NEAX®2400IMX

ISDN
Features and Specifications

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NEAX2400 IMX
ISDN Features and Specifications

Revision Sheet 2/3

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NEAX2400 IMX
ISDN Features and Specifications

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NEAX2400 IMX
ISDN Features and Specifications

Feature List

Feature List (Continued)

Feature List (Continued)

NEAX2400 IMX ISDN Features

LEGEND		
X	–	Available
—	–	Not Applicable
N	–	Not Available
E	–	Enhanced or Changed
→	–	Feature carried over to next software series

Index	Feature Description	Series 7400	
		Base PBX	FCCS
A-76	Alternate Routing - PRI	X	X
A-88	Automatic Call Distribution - PRI	X	X
A-92	Announcement Service - PRI	X	X
A-94	Automatic Circuit Assurance - PRI	X	X
A-96	Automatic Trunk Test - PRI	X	N
B-19	Boss/Secretary Transfer - PRI	X	X
B-22	Boss/Secretary Override - PRI	X	X
C-95	Call Forwarding - All Calls - PRI	X	X
C-95D	Call Forwarding - All Calls - D^{term} - PRI	X	X
C-96	Call Forwarding - Busy Line - PRI	X	X
C-97	Call Pickup - Group - PRI	X	X
C-97D	Call Pickup - Group - D^{term} - PRI	X	X
C-98	Call Transfer - Attendant - PRI	X	X
C-99	Call Transfer - All Calls - PRI	X	X
C-99D	Call Transfer - All Calls - D^{term} - PRI	X	X
C-100	Consultation Hold - All Calls - PRI	X	X
C-100D	Consultation Hold - All Calls - D^{term} - PRI	X	X
C-101	Call Forwarding - Intercept Announcement - PRI	X	N
C-102	Call Pickup - Direct - PRI	X	X
C-114	Call Waiting - Terminating - PRI	X	X
C-119	Call Park - PRI	X	N
C-123	Call Forwarding - All Calls - Announcement - PRI	X	X
C-125	Call Forwarding - Intercept - PRI	X	N
C-129	Call Forwarding - Don't Answer - PRI	X	X

NEAX2400 IMX ISDN Features (Continued)

		Series 7400	

LEGEND
    X   –   **Available**
    —   –   **Not Applicable**
    N   –   **Not Available**
    E   –   **Enhanced or Changed**
    → – **Feature carried over to next software series**			

Index	**Feature Description**	**Base PBX**	**FCCS**
D-115	Distinctive Ringing - PRI	X	X
D-116D	Do Not Disturb - D^{term} - PRI	X	X
D-117	Data Line Security - PRI	X	X
D-118	Data Privacy on Demand - PRI	X	N
D-119	Data Interface - Automatic Answer - PRI	X	N
D-120	Data Transparency - PRI	X	N
D-121	Data Communications - PRI	X	N
D-122	Data Uniform Numbering Plan - PRI	X	N
D-137	Direct-In Termination (DIT) - PRI	X	X
E-14D	Elapsed Time Display - D^{term} - PRI	X	X
F-21	Flexible Numbering of Stations - PRI	X	X
F-26	Faulty Trunk Report - PRI	X	X
H-14D	Hands-Free Answer Back - D^{term} - PRI	X	X
H-15	Hot Line-Outside - PRI	X	X
I-24	Incoming Call Identification - PRI	X	X
I-25	Incoming ISDN Call to Tie Line Connection - PRI	X	X
I-26	Indialing Through Main - PRI	X	X
I-27	Inter-PBX Coordinated Station Numbering Plan - PRI	X	X
I-36	Inter-Office Off-Hook Queuing - PRI	X	X
L-31	Least Cost Routing - 3/6-Digit - PRI	X	N
L-32	LCR - Time of Day Routing - PRI	X	N
L-33	LCR - Attendant Manual Override - PRI	X	N
L-34	LCR - Automatic Overflow to DDD - PRI	X	X

LEGEND

X	–	**Available**
—	–	**Not Applicable**
N	–	**Not Available**
E	–	**Enhanced or Changed**
→	–	**Feature carried over to next software series**

Index	Feature Description	Series 7400	
		Base PBX	**FCCS**
L-35	LCR - Clocked Manual Override - PRI	X	N
L-42	Last Number Call - PRI	X	X
L-42D	Last Number Call - D^{term} - PRI	X	X
L-44	LDN Night Connection - PRI	X	N
L-46	LDN Night Connection - Outside - PRI	X	N
L-49	LCR - Special Line Warning Tone - PRI	X	X
M-71	Miscellaneous Trunk Access - PRI	X	X
M-72	Miscellaneous Trunk Restriction - PRI	X	X
M-73	Music On Hold - PRI	X	X
M-74	Modem Pooling - PRI	X	N
M-75	Multiple Call Forwarding - All Calls - PRI	X	X
N-20	Night Connection - Fixed - PRI	X	X
N-21	Night Connection - Flexible - PRI	X	X
N-22	Non-Delay Operation - PRI	X	X
N-29	Night Connection Outside - System - PRI	X	X
N-31	Nailed-Down Connection - PRI	X	X
O-24	Outgoing Trunk Queuing - PRI	X	X
O-26	Outgoing Trunk Queuing - Deluxe - PRI	X	X
O-28	Off-Hook Queuing - PRI	X	X
O-30	Outgoing Trunk Queuing - Attendant - PRI	X	X
O-32	Overflow - UCD - PRI	X	X
P-37	Peg Count - PRI	X	X
P-38	Primary Call Restriction - PRI	X	N
P-39	PRI Trunk to Tie Line Connection With Pad Control	X	X

NEAX2400 IMX ISDN Features (Continued)

LEGEND				
X	–	Available		
—	–	Not Applicable		
N	–	Not Available		
E	–	Enhanced or Changed		
→	–	Feature carried over to next software series		

Index	Feature Description	Series 7400	
		Base PBX	FCCS
P-47	Paging Transfer - PRI	X	N
P-49	PRI Failsafe Routing	X	X
R-35	Restriction From Outgoing Calls - PRI	X	X
S-82	Speed Calling - System - PRI	X	X
S-82D	Speed Calling - System - D^{term} - PRI	X	X
S-83	Station Message Detail Recording - PRI	X	X
S-84	Speed Calling - Station - PRI	X	X
S-85	Speed Calling - Group - PRI	X	X
S-86	Simultaneous Voice and Data Transmissions - PRI	X	N
S-87	Synchronous Data Switching - PRI	X	N
S-88	SMDR for Data Call - RS232C - PRI	X	X
S-89	Speed Calling Override - System - PRI	X	X
S-107	Station Individual Trunk Access - PRI	X	N
T-37	Tandem Switching of Tie Trunks - 2/4-Wire - PRI	X	X
T-38	Three-Way Calling - PRI	X	X
T-38D	Three-Way Calling - D^{term} - PRI	X	X
T-40	Toll Denial/Toll Diversion - PRI	X	X
T-41	Toll Restriction - 3/6 Digit - PRI	X	X
U-6	Uniform Call Distribution (UCD) - PRI	X	X

NEAX2400 IMX ISDN PRI Supplementary Features

LEGEND		
X	–	**Available**
—	–	**Not Applicable**
N	–	**Not Available**
E	–	**Enhanced or Changed**
→	–	**Feature carried over to next software series**

Index	Feature Description	Series 7400	
		Base PBX	FCCS
A-77	Accunet Access	X	N
A-136	Advice of Charge (AOC) - Receipt and Display of AOC from a Foreign Q-SIG Network	X	X
C-103	Calling Party Recognition Service (CF - All Calls/Busy Line/Don't Answer)	X	X
C-104	Calling Party Recognition Service (Direct-In-Termination (DIT))	X	X
C-105	Call-By-Call Service Selection	X	X
C-106	Call-By-Call Pool Management	X	X
C-112	Calling Party Information Transfer	X	X
C-148	Call Completion to Busy Subscriber (CCBS)	X	X
C-152	Call Completion on No Reply (CCNR)	X	X
C-153	Calling Name ID Presentation (CNIP)/ Connected Name ID Presentation (CONP)	X	X
C-158	Call Forwarding Supplementary Service (SS-CF) with Rerouting	X	X
C-159	Call Transfer Supplementary Service (SS-CT) with Rerouting	X	X
C-164	CCIS Tandem Call - Calling Party Number (CPN) Delivery to ISDN & Q-SIG Networks	X	X
D-123	Direct Inward Dialing (DID) Addressing	X	X
D-152	D Channel Backup - PRI	X	X
E-23	Event Based CCIS - ISDN Transport	X	X
E-24	Event Based CCIS - Q-SIG Transport	X	X
I-28	ISDN Individual Calling Line Identification (ICLID)	X	X
M-76	Megacom Access	X	X
M-77	Megacom 800 Service	X	X

NEAX2400 IMX ISDN PRI Supplementary Features

LEGEND				
X	–	Available		
—	–	Not Applicable		
N	–	Not Available		
E	–	Enhanced or Changed		
→	–	Feature carried over to next software series		

Index	Feature Description	Series 7400	
		Base PBX	**FCCS**
N-39	NI-1 BRI Terminal Support	X	X
N-40	Non-Facility Associated Signaling - PRI	X	X
N-42	National ISDN - 2 PRI	X	X
P-58	PRI Terminal Support	X	X
Q-4	Q-SIG Circuit Switched Basic Call - ETSI Version	X	X
S-90	SDN Access	X	X
S-91	SID to Network - Present	X	X
S-92	SID to Network - Privacy	X	X
S-93	SID to Terminating User - Display	X	X
S-94	SID to Terminating User - DTE	X	X
S-95	Sub-Address Addressing	X	X
S-96	Sub Address - Present	X	X
T-42	Trunk Provisioning Service Selection	X	X
T-44	Transfer Message (TRM)	X	N
V-18	Virtual Tie Line	X	N

A-76 Alternate Routing - PRI

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. The equipment then routes the call through alternate trunk groups if the first is busy. The NEAX2400 IMX will also add or delete digits, when necessary, to complete the call to the desired station.

