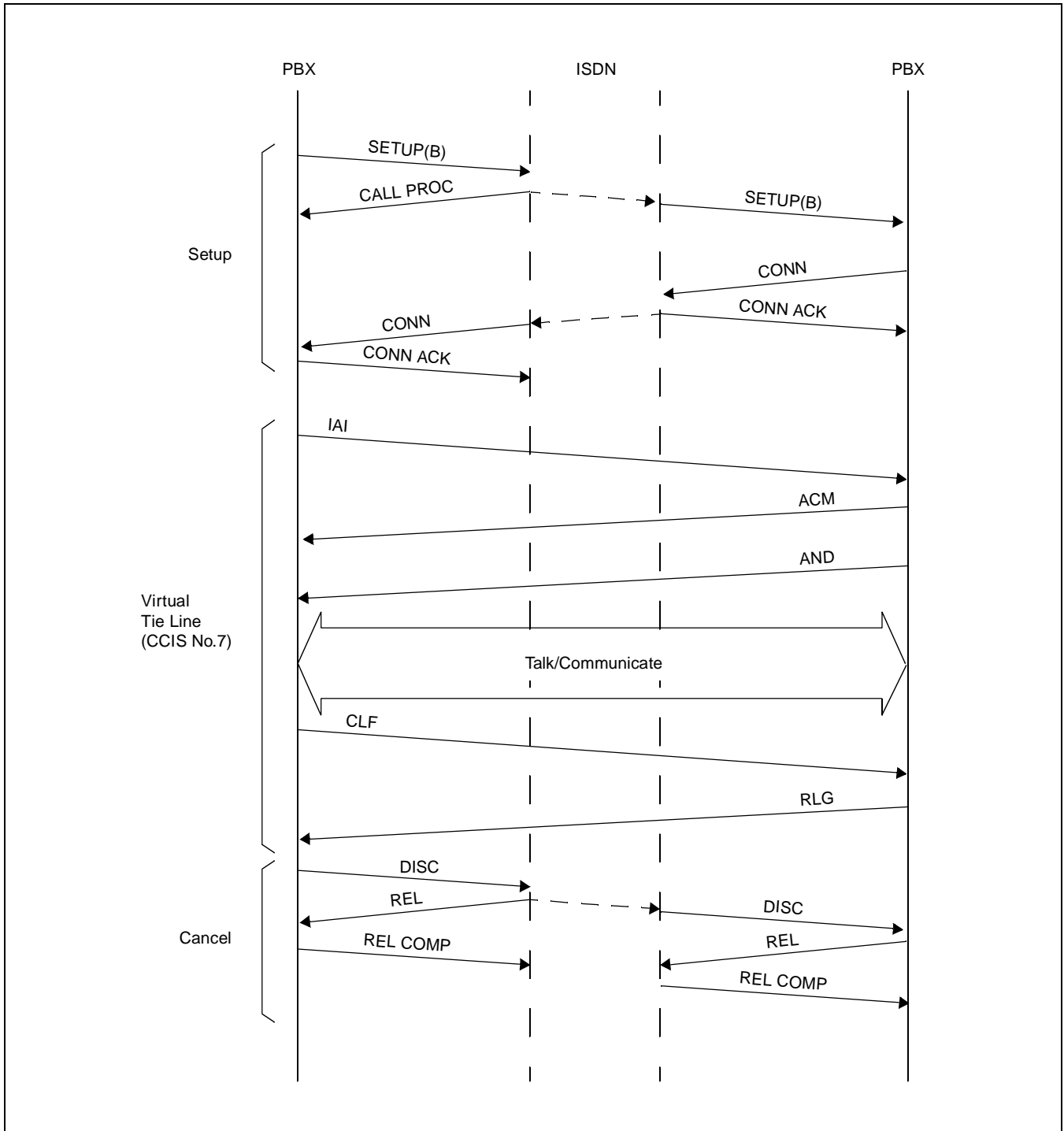
- Service Status



Note: When a call is connected to the Virtual Tie Line at the time designated to cancel the connection, the connection is extended by 10 minutes (maximum 30 minutes) to wait for the call to be released. After 30 minutes, the calls connected to the line will be released forcefully.

VIRTUAL TIE LINE

- Setup/Cancel Protocol for Virtual Tie Line



2. Operating Procedure

No manual operation is required.

3. Programming

STEP 1: Assign the Basic Data for ISDN. (Refer to [Chapter 3](#).)

Note 1: *If in Virtual Tie Line network, an alternative route cannot be assigned.*

Note 2: *Example for ports allocation of the command ATRK.*

24PRT

Odd	LV7	Bch-8	Dch	CCIS
	LV6	Bch-7	SIG-ch	
	LV5	Bch-6	Speech	
	LV4	Bch-5	Speech	
	LV3	Bch-4	Speech	
	LV2	Bch-3	Speech	
	LV1	Bch-2	Speech	
	LV0	Bch-1	Bch-17	
Even	LV7		Bch-16	
	LV6		Bch-15	
	LV5		Bch-14	
	LV4		Bch-13	
	LV3		Bch-12	
	LV2		Bch-11	
	LV1		Bch-10	
	LV0	DCH	Bch-9	

STEP 2: Assign the data for CCIS No. 7.

STEP 3: Assign the Virtual Tie Line data.

For the originating office: **AVTL** - Assign a schedule for Virtual Tie Line implementation period.
 TL/SPC (T/S): Time Link/Semi Permanent Connection
 DATE: Start day-End day **Note 1**
 PTN: Pattern number (0-15)
 IC/OG: OG
 RT: Route No. used for Virtual Tie Line
 TK: First trunk No. of Virtual Tie Line route.
 D-LENS: LENS of DCH used for setting Virtual Tie Line
 CH: Number of Bch used for Virtual Tie Line **Note 1**
 CALLING: The number of ISDN line of the self office
 KEY PAD:
 CALLED: The Virtual Tie Line number of ISDN line of the facing (terminating) office
 SUB: 0
 WEEK: Week range **Note 1**
 TIME: Start Time and End Time **Note 1**

VIRTUAL TIE LINE

For the terminating office: AVTL - Assign a schedule for Virtual Tie Line implementation period.

TL/SPC (T/S): Time Link/Semi Permanent Connection

DATE: Start day-End day **Note 1**

PTN: Pattern number

IC/OG: IC

RT: Route No. used for Virtual Tie Line

TK: First trunk No. of Virtual Tie Line route.

D-LENS: LENS of DCH

CH: Number of Bch used for Virtual Tie Line **Note 1**

CALLING: The number of ISDN line of the facing (originating) office

SUB: 0

WEEK: Week range **Note 1**

TIME: Start Time and End Time **Note 1**

AVTC - Assign a Virtual Tie Line Call data

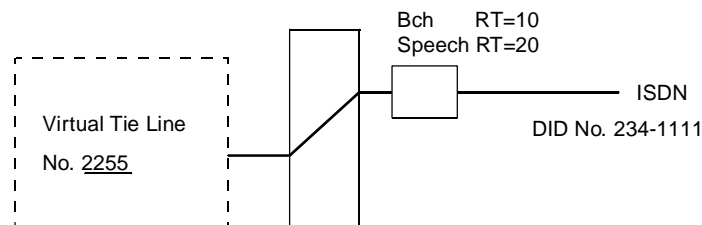
TN:

STN: **Note 2**

Note 1: Data of DATE, WEEK, TIME and CH must match between the originating office and the terminating office.

Note 2: In addition, "DID-Addressing" data is necessary for both Bch of ISDN and Speech CH of CCIS No. 7. ARTD-CDN66 (DC)

ACDD-Assign a data for digits conversion to Virtual Tie Line number as follows;



- D/N=D RT=10 DC=1111, CDC=2255
A/D=0, XFR=0

- D/N=D RT=20 DC=1111, CDC=2255
A/D=0, XFR=0

E-23 EVENT BASED CCIS - ISDN TRANSPORT**1. General Description**

This feature provides VIRTUAL TIE LINE for each event such as call origination and MCI message transmission. Inter-PBX link for this feature is established on B-channels of the public ISDN line using CCIS No. 7 signaling protocol. For addressing a specific terminal, Called Sub Address or Called DID Number is used depending on the network configuration.

2. Operating Procedure

None.

3. Service Conditions

1. The ISDN Primary Rate Interface (PRI) trunk is used for this feature.
2. The following ISDN interfaces are available:
 - 4 ESS
 - DMS 100
 - N-ISDN2
3. When using Called Sub Address as addressing information:
 - (a) channel negotiation and Sub Address-Addressing must be available in the public ISDN network.
 - (b) different DID Numbers must be assigned to the ISDN line, the E-CCIS line and its alternate route. For the E-CCIS line, DID Number is required for each D-channel.
 - (c) Sub Address assigned to the E-CCIS trunk must be common to both offices.
4. When using Called DID Number as addressing information:
 - (a) a different DID Number is required for each channel of the E-CCIS line.
 - (b) when channel negotiation is not available, call termination to an E-CCIS trunk must not be allowed except when DID Number assigned to the trunk is dialed.
 - (c) different DID Numbers must be assigned to the ISDN line and the E-CCIS line. For the E-CCIS line, DID Number is required for each D-channel.
 - (d) alternate route for the E-CCIS line cannot be assigned.
5. Each trunk for the E-CCIS line cannot be used for the public ISDN line.
6. Each channel used for a E-CCIS line must be controlled by a single D-channel (i.e. Each channel must be assigned to a single ISDN line).
7. Billing information on the E-CCIS line does not include Access Code or Converted Number.

EVENT BASED CCIS - ISDNTRANSPORT

8. The following features are available for the E-CCIS line:
- Asynchronous Data Switching [A-44] **Note**
 - Attendant Camp-On with Tone Indication – CCIS [A-45]
 - Attendant-Controlled Conference – CCIS [A-46]
 - Automatic Recall – CCIS [A-71]
 - Automatic Number Identification (ANI) – CCIS [A-87]
 - Busy Verification – CCIS [B-9]
 - Brokerage Hotline – CCIS [B-10]
 - Call Back – CCIS [C-44]
 - Call Forwarding – All Calls – CCIS [C-45]
 - Call Forwarding – Busy Line – CCIS [C-46]
 - Call Forwarding – Don't Answer – CCIS [C-47]
 - Call Forwarding – Intercept – CCIS [C-48]
 - Call Forwarding – Override – CCIS [C-49]
 - Call Transfer – All Calls – CCIS [C-50]
 - Called Station Status Display – CCIS [C-51]
 - Calling/Called Number Display – CCIS [C-52]
 - Call Processing Indication – CCIS [C-53]
 - Call Transfer – Attendant – CCIS [C-54]
 - Consultation Hold – All Calls – CCIS [C-58]
 - Call Forwarding Assignment – Attendant – CCIS [C-94]
 - Data Communication – CCIS [D-41] **Note**
 - Data Interface – Automatic Answer – CCIS [D-65] **Note**
 - Data Line Security – CCIS [D-66] **Note**
 - Data Line Privacy – CCIS [D-67] **Note**
 - Data Privacy on Demand – CCIS [D-68] **Note**
 - Data Transparency – CCIS [D-69] **Note**
 - Deluxe Traveling Class Mark – CCIS [D-70]
 - Dial Access to Attendant – CCIS [D-71]
 - Digital Display – Station – CCIS [D-72]
 - Digital Display – Trunk – CCIS [D-73]
 - Direct-In Termination – CCIS [D-74]
 - Distinctive Ringing – CCIS [D-75]
 - Do Not Disturb – D^{term} – CCIS [D-76D]
 - Data Hotline – CCIS [D-86] **Note**
 - Dialed Number Display – Recall – CCIS [D-91]
 - Dual Hold D^{term} – CCIS [D-93D]
 - Executive Right-of-Way – CCIS [E-8]
 - Elapsed Time Display – CCIS [E-9]
 - E-911 ANI Unified Number of Digits – CCIS [E-20]
 - Flexible Numbering of Stations – CCIS [F-12]
 - Hands-Free Answerback – D^{term} – CCIS [H-10D]
 - House Phone – CCIS [H-11]

- Hotline – CCIS [H-12]
- Incoming Call Identification – CCIS [I-16]
- Individual Attendant Access – CCIS [I-17]
- Inter-Position Transfer – CCIS [I-18]
- Individual Trunk Access – CCIS [I-19]
- Look Ahead Routing – CCIS [L-25]
- LDN Night Connection – CCIS [L-29]
- Message Reminder – CCIS [M-34]
- Message Reminder – D^{term} – CCIS [M-34D]
- Message Waiting Lamp Setting – Attendant – CCIS [M-35]
- Message Waiting Lamp Setting – Station – CCIS [M-36]
- Miscellaneous Trunk Access – CCIS [M-37]
- Miscellaneous Trunk Restriction – CCIS [M-38]
- Modem Pooling – CCIS [M-39] **Note**
- Multiple Call Forwarding – All Calls – CCIS [M-40]
- Multiple Call Forwarding – Busy Line – CCIS [M-41]
- Multiple Call Forwarding – Don't Answer – CCIS [M-42]
- Multiple Console Operation – CCIS [M-43]
- Message Center Interface – CCIS [M-67]
- Night Connection – Fixed – CCIS [N-15]
- Night Connection – Flexible – CCIS [N-16]
- Name Display – System – CCIS [N-37]
- Off-Hook Queuing – CCIS [O-11]
- Outgoing Trunk Queuing – CCIS [O-12]
- Paging Access – CCIS [P-28]
- Restriction from Outgoing Calls – CCIS [R-22]
- Serial Call – CCIS [S-52]
- Service Display – D^{term} – CCIS [S-53D]
- Simultaneous Voice and Data Transmission – CCIS [S-54]
- Single-Digit Station Calling – CCIS [S-55]
- Station Controlled Conference – CCIS [S-56]
- Station-to-Station Calling – CCIS [S-57]
- Station-to-Station Calling – Operator Assistance – CCIS [S-58]
- Step Call – CCIS [S-59]
- Synchronous Data Switching – CCIS [S-60]
- Supervisory Call – CCIS [S-73]
- Toll Restriction – 3/6-Digit – CCIS [T-26]
- Trunk Answer from Any Station – CCIS [T-27]
- Uniform Numbering Plan – CCIS [U-5]
- Voice Call – CCIS [V-7]

Note: When A/D=1(Digital) is assigned by CDN45. ARTD, this feature is available.

EVENT BASED CCIS - ISDNTRANSPORT

9. The following features are available only when the signal-channel link of the E-CCIS line is established:
 - Centralized Billing-CCIS [C-55]
 - Centralized System Management Report – CCIS [C-57]
10. When a RELEASE COMPLETE message (Cause number 34 [No circuit/channel available] /44 [Requested circuit/channel not available]) or DISCONNECT message is received from an ISDN network, route advance is executed according to the parameter RA (Order of Route Advancing) of AOPR command.

Route advance is available when a calling party is under the following status.

- Station without a held station/trunk
- Station with a held station
- Station with a held trunk
- Tandem Connection
- Attendant Console without a held station/trunk
- Attendant Console with a held station
- Attendant Console with a held trunk

However, route advance is not available in the following cases:

- Call origination from an ISDN terminal
- Tandem connection from an MFC trunk
- Data communication

When route advance is executed, the following services are not available:

- OFF-HOOK QUEUING [O-7]
- OUTGOING TRUNK QUEUING [O-2]
- INTER-OFFICE OFF – HOOK QUEUING [I-11]
- OUTGOING TRUNK BUSY ANNOUNCEMENT [O-21]
- ROUTE RESTRICTION – ANNOUNCEMENT [R-27]
- Dialing AUTHORIZATION CODE [A-21] from an ISDN trunk

4. Programming

STEP 1: Assign the Basic Data for ISDN. (Refer to [Chapter 3.](#))

Note: Example of ports allocation by ATRK command is shown below.

24PRT

Odd	LV7	Bch-8	Dch	CCIS
	LV6	Bch-7	Signal	
	LV5	Bch-6	Speech	
	LV4	Bch-5	Speech	
	LV3	Bch-4	Speech	
	LV2	Bch-3	Speech	
	LV1	Bch-2	Speech	
	LV0	Bch-1	Bch-17	
Even	LV7		Bch-16	
	LV6		Bch-15	
	LV5		Bch-14	
	LV4		Bch-13	
	LV3		Bch-12	
	LV2		Bch-11	
	LV1		Bch-10	
	LV0	DCH	Bch-9	

STEP 2: Assign CCIS No. 7 related data.

STEP 3: ARTD - Assign Bearer Capability for the speech channels of the E-CCIS line.

CDN:45 A/D: 0/1 = Analog (Bearer Capability: Speech)/
Digital (Bearer Capability: Unrestricted Digital)

Note that Bearer Capability for the signal channel is Unrestricted Digital only.

Assign Trunk Selection Sequence.

CDN:49 TRKS: 0/1= Select the trunk (CIC No.) in ascending order/descending order,
which assigned by the ACSC command.

Note that each office must be assigned a different value to avoid collision at the time of call origination.

EVENT BASED CCIS - ISDNTRANSPORT

Assign Dialed Number confirmation for the E-CCIS (speech channel) RT and the E-CCIS (signal channel) RT.

CDN : 66 DC: Assign the same value as the ARTD command of CDN 66 (DC) which assigned for common ISDN (speech channel RT)

STEP 4: ARTI - Assign the following CDN data for the E-CCIS route.
ECCIS (Event Based CCIS): 1

ECCISTM: Release Timer for the E-CCIS line

- 0: 3 minutes (Default)
- 1: 15 seconds
- 2: 30 seconds
- 3: 1 minute
- 4: 2 minutes
- 5: 5 minutes
- 6: 10 minutes
- 7: 15 minutes
- 8: 30 minutes
- 9: 1 hour
- 10-13: Not used
- 14: Immediately after call completion (for Speech Channel)/
1 minute (for Signal Channel)
- 15: Not released

ECCISOB: OG Billing for E-CCIS Line

- 0: Not required
- 1: Required

ECCISIB: IC Billing for E-CCIS Line

- 0: Not required
- 1: Required

ECCISTD: Addressing information used in E-CCIS

- 0: Called DID Number
- 1: Called Sub Address

STEP 5: AEVT - Assign virtual tie line data for E-CCIS.

RT:	Route Number
TK:	Trunk Number
TYPE:	System type (Dch is used commonly or separately with ISDN trunk)
DESTINATION:	Destination Number (Maximum 6 digits)
CALLING:	Calling Number (Maximum 24 digits)
CALLED:	Called Number (Maximum 24 digit s) Note
C_RT:	CCIS Signal Route Number
C_TK:	CCIS Signal Trunk Number
VRY:	Verification of Connection Note
	0: Not required
	1: Required
OPR:	Outgoing Route Selection Pattern Number of CBC Service
RA:	Order of Route Advance of CBC Service

Note: *When Verification of Connection is in service, if the last four digits of the received number is not equal to those of Called Number, the connection is not established.*

STEP 6: AVTC - Assign Virtual Tie Line Number for the E-CCIS route.

STEP 7: ACBC - If required, assign Call by Call data for the E-CCIS route.

EVENT BASED CCIS - ISDNTRANSPORT

Examples of Data Assignment for the E-CCIS line

- Example of port allocation when using Called Sub Address as addressing information **Note**

		24PRT			
RT110	TK1	●	ISDN D-channel		
RT120	TK1	○	E-CCIS Signal Channel	Sub Address: 9803	
RT20	TK3	○	E-CCIS Speech Channel	Sub Address: 9802	
RT20	TK2	○	E-CCIS Speech Channel	Sub Address: 9801	
RT20	TK1	○	E-CCIS Speech Channel	Sub Address: 9800	
RT10	TK19	○	ISDN B-channel		
RT10	TK18	○	ISDN B-channel		
RT10	TK17	○	ISDN B-channel		
RT10	TK16	○	ISDN B-channel		
⋮	⋮	⋮	⋮		
RT10	TK2	○	ISDN B-channel		
RT10	TK1	○	ISDN B-channel		

DID Number for incoming calls from an E-CCIS line: 0471-81-3500
 DID Number for incoming calls from an alternate route: 0471-81-3600

Data assignment procedure related to the E-CCIS line is shown below.

STEP 1: ARTD - RT20 CDN 45 A/D: 0 (Voice information is transmitted)
 CDN 49 TRKS: 0 (Select the trunk (CIC No.) in ascending order)
 CDN 66 DC: 4
 RT120 CDN 66 DC: 4

Note
Note

Note: The same value in "DC" assigned for ISDN B channel must be programmed to both E-CCIS Signal and Speech route (RT10-CDN66 DC: 4).

STEP 2: ARTI - RT20 ECCIS: 1 (E-CCIS Route)
 ECCISTM: 5 (Release timer: 5 minutes)
 ECCISOB: 1 (OG billing for the E-CCIS line is required)
 ECCISIB: 1 (IC billing for the E-CCIS line is required)
 ECCISTD: 1 (Addressing information: Sub Address)

RT120 ECCIS: 1 (E-CCIS Route)
 ECCISTM : 3 (Release timer: 1 minute)
 ECCISOB: 1 (OG billing for the E-CCIS line is required)
 ECCISIB: 1 (IC billing for the E-CCIS line is required)
 ECCISTD: 1 (Addressing information: Sub Address)

STEP 3: AEVT - RT20 TK1 DESTINATION: 9800 (E-CCIS trunk identification number)
CALLING: 0471813500 (DID number for incoming call)
CALLED: 0891245600 (DID number for outgoing call)
C_RT: 120 (CCIS Signal Route Number)
C_TK: 1 (CCIS Signal Trunk Number)
VRY: 1 (Verification of Connection: Required)

TK2 DESTINATION: 9801 (E-CCIS trunk identification number)
CALLING: 0471813500 (DID number for incoming call)
CALLED: 0891245600 (DID number for outgoing call)
C_RT: 120 (CCIS Signal Route Number)
C_TK: 1 (CCIS Signal Trunk Number)
VRY: 1 (Verification of Connection: Required)

TK3 DESTINATION: 9802 (E-CCIS trunk identification number)
CALLING: 0471813500 (DID number for incoming call)
CALLED: 0891245600 (DID number for outgoing call)
C_RT: 120 (CCIS Signal Route Number)
C_TK: 1 (CCIS Signal Trunk Number)
VRY: 1 (Verification of Connection: Required)

RT120 TK1 DESTINATION: 9803 (E-CCIS trunk identification number)
CALLING: 0471813500 (DID number for incoming call)
CALLED: 0891245600 (DID number for outgoing call)
C_RT: 120 (CCIS Signal Route Number)
C_TK: 1 (CCIS Signal Trunk Number)
VRY: 1 (Verification of Connection: Required)
OPR: 20 (OPR number for RT20 specified in the ACBC command)
RA: 0 (RA number for RT20 specified in the ACBC command)

STEP 4: AVTC - TN:1
STN: 3500 (DID Number or Converted Number generated by ACDD command)

EVENT BASED CCIS - ISDNTRANSPORT

The following data is assigned for route advance using Remote Access to System.