Operating Procedure

No manual operation is required.

Service Conditions

1. A step-by-step explanation that provides a clearer understanding of how the NEAX2400 IMX accomplishes Least Cost Routing follows:

    a.) If dialing a toll or local call (NPA-XXX or NXX-XXXX), routing begins with translation of three-digit (NPA or NXX) area or office code. In the case of specific numbers, this translation may result in the immediate selection of the three-digit routing patterns. If the number dialed is an NPA and six-digit translation is required, the NXX code is verified in the SCC (XX) or the FX (XX) Table. If the NXX is not located in either table, see part C of this Service Condition. There are a maximum of 256 Outgoing Pattern Routing (OPR) Tables with a maximum of 8 routes for selection.

Note: *SCC (XX) is a Special Common Carrier NXX Translation Table. FX (XX) is the FX NXX Translation Table.*

    b.) First choice route option is an NPA pattern that will most often be a Specialized Common Carrier. If a trunk is available in this group, further digit translation is required to determine whether the called number is served by the carrier. NXX digit translation is also required in instances where a call is routed over a tie or FX trunk. For these purposes, 256 NXX patterns are available.

    c.) In the case of Specialized Common Carriers, associated NXX patterns will return a Yes/No answer to the PBX, indicating whether or not the dialed number is within the designated service area of the selected SCC. If service is available, the PBX will seize the trunk and complete the connection. If the No answer is returned, the PBX searches for the next available trunk group.

    d.) Calls routed over FX trunk groups may require outpulsing of prefix digit "a," depending upon the NXX number dialed. For this purpose, another group of associated NXX patterns can be used, operating on the same Yes/No principle. A Yes answer returned to the PBX in this instance results in prefix "1" being added automatically before sending digits to the called Central Office.

    e.) In a circumstance where the selected route is an FX trunk group, NXX translation can be used to either allow or disallow the connection. This is accomplished using Yes/No answer from a designated group of NXX patterns, and enables calls to selected Central Office areas to be effectively restricted to only the most economical routes.

2. In certain cases, three- and six-digit translation provide sufficient information for identification of the service area; 256 separate Outgoing Routing Patterns are provided for this.

3. Up to eight trunk routes can be in each Outgoing Routing Pattern.

4. STATION MESSAGE DETAIL RECORDING (SMDR) [S-10] can be used in conjunction with Least Cost Routing. The route selected by the PBX is recorded by the SMDR unit.

5. Tie lines can be included in route patterns.

6. Application of NXX patterns provides for inclusion of multiple common carriers serving different areas.

Service Conditions (cont'd)

7. When a Tie trunk requiring an off-net connection to the local Central Office is included as a route option, the NEAX2400 IMX can provide a 2.8 second prepause before sending out the selecting signal.

8. Senders (dial pulse or tone) are provided with this feature for dialing.

9. Pre-translation capability minimizes waiting time after dialing. After enough digits are collected to determine a route, the system starts outpulsing before the station completes dialing the entire called number.

10. When Least Cost Routing is provided, the Attendant cannot pass dial tone to a station. The desired number must be dialed by the Attendant.

11. Stations having different Route Restriction Classes, but using the same Least Cost Routing pattern, can be denied access to the last choice trunk route(s) in that pattern. Route Restriction Classes may be set up so that a station dialing an area code can use WATS, FX, and DDD; or only the WATS line, if such an arrangement is desired. This is a form of forced Least Cost Routing.

12. NXX patterns may be programmed to restrict all stations in the system from completing calls to specific NXX numbers over FX trunks.

13. The system includes the ability to detect a dialed DDD number and compare it with a DDD list table to determine if the call is directed to a facility served by the trunk network. If the dialed number is found in the DDD list table, a translation is provided to the seven-digit, on-net number (AFC-XXXX) served by the Tie trunk. This allows an expensive public network dialed number to be trapped and automatically diverted to an available leased facility. If a Tie trunk is not available, the call is routed as dialed.

14. The NEAX2400 IMX is capable of converting a maximum of 24 receiving digits into a required 24-digit number. Interdigital pauses can be inserted whenever necessary. This provides for an extremely flexible numbering plan for a complex network.

15. CALL-BY-CALL SERVICE SELECTION [C-105] is available on a provisionary basis.

16. When activating this feature via the FCCS network, only Physical Telephone Number may be used.

A-88   Automatic Call Distribution - PRI

General Description

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

Operating Procedure

Refer to the NEAX2400 IMX ACD Features and Specifications for details.

Service Conditions

1.   The following ACD features are available for incoming calls from ISDN trunk.

Code No.	Feature Name	Availability
A-31	Abandoned Call Search	Available
A-34	Assistance - ACD Agent	Available
A-35	Automatic Answer	Available
A-37	Availability - ACD Position	Available
A-80	Announcements	Available
B-21	Break Mode	Not Applicable
C-35	Call Distribution to Agents	Available
C-67	Call Transfer to Split Queue	Available
C-68	Call Waiting Indication - LCD Display/CW Lamp	Available
C-70	Calling Party Identification	Available
C-108	Call Control Vector	Not Applicable
C-127	Call Forwarding - Split	Available
E-6	Emergency/Recorder	Available
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	Available
M-29	Multiple Customer Groups (ACD Groups)	Not Applicable
M-79	Multiple Supervisors	Not Applicable
N-12	Night Service - ACD	Available
N-14	Non - ACD Call	Not Applicable
O-19	Overflow Outside - ACD	Available

Code No.	Feature Name	Availability
P-21	Priority Queuing - ACD	X
P-40	Pilot Numbers	Not Applicable
P-45	Personal Emergency and Assist	Available
Q-1	Queuing - ACD	Available
R-19	Release - ACD Position	Available
S-97	Split Display - ACD Position	Not Applicable
S-98	Split Selection	Not Applicable
T-24	Trunk Trouble Report - MIS	Available
T-49	Tally Count	Available
T-50	Time of Day/Week Routing	Not Applicable
Z-1	Zip Tone	Available

Note 1: *When announcement service is provided, billing starts from the beginning of the announcement.*

Note 2: *The features indicated Not Applicable are the features not related to trunks.*

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

   3.   When an incoming call placed in a queue remains in the queue for more than 90 seconds, the call is automatically released.

   4.   When activating this feature via the FCCS network, only Physical Telephone Number may be used.

A-92   Announcement Service - PRI

General Description

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

Operating Procedure

1. Lift the handset; receive dial tone.
2. Dial the announcement trunk access code. 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.
3. 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 be sent after the announcement finishes
   d.) Remote office answer signal to be sent or not to be sent.
4. The call is connected to the announcement trunk; the caller hears announcement.
5. If 30-second 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 busy tone. Otherwise, the call remains connected to the Announcement Trunk until the caller hangs up.

Service Conditions

1. This feature requires the following hardware:
   a.) ISDN trunk to interface with an announcement machine
   b.) One announcement machine or Digital Announcement Trunk (DAT)
2. The following connections are available:
   a.) Multiple connection: Many ISDN trunks can be connected to one announcement trunks simultaneously.
   b.) Single connection: Only one ISDN trunk can be connected to one announcement trunk.
3. This feature is also available for Tie Line trunk access to announcement trunk.
4. This connection can be continuous until a user hangs up, or it can be disconnected after 30 seconds. This function can be selected on a per announcement trunk basis.
5. Before connection to the announcement machine is made, the system can be programmed to return ringback tone.
6. When this feature is activated from a Tie line, an answer supervision signal is sent to the far end PBX.
7. ANNOUNCEMENT SERVICE can be provided for a maximum of 16 trunks, which includes the announcement trunks for CALL FORWARDING - INTERCEPT/ANNOUNCEMENT [C-25]. Fourteen kinds of announcement are available on each tenant basis.
8. When the announcement service is not provided, reorder tone is returned to the caller.
9. When a system with an announcement service receives the announcement trunk access code, it sends the announcement to the caller.

Service Conditions (cont'd)

10. If a multiple connection is made, the recorded tape is not rewound and the announcement is sent out from anywhere on the tape. If a single connection is made, the tape is rewound upon completion of the announcement and the announcement is sent out to the caller from the beginning.

11. When activating this feature via the FCCS network, only Physical Telephone Number may be used.

A-94 Automatic Circuit Assurance - PRI

General Description

When a call connection time is less or greater than a pre-determined time period, the NEAX2400 IMX can display or print a reference to it using this feature.

Operating Procedure

No manual operation is required.

Service Conditions

1. This feature cannot be activated without STATION MESSAGE DETAIL RECORDING (SMDR) [S-10].
2. This feature is available for both incoming and outgoing calls.
3. This feature is not activated for station-to-station or station-to-Attendant calls under the following conditions:
   a.) When the station performs a switch hook flash
   b.) When the station presses the D^{term} line/feature key (HOLD, TRANSFER, or switch hook flash)
   c.) When the Attendant presses HOLD key
   d.) When the call is overridden by another call
   e.) When the station answers Call Waiting or Attendant Camp-On call

A-96   Automatic Trunk Test - PRI

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.

Operating Procedure

1. Input the TTLC command.
2. The system prompts for either Immediate or Scheduled Execution of the AUTOMATIC TRUNK TEST feature. If Scheduled Execution is chosen, the time when the test begins is entered via the MAT.
3. The system asks for the Route Number to be tested as RT on monitor.
4. Input a route number from 1 through 255. The maximum number of routes is 255.
5. The system asks for the trunk number(s) to be tested as TK on monitor.
6. Input the trunk number from 1 through 255. Input the trunk number(s) to be tested as test start from TRK NUMBER to TRK NUMBER.
7. The system will execute the trunk test based on the data input above. Test results will be printed out after all trunks have been tested.