STEP 5: AOPR - TDPTN: 0

OPR: 15

RA: 1

E: 0

RT: 10

SKIP: 0

PNL: 30

OVFT: 1

PRSC: 0

STEP 6: AADC - PNL:30

DC: 0891246000*(Calling number for Remote Access to System plus*)

STEP 7: ASYD - System Data 1, Index 43, Bit 0:1 (Forced Account Code Dialing is not required for Remote Access to System)

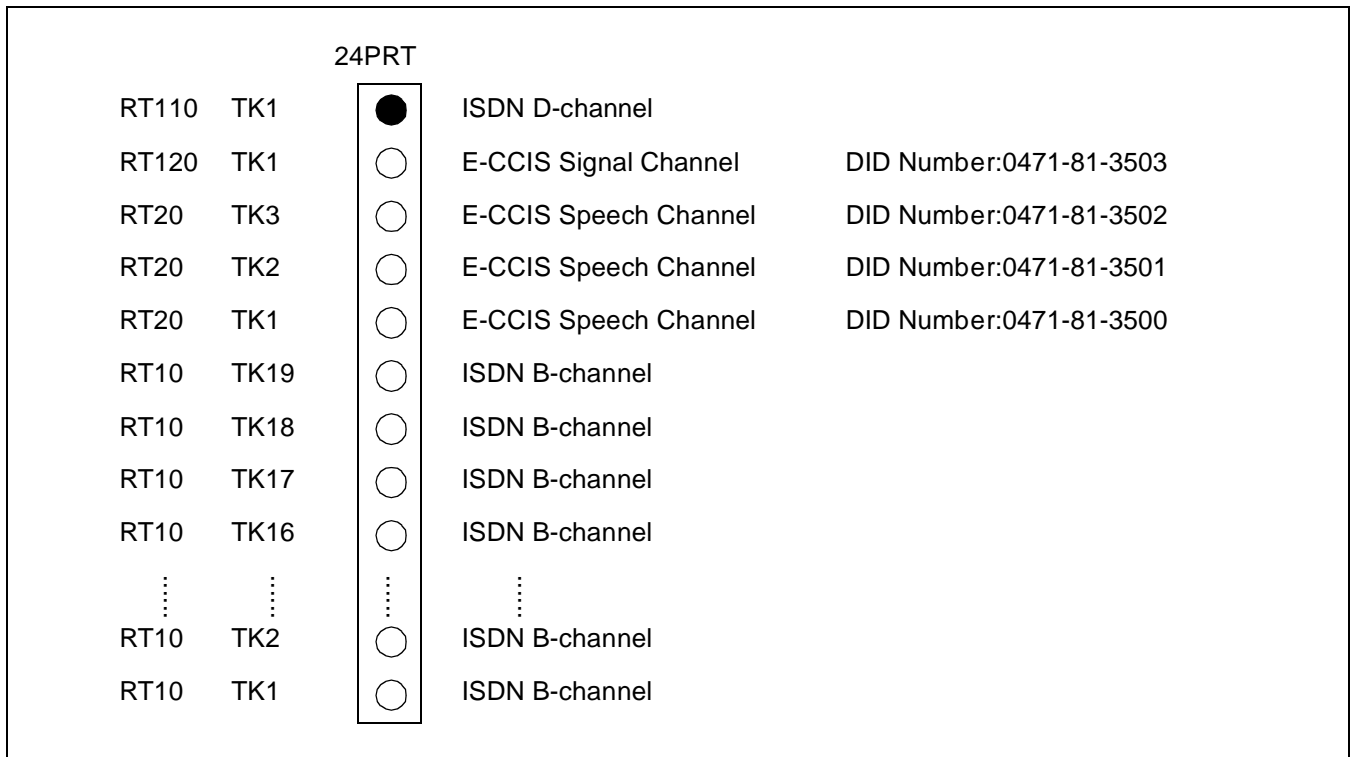
STEP 8: ARTD - For the alternate incoming route, assign CDN 38 (FA) as 1.

STEP 9: ARAC - ICTN: 1

ACC: 3600 (DID Number or Converted Number generated by ACDD command)

TN: 1

- Example of port allocation when using DID Number as addressing information



Data assignment procedure related to the E-CCIS line is shown below.

STEP 10: ARTD - RT20 CDN 45 (A/D): 0
 CDN 66 (DC): 4

 RT120 CDN 66 (DC): 4

STEP 11: ARTI - RT20 CDN 31 (ECCIS): 1 (E-CCIS Route)
 CDN 32 (ECCISTM) : 5 (Release timer: 5 minutes)
 CDN 33 (ECCISOB) : 1 (OG billing for the E-CCIS line is required)
 CDN 34 (ECCISIB) : 1 (IC billing for the E-CCIS line is required)
 CDN 36 (ECCISTD) : 0 (Addressing information: Called DID Number)

 RT120 CDN 31 (ECCIS): 1 (E-CCIS Route)
 CDN 32 (ECCISTM) : 3 (Release timer: 1 minute)
 CDN 33 (ECCISOB) : 1 (OG billing for the E-CCIS line is required)
 CDN 34 (ECCISIB) : 1 (IC billing for the E-CCIS line is required)
 CDN 36 (ECCISTD) : 0 (Addressing information: Called DID Number)

EVENT BASED CCIS - ISDNTRANSPORT

STEP 12: AEVT - RT20 TK1 DESTINATION: 3500 (E-CCIS trunk identification number)
CALLING: 0471813500 (DID number for incoming call)
CALLED: 0891245600 (DID number for outgoing call)
C_RT: 120 (CCIS Signal Route Number)
C_TK: 1 (CCIS Signal Trunk Number)
VRY: 1 (Verification of Connection: Required)

TK2 DESTINATION: 3501 (E-CCIS trunk identification number)
CALLING: 0471813501 (DID number for incoming call)
CALLED: 0891245601 (DID number for outgoing call)
C_RT: 120 (CCIS Signal Route Number)
C_TK: 1 (CCIS Signal Trunk Number)
VRY: 1 (Verification of Connection: Required)

TK3 DESTINATION: 3502 (E-CCIS trunk identification number)
CALLING: 0471813502 (DID number for incoming call)
CALLED: 0891245602 (DID number for outgoing call)
C_RT: 120 (CCIS Signal Route Number)
C_TK: 1 (CCIS Signal Trunk Number)
VRY: 1 (Verification of Connection: Required)

RT120 TK1 DESTINATION: 3503 (E-CCIS trunk identification number)
CALLING: 0471813503 (DID number for incoming call)
CALLED: 0891245603 (DID number for outgoing call)
C_RT: 120 (CCIS Signal Route Number)
C_TK: 1 (CCIS Signal Trunk Number)
VRY: 1 (Verification of Connection: Required)
OPR: 20 (OPR number for RT20 specified in the ACBC command)
RA: 0 (RA number for RT20 specified in the ACBC command)

STEP 13: AVTC - TN: 1

STN: 3500

STN: 3501 DID Number or Converted Number generated by ACDD command

STN: 3502

STN: 3503

E-24 EVENT BASED CCIS - Q-SIGTRANSPORT**1. General Description**

This feature provides VIRTUAL TIE LINE for each event such as call origination and MCI message transmission. Inter-PBX link for this feature is established on B-channels of the private ISDN line using CCIS No. 7 signaling protocol. For addressing a specific terminal, Called Sub Address or Called DID Number is used depending on the network configuration.

2. Operating Procedure

None.

3. Service Conditions

1. The ISDN Primary Rate Interface (PRI) trunk is used for this feature.
2. ETS 300 172 or ISO/IEC 11572 is available as ISDN interface for this service.
3. E-CCIS signal channel assignment is not necessary when activating via the private ISDN line because E-CCIS line is controlled by D-channel of ISDN.
4. This feature is activated between two PBXs directly connected to each other. Therefore, this feature is not available for the using tandem office.
5. Since this feature uses the B-channel for ISDN as the speech line, the speech line is not established when all B-channels are busy.
6. When using Called Sub Address as addressing information:
 - (a) Sub Address-Addressing must be available in the ISDN network.
 - (b) different DID Numbers must be assigned to the ISDN line, the E-CCIS line. For the E-CCIS line, DID Number is required for each D-channel.
 - (c) Sub Address assigned to the E-CCIS trunk must be common to both offices.
7. When using Called DID Number as addressing information:
 - (a) a different DID Number is required for each channel of the E-CCIS line.
 - (b) when multiple routes are assigned for the terminating office, call termination to an E-CCIS trunk must not be allowed except when DID Number assigned to the trunk is dialed.
 - (c) different DID Numbers must be assigned to the ISDN line and the E-CCIS line. For the E-CCIS line, DID Number is required by for each D-channel.
8. Each channel used for a E-CCIS line must be controlled by a single D-channel (i.e. Each channel must be assigned to a single ISDN line).

EVENT BASED CCIS - Q-SIGTRANSPORT

9. Billing information
 - (a) OG billing and IC billing data should be set for each route via the ARTI command.
 - (b) Trunk identification number assigned at DESTINATION of the AEVT command is output to the SDMR text in place of a station number.
 - (c) Billing information on E-CCIS line does not include Access Code or Converted Number (ASYD-SYS1 Index 32, bit 5/Index 34, bit 5/Index 62, bit 2=0).
10. Peg Count service for E-CCIS line (ETS 300 172 or ISO/IEC 11572) is activated for ISDN route setting Virtual Tie Line data.
(Peg Count for ISDN line includes the route for E-CCIS line)
11. This service is established when no E-CCIS line is established or the call is originated even if the all channels are busy.
12. The release timer is activated when the CCIS call is disconnected.
13. The following features are available for the E-CCIS line:
 - Asynchronous Data Switching [A-44] **Note**
 - Attendant Camp-On with Tone Indication – CCIS [A-45]
 - Attendant-Controlled Conference – CCIS [A-46]
 - Automatic Recall – CCIS [A-71]
 - Automatic Number Identification (ANI) – CCIS [A-87]
 - Busy Verification – CCIS [B-9]
 - Brokerage Hotline – CCIS [B-10]
 - Call Back – CCIS [C-44]
 - Call Forwarding – All Calls – CCIS [C-45]
 - Call Forwarding – Busy Line – CCIS [C-46]
 - Call Forwarding – Don't Answer – CCIS [C-47]
 - Call Forwarding – Intercept – CCIS [C-48]
 - Call Forwarding – Override – CCIS [C-49]
 - Call Transfer – All Calls – CCIS [C-50]
 - Called Station Status Display – CCIS [C-51]
 - Calling/Called Number Display – CCIS [C-52]
 - Call Processing Indication – CCIS [C-53]
 - Call Transfer – Attendant – CCIS [C-54]
 - Consultation Hold – All Calls – CCIS [C-58]
 - Call Forwarding Assignment – Attendant – CCIS [C-94]
 - Deluxe Traveling Class Mark – CCIS [D-70]
 - Data Communication – CCIS [D-41] **Note**
 - Data Interface – Automatic Answer – CCIS [D-65] **Note**
 - Data Line Security – CCIS [D-66] **Note**
 - Data Line Privacy – CCIS [D-67] **Note**
 - Data Privacy on Demand – CCIS [D-68] **Note**
 - Data Transparency – CCIS [D-69] **Note**
 - Dial Access to Attendant – CCIS [D-71]
 - Digital Display – Station – CCIS [D-72]

- Digital Display – Trunk – CCIS [D-73]
- Direct-In Termination – CCIS [D-74]
- Distinctive Ringing – CCIS [D-75]
- Do Not Disturb – D^{term} – CCIS [D-76D]
- Data Hotline – CCIS [D-86] **Note**
- Dialed Number Display – Recall – CCIS [D-91]
- Dual Hold D^{term} – CCIS [D-93D]
- Executive Right-of-Way – CCIS [E-8]
- Elapsed Time Display – CCIS [E-9]
- E-911 ANI Unified Number of Digits – CCIS [E-20]
- Flexible Numbering of Stations – CCIS [F-12]
- Hands-Free Answerback – D^{term} – CCIS [H-10D]
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- Individual Attendant Access – CCIS [I-17]
- Inter-Position Transfer – CCIS [I-18]
- Individual Trunk Access – CCIS [I-19]
- Look Ahead Routing – CCIS [L-25]
- LDN Night Connection – CCIS [L-29]
- Message Reminder – CCIS [M-34]
- Message Reminder – D^{term} – CCIS [M-34D]
- Message Waiting Lamp Setting – Attendant – CCIS [M-35]
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- Multiple Call Forwarding – All Calls – CCIS [M-40]
- Multiple Call Forwarding – Busy Line – CCIS [M-41]
- Multiple Call Forwarding – Don't Answer – CCIS [M-42]
- Multiple Console Operation – CCIS [M-43]
- Message Center Interface – CCIS [M-67]
- Night Connection – Fixed – CCIS [N-15]
- Night Connection – Flexible – CCIS [N-16]
- Name Display – System – CCIS [N-37]
- Off-Hook Queuing – CCIS [O-11]
- Outgoing Trunk Queuing – CCIS [O-12]
- Paging Access – CCIS [P-28]
- Restriction from Outgoing Calls – CCIS [R-22]
- Serial Call – CCIS [S-52]
- Service Display – D^{term} – CCIS [S-53D]
- Simultaneous Voice and Data Transmission – CCIS [S-54]
- Single-Digit Station Calling – CCIS [S-55]

EVENT BASED CCIS - Q-SIGTRANSPORT

- Station Controlled Conference – CCIS [S-56]
- Station-to-Station Calling – CCIS [S-57]
- Station-to-Station Calling – Operator Assistance – CCIS [S-58]
- Step Call – CCIS [S-59]
- Synchronous Data Switching – CCIS [S-60]
- Supervisory Call – CCIS [S-73]
- Toll Restriction – 3/6-Digit – CCIS [T-26]
- Trunk Answer from Any Station – CCIS [T-27]
- Uniform Numbering Plan – CCIS [U-5]
- Voice Call – CCIS [V-7]

Note: When A/D=1 (Digital) is assigned by CDN45, ARTD, this feature is available.

4. Programming

STEP 1: Assign the Basic Data for ISDN. (Refer to [Chapter 3](#).)

STEP 2: Assign CCIS No.7 related data.

Note: Assign the LEN of the DCH for controlling E-CCIS route at the CCH parameter of the ACSC command.

STEP 3: ARTD - Assign the Bearer Capability for the speech channels of the E-CCIS line.

CDN45 A/D: 0/1= Analog (Bearer Capability: Speech)/Digital (Bearer Capability: Unrestricted Digital)

CDN49 TRKS: 0/1= select the trunk in ascending order/descending order (CIC No. is programmed by the ACSC command)

STEP 4: ARTI - Assign the following data for the E-CCIS route.
JECCIS (Common use with E-CCIS RT):1

ECCISTIM: Release Timer for the E-CCIS line
 0: 3 minutes (Default)
 1: 15 seconds
 2: 30 seconds
 3: 1 minute
 4: 2 minutes
 5: 5 minutes
 6: 10 minutes
 7: 15 minutes
 8: 30 minutes
 9: 1 hour
 10-13: Not used
 14: Immediately after call completion
 15: Not released

ECCISOB: OG Billing for E-CCIS Line
 0/1=Not required/Required.

ECCISIB: IC Billing for E-CCIS Line
 0/1=Not required/Required.

ECCISTD: Addressing information used in E-CCIS
 0/1=Called DID Number/Called Sub Address.

ECCIS2 (E-CCIS System): 1=Common Channel System

STEP 5: AEVT - Assign the virtual tie line data for E-CCIS.

FUNC: 1
 RT: Route Number
 TK: Fixed "0"
 TYPE: 3 (Common Channel System)
 DESTINATION: Destination Number (Max. 6 digits)
 CALLING: Calling Number (Max. 24 digits)
 CALLED: Called Number (Max. 24 digits)
 ISDN_RT: ISDN Route Number
 VRY: Verification of Connection **Note**
 0/1=Not required/Required
 FUNC: 2
 PC: Terminating Point Code
 RT: E-CCIS Route Number

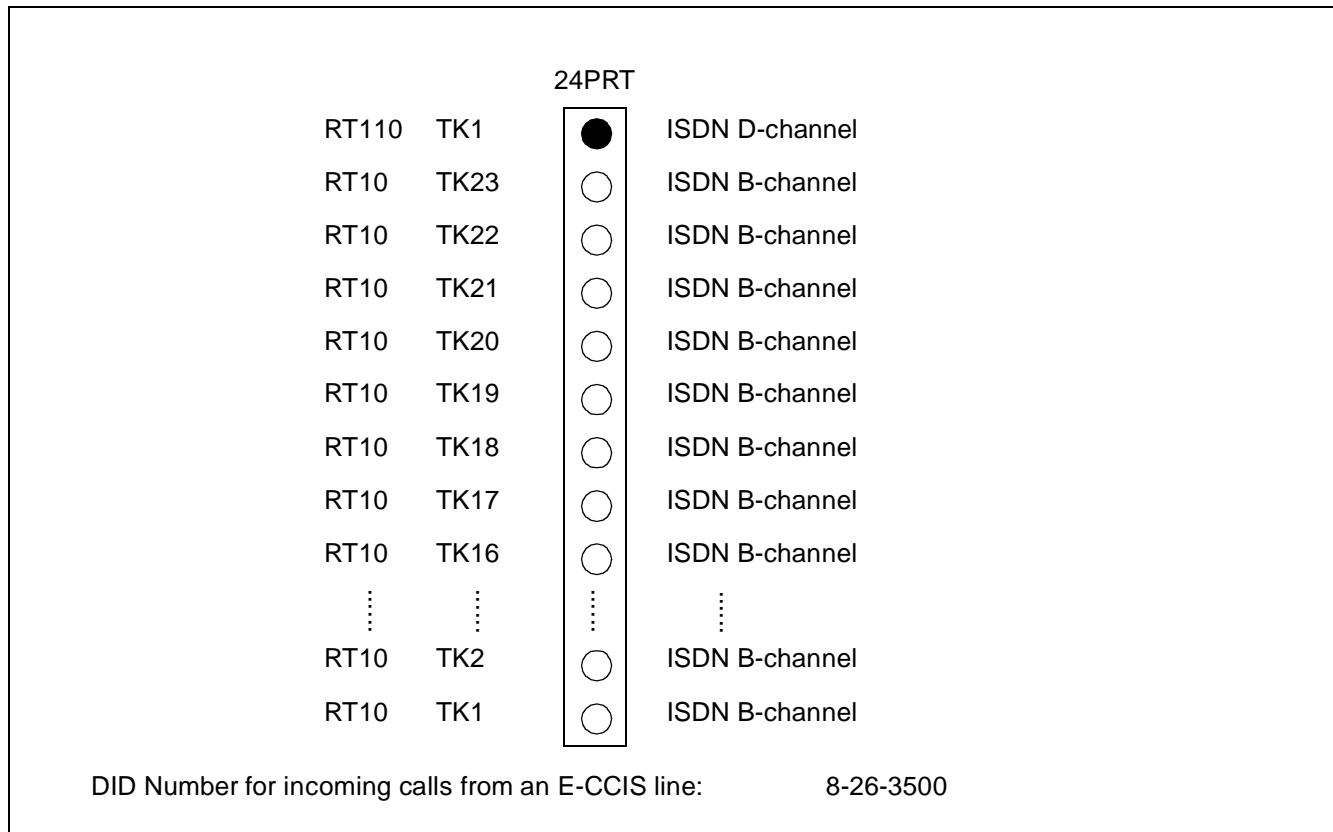
Note: *When Verification of Connection is in service, if the last four digits of the received number is not equal to those of Called Number, the connection is not established.*

STEP 6: AVTC - Assign Virtual Tie Line Number for the E-CCIS route.

EVENT BASED CCIS - Q-SIGTRANSPORT

Examples of Data Assignment for the E-CCIS line

- Example of port allocation when using Called Sub Address as addressing information



Data assignment procedure related to the E-CCIS line is shown below.

E-CCIS speech line for the office A (PC=2) → RT20

E-CCIS speech line for the office B (PC=3) → RT30

STEP 1: ARTD - Office A

RT20 CDN 45 (A/D): 0 (Bearer capability: speech)
 CDN 49 (TRKS): 0

- Office B

RT30 CDN 45 (A/D): 0 (Bearer capability: speech)
 CDN 49 (TRKS): 0

STEP 2: ARTI - RT10 JECCIS: 1 (common use with E-CCIS RT)

- Office A

RT20 ECCISTM: 5 (Release timer: 5 minutes)
 ECCISOB: 1 (OG billing for the E-CCIS line is required)
 ECCISIB : 1 (IC billing for the E-CCIS line is required)
 ECCISTD: 1 (Addressing information: Sub Address)
 ECCIS2: 1 (Common channel system)

- Office B

RT30 ECISTM: 5 (Release timer: 5 minutes)

ECCISOB: 1 (OG billing for the E-CCIS line is required)
 ECCISIB : 1 (IC billing for the E-CCIS line is required)
 ECCISTD: 1 (Addressing information: Sub Address)
 ECCIS2: 1 (Common channel system)

STEP 3: AEVT - Office A

FUNC: 1
 RT20
 TK: 0 (fixed)
 TYPE: 3 (Common channel system)
 DESTINATION: 9800
 CALLING: 8263500
 CALLED: 81164500
 ISDN_RT: 10
 VRY: 1
 FUNC: 2
 PC: 2
 RT: 20

- Office B

FUNC: 1
 RT30
 TK: 0 (fixed)
 TYPE: 3 (Common channel system)
 DESTINATION: 9801
 CALLING: 8263500
 CALLED: 8205500
 ISDN_RT: 10
 VRY: 1
 FUNC: 2
 PC: 3
 RT: 30

STEP 4: AVTC - TN:1

STN: 3500 (DID number or Converted number generated by the ACDD command)

EVENT BASED CCIS - Q-SIGTRANSPORT

- Example of port allocation when using DID Number as addressing information

		24PRT		
RT110	TK1	<input checked="" type="radio"/>	ISDN D-channel	
RT10	TK23	<input type="radio"/>	ISDN B-channel	
RT10	TK22	<input type="radio"/>	ISDN B-channel	
RT10	TK21	<input type="radio"/>	ISDN B-channel	
RT10	TK20	<input type="radio"/>	ISDN B-channel	
RT10	TK19	<input type="radio"/>	ISDN B-channel	
RT10	TK18	<input type="radio"/>	ISDN B-channel	
RT10	TK17	<input type="radio"/>	ISDN B-channel	
RT10	TK16	<input type="radio"/>	ISDN B-channel	
⋮	⋮	⋮	⋮	
RT10	TK2	<input type="radio"/>	ISDN B-channel	
RT10	TK1	<input type="radio"/>	ISDN B-channel	
[For Office A] DID Number for incoming calls from an E-CCIS line:		8-26-3200		
[For Office B] DID Number for incoming calls from an E-CCIS line:		8-26-3300		

Data assignment procedure related to the E-CCIS line is shown below.

E-CCIS speech line for the office A (PC=2) → RT20

E-CCIS speech line for the office B (PC=3) → RT30

STEP 5: ARTD - Office A

RT20	CDN 45 (A/D):	0 (Bearer capability: speech)
	CDN 49 (TRKS):	0

- Office B

RT30	CDN 45 (A/D):	0 (Bearer capability: speech)
	CDN 49 (TRKS):	0

STEP 6: ARTI - RT10 JECCIS: 1 (common use with E-CCIS RT)

- Office A

RT20	ECISTM:	5 (Release timer: 5 minutes)
	ECCISOB:	1 (OG billing for the E-CCIS line is required)
	ECCISIB :	1 (IC billing for the E-CCIS line is required)
	ECCISTD:	0 (Addressing information: DID number)
	ECCIS2:	1 (Common channel system)

- Office B
 RT30 ECISTM: 5 (Release timer: 5 minutes)
 ECCISOB: 1 (OG billing for the E-CCIS line is required)
 ECCISIB : 1 (IC billing for the E-CCIS line is required)
 ECCISTD: 0 (Addressing information: DID number)
 ECCIS2: 1 (Common channel system)

STEP 7: AEVT - Office A

FUNC: 1
 RT20
 TK: 0 (fixed)
 TYPE: 3 (Common channel system)
 DESTINATION: 3200
 CALLING: 8263200
 CALLED: 81164500
 ISDN_RT: 10
 VRY: 1
 FUNC: 2
 PC: 2
 RT: 20

- Office B

FUNC: 1
 RT30
 TK: 0 (fixed)
 TYPE: 3 (Common channel system)
 DESTINATION: 3300
 CALLING: 8263300
 CALLED: 8205500
 ISDN_RT: 10
 VRY: 1
 FUNC: 2
 PC: 3
 RT: 30

STEP 8: AVTC - TN:1

STN: 3200 (DID number or Converted number generated by the ACDD command)
 STN: 3300 (DID number or Converted number generated by the ACDD command)

CALL COMPLETION ON NO REPLY (CCNR)

C-152 CALL COMPLETION ON NO REPLY (CCNR)

1. General Description

This feature allows a calling station to set Inter-Office Call Back when the called station does not answer. This feature conforms to ETS 300 366. CCNR conforming to IS-13870 is available since Series 7400 software.

2. Operating Procedure

To set CCNR:

1. Station A places a call to Station B and receives Ring Back Tone; Station B does not answer.
2. While hearing Ring Back Tone, Station A presses the switchhook flash button and dials the access code or presses the feature key for setting CCNR; Station A receives Service Set Tone.
3. Station A goes on-hook and waits for call back from Station B. Station B lifts the handset and handles another call.
4. Station B goes on-hook; Station A rings.
5. Station A answers; Station B is automatically recalled.
6. Station B answers; Station A and Station B are connected.

To cancel CCNR:

1. Station A lifts the handset while the CCNR service is set; Station A hears Dial Tone.
2. Station A dials the access code or presses the function key for canceling CCNR; Station A hears Service Set Tone.
3. Station A replaces the handset.

Note: *Operating procedure varies depending on the specifications of the station since ETS 300 306/IS-13870 protocol does not regulate.*

3. Service Conditions

1. CCNR is available when an end-to-end link is established via Q-SIG interface (ETS 300 172).
2. The transfer rate is 64 kbps. Bearer Capabilities are as follows:
 - Speech
 - 3.1 kHz audio
 - 7 kHz audio
3. Multiple CCNR features cannot be set for a single station.
4. CCNR is available for the D^{term} or an analog station (i.e. not available for Attendant Console or ISDN terminal).
5. When the called station becomes idle while the calling station is in conversation, the calling station is recalled after the conversation ends.

6. When the called station number is Pilot Number of Station Hunting Group, CCNR is set to the terminated station.
7. When a Call Forwarding feature is activated at the called station, note the following conditions:
 - If Call Forwarding - All Calls is activated, CCNR is not available.
 - If Call Forwarding - Busy Line or Call Forwarding - Don't Answer is activated, CCNR is set to the forwarded station.
 - If Call Forwarding - Don't Answer is activated and the forwarded station is busy, CCNR is not available.
8. CCNR is not available while one of the following features is activated:
 - Call Back
 - Call Back - CCIS
 - Call Waiting
 - Call Hold
 - ATT Camp On (Called side)
9. CCNR is canceled when:
 - Cancel Timer for CCNR expires.
 - All the trunks for recalling are busy.
 - The system recalls the calling station in lockout or make-busy state.
 - The called station is abnormally released (ex. the handset remains off-hook) and turned into lockout state.
10. CCNR conforming to IS-13870 is available when an end-to-end link is established via IS-11572 interface or when the tandem connection of Q-SIG and IS-11572 link is established (Not available for the signaling method other than Q-SIG and IS-11572).
11. The transfer rate is 64kbps. Bearer Capabilities are as follows:
 - - Speech
 - - 3.1 kHz audio

Note: *For more details of CCNR feature regulated by protocol, see the corresponding manual.*

12. CCNR is available for the D^{term} or an analog station (i.e. not available for PS terminal, Attendant Console nor ISDN terminal).
13. CCNR is available while the called party is ringing in two-party connection between calling and called party.
14. CCNR is not available while the calling/called station is in one of the following conditions:
 - (a) Calling Station
 - the station sets Call Back or Call Back is set to the station
 - the station sets Call Back-CCIS or Call Back-CCIS is set to the station
 - the station uses Call Hold
 - the station sets Call Waiting service
 - the station is restricted this feature

CALL COMPLETION ON NO REPLY (CCNR)

- (b) Called Station
- the station is in lockout state or make-busy state
 - the station sets Call Back or Call Back is set to the station
 - the station sets Call Back-CCIS or Call Back-CCIS is set to the station
 - the station uses Call Hold
 - the station sets Call Forwarding-All Calls/Busy Line (providing that Call Forwarding service is successful)
 - Attendant Camp on with Tone Indication is set to the station
 - the station sets Call Waiting service
 - the station is restricted this feature

15. CCNR is canceled when:

- (a) Automatic Cancel Timer for CCNR expires (ASYD, System data 1, Index 71, b0-b3 decides the timer and b7 makes the timer effective).
** Automatic Cancel for Call Back is applied to this feature also.*
- (b) No Answer Timer (calling station does not answer the CCNR recall) expires (ASYD, System Data 1, Index 139. Default data is 30 seconds).
- (c) The system recalls the calling station in lockout or make-busy state (CCNR is effective when the system recalls after lockout state or make-busy state is recovered).
- (d) All trunks for recalling are busy when the system recalls the calling station.
- (e) The called station is abnormally released (ex. The handset remains off-hook) and turned into lockout state.
- (f) The operating station is restricted incoming calls at the time of recall.

16. The single station cannot set multiple CCNR services and multiple CCNR services cannot be set to the single station.

A maximum number of CCNR to be set simultaneously per LP =

480 – (no. of ISDN call to be handled + no. of already set CCBS and CCNR service **Note**)

Note: Both CCBS and CCNR services conforming to ETS300 366 and IS-13870.

17. When the called station becomes idle while the calling station is in conversation, the system recalls the calling station after the conversation ends.

18. If the fault occurs at IS-11572 data link;

- (a) If the fault occurs when the calling station is operating to set CCNR, CCNR service cannot be set.
- (b) If the fault occurs when the calling station is operating to cancel CCNR, CCNR is canceled at the side of operating station but not canceled at the side of called station to be set since the cancel message is not sent to the station.
- (c) If the fault occurs when informing the calling station that the called station becomes idle, CCNR is canceled at the side of called station, but not canceled at the side of calling station since the message is not sent to the station.
- (d) If the fault occurs when the calling station answers the recall (CCNR call), CCNR is canceled at the side of the calling station but not canceled at the side of the called station since the message is not sent to the station.

19. The conditions of alternate routing are as follows.

- (a) If the data link fault occurs when the station is operating to set CCNR, the message for service set is sent using alternate route providing that the interface is Q-SIG/IS-11572.
- (b) The same route is used for sending service set message and recall (the other route cannot be used). Therefore, recall is not completed since all trunks (B-channel) of the corresponding route are busy, and the system processes the call as follows.
 - All B-channel trunks at the system of an calling station are busy: cancel CCNR and send the busy tone to the calling station.
 - All B-channel trunks at the mediate system are busy: send the message of CCNR recall fault to the calling station and the message of CCNR cancel to the called station.

20. The description below are interactions between CCNR and Call Forwarding service (All Calls, Busy Line, Don't Answer).

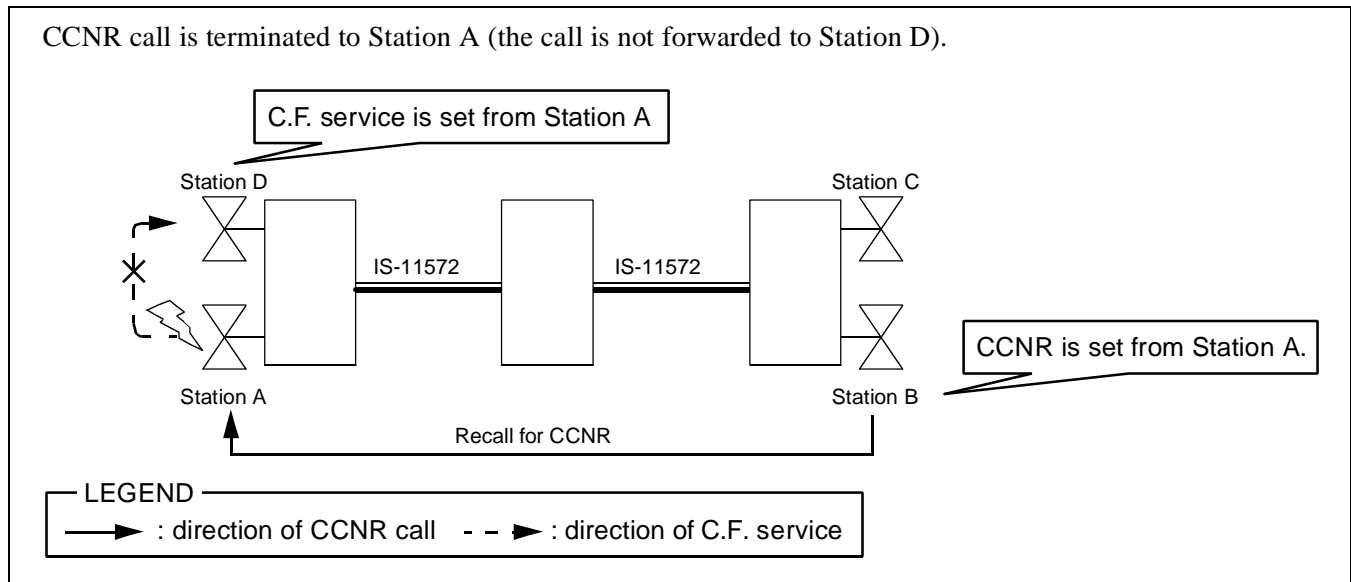
- (a) When setting CCNR to the station which is set C.F. service, the time of setting CCNR decides whether the service is set or not.

	C.F. - All Calls	C.F. - Busy Line	C.F. - Don't Answer
C.F. is incomplete C.F. is not applicable (the condition for making C.F. complete is not agreed) (before) C.F. is activated	-	CCNR is set to the forwarding station (called station)	CCNR is set to the forwarding station (called station) Note 1, Note 2
(after) C.F. is complete	Not Available	Not Available	CCNR is set to the forwarding station (called station) Note 1, Note 2

Note 1: *When the calling station recalls the station which is set CCNR service after answering CCNR recall, No Answer Timer time out is effective. If the timer expires, the recall is forwarded to the destination.*

Note 2: *The station to be set CCNR is not changed if C.F. - Don't Answer service is canceled after CCNR service set.*

CALL COMPLETION ON NO REPLY (CCNR)



- (b) When Call Forwarding - All Calls/Busy Line/Don't Answer is set on a calling station, the system recalls the calling party.
 - (c) When a called station is set Call Forwarding - All Calls/Busy Line/Don't Answer after CCBS service is set to the station, a calling station recalls the called station (forwarding station). As for a called station to be set Call Forwarding - Don't Answer, the destination station is recalled from the calling station if No Answer Timer expires.
21. When the called station is Station Hunting Group member, CCNR is set to the terminated station. If the terminated station is busy, CCNR cannot be set.
 22. Sub Address-Addressing is not used with CCNR.

4. Programming

Assign the basic data for establishing the Q-SIG or the IS-11572 (available to operate CCNR conforming to IS-13870 since Series 7400 Release 8 software) line referring to “IS-11572 (Layer 3 specifications for inter-PBX signalling protocol)” or “Q-SIG Circuit Switched Basic Call-ETSI Version” in this chapter.

STEP 1: ASYD -System Data 1, Index 17, bit 0. Hooking service while hearing Ring Back Tone is available for single line stations? 0/1 = No/Yes.

System Data 1, Index 71, bits 0 through 3. Assign the timer value of Cancel Timer for CCNR.

System Data 1, Index 71, bit 7. Automatic Cancel of CCNR. 0/1 = Out/In Service.

System Data 2, Index 4, bit 0. CCNR and OG Trunk Queuing Access Code. 0/1 = Separate/Common.

System Data 3, Index 7. Assign Ringer Pattern for Recalling.

STEP 2: ANPD -Reserve a number level for setting/canceling CCNR.

STEP 3: ASPA -Assign an access code for setting/canceling CCNR.

- For setting CCNR
 CI = H
 SRV = SSC
 SID = 3 (Call Back; Entry)
- For canceling CCNR
 CI = N
 SRV = SSC
 SID = 6 (Call Back; Cancel)

STEP 4: Assign Service Feature Class that allows SFI = 2 (Call Back) to the stations allowed this service.

CALL COMPLETION TO BUSY SUBSCRIBER (CCBS)

C-148 CALL COMPLETION TO BUSY SUBSCRIBER (CCBS)

1. General Description

This feature allows an Inter-Office Call Back when the calling station and the called station respectively belong to a different PBX in a Q-SIG network. This feature conforms to ETS 300 366.

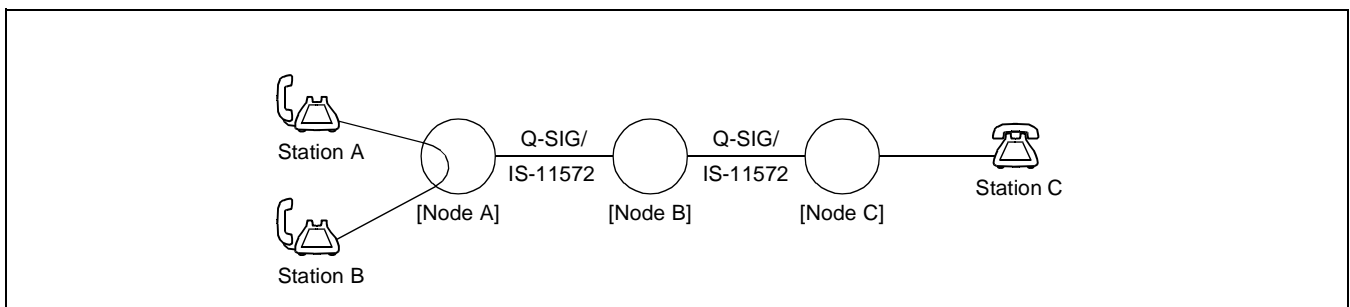
Since the Series 7400 software program, CCBS conforming to IS-13870 is also available.

2. Operating Procedure

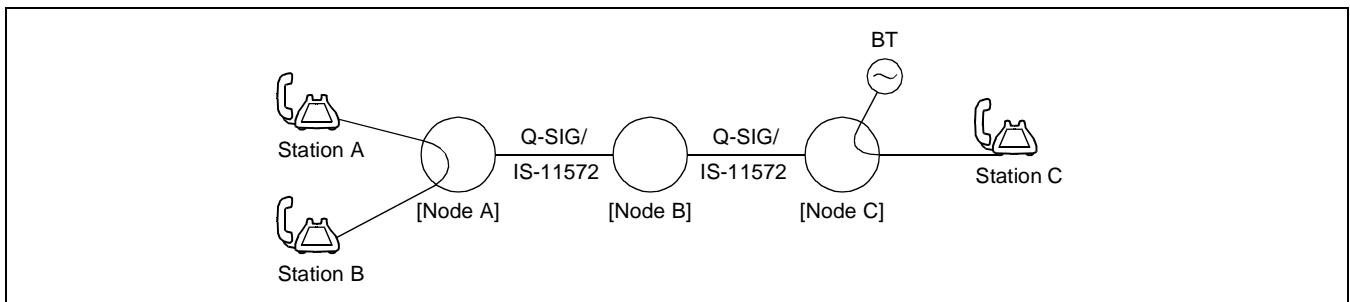
To set CCBS:

[When using the access code]

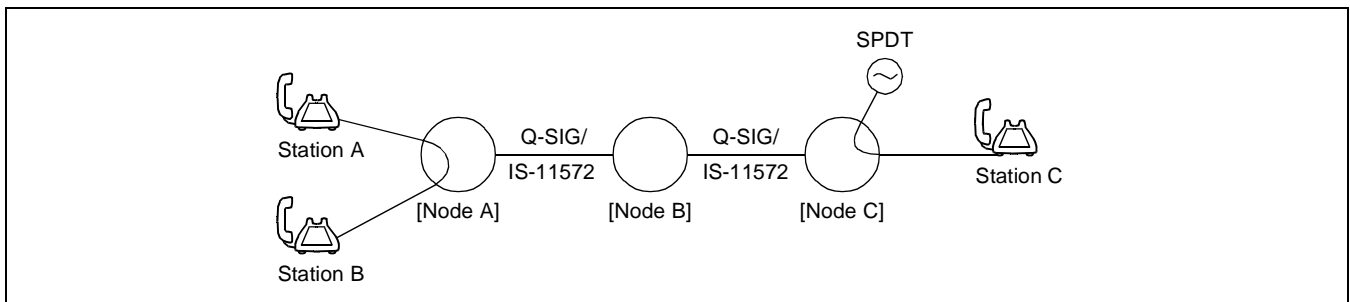
1. Station A and Station B are in station-to-station connection.



2. Station C dials the number for Station B; Station C receives Busy Tone.

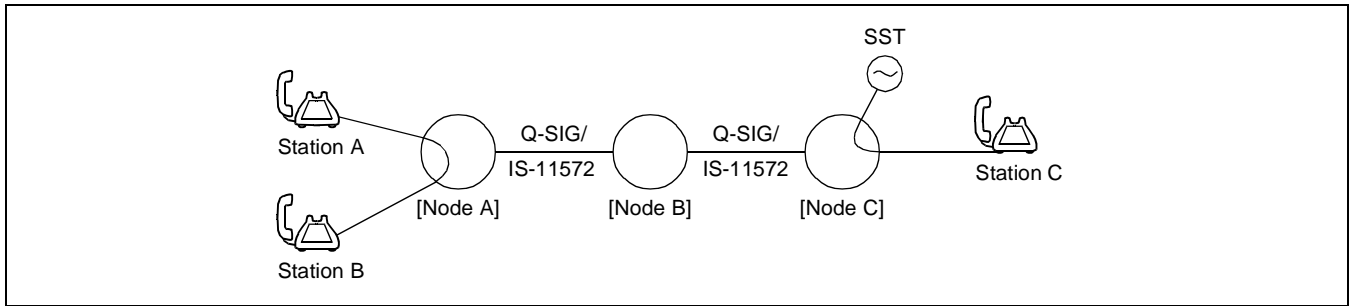


3. Station C presses the switchhook or dials the last digit of the number for Station B; Station C receives Special Dial Tone.

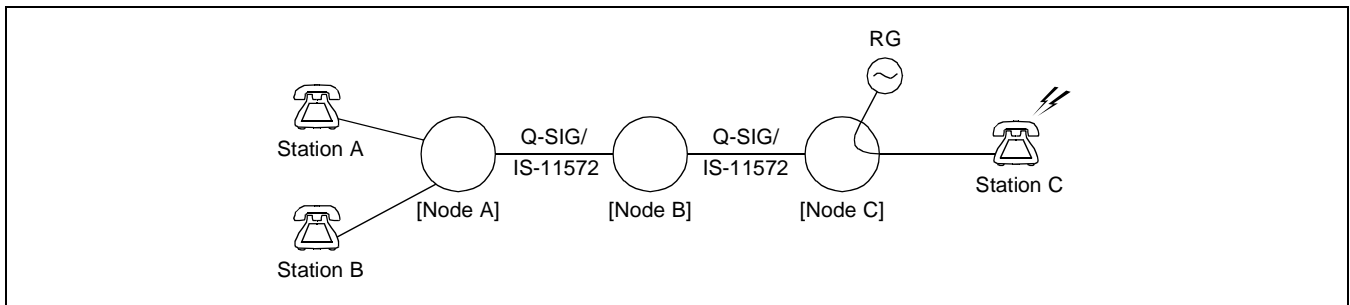


CALL COMPLETION TO BUSY SUBSCRIBER (CCBS)

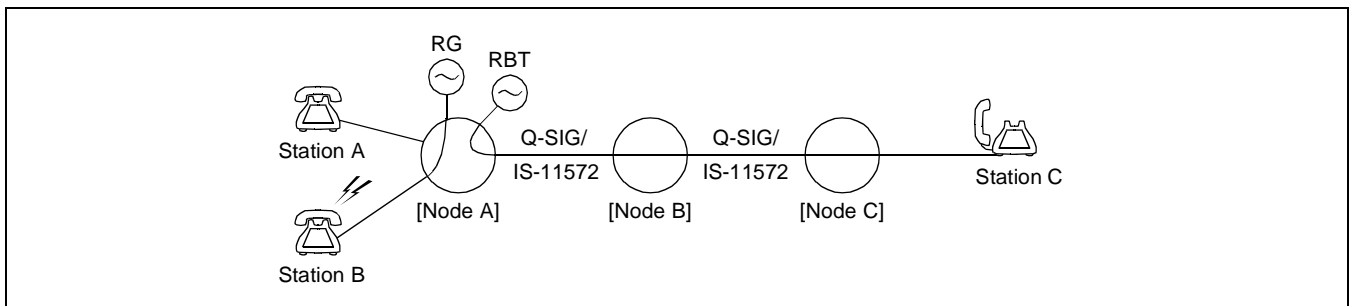
4. Station C dials the access code for CCBS; Station C receives Service Set Tone and hangs up.



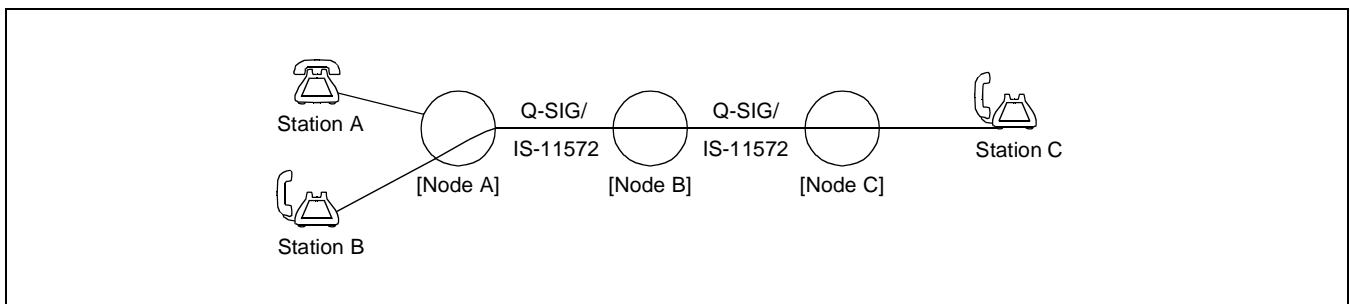
5. Both Stations A and B hang up (i.e. Station B becomes idle); Station C rings.



6. Station C answers and receives Ring Back Tone; Station B rings.



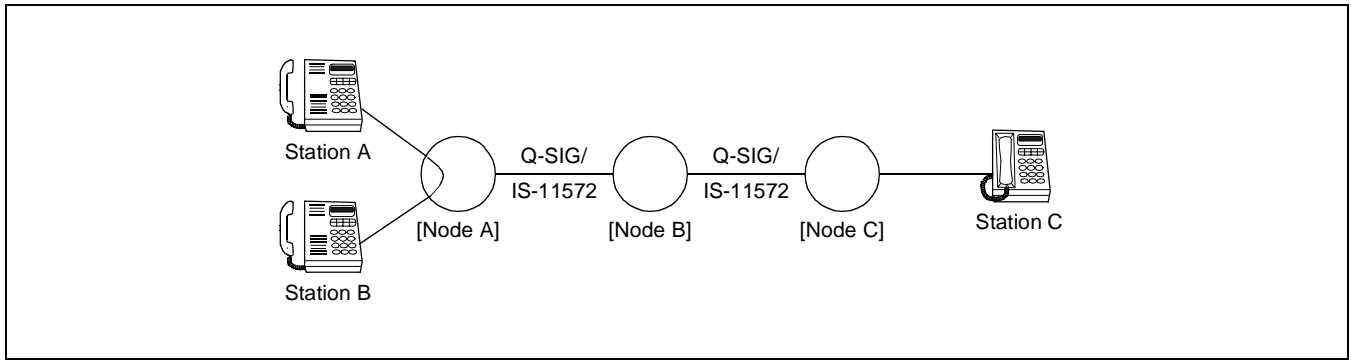
7. Station B answers; Stations C and B are connected.



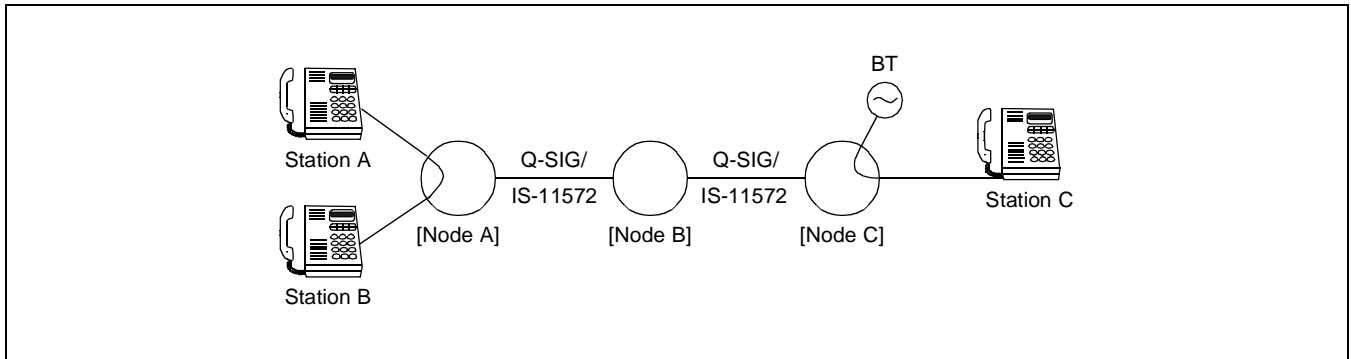
When using line/feature key:

CALL COMPLETION TO BUSY SUBSCRIBER (CCBS)

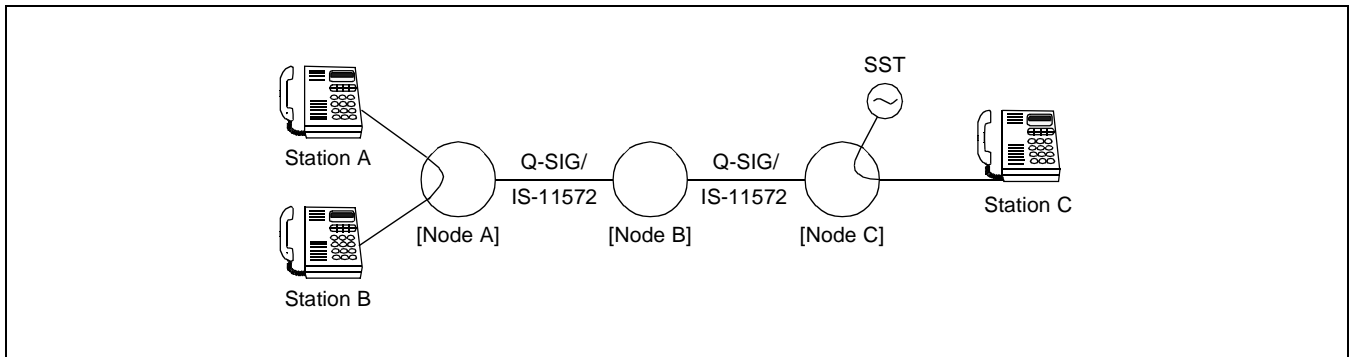
1. Station A and Station B are in station-to-station connection.