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 trunk functions can be tested on all trunks in a specified group:
   a.) Trunk selection
   b.) Detection of ringback tone sent back from the connecting office after test number outpulsing
   c.) Detection of test tone (1 kHz) returned from Automatic Answer Trunk facility, if provided.
3. As part of the AUTOMATIC TRUNK TEST facility, an Automatic Answer Trunk (AAT) is provided at the NEAX2400 IMX 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 acknowledgment signal.
4. When activating 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 Push Button (PB) signals.

B-19   Boss/Secretary Transfer - PRI

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.

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; the 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 [V-2D] **Note 1**. The LCD displays (boss and secretary):

ICM   **XXXX**
(Time Display)

   If the MIC of boss' D^{term} is on, boss can converse HANDS-FREE ANSWER BACK - D^{term} [H-4D].
4. 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 also placed on hold, and secretary can answer the held call at any time. **Note 3**
5. Boss lifts the handset, presses the boss' line key, and answers the call. The LCD displays:

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 either to the incoming call or to the boss by pressing the boss' line key or the TRANSFER key.*

Note 3: *If the boss does not answer the held call in a predetermined time, the secretary is recalled by the held call.*

Service Conditions

1. The secretary must have boss' My-Line appearing on the D^{term} in a multi-line operation.
2. The secretary must have a D^{term} for this operation. The boss may have a single line telephone.
3. This feature is only available when the secretary is talking in the boss' My-Line.
4. This feature must be allowed in CLASS OF SERVICE - INDIVIDUAL [C-15] via system data programming.
5. BOSS-SECRETARY TRANSFER - PRI is denied if the secretary is connected to the ATTENDANT CONSOLE [A-3].
6. If provided in the system, the held caller hears MUSIC ON HOLD [M-7].
7. The call is recorded in STATION MESSAGE DETAIL RECORDING [S-10] for the boss' station.

Service Conditions (cont'd)

8. This feature will override CALL FORWARDING - BUSY LINE [C-2] set for the boss, unless the boss' line is forwarded to the secretary.

9. THREE-WAY CALLING [T-2] (boss, secretary and calling party) is not available.

10. A BOSS-SECRETARY TRANSFER - PRI call cannot be picked up by CALL PICKUP - GROUP [C-7], or CALL PICKUP - DIRECT [C-30].

11. BOSS-SECRETARY TRANSFER - PRI is denied to the secretary if the secretary is activating or engaged in any of the following:

ATTENDANT OVERRIDE	[A-7]
BOSS-SECRETARY OVERRIDE - D^{term}	[B-5D]
BUSY VERIFICATION	[B-3]
CALL BACK	[C-1]
CALL HOLD	[C-6]
CALL TRANSFER - ATTENDANT	[C-10]
CALL TRANSFER - ALL CALLS	[C-11]
CALL TRANSFER - ALL CALLS - D^{term}	[C-11D]
CALL WAITING - ORIGINATING	[C-31]
CALL WAITING - TERMINATING	[C-12]
CONSULTATION HOLD - ALL CALLS	[C-17]
CONSULTATION HOLD - ALL CALLS - D^{term}	[C-17D]
CALL FORWARDING - INTERCEPT/ANNOUNCEMENT - ATTENDANT	[C-75]
DATA LINE SECURITY - CCIS	[D-66]
DATA PRIVACY ON DEMAND - CCIS	[D-68]
DIAL ACCESS TO ATTENDANT	[D-2]
EXCLUSIVE HOLD - D^{term}	[E-4D]
EXECUTIVE RIGHT-OF-WAY	[E-1]
EXECUTIVE RIGHT-OF-WAY - D^{term}	[E-1D]
NON-EXCLUSIVE HOLD - D^{term}	[N-7D]
OFF-HOOK QUEUING	[O-7]
OUTGOING TRUNK QUEUING	[O-2]
OUTGOING TRUNK QUEUING - D^{term}	[O-2D]
PRIVACY - D^{term}	[P-14D]
PRIVACY RELEASE	[P-18]
THREE-WAY CALLING	[T-2]
THREE-WAY CALLING - D^{term}	[T-2D]
VOICE CALL - D^{term}	[V-2D]

12. When the secretary is talking to a station or C.O. line on a sub-line, BOSS-SECRETARY TRANSFER PRI can be activated to the station whose My-Line is that same sub-line of the secretary's D^{term}.

13. The secretary cannot use this service simply to call the boss.

14. As selected by the AKYD command of the boss' telephone, the telephone can be set not to ring when the secretary calls the boss.

15. If the secretary is talking on the boss' line, the boss cannot use My-Line. A boss who has a single line telephone and lifts the handset at that time, will receive the busy tone.

16. When the boss is using a D^{term}, the boss must always press the line key to answer the call transferred from the secretary.

B-22   Boss/Secretary Override - PRI

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.

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 the 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 - D^{term} [S-26D] key on which BOSS-SECRETARYOVERRIDE tone code, RECALL key and Boss' telephone 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, switch hook flashes.
2. Boss converses with Trunk A and Trunk B receives hold tone (MUSIC ON HOLD [M-7]).
3. Boss presses the TRANSFER key again. In the case of a single line telephone, switch hook flashes 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. 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, switch hook flashes.
2. Boss converses with secretary (Trunk A is placed on hold).
3. Secretary hangs up, boss is speaking with Trunk B.

Operating Procedure (cont'd)

Case 2:
1. Boss presses the ANSWER key or TRANSFER key. If boss has a single line telephone, switch hook flashes.
2. Boss converses with secretary (Trunk A is placed on hold).
3. Boss presses 201 key and converses with Trunk A, secretary hears reorder tone.

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 number 3 of Case 1 or Case 2.

Case 4:
1. Boss does not respond to 3 bursts of waiting tone.
2. Secretary presses CALL HOLD key to resume talking to Trunk B.

Service Conditions

1. The boss and the secretary must have each other's My-Line appearing on their D^{term}'s in a multi-line operation.
2. The secretary must have a D^{term} for this operation. The boss may have a single line telephone. However, because no line key or call hold key is available, the boss will always be connected to the second calling party (Trunk B).
3. This feature is only available when both the boss and the secretary are on their own My-Lines.
4. This feature must be allowed in CLASS OF SERVICE - INDIVIDUAL [C-15] via system data programming.
5. BOSS-SECRETARY OVERRIDE - PRI is denied if the boss or the secretary is connected to the ATTENDANT CONSOLE [A-3].
6. If provided in the system, held caller will hear MUSIC ON HOLD [M-7].
7. The call is recorded in STATION MESSAGE DETAIL RECORDING [S-10] for the secretary's station.
8. This feature is denied to a UNIFORM CALL DISTRIBUTION (UCD) [U-1] group.
9. This feature will override CALL FORWARDING - BUSY LINE [C-2], CALL FORWARDING - DON'T ANSWER [C-3], and CALL FORWARDING - ALL CALLS [C-5] if set for the boss, unless the boss' line is forwarded to the secretary.
10. BOSS-SECRETARY OVERRIDE overrides DO NOT DISTURB [D-11], DO NOT DISTRUB - D^{term} [D-11D], DO NOT DISTURB - D^{term} - CCIS [D-76D] if set for the boss.
11. BOSS-SECRETARY OVERRIDE - PRI is denied to the secretary if the secretary has activated or is engaged in any of the following:

ATTENDANT OVERRIDE	[A-7]
BUSY VERIFICATION	[B-3]
CALL BACK	[C-1]
CALL TRANSFER - ATTENDANT	[C-10]
CALL TRANSFER - ALL CALLS	[C-11]
CALL TRANSFER - ALL CALLS - D^{term}	[C-11D]
CALL WAITING - ORIGINATING	[C-31]
CALL WAITING - TERMINATING	[C-12]
CONSULTATION HOLD - ALL CALLS	[C-17]

Service Conditions (cont'd)

CONSULTATION HOLD - ALL CALLS - D^{term}	[C-17D]
CALL FORWARDING - INTERCEPT/ANNOUNCEMENT - ATTENDANT	[C-75]
DIAL ACCESS TO ATTENDANT	[D-2]
EXCLUSIVE HOLD - D^{term}	[E-4D]
EXECUTIVE RIGHT-OF-WAY	[E-1]
EXECUTIVE RIGHT-OF-WAY - D^{term}	[E-1D]
NON-EXCLUSIVE HOLD - D^{term}	[N-7D]
PRIVACY RELEASE	[P-18]
THREE-WAY CALLING	[T-2]
THREE-WAY CALLING - D^{term}	[T-2D]

12. BOSS-SECRETARY OVERRIDE - PRI is denied to the boss if the boss has activated or is engaged in any of the following:

ATTENDANT OVERRIDE	[A-7]
BUSY VERIFICATION	[B-3]
CALL BACK	[C-1]
CALL HOLD	[C-6]
CALL HOLD - D^{term}	[C-6D]
CALL TRANSFER - ATTENDANT	[C-10]
CALL TRANSFER - ALL CALLS	[C-11]
CALL TRANSFER - ALL CALLS - D^{term}	[C-11D]
CALL WAITING - ORIGINATING	[C-31]
CALL WAITING - TERMINATING	[C-12]
CONSULTATION HOLD - ALL CALLS	[C-17]
CONSULTATION HOLD - ALL CALLS - D^{term}	[C-17D]
CALL FORWARDING - INTERCEPT/ANNOUNCEMENT - ATTENDANT	[C-75]
DATA LINE SECURITY	[D-12]
DATA PRIVACY ON DEMAND	[D-17]
DIAL ACCESS TO ATTENDANT	[D-2]
EXCLUSIVE HOLD - D^{term}	[E-4D]
EXECUTIVE RIGHT-OF-WAY	[E-1]
EXECUTIVE RIGHT-OF-WAY - D^{term}	[E-1D]
NON-EXCLUSIVE HOLD - D^{term}	[N-7D]
OFF-HOOK QUEUING	[O-7]
OUTGOING TRUNK QUEUING	[O-2]
OUTGOING TRUNK QUEUING - D^{term}	[O-2D]
PRIVACY - D^{term}	[P-14D]
PRIVACY RELEASE	[P-18]
THREE-WAY CALLING	[T-2]
THREE-WAY CALLING - D^{term}	[T-2D]
VOICE CALL - D^{term}	[V-2D]

13. Class of Service restriction for the CALL WAITING - ORIGINATING [C-31], CALL WAITING - TERMINATING [C-12] of the boss' and the secretary's station must be assigned to "no-restriction".