2. Station C dials the number for Station B; Station C receives Busy Tone.

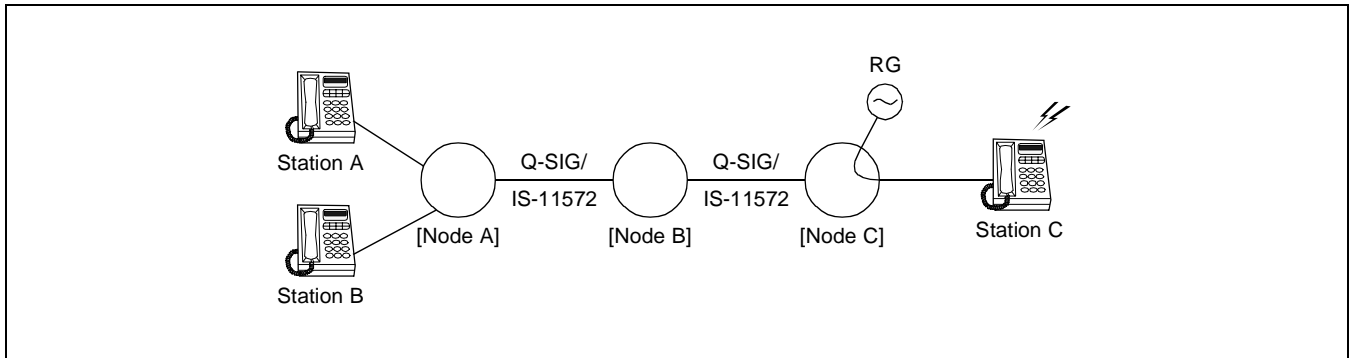


3. Station C presses the feature key for CCBS; Station C receives Service Set Tone and hangs up.

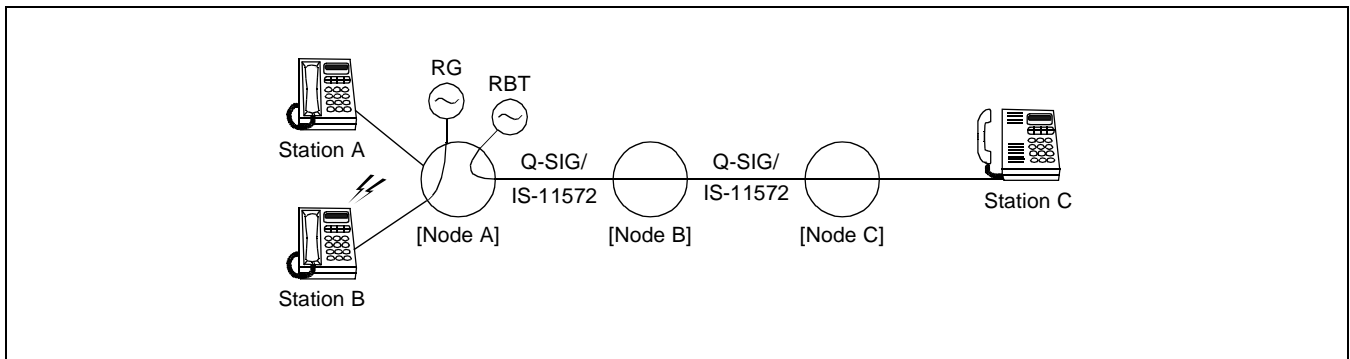


CALL COMPLETION TO BUSY SUBSCRIBER (CCBS)

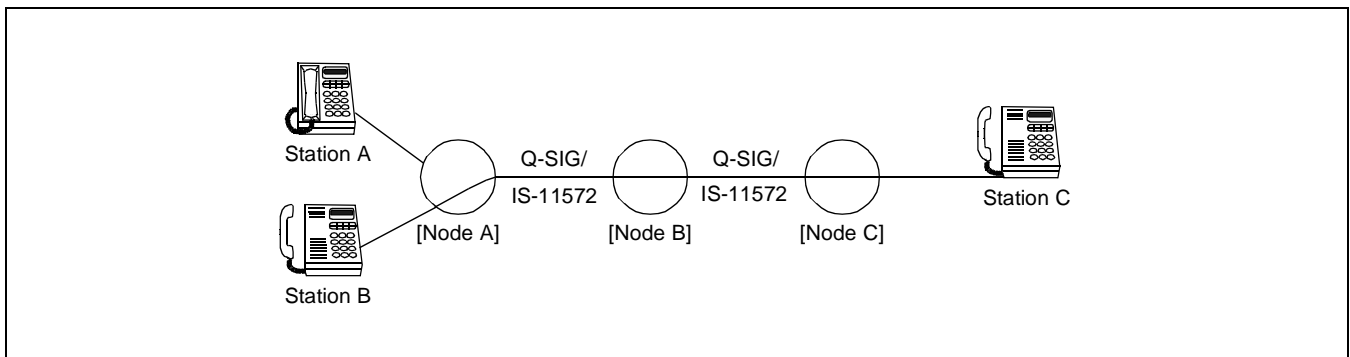
- Both stations A and B hang up (i.e. Station B becomes idle); Station C rings.



- Station C answers and receives Ring Back Tone; Station B rings.



- Station B answers; Station B and Station C are connected.



To cancel CCBS:

- Station A lifts the handset while the CCBS service is set; Station A hears Dial Tone.
- Station A dials the access code or presses the function key for canceling CCBS; Station A hears Service Set Tone.
- Station A replaces the handset.

Note: Operating procedure varies depending on the specifications of the station since ETS 300 306/IS-13870 protocol does not regulate.

CALL COMPLETION TO BUSY SUBSCRIBER (CCBS)

3. Service Conditions

1. CCBS is available when an end-to-end link is established via Q-SIG interface (ETS 300 172).
2. The transfer rate is 64 kbps. Bearer Capabilities are as follows:
 - Speech
 - 3.1 kHz audio
 - 7 kHz audio
3. Multiple CCBS features cannot be set for a single station.
4. CCBS is available for the D^{term} or an analog station (Attendant Console and ISDN terminal cannot be used).
5. When the called station number is Pilot Number of Station Hunting Group, CCBS is set to the terminated station.
6. When Call Forwarding – All Calls is activated at the called station, CCBS is set to the forwarded station.
7. When Call Forwarding – Busy Line is activated at the called station and the forwarded station is also busy, CCBS is set to the called station.
8. CCBS is not available while one of the following features is activated:
 - Call Back
 - Call Back – CCIS
 - Call Waiting
 - Call Hold
 - ATT Camp On (Called side)
9. CCBS is canceled when:
 - Cancel Timer for CCBS expires.
 - All the trunks for recalling are busy.
 - The system recalls the calling station in lockout or make busy state.
 - The called station is abnormally released (ex. the handset remains off-hook) and turned into lockout state.
10. CCBS conforming to IS-13870 is available when an end-to-end link is established via IS-11572 interface or when the tandem connection of Q-SIG and IS-11572 link is established (Not available for the signaling method other than Q-SIG and IS-11572).
11. The transfer rate is 64 kbps. Bearer Capabilities are as follows:
 - Speech
 - 3.1 kHz audio

Note: *For more details about the CCBS feature regulated by protocol, see the corresponding manual.*

12. CCBS is available for the D^{term} or an analog station (i.e. not available for PS terminal, Attendant Console nor ISDN terminal).
13. CCBS can be set only when the called station is in two-party connection or busy condition and the call is not completed for the called user busy (fault cause is #17).

14. CCBS is not available while the calling and called station is in one of the following conditions:

(a) Calling Station

- the station sets Call Back or Call Back is set to the station
- the station sets Call Back-CCIS or Call Back-CCIS is set to the station
- the station uses Call Hold
- the station sets Call Waiting service
- the station is restricted this feature

(b) Called Station

- the station is in lockout state or make-busy state.
- the station sets Call Back or Call Back is set to the station
- the station sets Call Back-CCIS or Call Back-CCIS is set to the station
- the station uses Call Hold
- the station sets Call Forwarding-All Calls/Busy Line (providing that these C.F. services are complete)
- Attendant Camp on with Tone Indication is set to the station
- the station sets Call Waiting service
- the station is restricted this feature

15. CCBS is canceled when:

(a) Automatic Cancel Timer for CCNR expires (ASYD, System data 1, Index 71, b0-b3 decides the timer and b7 makes the timer effective).

* Automatic Cancel for Call Back is applied to this feature also.

(b) No Answer Timer (calling station does not answer the CCBS recall) expires (ASYD, System Data 1, Index 139. Default data is 30 seconds).

(c) The system recalls the calling station in lockout or make-busy state (CCNR is effective when the calling station is called after lockout state or make-busy state is recovered).

(d) All trunks for recalling are busy at the time of recall.

(e) The called station is abnormally released (ex. The handset remains off-hook) and turned into lockout state.

(f) The calling station (operating station) is restricted incoming calls at the time of recall.

16. The single station cannot set multiple CCBS services and multiple CCBS services cannot be set to the single station.

A maximum number of CCBS to be set simultaneously per LP =

480 – (no. of ISDN call to be handled + no. of already set CCBS and CCNR service **Note**)

Note: Both CCBS and CCNR services conforming to ETS300 366 and IS-13870.

17. When the called station becomes idle while the calling station is in conversation, the system recalls the calling station after the conversation ends.

18. Sub Address-Addressing is not used with CCBS.

19. If the fault occurs at IS-11572 data link when;

(a) If the fault occurs when the calling station is operating to set CCBS, CCBS service cannot be set.

(b) If the fault occurs when the calling station is operating to cancel CCBS, CCBS is canceled at the side of operating station but not canceled at the side of called station since the cancel message is not sent to the station.

CALL COMPLETION TO BUSY SUBSCRIBER (CCBS)

- (c) If the fault occurs when informing the calling station that the called station becomes idle, CCBS is canceled at the side of station to be set, but not canceled at the side of calling station since the message is not sent to the station.
- (d) If the fault occurs when the calling station answers the recall (CCBS call), CCBS is canceled at the side of the calling station but not canceled at the side of the called station since the message is not sent to the station.
20. The conditions of alternate routing are as follows.
- (a) If the data link fault occurs when the station is operating to set CCBS, the message for service set is sent using alternate route providing that the interface is Q-SIG/IS-11572.
- (b) The same route is used for sending service set message and recall (the other route cannot be used). Therefore, recall is not completed since all trunks (B-channel) of the corresponding route are busy, the system processes the call as follows.
- All B-channel trunks at the system of an calling station are busy: cancel CCBS and send the busy tone to the calling station.
 - All B-channel trunks at the mediate system are busy : send the message of CCBS recall fault to the calling station and the message of CCBS cancel to the called station.
21. The description below are interactions between CCBS and Call Forwarding service (All Calls, Busy Line, Don't Answer).
- (a) When setting CCBS to the station which is set C.F. service, the time of setting CCBS decides whether the service is set or not.

	C.F. - All Calls	C.F. - Busy Line	C.F. - Don't Answer
C.F. is incomplete C.F. is not applicable (the condition for making C.F. complete is not agreed) (before) C.F. is activated	-	-	CCBS is set to the forwarding station (called station) Note 1, Note 2
(after) C.F. is complete	Not Available	Not Available	-

Note 1: *When the calling station recalls the station which is set CCBS service after answering CCBS recall, No Answer Timer time out is effective. If the timer expires, the recall is forwarded to the destination.*

Note 2: *The station to be set CCBS is not changed after CCBS service set even if C.F. - Don't Answer service is canceled.*

- (b) When Call Forwarding - All Calls/Busy Line/Don't Answer is set on a calling station, the system recalls the calling party.
- (c) When a called station is set Call Forwarding - All Calls/Busy Line/Don't Answer after CCBS service is set to the station, a calling station recalls the called station (forwarding station). As for a called station to be set Call Forwarding - Don't Answer, the destination station is recalled from the calling station if No Answer Timer expires.

4. Programming

Assign the basic data for establishing the Q-SIG or the IS-11572 (since Series 7400 software) line referring to "IS-11572 (Layer 3 specifications for inter-PBX signaling protocol)" or "Q-SIG Circuit Switched Basic Call-ETSI Version" in this chapter.

CALL COMPLETION TO BUSY SUBSCRIBER (CCBS)

STEP 1: ARTD - Assign the following CDN data for the B channel route.
CDN43(BT): 1

STEP 2: ASYD - System Data 1, Index 68, bit 0. Operating method for busy station service.
0/1 = SHF + Access Code/Last Digit + Access Code.
System Data 1, Index 71, bits 0 through 3. Assign the timer value of Cancel Timer for CCBS.
System Data 1, Index 71, bit 7. Automatic Cancel for CCBS. 0/1 = Out/In Service.
System Data 2, Index 4, bit 0. CCBS and OG Trunk Queuing Access Code. 0/1 = Separate/Common.
System Data 3, Index 7. Assign Ringer Pattern for Recalling.

STEP 3: ANPD - Reserve a number level for setting/canceling CCBS.

STEP 4: ASPA - Assign an access code for setting/canceling CCBS.

- For setting CCBS
CI = B
SRV = SSC
SID = 3 (Call Back; Entry)
- For canceling CCBS
CI = N
SRV = SSC
SID = 6 (Call Back; Cancel)

STEP 5: ASFC - Assign Service Feature Class that allows SFI = 2 (Call Back) to the stations allowed this service.

C-153 CNIP/CONP

1. General Description

In between Q-SIG networks, this feature allows calling or called party's information, called Name ID, to be displayed on the D^{term} LCD. This feature conforms to ETS 300 238. This feature is available for IS-11572 networks.

- Calling Name Identification Presentation (CNIP): Calling party's information (Name ID) is displayed on the called party's D^{term} LCD.
- Connected Name Identification Presentation (CONP): Called party's information (Name ID) is displayed on the calling party's D^{term} LCD.

This feature is also available when interworking with a CCIS interface.

2. Operating Procedure

No manual operation is required.

3. Service Conditions

1. This service is not available when:
 - a tandem office is not provided with this feature or Name Display - System - CCIS [N-37].
 - a call is routed through a signaling interface other than Q-SIG or CCIS.
2. The routes to the offices not provided with this feature must be separated from the routes to the offices provided with this feature.
3. While hearing Ring Back Tone, Name ID of the called party is displayed on the calling party's D^{term} LCD. Note that the display is not changed even if the call is transferred using such features as CALL FORWARDING - ALL CALLS.
4. When a call is transferred to another office using a forwarding feature such as CALL FORWARDING - ALL CALLS - OUTSIDE, Name ID of the terminated station is displayed on the calling party's D^{term} LCD.
5. Even if the called party is in busy or lockout state, the called party's Name ID is displayed on the calling party's D^{term} LCD. However, when the called party is in Do Not Disturb state, Name ID is not displayed.

6. When a call is transferred using Consultation Hold and Voice Call, Name ID of the calling party is not displayed on the transferred party's D^{term} LCD.
7. This service cannot be used in conjunction with the ISDN Information Transfer service.
8. The transfer rate is 64 kbps. Bearer Capabilities are as follows:
 - Speech
 - 3.1 kHz audio
 - 7 kHz audio
9. When Name ID is not assigned, the calling or called party's number is displayed.
10. When both 8-digit display and 16-digit display are used for this feature, the calling or called party's name is displayed as shown in the table below.

ORIGINATING OFFICE →TERMINATING OFFICE	CALLING PARTY'S NAME ID DISPLAY	CALLED PARTY'S NAME ID DISPLAY
16 digits → 8 digits	Bottom 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)	Bottom 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	Bottom Line: 16 digits	Bottom Line: 16 digits

11. When 16-digit display is in service, MULTIPLE LINE OPERATION is not available for the D^{term}.
12. When originating a call to a Q-SIG line using a D^{term} sub line, Name ID of the D^{term} sub line is sent to the called party.
13. CONP is available only for Prime Line of the calling party.
14. The characters displayed by this service are English alphabets, numerals and symbols of JIS unit codes conforming to ISO-8859-1.
15. This service is available only for the D^{term} equipped with LCD.
16. This service does not support Calling/Connected Name Identification Restriction (CNIR) conforming to ETS 300 238.

4. Programming

Name ID is assigned by ANDD command on each station number basis.

STEP 1: ASYD - System Data 1, Index 78, Bit 3: Station Number Display with 8-Character Name Display. 0/1: Out/In Service.
System Data 1, Index 78, Bit 5: (1) Name Display 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: 8-Digit Display Service/16-Digit Display Service.

STEP 2: ARTD - Assign route class data for the Q-SIG trunk route.
BT (CDN=43): 1
DPLY (CDN=50): 1
CI (CDN=98): 0
IND (CDN=112): 1

5. Interactions

Name ID is available for the following features:

- Call Forwarding - All Calls - CCIS
- Call Forwarding - Busy Line - CCIS
- Call Forwarding - Don't Answer - CCIS
- Step Call - CCIS
- Call Pickup
- Recalling of Call Hold
- Answering of Call Park
- Call Waiting
- Termination from UCD Queuing
- Outgoing Trunk Queuing
- Off-Hook Queuing
- Inter-Office Off-Hook Queuing

C-158 CALL FORWARDING SUPPLEMENTARY SERVICE (SS-CF) WITH REROUTING

1. General Description

This feature provides Call Forwarding service activated to be followed by IS-13873/ETS 300 257 protocol (SS-CF). By using this feature, all incoming calls can be forwarded automatically after the destination was programmed against the called party. Also, rerouting function is activated with SS-CF service.

The functions of this feature are as follows.

1. Call Forwarding-Supplementary Service

Example) The service activation procedures below are explained under this condition.

Station A: Calling Station

Station B: Called Station (Forwarding Station)

Station C: Forwarded Station

(a) Supplementary Service - Call Forwarding Unconditional (SS-CFU)

All incoming calls routed to the station are forwarded to the designated destination automatically.

(1) Station A originates a call to Station B.

(2) The call is forwarded to Station C.

(a) Supplementary Service - Call Forwarding Busy (SS-CFB)

When the called station is busy, an incoming call terminated at the station is forwarded to the designated destination automatically.

When Station B is busy, the call is forwarded to Station C.

(b) Supplementary Service - Call Forwarding No Reply (SS-CFNR)

When the called station has not answered for a predetermined time, an incoming call terminated at the station is forwarded to the designated destination automatically.

(1) When Station A originates a call to Station B (Station B is ringing).

(2) Since Station B has not answered for a predetermined time a call is forwarded to Station C.

CALL FORWARDING SUPPLEMENTARY SERVICE (SS-CF) WITH REROUTING

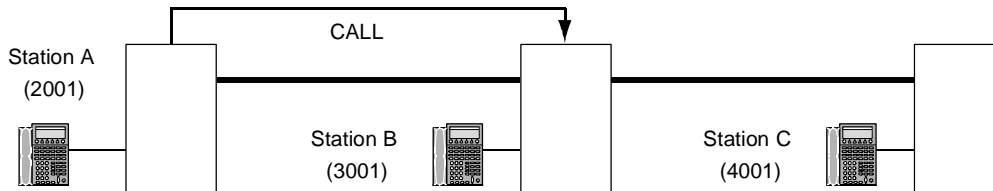
3. Rerouting Function

To select the most proper routing (prevent to keep holding the unnecessary line), the line from the calling party to the forwarded destination is newly established when SS-CF service is successful. LCDs of stations concerned with this service are shown below.

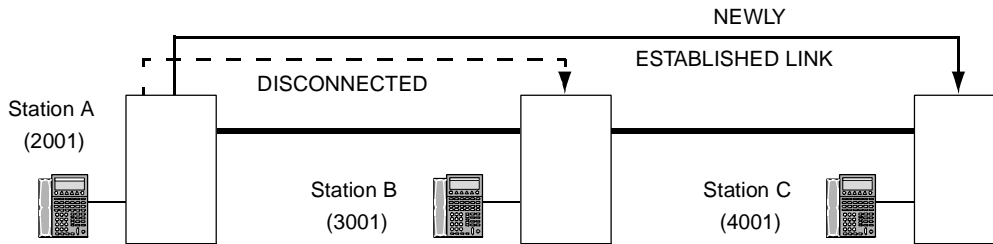
Example) SS-CFU is used in this example.

Station A: Calling Party
Station B: Called Party (Forwarding Party)
Station C: Forwarded Party

1) Station A originates a call to Station B. LCD display on station A is "3001".



2) As the SS-CFU is activated, a new call is automatically originated from Station A to Station C and the line used for Station A through Station C is reestablished. LCD display on Station A is "4001" and "2001" is displayed on Station C's LCD.



— : IS-11572 or Q-SIG

2. Operating Procedure

[Set the service]

The SS-CF service setting should not be duplicated. The following operations (either by the access code or by the function/soft key) should be performed for each service.

Note: *The CF-B and CF-NR can be set/cancelled at one time depending on the system data.*

- Using the access code
 - (1) Lift the handset; the dial tone is heard.
 - (2) Dial each access code for setting the corresponding Call Forwarding service; the special dial tone is heard.
 - (3) Dial the destination's number; the service set tone is heard.
 - (4) Replace the handset.

- Using the function/soft key
 - (1) Lift the handset; the dial tone is heard.
 - (2) Press each function/soft key for setting the corresponding Call Forwarding service; the special dial tone is heard.
 - (3) Dial the destination's number; the service set tone is heard.
 - (4) Replace the handset.

[Cancel the service]

- Using the access code
 - (1) Lift the handset; the dial tone is heard.
 - (2) Dial each access code for canceling the corresponding Call Forwarding service; the service set tone is heard.
 - (3) Replace the handset.

- Using the function/soft key
 - (1) Lift the handset; the dial tone is heard.
 - (2) Press each function/soft key for canceling the corresponding Call Forwarding service; the service set tone is heard.
 - (3) Replace the handset.