C-95   Call Forwarding - All Calls - PRI

General Description

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

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 access code; receive special dial tone.
3. Dial the desired target telephone 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 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 access code; receive special dial tone.
3. Dial the TENANT [T-12] number (2 or 3 digits).
4. Dial the originating telephone number.
5. Dial the desired target telephone 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 CALL FORWARDING - ALL CALLS cancellation code; receive special dial tone.
3. Dial the TENANT [T-12] number (2 or 3 digits).
4. Dial the originating telephone number; receive service set tone.

Service Conditions

1. Stations with this feature set may originate calls and access the CALL FORWARDING - ALL CALLS cancellation code.
2. There is no limitation to the number of stations that can set CALL FORWARDING - ALL CALLS - PRI simultaneously.
3. Stations can be assigned this feature via CLASS OF SERVICE - INDIVIDUAL [C-15] programming in system data.
4. When a call is forwarded to another station, one burst of ringing signal will be sent to the station to indicate that it is call forwarded.
5. Stations activating CALL FORWARDING - ALL CALLS - PRI may be restricted from placing any calls except to the Attendant. (This is an optional, programmable feature.)
6. CALL FORWARDING - ALL CALLS - PRI data remains in the data memory even if the system is reinitialized or in the event of a power failure.
7. When users dial their own telephone numbers as the target telephone number after dialing the CALL FORWARDING - ALL CALLS access code, CALLING PARTY RECOGNITION SERVICE (DIRECT-IN TERMINATION (DIT)) [C-104] is activated.
8. This service is not available when the destination telephone number exceeds 13 digits.

C-95D   Call Forwarding - All Calls - D^{term} - PRI

General Description

This feature permits all calls from the 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 can be accomplished by the user or the Attendant.

CALL FORWARDING - ALL CALLS - D^{term} - PRI can be set or cancelled by the user for all multi-line appearances on the D^{term}. This way, a user can set CALL FORWARDING - ALL CALLS - D^{term} - PRI for all sub-lines on the D^{term}.

Operating Procedure

To set 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 feature key; receive special dial tone.
3. Dial the desired target telephone number; receive service set tone. The LED lights and the LCD display.

<div align="center">

Target
Station

FORWARD SET   **XXXX**   **(Time Display)**

OR

Operator

FORWARD SET   **OPR**   **(Time Display)**

</div>

4. Replace the handset or press the SPEAKER key.

Operating Procedure (cont'd)

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

1. Press the CALL FORWARDING- ALL CALLS feature key. The LCD displays:

<div align="center">

Target
Station

FORWARD   **XXXX**
(Time Display)

OR

Operator

FORWARD SET   **OPR**
(Time Display)

</div>

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 feature key; receive service set tone. The LED of the associated feature key goes out. The LCD displays:

<div align="center">

FORWARD CANCEL
(Time Display)

</div>

3. Replace the handset or press the SPEAKER key.

To set CALL FORWARDING - ALL CALLS - D^{term} - PRI for another multi-line appearance

1. Lift the handset or press the SPEAKER key.
2. Press the multi-line appearance; receive dial tone. Press CALL FORWARDING - ALL CALLS feature key; receive special dial tone.
3. Dial the desired target telephone 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:

<div align="center">

Target
Station

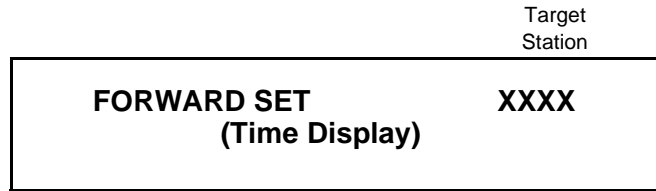| |
|---|
| **FORWARD SET**   **XXXX** |
| **(Time Display)** |

</div>

4. Replace the handset or press the SPEAKER key.
5. If the target station is the operator, the LCD displays.

<div align="center">

FORWARD SET   **OPR**
(Time Display)

</div>

Operating Procedure (cont'd)

To monitor CALL FORWARDING - ALL CALLS - D^{term} - PRI for another multi-line appearance

1. Press the multi-line appearance. Then press the CALL FORWARDING - ALL CALLS feature key. The LCD displays:

```
                                          Target
                                          Station

        ┌─────────────────────────────────────────┐
        │                                          │
        │   FORWARD SET              XXXX          │
        │       (Time Display)                     │
        │                                          │
        └─────────────────────────────────────────┘
```

To cancel CALL FORWARDING - ALL CALLS - D^{term} - PRI for another multi-line appearance

1. Lift the handset or press the SPEAKER key; receive dial tone.
2. Press the multi-line appearance; receive dial tone. Press the CALL FORWARDING - ALL CALLS feature key; receive service set tone. The LCD displays:

```
        ┌─────────────────────────────────────────┐
        │                                          │
        │   FORWARD CANCEL                         │
        │       (Time Display)                     │
        │                                          │
        └─────────────────────────────────────────┘
```

   The associated LED lit at another station goes out.

3. Replace the handset or press the SPEAKER key.

Service Conditions

1. Stations with this feature set can originate any calls and access the CALL FORWARDING - ALL CALLS cancellation code.
2. All stations can simultaneously activate CALL FORWARDING - ALL CALLS - D^{term} - PRI.
3. Stations can be assigned this feature via CLASS OF SERVICE - INDIVIDUAL [C-15] programming in system data.
4. CALL FORWARDING - ALL CALLS - D^{term} - PRI can only be set from the My-Line.
5. CALL FORWARDING - ALL CALLS - D^{term} - PRI can also be accessed via the dial pad or SPEED CALLING - ONE TOUCH - D^{term} [S-26D]. If this feature is accessed via the dial pad, it must also be cancelled via the dial pad.

Service Conditions (cont'd)

6.   A user may set CALL FORWARDING - ALL CALLS - D^{term} - PRI for a multi-line appearance based on the CLASS OF SERVICE - INDIVIDUAL [C-15] assigned to the station. Below are key sheet assignments for stations 200 & 201. The CLASS OF SERVICE - INDIVIDUAL [C-15] for station 200 is allowed CALL FORWARDING - ALL CALLS - D^{term} - PRI. However, the CLASS OF SERVICE - INDIVIDUAL [C-15] for station 201 is not. Station 200 is able to set CALL FORWARDING - ALL CALLS - D^{term} - PRI for station 201. The associated feature button LED on station 201 will illuminate.
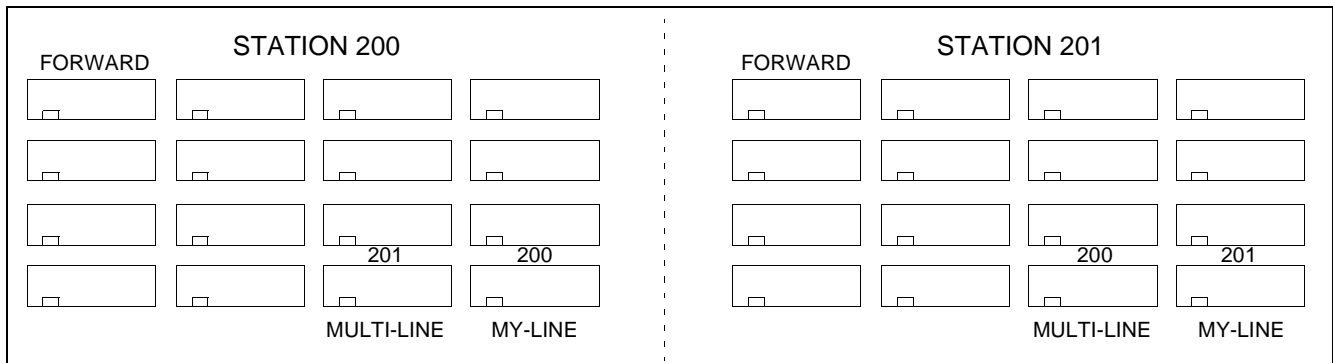
Note: *FORWARD key is same as the CALL FORWARDING - ALL CALLS feature key.*

7.   This feature is applicable to CALL FORWARDING - ALL CALLS - OUTSIDE [C-28] and CALL FORWARDING - ALL CALLS - CCIS [C-45] and MULTIPLE CALL FORWARDING - ALL CALLS - CCIS [M-40].

8.   When users dial their own telephone numbers as the target telephone number after dialing the CALL FORWARDING - ALL CALLS - D^{term} access code, CALLING PARTY RECOGNITION SERVICE (DIRECT-IN TERMINATION (DIT)) [C-104] is activated.

9.   This feature can be restricted according to the service restriction class of the My-Line.
     After CALL FORWARDING - ALL CALLS - D^{term} - PRI has been set to a D^{term} multi-line, incoming calls to the multi-line cannot be transferred if the service class of the My-Line restricts this feature.

10. This service is not available when the destination telephone number exceeds 13 digits.

C-96   Call Forwarding - Busy Line - PRI

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 through system data whether the calling party is directed to the called parties hunt group, or to the terminating parties hunt group, when all of the forwarded stations are busy.

Operating Procedure

To set CALL FORWARDING - BUSY LINE - PRI from an individual station
1. Lift the handset, receive dial tone.
2. Dial the CALL FORWARDING - BUSY LINE access code; receive special dial tone.
3. Dial the desired target telephone 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 CALL FORWARDING - BUSY LINE cancel code; receive special dial tone.

To set CALL FORWARDING - BUSY LINE - PRI from the ATTENDANT CONSOLE [A-3]
1. Press an idle loop key.
2. Dial the CALL FORWARDING - BUSY LINE access code; receive special dial tone.
3. Dial the TENANT SERVICE [T-12] number (2 digits).
4. Dial the originating telephone number.
5. Dial the desired target telephone 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 CALL FORWARDING - BUSY LINE cancel code.
3. Dial the TENANT SERVICE [T-12] number (2 digits).
4. Dial the originating telephone number; receive service set tone.

Service Conditions

1. This feature can be set and cancelled by either the user or the Attendant.
2. CALL FORWARDING - BUSY LINE data remains in the data memory even if the system is re-initialized or in the event of a power failure.
3. Stations are assigned this feature according to CLASS OF SERVICE - INDIVIDUAL [C-15] programming in system data.
4. Registration memories for CALL FORWARDING - BUSY LINE and CALL FORWARDING - DON'T ANSWER [C-3] are common. Changing system data will enable separation of the two, permitting separate access codes to be assigned.
5. CALL FORWARDING - BUSY LINE can be provided on a system and/or an individual basis.
6. Call Forwarding on a system basis allows any incoming calls, which encounter a busy condition, to be forwarded to a predetermined station or the ATTENDANT CONSOLE [A-3].
7. Individual CALL FORWARDING - BUSY LINE supersedes system basis call forwarding. If a station is busy, the CALL FORWARDING - BUSY LINE on system basis is available if the station has not set the service.

Service Conditions (cont'd)

8. If all stations in the terminating STATION HUNTING - CIRCULAR [S-7], STATION HUNTING - SECRETARIAL [S-8], and STATION HUNTING - TERMINAL [S-9] groups are busy, the forwarding call will hear busy tone and will not return to the calling party's hunt group.

9. When MULTIPLE CALL FORWARDING - BUSY LINE [M-24] service is activated, hunting is performed at the last destination of the forwarded call, even though the multiple jumped stations are in a hunt group.

10. When the pilot station of a STATION HUNTING - CIRCULAR [S-7], STATION HUNTING - SECRETARIAL [S-8], and STATION HUNTING - TERMINAL [S-9] group activates CALL FORWARDING - BUSY LINE to a station (not a member of a hunt group) and system parameters specify that call hunting will not be activated at the forwarded station, the NEAX2400 IMX will send busy tone if the forwarded station is busy. If the parameters specify hunting at the forwarding station, and if the forwarded station is busy, the call will hunt in the forwarding station's hunt group.

11. If the destination station of CALL FORWARDING - BUSY LINE - PRI is in a hunt group and is set to CALL FORWARDING - BUSY LINE in the station of another hunt group, it can be determined through system data, whether the calling party hunts to the called party's hunt group or to the terminating party's hunt group when the forwarded-to stations are busy.

12. If the called station is the pilot of a UNIFORM CALL DISTRIBUTION (UCD) [U-1] group and activates CALL FORWARDING - BUSY LINE, the calling station will queue to the UCD [U-1] group and will not be forwarded.

13. If a calling station, ATTENDANT CONSOLE [A-3], or trunk receives busy tone after being call forwarded - busy and activates EXECUTIVE RIGHT-OF-WAY [E-1], CALL WAITING - ORIGINATING [C-31], CALL WAITING - TERMINATING [C-12] or BUSY VERIFICATION [B-3], these services will be activated to the calling station.

14. There is no limitation to the number of stations that can set CALL FORWARDING - BUSY LINE simultaneously.

15. The Attendant answering a forwarded call can identify the called telephone number on the ATTENDANT CONSOLE [A-3] display.

16. If the station's own telephone number is set for CALL FORWARDING - BUSY LINE, this feature is changed to CALLING PARTY RECOGNITION SERVICE (CF - ALL CALLS/BUSY LINE/DON'T ANSWER) [C-103].

17. This service is not available when the destination telephone number exceeds 13 digits.

18. This service is made available according to the system data of each tenant.

19. In the system basis CALL FORWARDING - BUSY LINE - PRI, the following Call Forwarding patterns are available.

    a.) ISDN trunk to a station

C-97　　　　Call Pickup - Group - PRI

General Description

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

Operating Procedure

To pick up an incoming ISDN call
1.　Stations within the same CALL PICKUP - GROUP ring.
2.　Lift the handset; receive dial tone.
3.　Dial the Call Pickup code; the call is connected to the station.

To pick up an incoming call (Consultation Hold)
1.　Stations within the CALL PICKUP - GROUP ring.
2.　Flash the switchhook; receive special dial tone.
3.　Dial the Call Pickup code; the call is connected to the station.
4.　The first party is placed on hold.

Service Conditions

1.　This feature can be provided on a per-line basis via system data.
2.　Stations with a fully restricted CLASS OF SERVICE - INDIVIDUAL [C-15] will be unable to answer incoming Central Office calls using this feature. When such a station tries to pick up the call, busy tone is returned.
3.　A Call Pickup Group is defined as those stations having the ability to pick up each other's calls using the CALL PICKUP feature.
4.　A maximum of 100 stations per group can be assigned. There is no limit to the number of groups per system.
5.　If the call pickup code is dialed while two or more stations within the group are ringing, the switching system connects the calls in the order of priority assigned to the call pickup chain.
6.　CALL PICKUP cannot be used to answer OUTGOING TRUNK QUEUING [O-2] or CALL BACK [C-1] from another station.
7.　A busy station can perform CALL PICKUP by pressing the switchhook, then dialing the pickup code. The call in progress is automatically placed on hold, and the call can be picked up by any other station in the same group.
8.　This service can only be set for stations that belong to the same tenant.

Service Conditions (cont'd)

9. When a single line station is originating/holding a call, the station can activate this feature.
10. This service cannot be activated from an ATTENDANT CONSOLE [A-3].
11. The following issues of firmware are required to be equipped on the circuit cards:

Circuit Card	
PA-16ELCH	Contact NEC Engineering for firmware requirements.
DAU (DLI)	Contact NEC Engineering for firmware requirements.
DAU (DRU)	Contact NEC Engineering for firmware requirements.

Interactions

1. CALL HOLD [C-6]: To pick up a call while engaged in a two-party connection, the station can switchhook flash to place the other party on CALL HOLD [C-6] and dial the Call Pickup code. The first party is put on CALL HOLD [C-6].
2. CALL BACK [C-1]: The call back station originator being called back cannot be picked up by a station with the CALL PICKUP - GROUP feature. If the call back is directed to the terminating station, then Call Pickup may be used to answer the call. Any other station attempting to pick up the call receives reorder tone.
3. OUTGOING TRUNK QUEUING [O-2]: The OUTGOING TRUNK QUEUING [O-2] station being rung back cannot be picked up by a station with the CALL PICKUP - GROUP feature. An attempt to pick up the call results in receiving reorder tone.
4. Restriction: If assigned to a call pickup group, a station assigned as fully restricted or with inward restrictions cannot use the Call Pickup feature.
5. THREE-WAY CALLING [T-2]: Call Pickup can be used only after a three-way conference has been reduced to a two-party connection or the station has returned to an idle state.
6. STATION MESSAGE DETAIL RECORDING (SMDR) [S-10]: When a call is answered using the CALL PICKUP - GROUP feature, the station dialing the call pickup code is recorded.
7. If more than one station line in a call pickup group is ringing, the individual call answered is selected by the system. The system priority is based on a circular chain arrangement with first priority given to the station following the station dialing the pickup code.

C-97D   Call Pickup - Group - D^{term} - PRI

General Description

This feature permits a user to answer any 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 seize the dial tone from any multi-line appearance on the D^{term}.

Operating Procedure

To pick up an incoming call

1.   Stations within the call pickup group ring.
2.   Lift the handset; receive dial tone.
3.   Press the CALL PICKUP - GROUP feature key; the call is connected to the station. The LCD displays:

	Called Station	Calling Station/Trunk
PICK UP	**XXXX** **(Time Display)**	**XXXX**

Note: *When the telephone number of the called/calling station exceeds 8 digits, the last 8 digits are displayed.*
However, maximum 16-digit calling telephone number can be displayed on the middle line of the LCD depending on the System Data.

To pick up an incoming call (Consultation Hold)

1.   Stations within the call pickup group ring.
2.   Press the TRANSFER or CALL HOLD feature key; receive special dial tone.
3.   Press the CALL PICKUP - GROUP feature key; the call is connected to the station.
4.   The first party is placed on hold.

To pick up an incoming call within the EXPANDED CALL PICKUP GROUP

1.   A station within the EXPANDED CALL PICKUP GROUP rings.
2.   Lift the handset; receive dial tone.
3.   Dial the access code or press the feature key for EXPANDED CALL PICKUP; the call is connected to the station.

Service Conditions

1.   Stations with a fully restricted CLASS OF SERVICE - INDIVIDUAL [C-15] will be unable to answer incoming Central Office calls using this feature. When such a station tries to pick up the call, busy tone is returned.
2.   A Call Pickup Group is defined as those stations with the ability to pick up each others calls using the CALL PICKUP feature.
3.   A maximum of 100 stations per group may be assigned. There is no limit to the number of groups per system.
4.   If CALL PICKUP is activated while two or more stations within the group are ringing, the system will connect the calls in the order of priority assigned to the call pickup chain.
5.   CALL PICKUP cannot be used to answer OUTGOING TRUNK QUEUING [O-2] or CALL BACK [C-1] from another station.
6.   The D^{term} operation originating from a multi-line, picks up the call pickup group of My Line.