CALL FORWARDING SUPPLEMENTARY SERVICE (SS-CF) WITH REROUTING

3. Service Conditions

Call Forwarding-Supplementary Service

1. The conditions for service set/cancel are the same as the that of CALL FORWARDING - ALL CALLS/ BUSY LINE/DON'T ANSWER. Refer to "Feature Programming Manual" for those conditions.
2. The allowable terminals for this service are D^{term}, the analog station, ISDN terminal, PCS, and the attendant console.
3. This feature is available with IS-11572/ETS 300 172 interface.
4. This feature is restricted by the Service Feature Restriction Class (SFC in ASFC) that denies CALL FORWARDING - BUSY LINE [C-2]/DON'T ANSWER [C-3]/ALL CALLS [C-5] provided in the business system.
5. The name display for supplementary information is available with this feature if Name Identification supplementary-services (IS-13868/ETS 300 238) is provided.
6. The conditions for the display, transmission, set or cancel of the name display function, the supplementary service of this feature, are the same as one of Name ID function provided as the supplementary service of IS-11572/Q-SIG. Refer to "CALLING NAME IDENTIFICATION (CNIP)/CONNECTED NAME IDENTIFICATION PRESENTATION (CONP)".
7. When the station is called back, the SS-CF service is not activated (The call is not forwarded to the destination, but the call is terminated at the called station.)
8. When multiple SS-CF services are set;
 - Maximum number of time for Call Forwarding is five (depending on the system data).
 - The above-mentioned number is described on the number of time that service is continuously activated through Q-SIG/IS-11572.
 - The number of time that Call Forwarding service is activated within the system is not included in the above-mentioned number.
 - Call Forwarding is not activated after the service has been performed the pre programmed number of times.
9. When the forwarded party or the forwarded trunk is busy;
 - SS-CFU: The call is forwarded. The caller hears the busy tone.
 - SS-CFB: The call is forwarded. The caller hears the busy tone.
 - SS-CFNR: The call is not forwarded. The call continues to be placed at the party to be set SS-CFNR to the busy party.
10. When the forwarded destination is the calling party;
(For example, Station A originates a call to Station B and Station B is set the SS-CF service to forward a call to Station A)
 - SS-CFU: The call is forwarded. The caller hears the busy tone.
 - SS-CFB: The call is not forwarded. The caller hears the busy tone.
 - SS-CFNR: The call is not forwarded. The call continues to be placed at the party programmed SS-CFNR to the calling party.
11. When a forwarded party is set multiple SS-CF and its destination is the forwarding party (the number of times for activating the service is not exceeded the preprogramming number);

CALL FORWARDING SUPPLEMENTARY SERVICE (SS-CF) WITH REROUTING

Example 1) Station A originates a call to Station B, and Station B set to forward a call to Station C. Station C is set a call to forward to Station B.

The call is terminated at the Station B after being forwarded to Station C.

Example 2) Station A originates a call to Station B, and Station B set to forward a call to Station C. Station C is set a call to forward to Station D and then Station D set to Station B.

The call is terminated at the Station B after being forwarded to Station C and D.

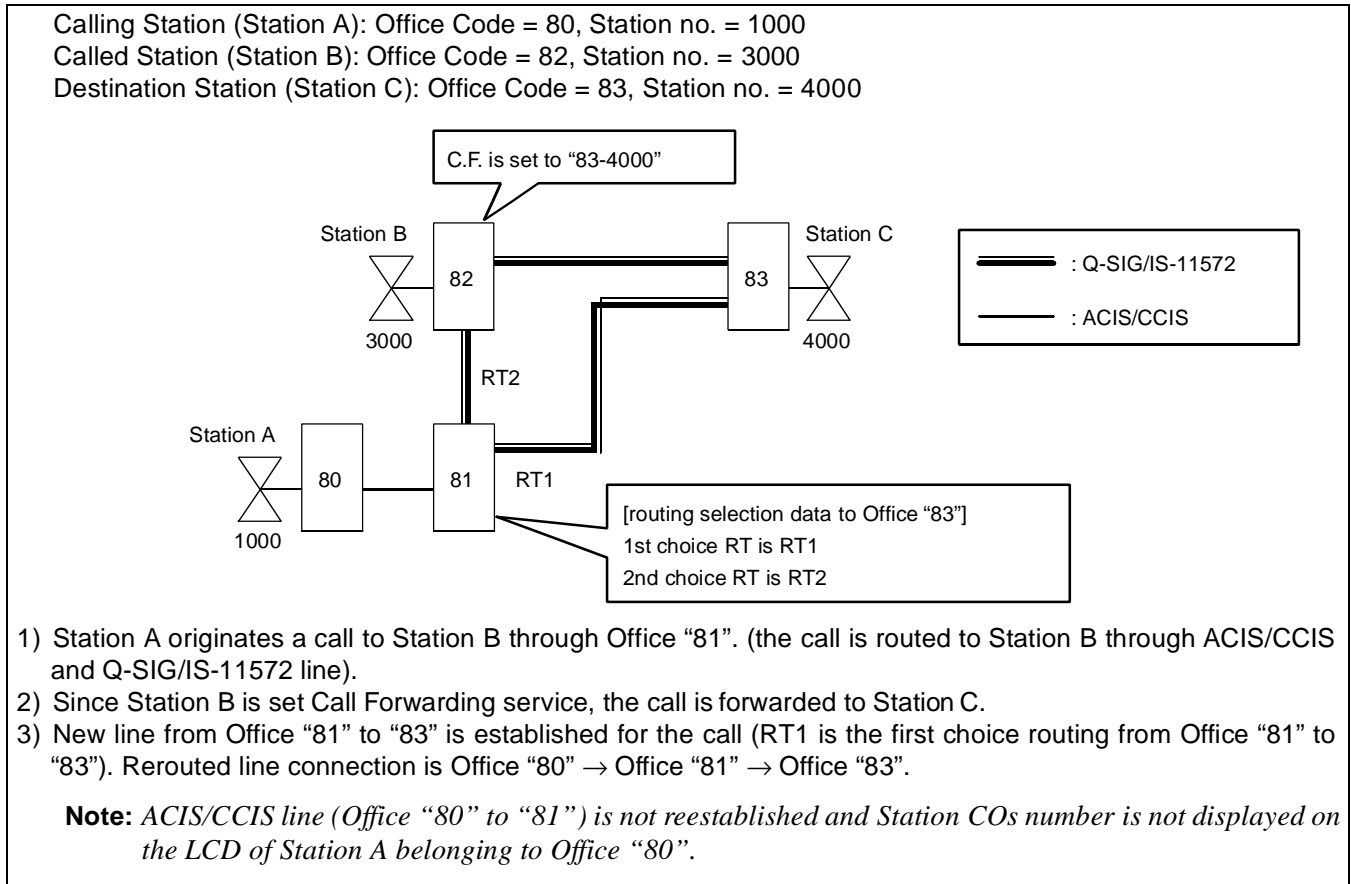
12. When the service is used to be interworked with the interface except IS-11572 or Q-SIG, the displayed number is as follows.
 - On the caller's LCD, the display that indicates the connected party's number will not be changed until the forwarded destination answers the call (If using IS-11572 or Q-SIG interface, the display is changed when the call is forwarded and the called party starts to ring). After the call is answered, the display is changed from the caller number to the destination's number.
 - On the destinations LCD, the display is the same as that of the forwarded station using CALL FORWARDING service.

Rerouting Function

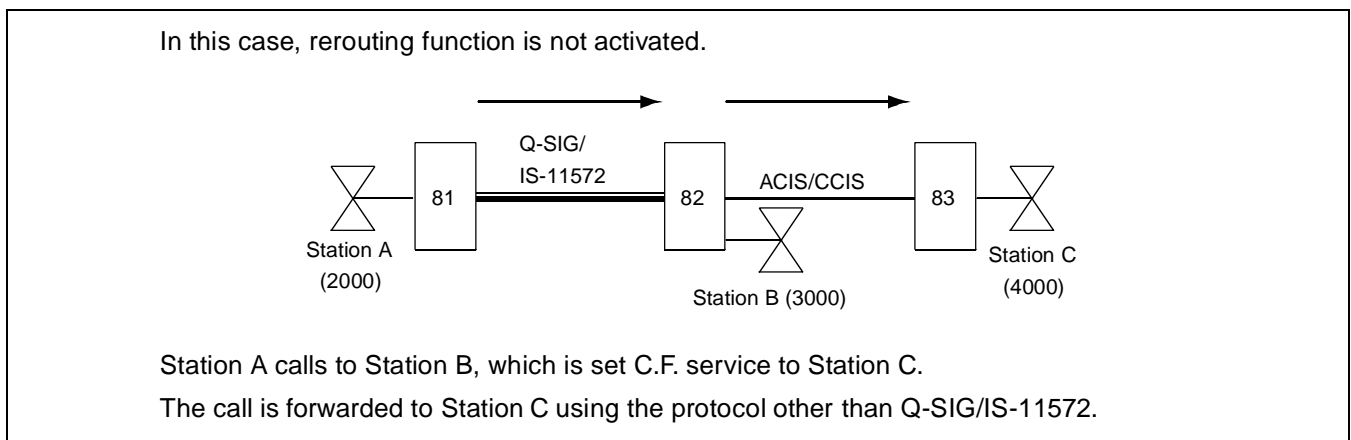
1. Rerouting function is available when:
 - (a) SS-CF service is available.
 - (b) Bearer Capability information of speech or 3.1 kHz audio is available for rerouting function (Unrestricted digital data cannot be forwarded and the line is disconnected).
 - (c) Transmission speed rate is 64 kbps.
 - (d) The calling and called party are D^{term} or analog station. (When one of those stations is ISDN terminal, PS terminal, or Attendant Console, C.F. service is activated without rerouting function). As for the forwarded station, any terminal is available for this service.
 - (e) Another service is activated on the calling party.

CALL FORWARDING SUPPLEMENTARY SERVICE (SS-CF) WITH REROUTING

2. Rerouting function is also available for the call in the example below.



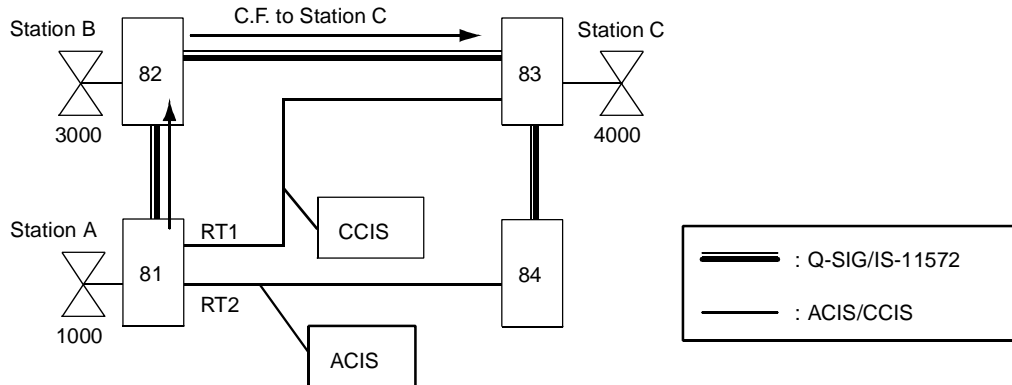
3. When interworking through FCCS link, rerouting function is activated with no restriction.
4. When station-to-station connection is established between a calling party and a called party, the called party and a forwarded party, rerouting function is not activated (Station-to-station connection in a Fusion Network is also applied to this condition).
5. When the selected route for forwarding a call (from the called station to the forwarded station) is other than Q-SIG, IS-11572 line, Call Forwarding service is activated without rerouting function. See the figure below.



CALL FORWARDING SUPPLEMENTARY SERVICE (SS-CF) WITH REROUTING

- When there is no route that supports Q-SIG, IS-11572 protocol in the route selection data from a calling party to a called station, Call Forwarding service is activated without rerouting function.

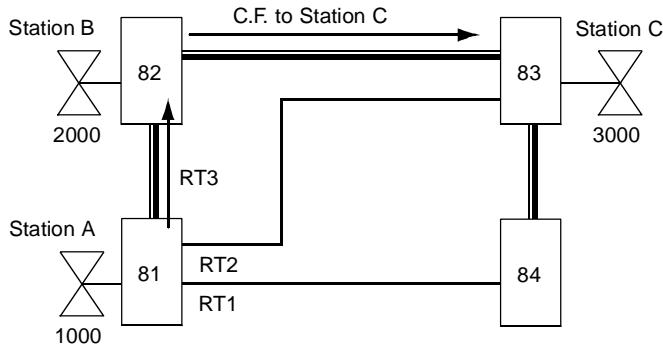
In this example, since the Q-SIG, IS-11572 line cannot be selected for a route from Station A (calling station) to Station C (forwarded station), rerouting function is not activated even if RT1 or RT2 is idle.



CALL FORWARDING SUPPLEMENTARY SERVICE (SS-CF) WITH REROUTING

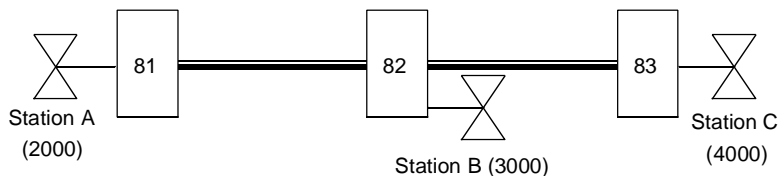
7. Reestablished route is decided by the routing selection pattern data programmed at the office where the calling party is accommodated or the gateway PBX office to the called station. Therefore, the improper route or the route that is the same as before rerouting function may be selected depending on the office data.

For Examples 1) through 4), see the figure below.



- Example 1) the most proper routing is selected by the office data
Routing selection data to Office "83" programmed at Office "81": 1st RT2, 2nd RT1, 3rd RT3
RT2 is selected by rerouting function after Call Forwarding is successful.
- Example 2) the improper routing is selected by the office data
Routing selection data to Office "83" programmed at Office "81": 1st RT1, 2nd RT2, 3rd RT3
RT1 is selected by rerouting function after Call Forwarding is successful.
- Example 3) the improper routing is selected because of alternate routing
Routing selection data to Office "83" programmed at Office "81": 1st RT2, 2nd RT1, 3rd RT3
All trunks of RT2 (the first choice) are busy.
RT1 is selected for alternate routing after Call Forwarding is successful.
- Example 4) the improper routing is selected because of the difference of protocol
Routing selection data to Office "83" programmed at Office "81": 1st RT2, 2nd RT1, 3rd RT3
RT2 (the first choice) is ACIS/CCIS line (not Q-SIG or IS-11572 line).
RT1 is selected for alternate routing after Call Forwarding is successful.

For Example 5), see the figure below.



- Example 5) the rerouting pattern is not changed from that before rerouting function.

4. Interactions

Call Forwarding-Supplementary Service

1. When CALL COMPLETION ON NO REPLY (CCNR) is used with this feature that conforms to Q-SIG:

Note: *CCNR available for the Q-SIG network.*

SS-CFU: CCNR is not available for the station to be set the SS-CFU.

SS-CFB: CCNR is activated against the forwarding station (called station) even when the feature is set to the station to be set SS-CFB.

SS-CFNR: CCNR is activated against the forwarded station no matter when (before or after Call Forwarding) the CCNR is set.

2. When CALL COMPLETION TO A BUSY SUBSCRIBER (CCBS) is used with this feature that conforms to Q-SIG:

Note: *CCNR available for the Q-SIG network.*

SS-CFU: CCNR is not available for the station to be set the SS-CFU

SS-CFB: CCNR is activated against the forwarding station (called station) even when the feature is set to station to be set SS-CFB (If the forwarding station is busy at that time, CCBS is restricted).

3. When CONNECTED NAME IDENTIFICATION PRESENTATION (CONP) is used together with this feature;

SS-CFU: if the name information has been programmed, CONP is not effective and the connected party name is displayed followed by the name information programmed with SS-CFU data.

SS-CFB: if the name information has been programmed, CONP is not effective and the connected party name is displayed followed by the name information programmed with SS-CFB data.

SS-CFNR: if the name information has been programmed, CONP is not effective and the connected party name is displayed following by the name information programmed with SS-CFNR data.

4. When CALL WAITING - TERMINATING [C-12] is used together with this feature;
When automatic CALL WAITING - TERMINATING is set to the station that has already been set this feature, this feature has priority over CALL WAITING - TERMINATING service and the call is forwarded.

5. When DO NOT DISTURB [D-11D] service is used together with this feature;
 - SS-CFU: If incoming calls are terminated at the station to be set both features (SS-CFU and DND), the calls are forwarded by the SS-CFU data.
 - SS-CFB: If incoming calls are terminated at the station to be set both features (SS-CFB and DND), the calls are forwarded by the SS-CFB data.
 - SS-CFNR: If incoming calls are terminated at the station to be set both features (SS-CFNR and DND), the DND service takes priority and the caller hears the reorder tone.

6. When OUTGOING TRUNK QUEUEING [O-2] service is used with this feature;
When the call is forwarded to the trunk by the SS-CF service and the destination trunk is busy, OGQ service is not effective if the Automatic OGQ is available (the call continues to place at the trunk).

CALL FORWARDING SUPPLEMENTARY SERVICE (SS-CF) WITH REROUTING

7. When the OFF HOOK QUEUEING [O-7] service is used with this feature;
SS-CFNR: When the call is forwarded to the trunk by SS-CFNR and the destination trunk is busy, OFF HOOK QUEUEING is not available (the call continues to be placed at the trunk).
SS-CF (except SS-CFNR):
When the idle destination picks up the call after the call is queued using OFF HOOK QUEUEING, the calling number display or the name display will not be provided.
8. When the call forwarded by this feature is forwarded by AUTOMATIC ANNOUNCEMENT-PS OUT OF ZONE/C.F.-PS INCOMING INCOMPLETE service since the call cannot terminate to the destination PS which is out of zone or whose power is OFF, the calling number display or name display is not provided.
9. This feature requires 24DTI circuit card.
10. The conditions of displayed number at the destination are described below comparing with the CCIS service.
 - (a) Call Forwarding - All Calls/Busy Line;
IS-11572/Q-SIG- the displayed number that indicates the connected party is changed from the called party (forwarding party) to the destination before the destination answers the call (at the moment the call is forwarded).
CCIS- the displayed number that indicates the connected party is changed from the called party (forwarding party) to the destination after the destination answers the call.
 - (b) Call Forwarding - Don't Answer;
IS-11572/Q-SIG - the displayed number that indicates the connected party is changed from the called party (forwarding party) to the destination before the destination answers the call (at the moment the No Answer timer has been elapsed).
CCIS- the displayed number that indicates the connected party is changed from the called party (forwarding party) to the destination after the destination answers the call.

Rerouting Function

The calling party name or identification information is not displayed on the LCD of the destination station (Calling Name Identification Presentation (CNIP)/Connected Name Identification Presentation (CONP) is not available) while rerouting function is activated.

5. Programming

First, assign the data for IS-11572/Q-SIG interface establishment referring to “IS-11572 (LAYER 3 SPECIFICATIONS FOR INTER-PBX SIGNALING PROTOCOL)”/“Q-SIG (CIRCUIT SWITCHED BASIC CALL - ETSI VERSION)” in this manual.

- SS-CFU

STEP 1: ASFC - Assign the service feature restriction class (SFC) for allowing this service.
SFI=7 (Call Forwarding - All Calls) RES=1 (Available)

STEP 2: ATNR - Allow the tenant connection between the station to the station and/or the station to the attendant console.
TRI=1 (Station within the originating tenant <OGTN> sets Call Forwarding-All Calls / Busy Line / Don't Answer to a station within the terminating tenant <TMTN>)
RES=1 (Available)

STEP 3: ARSC - Assign the route restriction class.

STEP 4: ARRC - Allow the route connection between the outgoing route and the incoming route.

STEP 5: ASYD - Assign the system data concerned with this feature.
SYS1, INDEX4, b6. One Burst of Ringing is sent to the station which has been set C.F.-All Calls service on each an incoming call (analog phones only).
0/1 = Not Required/Required
SYS1, INDEX5, b1-3. Maximum number of times Multiple Call Forwarding - Busy Line/All Calls occurrences.

Note: *This data is valid when SYS1, INDEX 69, bit 7 is assigned as “1” (Multiple Call Forwarding - Busy Line/All Calls is in Service)*

SYS1, INDEX69, b7. Multiple Call forwarding - Busy Line/All Calls

0/1 = Out/In Service

SYS1, INDEX248, b7. Tone to be sent out when the handset is off-hook at the station on which C.F.-All Calls service is set.

0/1 = Dial Tone (DT)/Special Dial Tone (SPDT)

SYS2, INDEX1, b3. Toll Restriction for Speed Calling Station/Group services

0/1 = Required/Not Required

SYS2, INDEX1, b7. Speed Calling Override Service (System basis)

0/1 = Required/Not Required

SYS2, INDEX6, b4. Call Origination Restriction of Station upon setting C.F.-All Calls

0/1 = Required/Not Required

STEP 6: ANPD - Reserve a number level for the feature access and cancel.

STEP 7: ASPA - Assign the access code for the Call Forwarding - All Calls.
SRV=SSC, SID=8 (Call Forwarding - All Calls; Entry)
SRV=SSC, SID=9 (Call Forwarding - All Calls; Cancel)

CALL FORWARDING SUPPLEMENTARY SERVICE (SS-CF) WITH REROUTING

STEP 8: ARTI - Assign the trunk application data.

CDN52 : CTCF - 1 = SS-CT/SS-CF service is effective.

CDN53 : RERT - 1 = Rerouting function is effective.

- SS-CFB

STEP 1: ASFC - Assign the service feature class.

SFI=9 (Call Forwarding - Busy Line)RES=1 (Available)

STEP 2: ARSC - Assign the route restriction class.

STEP 3: ARRC - Allow the route connection between the outgoing route and the incoming route.

STEP 4: ASYD - Assign the system data concerned with the service.

SYS1, INDEX5, b0. Destination of Call Forwarding - Busy Line and Call Forwarding - Don't Answer

0/1 = Same/Separate

SYS1, INDEX5, b1-3. Maximum number of times that Multiple Call Forwarding - All Calls/Busy Line occurrences.

Note: *This data is valid when SYS1, INDEX 69, bit 7 is assigned as "1 (Multiple Call Forwarding - Busy Line/ All Calls is in service)".*

SYS1, INDEX69, b7. Multiple Call Forwarding - Busy Line/All Calls

0/1 = Out/In Service

SYS2, INDEX1, b3. Toll Restriction for Speed Calling Station/Group services

0/1 = Required/Not Required

SYS2, INDEX1, b7. Speed Calling Override Service (System basis)

0/1 = Required/Not Required

STEP 5: ANPD - Reserve a number level for the feature access and cancel.

STEP 6: ASPA - Assign the access code for the Call Forwarding - Busy Line.

SRV=SSC, SID=10(Call Forwarding - Busy Line; Entry)

SRV=SSC, SID=11(Call Forwarding - Busy Line; Cancel)

STEP 7: ARTI - Assign the trunk application data.

CDN52 : CTCF - 1 = SS-CT/SS-CF service is effective.

CDN53 : RERT - 1 = Rerouting function is effective.

CALL FORWARDING SUPPLEMENTARY SERVICE (SS-CF) WITH REROUTING

- SS-CFNR

- STEP 1: ASFC - Assign the service feature class.
SFI=8 (Call Forwarding - Don't Answer)RES=1(Available)
- STEP 2: ATNR - Allow the tenant connection between the station and the station and/or the station and the attendant console.
Assign the RES=1 (Not restricted) at the following indexes.
TRI= 0 (Station within the outgoing tenant <OGTN> calls to a station within the terminating tenant <TMTN>)
TRI= 1 (Station within the outgoing tenant <OGTN> sets Call Forwarding-All Calls / Busy Line / Don't Answer to a station within the terminating tenant <TMTN>)
TRI= 3 (Attendant Console within the outgoing tenant <OGTN> sets Call Forwarding-All Calls for a station within the terminating tenant <TMTN> (Call Forwarding-All Calls set/cancel by ATT))
- STEP 3: ARSC - Assign the route restriction class.
- STEP 4: ARRC - Allow the route connection between the outgoing route and the incoming route.
- STEP 5: ASYD - Assign the system data concerned with the service.
SYS1, INDEX5, b0. Destination of Call Forwarding - Busy Line and Call Forwarding - Don't Answer
0/1 = Same/Separate
SYS1, INDEX139, b0-b6. No Answer Timer for station to station, DID, and Tie Line calls. Time value setting is $MTC \times TC$ sec.
SYS1, INDEX140, b0-b6. No Answer Timer for Recall on Call Transfer: the duration for which a call will ring at the transfer destination before it will recall to the transferring party. The timer value is effective when INDEX69, b0=0. Timer value setting is $MTC (0-15) \times TC (2 \text{ or } 8)$ sec.
SYS2, INDEX6, b7. C.F.-Don't Answer service to be set at the destination when the call is transferred by the attendant console in the way of BLIND TRANSFER.
0/1 = Out of Service (Recall to Attendant Console)/In Service
- STEP 6: ANPD - Reserve a number level for the feature access and cancel.
- STEP 7: ASPA - Assign the access code for the Call Forwarding - Don't Answer.

SRV=SSC, SID=12 (Call Forwarding - Don't Answer; Entry)
SRV=SSC, SID=13 (Call Forwarding - Don't Answer; Cancel)
- STEP 8: ARTI - Assign the trunk application data.
CDN52 : CTCF - 1 = SS-CT/SS-CF service is effective.
CDN53 : RERT - 1 = Rerouting function is effective.