Service Conditions (cont'd)

7. This service can only be set for stations belonging to the same tenant.

8. When a single line station is originating/holding a call, the station can activate this feature.

9. This service cannot be activated from an ATTENDANT CONSOLE [A-3].

10. A maximum of 100 stations can be assigned to each EXPANDED CALL PICKUP GROUP. There is no limit to the number of Groups per system.

11. A user cannot pickup a call in the EXPANDED CALL PICKUP GROUP when engaged in another call.

12. The following issues of firmware are required to be equipped on the circuit cards:

Circuit Card	
PA-16ELCH	Contact NEC Engineering for firmware requirements.
DAU (DLI)	Contact NEC Engineering for firmware requirements.
DAU (DRU)	Contact NEC Engineering for firmware requirements.

Interactions

1. CALL HOLD [C-6]: To pick up a call while engaged in a two-party connection, the station can switchhook flash to place the other party on CALL HOLD [C-6] and dial the call pickup code. The first party is put on CALL HOLD [C-6].

2. CALL BACK [C-1]: The CALL BACK [C-1] station originator being called back cannot be picked up by a station with the CALL PICKUP - GROUP feature. If the CALL BACK [C-1] is directed to the terminating station, then call pickup can be used to answer the call. Any other station attempting to pick up the call causes the user to receive reorder tone.

3. OUTGOING TRUNK QUEUING [O-2]: The OUTGOING TRUNK QUEUING [O-2] station being rung back cannot be picked up by a station with the CALL PICKUP - GROUP feature. If an attempt is made to pick up the call, the station receives reorder tone.

4. Restrictions: If assigned to a call pickup group, a station assigned as fully restricted or with inward restrictions cannot use the call pickup feature.

5. THREE-WAY CALLING [T-2]: Call Pickup can be used only after a three-way conference has been reduced to a two-party connection or the station has returned to an idle state.

6. STATION MESSAGE DETAIL RECORDING (SMDR) [S-10]: When a call is answered using the CALL PICKUP - GROUP feature, the station dialing the call pickup code is recorded.

7. If more than one station line in a call pickup group is ringing, the individual call answered is selected by the system. The system priority is based on a circular chain arrangement with the first priority given to the station following the station dialing the call pickup code.

C-98   Call Transfer - Attendant - PRI

General Description

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

Operating Procedure

To call the Attendant
1. While engaged in a PRI trunk call, press the switchhook; receive special dial tone.
2. Dial the operator access code.

> a.) ATTENDANT CONSOLE [A-3] RECALL lamp flashes and buzzer sounds.
> b.) The station receives ringback tone.

> To answer by the Attendant, refer to ATTENDANT CONSOLE USER'S GUIDE.

If the station wishes to return to the PRI trunk call while the Attendant is being called
1. Press the switchhook; the RECALL lamp goes out; the buzzer stops.
2. Ringback tone ceases; the station returns to PRI trunk call.

Service Conditions

1. This feature is available for incoming and outgoing ISDN trunk calls.
2. When the ATTENDANT CONSOLE [A-3] is in the Night mode, the transferring station receives reorder tone.
3. The CALL TRANSFER - ATTENDANT - PRI feature allows a user, while participating in a two-party connection (a two-party connection can comprise a station and a trunk), to call the Attendant so that the Attendant can transfer the call or provide other assistance as required.
4. If all registers are busy and the user switchhook flashes, the flash is ignored by the system and the parties remain connected.

Interactions

1. When the HOTLINE [H-1] set is equipped with a dial, the user switchhook flashes to get special dial tone and dials 0. A ringback tone is provided, and the Attendant is notified of the call.
2. This feature can be used by a fully restricted station. The Attendant can transfer a fully restricted station to another station only.
3. This feature is not operable when NIGHT CONNECTION - FIXED [N-1] or NIGHT CONNECTION - FLEXIBLE [N-2] is activated. To process a transfer, use CALL TRANSFER - ALL CALLS - PRI [C-99] feature. A reorder tone is returned when CALL TRANSFER - ATTENDANT - PRI is attempted.
4. When the SPLITTING [S-4] and ATTENDANT LOCKOUT [A-5] features are activated, this feature can be activated.

C-99   Call Transfer - All Calls - PRI

General Description

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

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. The user can then either:
    a.) Hang up before the third party answers. The first and third parties are connected when third party answers.
    b.) Wait for third party to answer and announce the transfer while keeping the first party in a CONSULTATION HOLD - ALL CALLS - PRI [C-100] condition. When the user hangs up, the first and third parties are automatically connected.

Service Conditions

1. The station performing the CALL TRANSFER - ALL CALLS can drop off the connection before the called party answers. If the called station does not answer within the predetermined time, ringing is returned to the transferring station. See VARIABLE TIMING PARAMETERS [V-1] feature for additional timing choices.
2. In the case of outgoing calls (no answer supervision), this feature can be activated only after 18 seconds have elapsed since the last digit dialed.
3. Outgoing calls with answer supervision may be transferred immediately after call is answered (no time delay).
4. The THREE-WAY CALLING [T-2] feature can comprise not more than three parties on one connection. The three parties connected can be as follows:
    a.) Two stations and one trunk
    b.) One station and two trunks
5. The maximum number of simultaneous THREE-WAY CALLING [T-2] connections per system is dependent on the quantity of conference-function circuits equipped (traffic engineered). The conference function is included in the INT and TSW-INT cards.
6. When transferring a call from a station or trunk (second party) to another station (third party), the control station can transfer the call during ringing. When the control station goes on-hook, the station or trunk on hold is connected to the third party's connection and hears ringback tone. A variable timer is set when the controlling station goes on-hook. If the timer times out before the third party answers, the control station is rung back. When transferring a call from a loop start trunk, the trunk is disconnected if the timer times out before the third party answers.
7. When transferring a call from a trunk or station (second party) to a trunk or station (third party), the control station cannot answer the call during ringing. If the control station goes on-hook, during the ringing state, the station or trunk (second party) is not connected to the third party's line, and the controlling station will be rung back again.

Service Conditions (cont'd)

8. Reorder tone is returned to the user when the following actions occur:

   a.) The user's line is restricted by outward or miscellaneous trunk restrictions by the line class of service (COS).

   b.) The user dials the number of an unequipped line, or termination is restricted (route restrictions) by the line COS.

   c.) The first digit dialed by the user is invalid.

Interactions

1. If a station is in an established THREE-WAY CALLING [T-2] connection, that station cannot activate any features. If a station switchhook flashes to activate a feature, the flash is ignored and the three-way connection remains established.

2. If a party is involved in a CONSULTATION HOLD [C-17], CONSULTATION HOLD - D^{term} [C-17D], CONSULTATION HOLD - ALL CALLS - PRI [C-100], CONSULTATION HOLD - ALL CALLS - D^{term} - PRI [C-100D] condition or in an established THREE-WAY CALLING [T-2] connection, any attempted use of a feature to override the connection is denied. These features are:

ATTENDANT OVERRIDE	[A-7]
BOSS-SECRETARY OVERRIDE - D^{term}	[B-5D]
BUSY VERIFICATION	[B-3]
CALL BACK	[C-1]
CALL WAITING - TERMINATING	[C-12]
CALL FORWARDING - INTERCEPT/ANNOUNCEMENT ATTENDANT	[C-75]
EXECUTIVE RIGHT-OF-WAY	[E-1]
EXECUTIVE RIGHT-OF-WAY - D^{term}	[E-1D]

C-99D   Call Transfer - All Calls - D^{term} - PRI

General Description

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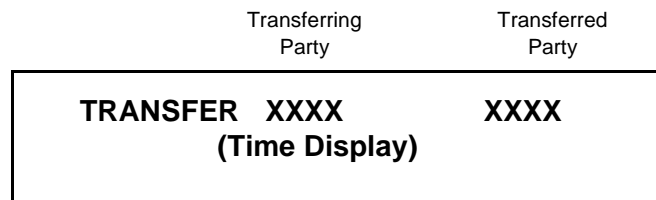
Operating Procedure

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 user can either wait and announce the call or hang up before the transfer is completed. The LCD display for an announced transfer is:

```
                                          Transferred
                                            Party

        ┌─────────────────────────────────────────────┐
        │                                              │
        │   TRANSFER                       XXXX        │
        │            (Time Display)                    │
        │                                              │
        └─────────────────────────────────────────────┘
```

The LCD display for an unannounced transfer is:

```
                        Transferring          Transferred
                          Party                 Party

        ┌─────────────────────────────────────────────┐
        │                                              │
        │   TRANSFER   XXXX                XXXX        │
        │            (Time Display)                    │
        │                                              │
        └─────────────────────────────────────────────┘
```

Note: *When the telephone number of the transferring/transferred station exceeds 8 digits, last 8 digits are displayed. However, maximum 16-digit transferred telephone number can be displayed on the middle line of the LCD depending on the System Data.*

Service Conditions

1.   The station performing the CALL TRANSFER - ALL CALLS - D^{term} - PRI can disconnect before the called party answers. If the called station does not answer within the predetermined time, ringing is returned to the transferring station. See VARIABLE TIMING PARAMETERS [V-1] feature for additional timing choices.

2.   In the case of outgoing calls (no answer supervision), this feature can be activated only after 18 seconds have elapsed since the last digit dialed.

3.   Outgoing calls with answer supervision can be transferred immediately after call is answered (no time delay).

4.   The THREE-WAY CALLING [T-2] feature can comprise not more than three parties on one connection. The three parties connected can be as follows:

      a.) Two stations and one trunk

      b.) One station and two trunks

5.   The maximum number of simultaneous THREE-WAY CALLING [T-2] connections per system is dependent on the quantity of conference-function circuits equipped (traffic engineered). The conference function is included in the INT and TSW-INT cards.

Service Conditions (cont'd)

6. When transferring a call from a station (second party) to another station or trunk (third party), the control station can transfer the call during ringing. When the control station goes on-hook, the station on hold is connected to the third party's connection and hears ringback tone. A variable timer is set when the controlling station goes on-hook. If the timer times out before the third party answers, the control station is rung back.

7. When transferring a call from a trunk (second party) to a station (third party), the control station can transfer the call during ringing. If the control station goes on-hook during the ringing state, the trunk (second party) is connected to the third party's line and hears ringback tone. A variable timer is set when the controlling station goes on-hook. If the timer times out before the third party answers, the control station is rung back.

8. Reorder tone is returned to the user when the following actions occur:

    a.) The user's line is restricted by outward or miscellaneous trunk restrictions by the line class of service (COS).

    b.) The user dials the number of an unequipped line or termination is restricted (route restrictions) by the line COS.

    c.) The first digit dialed by the user is invalid.

Interactions

1. If a station is in an established THREE-WAY CALLING [T-2] connection, that station cannot activate any features. If a station switchhook flashes to activate a feature, the flash is ignored and the three-way connection remains established.

2. If a party in involved is a CONSULTATION HOLD [C-17], CONSULTATION HOLD - D^{term} [C-17D], CONSULTATION HOLD - ALL CALLS - PRI [C-100], CONSULTATION HOLD - ALL CALLS - D^{term} - PRI [C-100D] condition or in an established THREE-WAY CALLING [T-2] connection, any attempted use of a feature to override the connection is denied. These features are:

ATTENDANT OVERRIDE	[A-7]
BOSS-SECRETARY OVERRIDE - D^{term}	[B-5D]
BUSY VERIFICATION	[B-3]
CALL BACK	[C-1]
CALL WAITING - TERMINATING	[C-12]
CALL FORWARDING - INTERCEPT/ANNOUNCEMENT - ATTENDANT	[C-75]
EXECUTIVE RIGHT-OF-WAY	[E-1]
EXECUTIVE RIGHT-OF-WAY - D^{term}	[E-1D]

C-100 Consultation Hold - All Calls - PRI

General Description

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

Operating Procedure

To hold the original call and place a second call
1. Press the switchhook; receive special dial tone. The original call is held.
2. Dial the second telephone number; receive ringback tone.
3. 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 gain 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.

Service Conditions

1. When TRUNK-TO-TRUNK CONNECTION [T-10] is provided with the system, an outgoing exchange network or Tie Line call can be made by the user.
2. In the case of outgoing calls, this feature can be activated only after 18 seconds have elapsed since the last digit dialed.
3. CALL PICKUP - GROUP - PRI [C-97] is available on Consultation Hold.

C-100D   Consultation Hold - All Calls - D^{term} - PRI

General Description

This feature permits a D^{term} user to hold any incoming or outgoing ISDN network calls, while originating a call to another NEAX2400 IMX station within the system.

Operating Procedure

To hold the original call and place second call from a D^{term}
1.   Press the TRANSFER key; receive special dial tone. The original call is held.
2.   Dial the second telephone number; receive ringback tone.
3.   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 gain 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.

    Pressing the CONF key initiates THREE-WAY CALLING [T-2].

Service Conditions

1.   When TRUNK-TO-TRUNK CONNECTION [T-10] is provided with the system, an outgoing ISDN network or Tie Line call can be made by the user.
2.   In the case of outgoing calls, this feature can be activated only after 18 seconds have elapsed since the last digit was dialed.
3.   CALL PICKUP - GROUP - PRI [C-97] is available on Consultation Hold.

C-101   Call Forwarding - Intercept Announcement - PRI

General Description

This feature provides for interception of a called party number received via ISDN by DIRECT INWARD DIALING [D-8] calls that 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 or a trunk busy condition, to automatically be routed to a recorded announcement informing the caller that all the outgoing trunks are busy.

Operating Procedure

No manual operation is required, once this feature has been programmed in system data.

Service Conditions

1. This feature requires an announcement trunk and an announcement machine or a Digital Announcement Trunk (DAT).
2. Only one ISDN call at a time can be connected to each announcement trunk. If a second ISDN call arrives while the first is being processed, the caller will receive ringback tone until the trunk becomes idle.
3. If the outside party or Attendant forgets to hang up, the system will automatically disconnect in 30 seconds (provided this is programmed in system data). If no disconnect timing is programmed, the outside party will control disconnect.
4. This feature is provided on a per-tenant basis.
5. This feature is only available on DID calls.
6. The following call conditions, which cannot be completed, can be routed to intercept:
    a.) Vacant level
    b.) Unassigned telephone number
7. Only one common message can be provided for the different intercept conditions.
8. There is no method that exempts an individual ISDN DID from intercept.
9. This service is not available when the destination telephone number exceeds 13 digits.
10. A station dials the LEAST COST ROUTING - 3/6-DIGIT [L-5] access code and an outside number. If that outside number is not listed in LEAST COST ROUTING - 3/6-DIGIT [L-5] tables (Outgoing Routing Patterns, OPR), the call will be routed to an intercept announcement.
11. If a different message is required for each of the three intercept conditions, three trunks and three announcement machines must be provided.

When encountering a restricted route

12. This service feature is valid when station to outgoing-trunk connection is restricted.
13. This feature is applied equally to all trunk routes in the system. It cannot be denied to some routes and available to other routes.
14. This service is valid when a call is redirected to an outgoing trunk via CALL FORWARDING - OUTSIDE [C-28]. The announcement is heard when the calling station is also a restricted station.

Service Conditions (cont'd)

15. This service is not valid for TRUNK-TO-TRUNK CONNECTION [T-10] when the called station has set CALL FORWARDING - ALL CALLS - OUTSIDE [C-28] via DID or Tie trunk.

16. This service is not valid for outgoing calls that do not go out when all trunks or senders are busy.

When encountering all trunks busy

17. This service feature is valid for outgoing station-to-trunk or tandem trunk-to-trunk connections.

18. Automatic OUTGOING TRUNK QUEUING [O-2], OFF-HOOK QUEUING [O-7], and ROUTE ADVANCE [R-6] are mutually exclusive with this feature. These features take priority over OUTGOING TRUNK BUSY ANNOUNCEMENTS [O-21].

C-102   Call Pickup - Direct - PRI

General Description

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

Operating Procedure

To pickup an incoming call
1. Lift the handset; receive dial tone.
2. Dial the CALL PICKUP - DIRECT code; receive second dial tone.
3. Dial the specific telephone number to be picked up. The incoming call is connected to your station.

Service Conditions

1. This feature is provided on a per line basis, based on the station CLASS OF SERVICE - INDIVIDUAL [C-15].
2. A station in a fully restricted class cannot answer an ISDN call using CALL PICKUP - DIRECT - PRI [C-102].
3. If the ringing call is a result of CALL BACK [C-1], CALL HOLD [C-6] Recall, CALL TRANSFER [C-\11] Recall or OUTGOING TRUNK QUEUING [O-2] Recall, it cannot be picked up by any station.
4. This feature cannot be accessed from the ATTENDANT CONSOLE [A-3].
5. Both stations in this procedure must belong to the same tenant group.
6. A busy station can accomplish CALL PICKUP - DIRECT - PRI by placing an existing call on hold.
7. CALL PICKUP - DIRECT - PRI cannot be accessed while in the CONSULTATION HOLD [C-17] mode.

C-114 Call Waiting - Terminating - PRI

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-6] to answer the second call. CALL HOLD [C-6] can be used to alternate between the two calls.

Operating Procedure

To activate CALL WAITING - TERMINATING on an incoming ISDN trunk call
1. The NEAX2400 IMX receives the called telephone 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. Flash the switchhook or press the ANSWER key on the D^{term} to hold the existing call.
3. CALL WAITING - TERMINATING call is automatically connected.
4. By another switchhook flash or pressing the ANSWER key, the user is returned to the original call and the second call is placed on hold.

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.

Service Conditions

1. Call waiting tone is two beeps. A beep is 200 milliseconds ON/OFF.
2. Periodic call waiting tone can be eliminated for each tenant by setting system data.
3. To be activated, CALL WAITING - TERMINATING - PRI must be allowed in the call originator's CLASS OF SERVICE - INDIVIDUAL [C-15] programming.
4. There is no limit on the number of stations able to receive this feature simultaneously.
5. CALL WAITING - TERMINATING - PRI is denied when the called station is connected to the ATTENDANT CONSOLE [A-3].
6. CALL WAITING - TERMINATING - PRI can be set only when the called station is busy on a two-party call with another station or trunk.
7. Call waiting ringback tone changes to normal ringback tone for the calling station, when the called station goes on-hook.
8. CALL WAITING - TERMINATING - PRI cannot be activated while in the CONSULTATION HOLD - ALL CALLS [C-17] mode.
9. CALL WAITING - TERMINATING - PRI cannot be used in conjunction with DIAL ACCESS TO ATTENDANT [D-2].