CALL TRANSFER SUPPLEMENTARY SERVICE (SS-CT) WITH REROUTING

C-159 CALL TRANSFER SUPPLEMENTARY SERVICE (SS-CT) WITH REROUTING

1. General Description

This feature provides CALL TRANSFER activated to be followed by IS-13869/ETS 300 260 protocol (SS-CT). By using this feature, the station can hold the handling call to transfer to the remote terminal. Also, rerouting function is activated with SS-CT service.

The functions of this feature are as follows.

1. Call Transfer-Supplementary Service

Example) Station A: Calling Party
 Station B: Called Party (Forwarding Party)
 Station C: Forwarded Party

- (a) When the intermediate party is disconnected after the forwarded party answers the call.
 - (1) Station B holds a call from Station A.
 - (2) Station B calls to Station C and Station C answers the call.
 - (3) Station A connects to Station B as Station B is disconnected
- (b) When the intermediate party disconnects before the forwarded party answers the call (BLIND TRANSFER)
 - (1) Station B holds a call from Station A.
 - (2) Station B places a call to Station C
 - (3) Station B disconnects and the tone that Station A receives changes from the hold tone to the ring back tone.
 - (4) Station A connects with Station C.

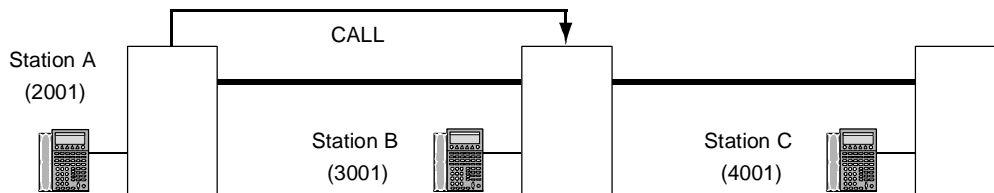
CALL TRANSFER SUPPLEMENTARY SERVICE (SS-CT) WITH REROUTING

2. Rerouting Function

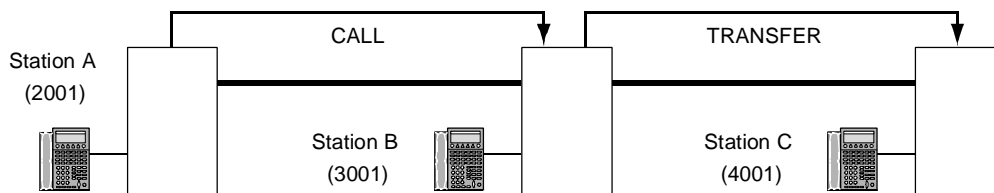
To prevent keeping a hold on the unnecessary line, the line from the calling party to the forwarded destination is newly established when SS-CT service is successful. LCDs of stations concerned with this service are shown below.

Station A: Calling Party
 Station B: Called Party (Forwarding Party)
 Station C: Forwarded Party

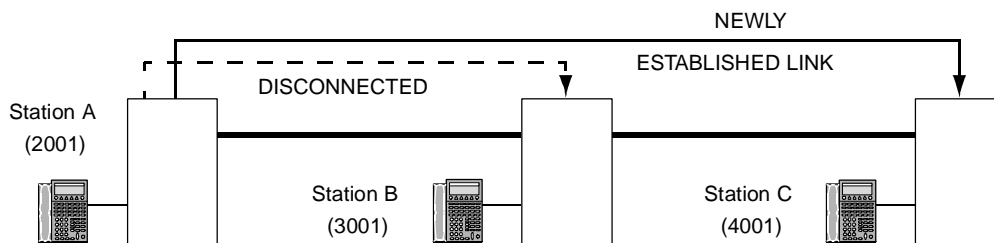
- 1) Station A originates a call to Station B. LCD display on Station A is "3001" and LCD display on Station B is "TRANSFER" (D^{term} Series E) or "XFR" (D^{term} Series III).



- 2) Station B transfers the call to Station C and Station C answers the call. LCD display on Station A is "3001", LCD display on Station B is "TRANSFER" (D^{term} Series E) or "XFR" (D^{term} Series III) and LCD display on Station C is "3001".



- 3) As Station B is released from the connection, a new call is automatically originated from Station A to Station C and the line used for Station A through Station C is reestablished. LCD display on Station A is "4001" and "2001" is displayed on Station C's LCD.



— : IS-11572 or Q-SIG

CALL TRANSFER SUPPLEMENTARY SERVICE (SS-CT) WITH REROUTING

2. Operating Procedure

This feature is operated when the station is in the two-party connection

[Set the service]

1. The station user performs the switch hook flash; the special dial tone is heard.
2. Dial the destination's number; the ring back tone is heard.
3. The destination party answers the call.
4. The station user replaces the handset. **Note**
5. The calling party and the transferred party are connected.

Note: *The user may replace the handset before the transferred party answering the call. In that case, the caller hears the ring back tone in place of the hold tone.*

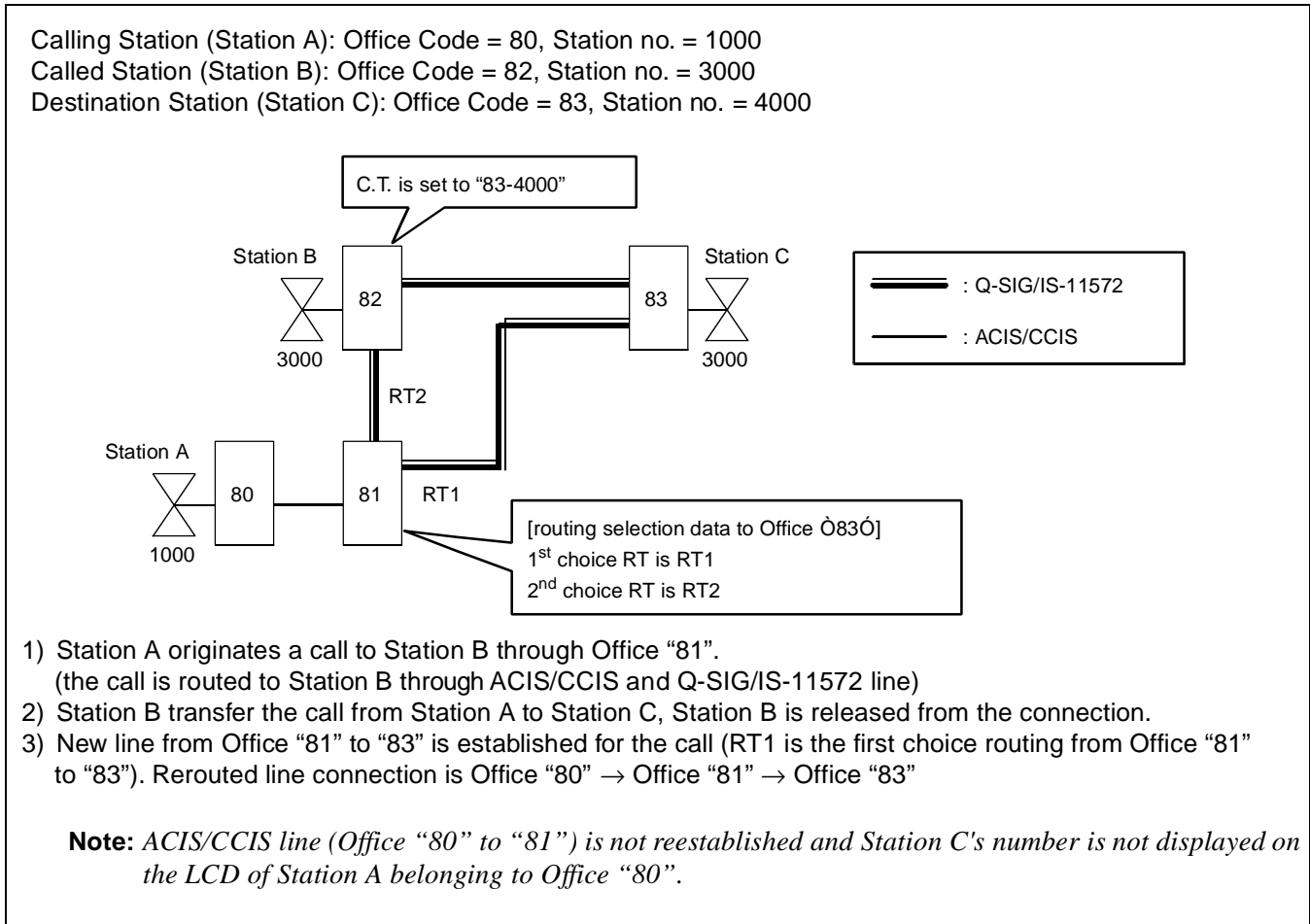
3. Service Conditions

Call Transfer-Supplementary Service

1. This service is available for D^{term}, the analog station, ISDN terminal, PCS terminal, or the attendant console.
2. This feature is available with IS-11572/ETS 300 172 interface.
3. Available Bearer Capability information for this service is speech and 3.1 kHz audio.
4. When the transferring party gets into a conversation with the destination party after the destination answers the call, the switch hook flash may use to switch the connected party to the held party.
5. If the transferring party hangs up before the destination answers the call (transfers in the way of BLIND TRANSFER) and transferred party is busy, the transferring party will be recalled.
6. If the call is transferred to release from the connection after the destination answers the call, the switchhook flash is available for the transferring party to place back the original connection since the destination is busy. (One digit dialing is not available for this operation)
7. When the transferring station is released from the connection after flashing the switchhook and hears the special dial tone (before dialing the destination's number), the caller hears the reorder tone. In this case, the transferring station is not recalled.
8. When the call transfer service is not available because of Register Prepause Timer time out or Register Inter-Digit Timer time out, the transferring party hears the reorder tone. In this case, the transferring party can perform the switchhook flash to reconnect with the calling party.
9. In this service, incoming call via the COT cannot be transferred by the way of BLIND TRANSFER service (When IS-11572 is interworked with ACIS, this service to be operated by BLIND TRANSFER method is not available).
10. When the service is used to be interworked with the interface except IS-11572 or Q-SIG, the displayed number will not be changed at the calling station (The display is the same as before the SS-CT service is activated and the LCD of calling station displays the called station (forwarding party)). However, the LCD of destination displays the calling station.

Rerouting Function

1. Rerouting function is available when:
 - (a) SS-CT service is available.
 - (b) Bearer Capability information of speech or 3.1 kHz audio is available for rerouting function (Unrestricted digital data cannot be forwarded and the line is disconnected).
 - (c) Transmission speed rate is 64 kbps.
 - (d) The calling party, the called party, and the destination station are D^{term} or analog station.
 - (e) Another service is activated on the calling party, the called party, and the destination station.
2. Rerouting function is also available for the call in the example below.

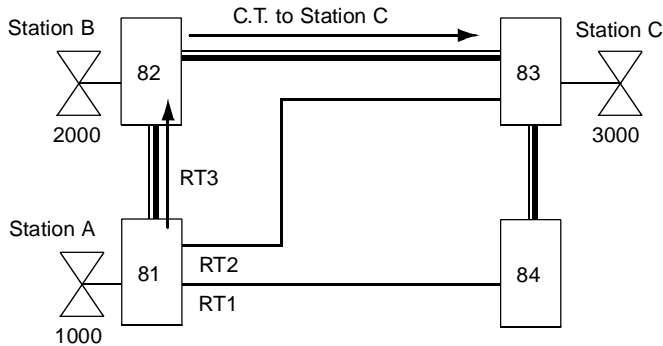


3. When interworking through FCCS link, rerouting function is activated with no restriction.
4. When station-to-station connection is established between a calling party and a called party, the called party and a forwarded party, rerouting function is not activated.
5. When rerouting function is not available or the activation is failed, Call Transfer service is activated without rerouting function.

CALL TRANSFER SUPPLEMENTARY SERVICE (SS-CT) WITH REROUTING

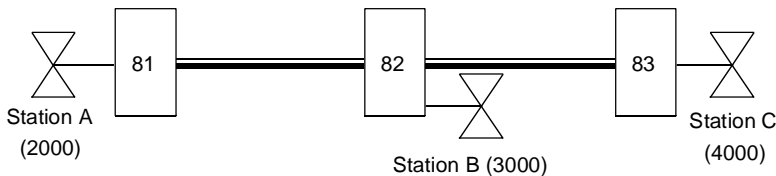
6. Reestablished route is decided by the routing selection pattern data programmed at the office where the calling party is accommodated or the gateway PBX office to the called station. Therefore, the improper route or the route that is the same as before rerouting function may be selected depending on the office data.

For Examples 1) through 4), see the figure below.



- Example 1) the most proper routing is selected by the office data
Routing selection data to Office "83" programmed at Office "81": 1st RT2, 2nd RT1, 3rd RT3
RT2 is selected by rerouting function after Call Transfer is successful.
- Example 2) the improper routing is selected by the office data
Routing selection data to Office "83" programmed at Office "81": 1st RT1, 2nd RT2, 3rd RT3
RT1 is selected by rerouting function after Call Transfer is successful.
- Example 3) the improper routing is selected because of alternate routing
Routing selection data to Office "83" programmed at Office "81": 1st RT2, 2nd RT1, 3rd RT3
All trunks of RT2 (the first choice) are busy.
RT1 is selected for alternate routing after Call Transfer is successful.
- Example 4) the improper routing is selected because of the difference of protocol
Routing selection data to Office "83" programmed at Office "81": 1st RT2, 2nd RT1, 3rd RT3
RT2 (the first choice) is ACIS/CCIS line (not Q-SIG or IS-11572 line).
RT1 is selected for alternate routing after Call Transfer is successful.

For Example 5), see the figure below.



- Example 5) the rerouting pattern is not changed from that before rerouting function.

4. Interactions

Call Transfer-Supplementary Service

1. When CALL PARK [C-29] is used with this feature:
The call parked by CALL PARK feature cannot be transferred by the SS-CT service. While, the station operated CALL PARK can use the SS-CT service for the another incoming call.
2. When CALL HOLD [C-6] is used with this feature:
The call held by CALL HOLD feature cannot be transferred by the SS-CT service.
3. When STEP CALL [S-13] is used with this feature:
When the destination to be transferred with the SS-CT service is busy, a new call can be originated using STEP CALL.
4. When OUTGOING TRUNK QUEUEING [O-2, 2D]/OFF HOOK QUEUEING [O-7, 7D]/INTER-OFFICE OFF HOOK QUEUEING [I-11] service is used with this feature;
When the call is transferred to the trunk by the SS-CT service, those services cannot be set against the busy trunk.
5. When Service Peg Count function of PEG COUNT [P-7] is used with this feature;
 - (a) When the transferring party operates to release from the connection after the station answers the call, this service is included in “CALL TRANSFER - ALL CALLS” service count.
 - (b) When the SS-CT service is operated in the way of BLIND TRANSFER service, this service is not counted.
6. This feature requires 24DTI circuit card.
7. When operating this service in the way of BLIND TRANSFER, the number that indicates the connected party at the calling party's LCD are different between CALL TRANSFER service activated through IS-11572/Q-SIG and the service activated through CCIS.
 - IS-11572/Q-SIG - The display of the calling party is changed from the transferring party's number (caller party's number) to the destination's number at the moment the transferring party releases from the connection.
 - CALL TRANSFER to be activated through CCIS - the LCD display of the calling party is changed after the transferring party answers the call.

Rerouting Function

1. The calling party name or identification information is not displayed on the LCD of the destination station while rerouting function is activated.
2. When the mediate user originates a call to the station on which Call Forwarding-Don't Answer is set and releases before the destination station answers the call, Call Forwarding-Don't Answer is not effective while rerouting function is activated.

CALL TRANSFER SUPPLEMENTARY SERVICE (SS-CT) WITH REROUTING

5. Programming

Assign the data for IS-11572/Q-SIG interface establishment referring to “IS-11572 (Layer 3 specifications for inter-PBX signaling protocol)/Q-SIG (Circuit Switched Basic Call-ETSI Version)” on this manual.

STEP 1: ASYD - Assign the system data concerned with this feature.
SYS1, INDEX17, b4. Blind Transfer to Attendant 0/1 = Out/In Service
SYS1, INDEX69, b0. Return transferred call to transferring party after Recall Timer expires
0/1 = Recall/No Recall (when C.F. - Don't Answer is set at the transfer destination)
SYS1, INDEX140, b0-b6. The duration for which a call will ring at the transfer destination before it will recall to the transferring party. (Assign this data when ASFC, SFI103=0)
SYS1, INDEX247, b0-b6. No Answer timer for Blind Transfer station. (Assign this data when ASFC, SFI103=1)

STEP 2: ASFC - Assign the service feature class (SFC) for allowing this service.
SFI103 (Assign the timer value of No Answer Timer for BLIND TRANSFER TO STATION)
0=followed by Index 140/Index 247 assigned by ASYD.
SFI104 (Processing in a case when the transfer destination does not answer within a predetermined period of time.)

Note: *This data is available when SYS1, INDEX69, b0=1*
0=The transfer destination station rings continuously
1=C.F. - Don't Answer is executed if it is set at the transfer destination

STEP 3: ARRC - Allow the alternative route connection between the outgoing trunk and the incoming trunk.

STEP 4: ARNP - Assign the route number “0” for the self office.

Note: *This command data is not necessary for the closed numbering system.*

STEP 5: ARTI - Assign the trunk application data.
CDN52 : CTCF - 1 = SS-CT/SS-CF service is effective.
CDN53 : RERT - 1 = Rerouting function is effective.

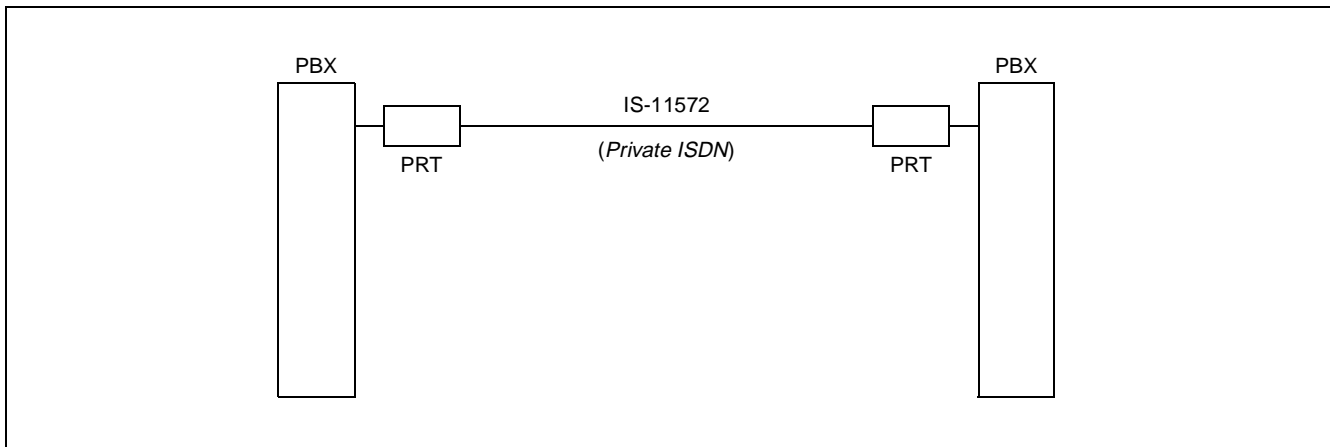
I-42 IS-11572 (LAYER 3 SPECIFICATIONS FOR INTER-PBX SIGNALING PROTOCOL)

1. General Description

This feature allows inter-PBX link using Layer 3 signalling protocol supporting circuit mode bearer services (ISO/IEC IS-11572). This feature has the following functions:

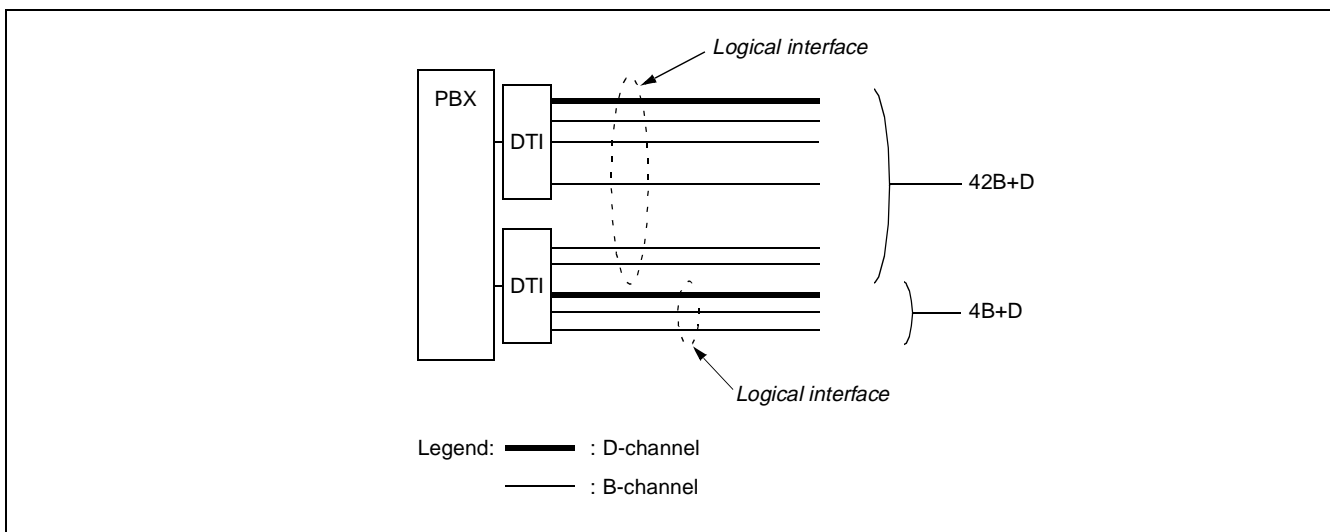
- Outgoing/Incoming Call Connection
- Tandem Connection
- Inter-PBX Link

This feature is available for the PBX with the PA-30PRTC circuit card.



1. Physical Interface

A maximum of 63 channels are to be controlled by a single Data Link channel. This feature, however, does not support D-CHANNEL BACKUP.



IS-11572 (LAYER 3 SPECIFICATIONS FOR INTER-PBX SIGNALING PROTOCOL)

2. Bearer Capability

- The transfer rate is 64 kbps/384 kbps/1,536 kbps/64 kbps × n (since Release 4) only.
- This feature provides the following Bearer Capabilities:
 - Speech
 - Unrestricted Digital Information
 - Restricted Digital Information (only in case of interworking)
 - 3.1 kHz audio
 - Unrestricted Multi-Rate
- At terminating PBX, received bearer capabilities are converted as shown below.
 Speech, 3.1 kHz audio, 7 kHz audio → Speech
 Unrestricted/Restricted Digital Information, Video → Unrestricted Digital Information
- Transparency of Bearer Capability when interworking with the C.O./Tie Line is shown in [Table 6-1](#).

Table 6-1 Transparency of Bearer Capability When Interworking with C.O./Tie Line

BEARER CAPABILITY INTERWORKING		SPEECH	3.1k AUDIO	7.1k AUDIO	UNRESTRICTED DIGITAL	RESTRICTED DIGITAL	VIDEO
		C.O. Line	ISDN → IS-11572	○	○	–	○
IS-11572 → ISDN	○		○	Converted to 3.1k audio	○	○	Converted to Unrestricted digital
Analog C.O. → IS-11572	–		○	–	–	–	–
IS-11572 → Analog C.O.	–		–	–	–	–	–
Tie Line	CCIS → IS-11572	○	○	–	○	–	–
	IS-11572 → CCIS	○	○	Converted to 3.1k audio	○	Converted to Unrestricted digital	Converted to Unrestricted digital
	ACIS → IS-11572	–	○	–	–	–	–
	IS-11572 → ACIS	–	–	–	–	–	–

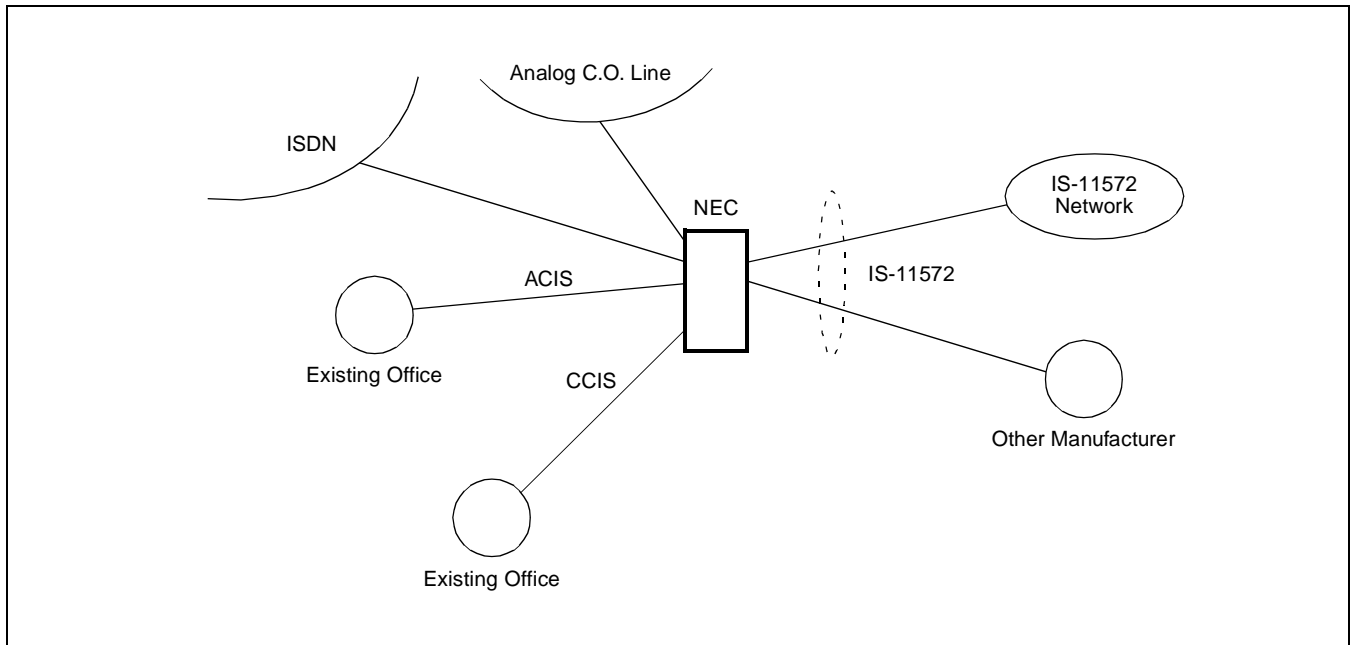
○ : Transparent
 – : Not Available

IS-11572 (LAYER 3 SPECIFICATIONS FOR INTER-PBX SIGNALING PROTOCOL)

3. Connectivity

IS-11572 is available for the following connection and interworking with the other networks.

Note that connection test is required when the NEC's PBX and other manufacturer's PBX coexists in an IS-11572 network.



IS-11572 (LAYER 3 SPECIFICATIONS FOR INTER-PBX SIGNALING PROTOCOL)

- Connectivity between IS-11572 and terminal equipment is shown below.

	CONNECTIVITY	REMARKS
BRI Station → IS-11572	○	
IS-11572 → BRI Station	○	
PRI Station → IS-11572	○	
IS-11572 → PRI Station	○	
IS-11572 → D ^{term}	○	
D ^{term} → IS-11572	○	
Analog Station → IS-11572	○	
IS-11572 → Analog Station	○	

○ : Available

4. Calling/Called Party Number Information

- As a calling/called party number, a maximum of 32 digits can be transmitted and received. (Note that the contents of the calling/called party number display vary depending on the type of terminal.)
- When different signalling systems are involved, transparency of calling/called party number is as shown below:

TYPE OF NETWORK	TRANSPARENCY
CCIS Network	The former 16 digits are transferred.
ISDN Network	Transparent
ISDN Private Network	Transparent

- D^{term} or analog telephone user can select whether to send the calling number or not.

2. Operating Procedure

No manual operation is required.

3. Service Conditions

1. The multi-rate bearer service is available.

Multi-rate bearer service: Desirably multiplied value of 64 (64 kbps × “n”-desired number) is available for the data transmission speed in addition to the current speed such as 384K (64K × 6), 1536K (64K × 24) and 1920K (64K × 30).

The following service conditions are concerned with the multi-rate bearer service.

- (a) Routing data must be assigned per physical interface (PRT/DTI).
- (b) Overlap sending (LCRS) is not provided with this feature.
- (c) Multi-rate bearer service is provided for the PBXs connecting directly with the Q-SIG interface. (If the PBXs are connected with the different interface such as the interface defined by Q.931/Q.931-a or CCIS, only H0/H1 service (transfer rate is 384 kbps/1.5 Mbps) is available.)

2. The User-to-User Signaling (UUS) can be sent via Q-SIG interface.

The following conditions are for the UUS transmission.

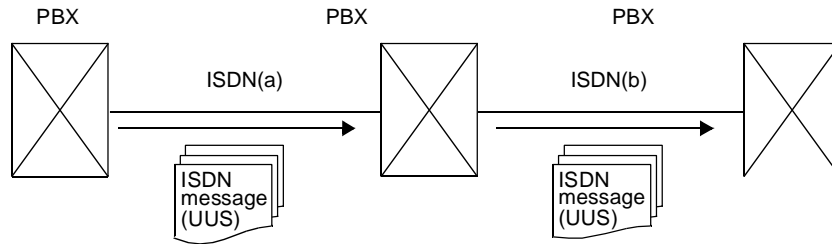
- (a) The maximum data capacity for the UUS is 128 bytes and the latter part of excessive data is automatically omitted.
- (b) The following messages for call establishment/clearing may include the UUS.
 - Setup
 - Alerting
 - Connect
 - Progress
 - Disconnect
 - Release
 - Release Complete

IS-11572 (LAYER 3 SPECIFICATIONS FOR INTER-PBX SIGNALING PROTOCOL)

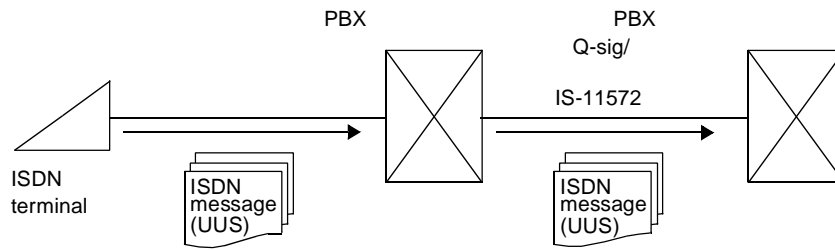
(c) The connection patterns for the UUS transmission are shown in the figure below.

Pattern 1: The ISDN tandem connection

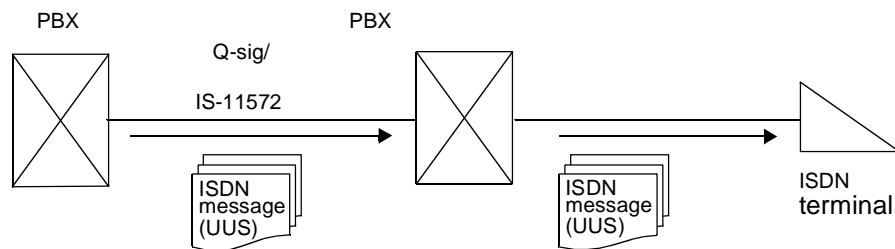
Note: *Either ISDN(a) or ISDN(b) is Q-sig/IS-11572 interface.*



Pattern 2: The interface used in the terminating office is Q-sig/IS-11572.



Pattern 3: The interface used in the originating office is Q-sig/IS-11572.



4. Programming

STEP 1: ASYD - Assign the following data.

SYS-1 Index 186 bit6=1 (ISDN/CCIS is in service)
 187=00 Hex
 220 bit6=0 (ISDN is in service)

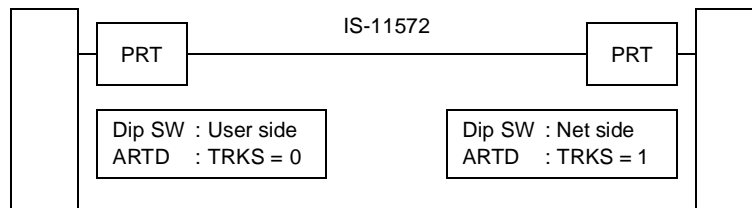
STEP 2: Assign the numbering plan data for call origination.

STEP 3: ARTD - Assign the route data for Bch and Dch at each physical interface.

B-channel route data		D-channel route data	
CDN	2 (ONSG) = 2	CDN	2 (ONSG) = 2
	4 (INSG) = 2		4 (INSG) = 2
	5 (TF) = 3		5 (TF) = 3
	6 (TCL) = 4		6 (TCL) = 4
	7 (L/T) = 1		7 (L/T) = 1
	8 (RLP) = 2		
	15 (LSG) = 12		15 (LSG) = 13
	28 (ANS) = 1		
	30 (PAD) = 4 Note 1		30 (PAD) = 7
	31 (OGRL) = 1		31 (OGRL) = 1
	32 (ICRL) = 1		32 (ICRL) = 1
	34 (GUARD) = 1		34 (GUARD) = 1
	45 (A/D) = 1		45 (A/D) = 1
	49 (TRKS) = 0/1 Note 2		
	50 (DPLY) = 1 Note 3		
	65 (INT) = 10		65 (INT) = 10
	66 (DC) = 15		
	113 (UUI) = 1 Note 4		
	118 (BOB) = 1 Note 5		118 (BOB) = 1 Note 5

Note 1: Depending on the level diagram of the network. Data "4" is for standard.

Note 2: Note that each office must be assigned a different value to avoid collision at the time of call origination.
 TRKS=0 (When PRT/DCH is set as "User side" by DIP switch.)
 TRKS=1 (When PRT/DCH is set as "Net side" by DIP switch.)



Note 3: Assign "1" when the number display on LCD of terminal is required.

Note 4: Assign "1" when the User-to-User signaling notification is required.

Note 5: Assign "1" when the multi-rate bearer service is used.

IS-11572 (LAYER 3 SPECIFICATIONS FOR INTER-PBX SIGNALING PROTOCOL)

STEP 4: ARTI - Assign the trunk application data.
INTD = 1 (IS-11572)

STEP 5: ATRK - Assign Bch trunks. Note that the LEN of Dch trunk should be assigned after STEP 9:
ACIC2 command assignment.

STEP 6: MBTK - Make idle Bch trunks.

STEP 7: ADPC - Assign PC (Point Code) for both Bch and Dch at each physical interface.

Note: Same PC (not existing PC for CCIS) must be assigned for both Bch and Dch.

STEP 8: ACSC - Assign the location of DCH (Dch Handler).
(Refer to the following example)

PIM0	PRT	CSCG=130 (Even No.)	CICG No.= 0	CCH= 00004
			1	00004
			2	00004
			3	00004
			4	00004
			5	00004
			6	00004
		7	00004	
Group No.	05	07		
	04	06		

Note: Bch location is not necessary. (DCH location only)

STEP 9: ACIC 1- Assign CSCG
PC=xxx CSCG=Even No. (130-254)

STEP 10: ACIC 2- Assign CIC No.
PC=xxx CIC(1~999) LENS (for speech channel)

STEP 11: ATRK - Assign the LEN of Dch trunk.

Attention: The circuit card must be initialized after changing data.

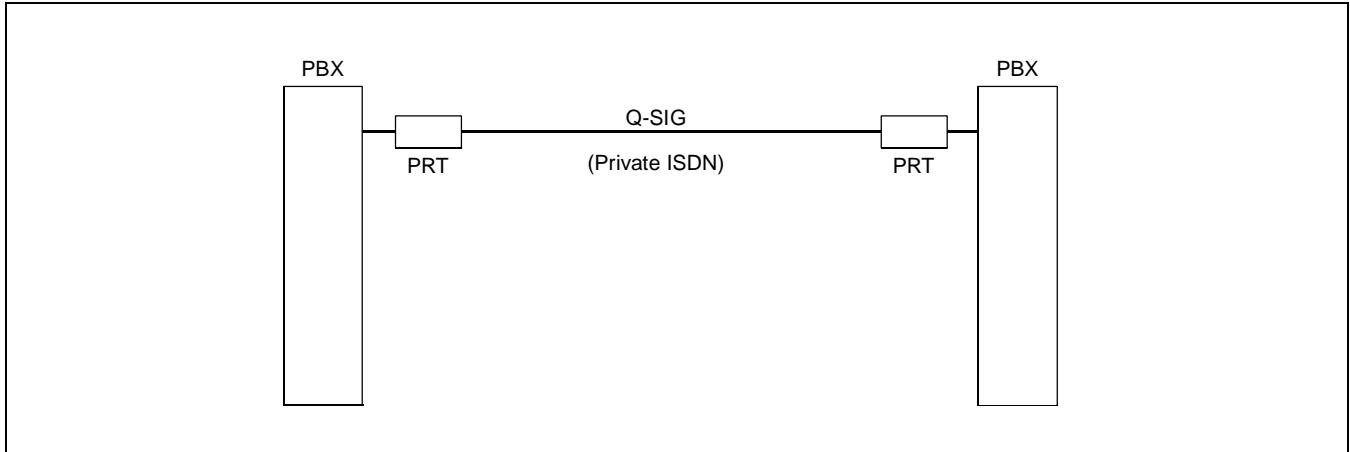
Note: The following data is available if necessary.
ASFC - SFI 139: SID to Network - Privacy [COLR]
0 = -
1 = SID to Network - Privacy

Q-4 Q-SIG (CIRCUIT SWITCHED BASIC CALL - ETSI VERSION)

1. General Description

This feature enable NEC's PBX to connect to NEC's PBX or other manufacturer by using Layer 3 protocol for the signaling for the support of circuit mode bearer services at the Q reference point.

Q-SIG conforms to ETS 300 172.



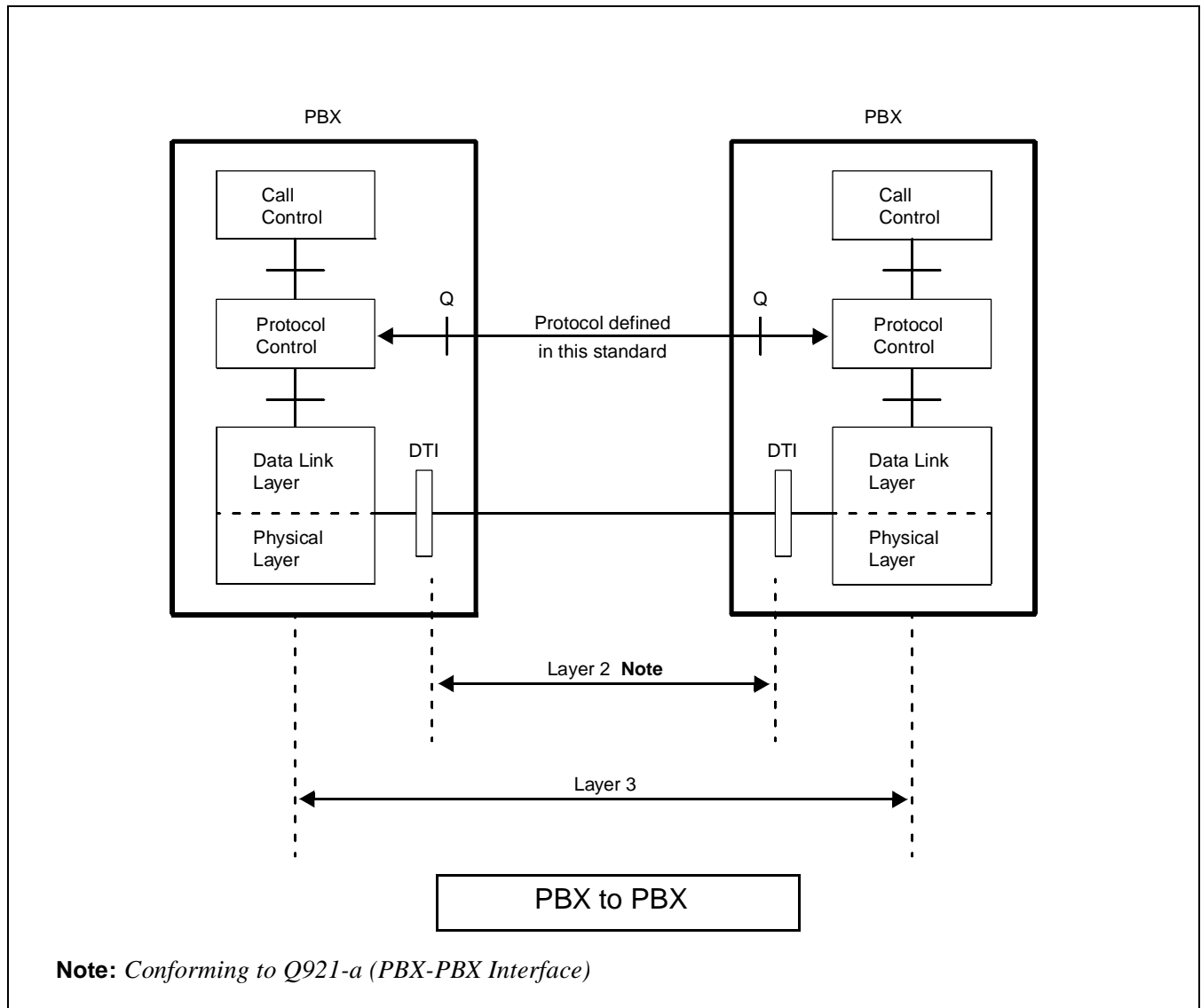
Note 1: *ETS 300 172= Private Telecommunication Network (PTN);
Inter-exchange signaling protocol
Circuit mode basic service*

Q-SIG (CIRCUIT SWITCHED BASIC CALL - ETSI VERSION)

1. Q reference point

The Q reference point is not expected to be a physical interface but is shown in conceptual terms in the figure below.

The Q-Sig protocol creates Layer 3 messages for inter-PTN (PBX) signaling.

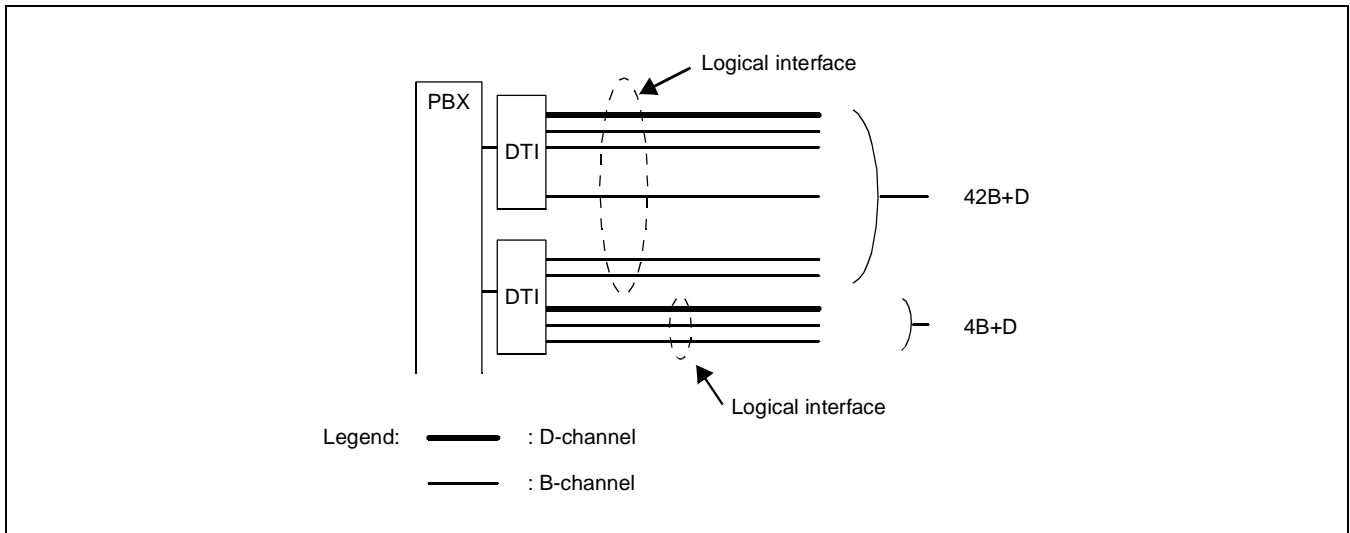


Control Plane Protocol Model

2. Physical Interface

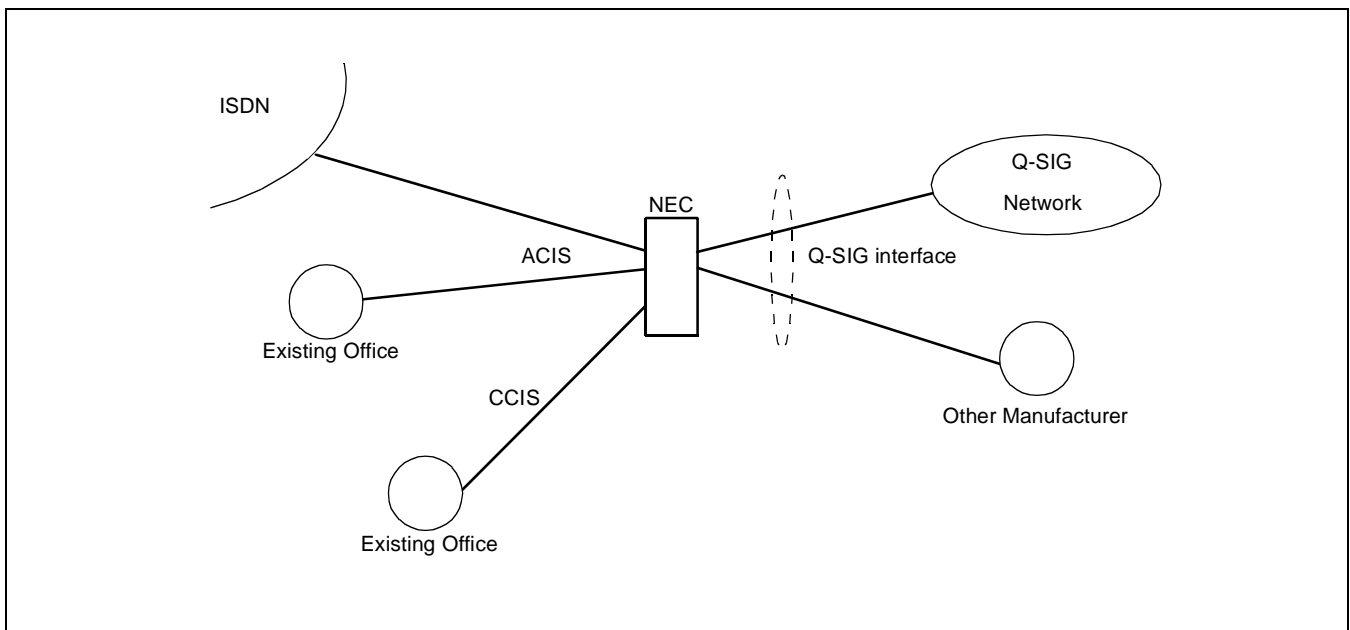
The physical interface is a 1.5 Mbps digital interface.

A maximum of 60 B-channels are controlled by a single Data Link channel.



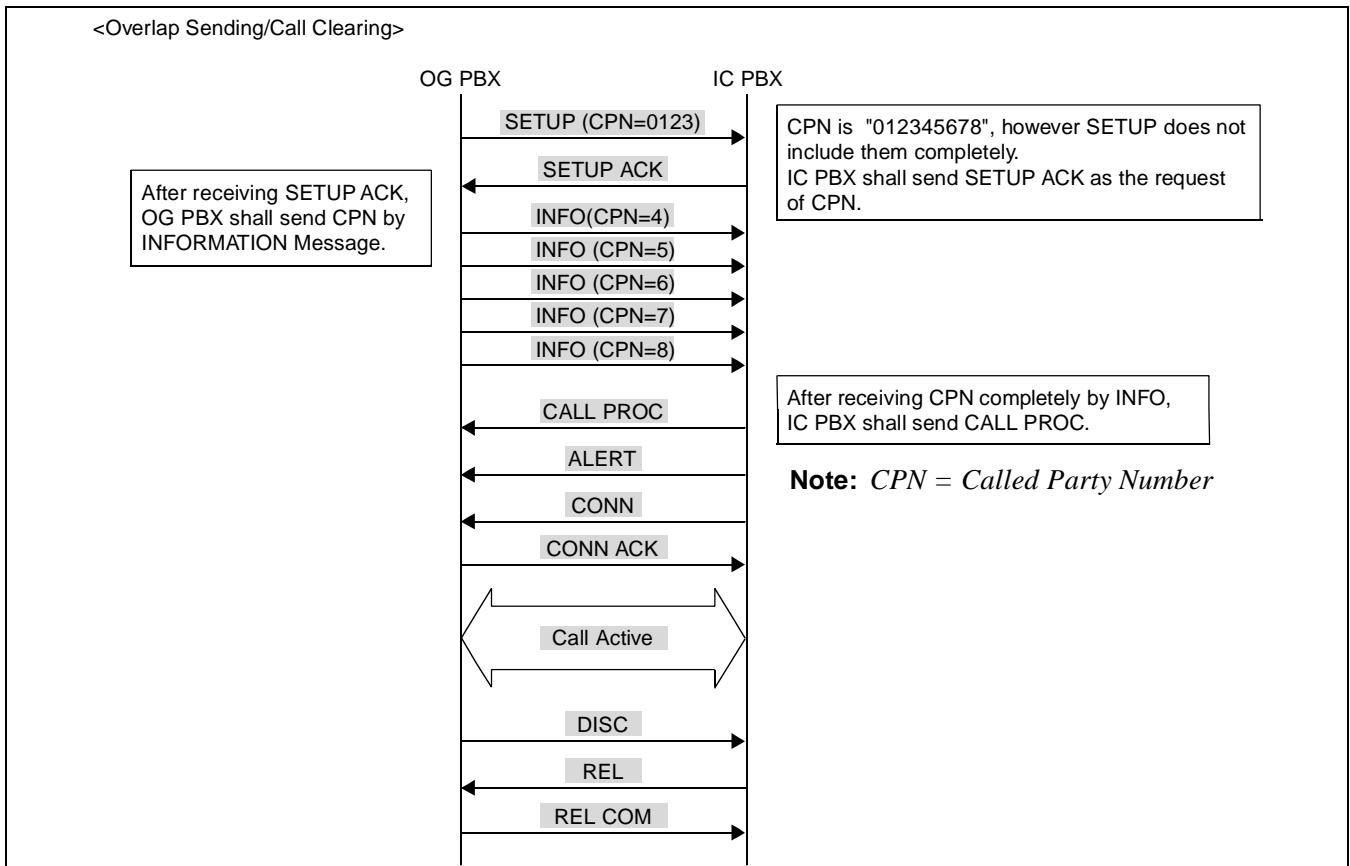
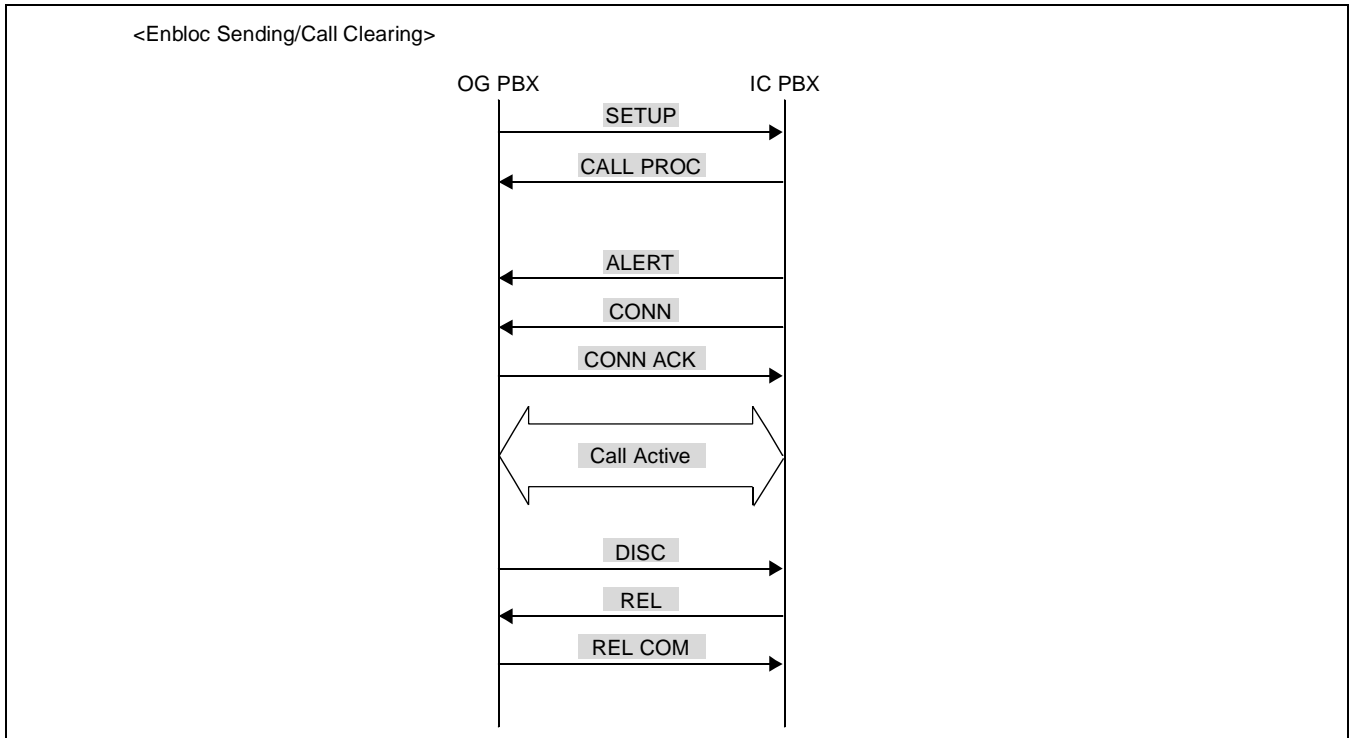
3. Interworking with Other Network

Q-SIG is available to the following connection and interworking with the other network.



Q-SIG (CIRCUIT SWITCHED BASIC CALL - ETSI VERSION)

4. Example of Message Sequences



5. Transparency

TYPE OF CALL	MANDATORY INFORMATION ELEMENTS	NON-MANDATORY INFORMATION ELEMENTS
Q-SIG \rightleftarrows Q-SIG	Conforming to ETS 300 172 (1) Message Type (2) Bearer Capability (3) Called Party Number Note 1 Note 2	Conforming to ETS 300 172 (1) Calling Party Number (2) Calling Party Sub-address (3) Called Party Sub-address
ISDN \rightleftarrows Q-SIG	(4) Cause (5) Call state	(4) Cause (5) Progress Indicator (6) Low Layer Capability (7) High Layer Capability
CCIS \rightleftarrows Q-SIG Note 3 Note 4	(1) Bearer Capability (Speech, Modem) (2) Called Party Number	(1) Calling Party Number
ACIS \rightleftarrows Q-SIG	(1) Called Party Number (Speech, 3.1k)	None
ISDN term \rightleftarrows Q-SIG	(1) Message Type (2) Bearer Capability (3) Called Party Number (4) Cause information element (5) Call state	(1) Calling Party Number (2) Calling Party Sub-address (3) Called Party Sub-address (4) Cause (5) Progress Indicator (6) Low Layer Capability (7) High Layer Capability

Note 1: When there is no called party number from ISDN, PBX may define the called party number.

Note 2: In the connection from Q-SIG to ISDN, PBX may add or delete digits of the called party number.

Note 3: A digital data communication between CCIS and Q-SIG will be disconnected by High Layer if the attribution mismatch.

Note 4: CCIS in this section means CCIS without ISDN transmitting information (ARTD CDN98 (CI)=0).

Q-SIG (CIRCUIT SWITCHED BASIC CALL - ETSI VERSION)

2. Operating Procedure

No manual operation is required.

3. Service Conditions

1. (Series 7300 Release 4 software enhancement) The multi-rate bearer service is available.

Multi-rate bearer service: Desirably multiplied value of 64 (64 kbps \times "n"-desired number) is available for the data transmission speed in addition to the current speed such as 384K (64K \times 6), 1536K (64K \times 24) and 1920K (64K \times 30).

The followings are the service condition concerned with the multi-rate bearer service.

- (a) Routing data must be assigned per physical interface (PRT/DTI).
 - (b) Overlap sending (LCRS) is not provided with this feature.
 - (c) Multi-rate bearer service is provided for the PBXs connecting directly with the Q-sig interface. (If the PBXs are connected with the different interface such as the interface defined by Q.931/Q.931-a or CCIS, only H0/H1 service (transfer rate is 384 kbps/1.5 Mbps) is available.)
2. (Series 7300 Release 4 software enhancement) The User-to-User Signaling (UUS) can be sent via Q-sig interface.

The followings are the conditions for the UUS transmission.

- (a) The maximum data capacity for the UUS is 128 bytes and the latter part of excessive data is automatically omitted.
- (b) The following messages for call establishment/clearing may include the UUS.
 - Setup
 - Alerting
 - Connect
 - Progress
 - Disconnect
 - Release
 - Release Complete

(c) The connection patterns for the UUS transmission are shown in [Figure 6-1](#).

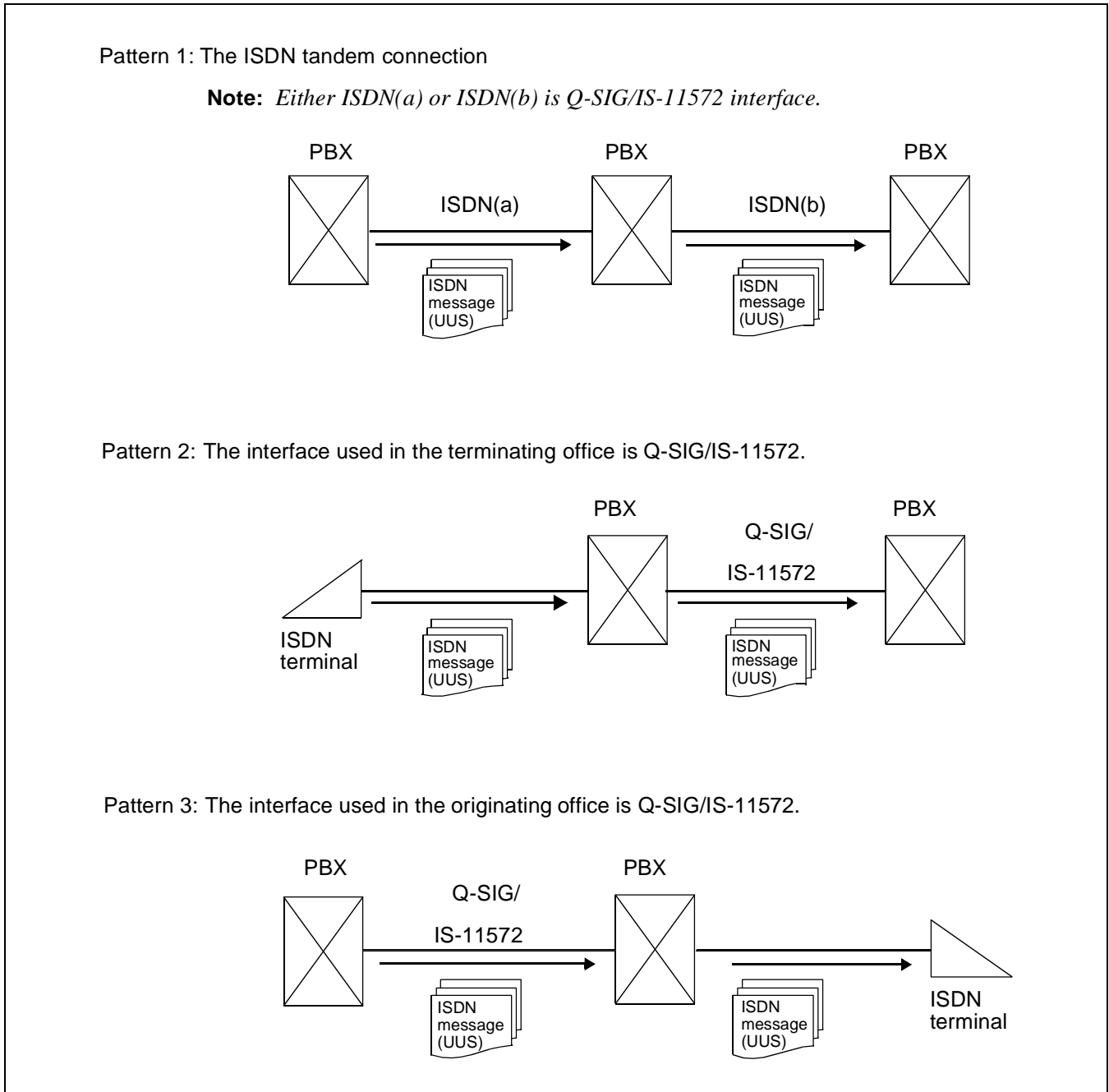


Figure 6-1 Connection Patterns for UUS Transmission

Q-SIG (CIRCUIT SWITCHED BASIC CALL - ETSI VERSION)

4. Programming

STEP 1: ASYD - Assign the following data.

SYS-1 Index 186 bit6=1 (ISDN/CCIS is in service)
 187=00 Hex
 220 bit6=0 (ISDN is in service)

STEP 2: Assign the numbering plan data for the originating call.

Note 1: ASPA LCR (for Enbloc sending)
 LCRS (for Overlap sending)

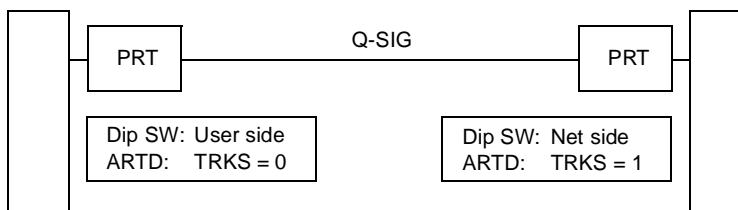
Note 2: Closed Numbering without office code will not allow in Q-SIG Network.

STEP 3: ARTD - Assign the route data for Bch and Dch at each physical interface.

B-channel route data				D-channel route data			
CDN	2	(ONSG)	= 2	CDN	2	(ONSG)	= 2
	4	(INSG)	= 2		4	(INSG)	= 2
	5	(TF)	= 3		5	(TF)	= 3
	6	(TCL)	= 4		6	(TCL)	= 4
	7	(L/T)	= 1		7	(L/T)	= 1
	8	(RLP)	= 2				
	15	(LSG)	= 12		15	(LSG)	= 13
	28	(ANS)	= 1				
	30	(PAD)	= 4 Note 1		30	(PAD)	= 7 Note 1
	31	(OGRL)	= 1		31	(OGRL)	= 1
	32	(ICRL)	= 1		32	(ICRL)	= 1
	34	(GUARD)	= 1		34	(GUARD)	= 1
	45	(A/D)	= 1		45	(A/D)	= 1
	49	(TRKS)	= 0/1 Note 2				
	50	(DPLY)	= 1 Note 3				
	65	(INT)	= 10		65	(INT)	= 10
	66	(DC)	= 15				
	113	(UUI)	= 1 Note 4				
	118	(BOB)	= 1 Note 5		118	(BOB)	= 1 Note 5

Note 1: Depending on the level diagram of the network. Data "4" is for standard.

Note 2: Note that each office must be assigned a different value to avoid collision at the time of call origination.
 TRKS=0 (When PRT/DCH is set as "User side" by DIP switch.)
 TRKS=1 (When PRT/DCH is set as "Net side" by DIP switch.)



Note 3: Assign "1" when the number display on LCD of terminal is required.

Note 4: Assign "1" when the User-to-User Signaling notification is required.

Note 5: Assign "1" when the multi-rate bearer service is used.

STEP 4: ARTI - Assign the trunk application data for Bch and Dch as follows.
INTD=0 (Q-SIG)

Note: This data is effective since release 4.

STEP 5: ATRK - Assign Bch trunk data. Note that Dch trunk data should be assigned after STEP 9: ACIC 2 command assignment.

STEP 6: ADPC - Assign PC (Point Code) for both Bch and Dch at each physical interface.

Note: Same PC (not existing PC for CCIS) must be assigned for both Bch and Dch. The Point Code does not have any relationship to the other PBX's like in CCIS

STEP 7: ACSC - Assign the location of DCH (Dch Handler).
(Refer to the following example)

PIM0	PRT	CSCG=130 (Even No.)	CICG No. = 0	CCH= 0004
			1	0004
			2	0004
			3	0004
			4	0004
			5	0004
			6	0004
			7	0004
Group	05	07		
No.	04	06	Note: Bch location is not necessary. (DCH location only)	

STEP 8: ACIC 1- Assign CSCG
PC=xxx CSCG=Even No. (130-254)

STEP 9: ACIC 2- Assign CIC No.
PC=xxx CIC (1~999) LENS (for speech channel)

STEP 10: ATRK - Assign the LEN of Dch trunk.

Attention: The circuit card must be initialized after changing data.

Note: The following data is available if necessary.
ASFC - SFI 139 : SID to Network - Privacy [COLR] for Q-SIG.
0 = -
1 = SID to Network - Privacy

ADVICE OF CHARGE (AOC) - RECEIPT AND DISPLAY OF AOC FROM A FOREIGN Q-SIG NETWORK

A-136 ADVICE OF CHARGE (AOC) - RECEIPT AND DISPLAY OF AOC FROM A FOREIGN Q-SIG NETWORK

1. General Description

This feature provides the calling station originated a call to ISDN network using Q-SIG/IS-11572 line with the charge information display sent from the ISDN network. Whether the charge information is displayed or not can be specified on a station basis.

2. Operating Procedure

No manual operation is required.

3. Service Conditions

1. This feature is available since Series 7400 (Release 8) software.
2. This service is available for the D^{term} and ISDN terminal. Attendant Console is not available for this service.
3. This feature is effective on condition that the call is originated to the ISDN network through ETS 300 172/IS-11572 line.
4. This feature supports AOC-E only (not applied to AOC-D nor AOC-S).
 - AOC-S: Charging information at call set-up time
The billing rate is sent to the caller when originating a call.
Also, when the billing rate is changed during the communication, the new information is sent to the caller.
 - AOC-E: Charging information at the end of the call
When the call is completed, the charge information is sent to the caller.
 - AOC-D: Charging information during the call
While the call is in progress, the charge information and the billing rate information are sent to the caller.
5. This feature supports the total billing information only when the call is completed.
6. Maximum number of digits for the charge display is six digits. When the charge exceeds the maximum digits, the LCD displays “*999,999”.
7. Charge information of more than ten digits can be displayed on the LCD (number of unit digit is not displayed). The charge of unit digit is raised to ten digit and charge of decimal places is omitted.
8. This feature is activated only when the charge information is sent from the ISDN network. Therefore, the call charge is not displayed when dialing the number free of charge.

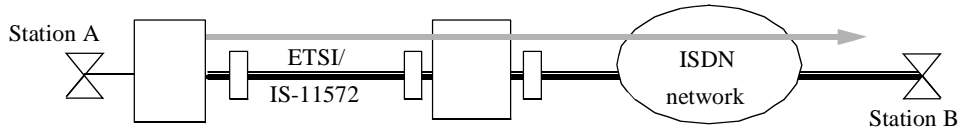
4. Interactions

1. When Call Transfer - All Calls service/Blind Transfer Service is activated with this feature, the call charge is not sent to the calling station. However, when Call Transfer - All Calls is activated with this feature, the call charge is sent to the forwarding station.
2. When Call Forwarding - Busy Line [C-2], Call Forwarding - All Calls [C-5] is activated with this feature, the call charge is sent to the calling station.
3. When Call Forwarding - Don't Answer [C-5] is activated with this feature, the call charge is not sent.
4. When C.F. - PS Incoming Incomplete is activated with this feature, the call charge is not sent.
5. When Calling Name Identification Presentation (CNIP)/Connected Name Identification Presentation (CONP) [C-153] is provided with this feature, the call charge is not sent.

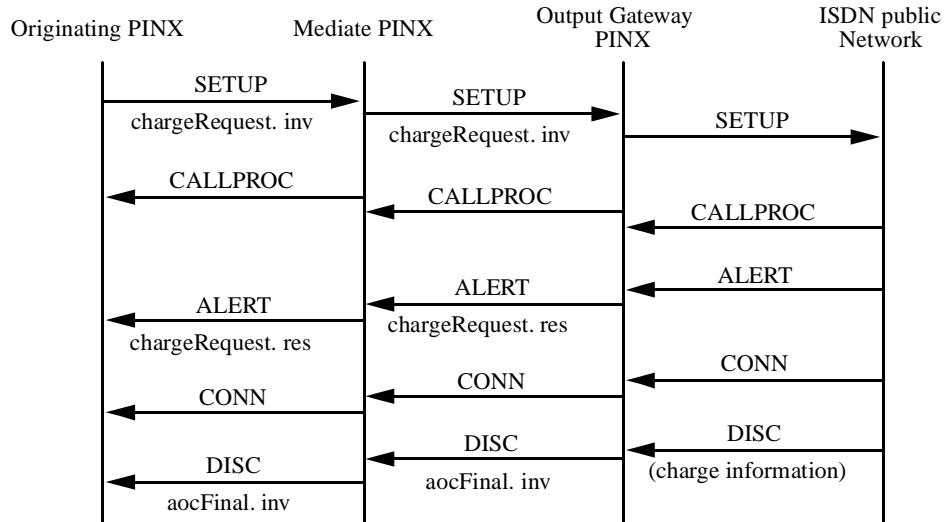
5. Example of Message Sequence

Some examples of message sequence for this service are shown below.

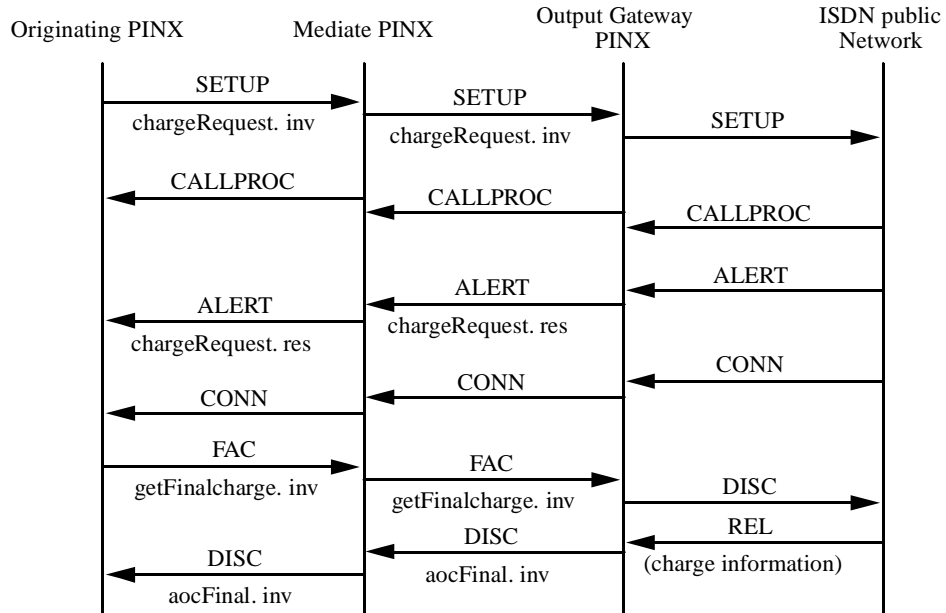
Station A calls to Station B and the two stations are connected.



(1) Message Sequence of charge information sent when the call is disconnected from a called user



(2) Message Sequence of charge information sent when the call is disconnected from a calling user



6. Programming

STEP 1: Assign the data for establishing Q-SIG/IS-11572 line followed by “Q-SIG (CIRCUIT SWITCHED BASIC CALL - ETSI VERSION)” or “IS-11572 (LAYER 3 SPECIFICATIONS FOR INTER-PBX SIGNALING PROTOCOL)” in this chapter. Also, assign the data for “STATION MESSAGE DETAIL RECORDING SYSTEM-RS232C-PRI” [S-83] in Chapter 5.

STEP 2: ASFC – Assign the service feature class to be allowed this service to each station.
SFI109 (Call charge notification to ISDN terminal), RES=1 (In service)
SFI175 (AOC), RES=1 (In service)

This page is for your notes.