Service Conditions (cont'd)

10. CALL WAITING - TERMINATING - PRI cannot be activated if the target station has accessed, entered, or is engaged in any of the following features or modes (the calling station receives reorder tone):

ATTENDANT OVERRIDE	[A-7]
BOSS-SECRETARY OVERRIDE - D^{term}	[B-5D]
BUSY VERIFICATION	[B-3]
CALL BACK	[C-1]
CALL HOLD	[C-6]
CALL HOLD - D^{term}	[C-6D]
CALL TRANSFER - ATTENDANT	[C-10]
CALL TRANSFER - ALL CALLS	[C-11]
CALL TRANSFER - ALL CALLS - D^{term}	[C-11D]
CALL WAITING - ORIGINATING	[C-31]
CONSULTATION HOLD - ALL CALLS	[C-17]
CONSULTATION HOLD - ALL CALLS - D^{term}	[C-17D]
CALL FORWARDING - INTERCEPT/ANNOUNCEMENT - ATTENDANT	[C-75]
DATA LINE SECURITY - CCIS	[D-66]
DATA PRIVACY ON DEMAND - CCIS	[D-68]
DIAL ACCESS TO ATTENDANT	[D-2]
EXCLUSIVE HOLD - D^{term}	[E-4D]
EXECUTIVE RIGHT-OF-WAY	[E-1]
LINE LOCKOUT	[L-3]
NON-EXCLUSIVE HOLD - D^{term}	[N-7D]
OUTGOING TRUNK QUEUING	[O-2]
OUTGOING TRUNK QUEUING - D^{term}	[O-2D]

    Paging:

PRIVACY - D^{term}	[P-14D]
PRIVACY RELEASE	[P-18]
THREE-WAY CALLING	[T-2]
THREE-WAY CALLING - D^{term}	[T-2D]
VOICE CALL	[V-2]
VOICE CALL - D^{term}	[V-2D]

11. The following service features take precedence over CALL WAITING - TERMINATING:

CALL FORWARDING - ALL CALLS	[C-5]
CALL FORWARDING - BUSY LINE	[C-2]
STATION HUNTING - CIRCULAR	[S-7]
STATION HUNTING - SECRETARIAL	[S-8]
STATION HUNTING - TERMINAL	[S-9]

12. CALL WAITING - TERMINATING - PRI cannot be activated to data terminals.

13. CALL WAITING - TERMINATING - PRI cannot be activated to stations already engaged in Call Waiting.

14. CALL WAITING - TERMINATING - PRI cannot be activated for the following incoming calls:

Calls transferred from Attendant/station	
DIRECT-IN TERMINATION (DIT)	[D-7]

C-119   Call Park - PRI

General Description

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

Operating Procedure

When an ISDN trunk party and Attendant are talking
1.   The Attendant presses the CALL PARK feature 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 user are talking
1.   The user briefly presses the switchhook; receives special dial tone.
2.   Dial the CALL PARK access code (the ISDN trunk connected to the called station is placed in Call Park state); receive service set tone.
3.   Replace the handset.

To retrieve a parked call from the originating station
1.   Dial the CALL PARK 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 that parked the call; the parked call is reconnected.

To retrieve a parked call set by ATTENDANT CONSOLE [A-3] from the user
1.   Dial the CALL PARK remote retrieval code and call park number. The parked call is reconnected.

Service Conditions

1.   Calls parked by a station are automatically parked on that station's telephone number. The my-line number is used for a D^{term}.
2.   CALL PARK may be activated only during two-party calls.
3.   The system provides one Attendant CALL PARK number for each Attendant. The individual Attendant number is also the CALL PARK number. See INDIVIDUAL ATTENDANT ACCESS [I-6].
4.   A station or Attendant can only park one call at a time. If a station or Attendant attempts to park a second call, the busy tone will be heard.
5.   This feature may be assigned to stations via CLASS OF SERVICE - INDIVIDUAL [C-15] programming in system data.
6.   There is a dedicated key on the ATTENDANT CONSOLE [A-3] for parking calls. This key is located between the HOLD and BV keys. An Attendant cannot use a CALL PARK code.
7.   A user can park a call only by dialing a CALL PARK code.
8.   Stations can originate and receive calls while having a call parked.

Service Conditions (cont'd)

9. The following features cannot be activated to a station which has set CALL PARK:

ATTENDANT OVERRIDE	[A-7]
BUSY VERIFICATION	[B-3]
CALL WAITING - ORIGINATING	[C-31]
CALL WAITING - TERMINATING	[C-12]
CALL FORWARDING - INTERCEPT/ANNOUNCEMENT - ATTENDANT	[C-75]
EXECUTIVE RIGHT-OF-WAY	[E-1]
EXECUTIVE RIGHT-OF-WAY - D^{term}	[E-1D]

10. A station in an ATTENDANT-CONTROLLED CONFERENCE [A-2] is denied access to CALL PARK.

11. There is no limit to the number of calls that can be parked simultaneously within a system.

12. A parked call recalls to the station that has set the CALL PARK. The recall timer is preprogrammed into system data. A call parked by the Attendant does not recall.

13. CALL PARK is denied for the following station status:

ATTENDANT OVERRIDE	[A-7]
BOSS-SECRETARY OVERRIDE - D^{term}	[B-5D]
BUSY VERIFICATION	[B-3]
BUSY VERIFICATION - CCIS	[B-9]
CALL TRANSFER - ATTENDANT	[C-10]
CALL TRANSFER - ALL CALLS	[C-11]
CALL TRANSFER - ALL CALLS - D^{term}	[C-11D]
CALL WAITING - ORIGINATING	[C-31]
CALL WAITING - TERMINATING	[C-12]
CONSULTATION HOLD - ALL CALLS	[C-17]
CONSULTATION HOLD - ALL CALLS - CCIS	[C-58]
DATA LINE SECURITY - CCIS	[D-66]
DIAL ACCESS TO ATTENDANT	[D-2]
DIAL ACCESS TO ATTENDANT - CCIS	[D-71]
EXCLUSIVE HOLD - D^{term}	[E-4D]
EXECUTIVE RIGHT-OF-WAY	[E-1]
EXECUTIVE RIGHT-OF-WAY - CCIS	[E-8]
NON-EXCLUSIVE HOLD - D^{term}	[N-7D]
PRIVACY RELEASE	[P-18]
THREE-WAY CALLING	[T-2]
VOICE CALL	[V-2]
VOICE CALL - CCIS	[V-7]

14. CALL PARK is denied for the following Attendant Console status:

BUSY VERIFICATION	[B-3]
CALL TRANSFER - ATTENDANT	[C-10]
CALL HOLD	[C-6]

C-123   Call Forwarding - All Calls - Announcement - PRI

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 can be accomplished either by the individual user or via the ATTENDANT CONSOLE [A-3].

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 available, 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.

Service Conditions

1. This service feature requires one of the following hardware alternatives:
   a.) Central Office Trunk (COT) or Tie Line Trunk (TLT) and an announcement machine
   b.) Digital Announcement Trunk (DAT).
2. Stations with this feature set can originate calls and access the CALL FORWARDING - ALL CALLS - ANNOUNCEMENT cancellation code.
3. There is no limit on the number of stations that can simultaneously set CALL FORWARDING - ALL CALLS - ANNOUNCEMENT.
4. Stations can be assigned this feature via CLASS OF SERVICE - INDIVIDUAL [C-15] programming in system data.
5. For CALL FORWARDING - ALL CALLS - ANNOUNCEMENT, announcement trunk access numbers can be programmed as the destination number.
6. When a call is directed to a forwarded station, one burst of ringing signal will be sent to the station.
7. Call forwarding data remains programmed even if the system is reinitialized or a power failure occurs.
8. Stations activating CALL FORWARDING - ALL CALLS - ANNOUNCEMENT can be restricted from placing any calls except to the Attendant, depending upon system data.
9. CALL FORWARDING - ALL CALLS - ANNOUNCEMENT can be provided for a maximum of 16 trunks, including the announcement trunks for:

ANNOUNCEMENT SERVICE	[A-15]
ANNOUNCEMENT SERVICE - ATTENDANT	[A-59]
CALL FORWARDING - INTERCEPT/ANNOUNCEMENT	[C-25]

Service Conditions (cont'd)

10. This service feature is available with the following connections:

    DIRECT INWARD DIALING (DID) [D-8]
    STATION-TO-STATION CALLING [S-11]
    Station calls from a Tie Line Trunk

11. If a call terminates to a system that cannot access the announcement service, the reorder tone is returned to the caller.

12. When a system with an announcement service receives the Call Forwarding - All Calls - Announcement access code, the service is activated.

13. If multiple connection is made, the recorded tape is not rewound, and the announcement is sent out from anywhere on the tape. If a single connection is made, the tape is rewound upon completion of the announcement, and the announcement is sent out to the caller. While the tape is rewound, if specified in system data, the caller receives ringback tone.

14. The station activating this service can be assigned with CALL FORWARDING - ALL CALLS [C-5] per one line by the service feature restriction class.

15. If 30-second forced disconnection is specified, the announcement trunk is released after 30 seconds, and the caller receives busy tone. Otherwise, the call remains connected to the announcement trunk until the caller hangs up.

Interactions

1. The kinds of announcement to be used by this service are the same as those used in ANNOUNCEMENT SERVICE [A-15], and 14 kinds are available to each tenant.

2. If the announcement access code is assigned to the announcement machine, the ANNOUNCEMENT SERVICE [A-15] tied up with CALL FORWARDING - ALL CALLS [C-5] is available.

C-125 Call Forwarding - Intercept - PRI

General Description

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

Operating Procedure

No manual operation is required.

Service Conditions

1. This feature is not available for data calls.
2. Activation of this service is determined by system data on a tenant basis.

C-129   Call Forwarding - Don't Answer - PRI

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 does not answer after a predetermined time interval.

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 access code; receive special dial tone.
3.   Dial the desired target telephone 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 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 access code; receive special dial tone.
3.   Dial the TENANT [T-12] number (two digits).
4.   Dial the originating telephone number.
5.   Dial the desired target telephone 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 cancel code; receive special dial tone.
3.   Dial the TENANT [T-12] number (two digits).
4.   Dial the originating telephone number; receive service set tone.

Service Conditions

1.   This feature may be set and cancelled by either the user or the Attendant.
2.   When the Attendant extends a call to a station that has set CALL FORWARDING - DON'T ANSWER, the called station rings for 30 seconds. If, after this time, the call has not been answered, AUTOMATIC RECALL [A-8] is activated. If desired, this timing can be changed through the VARIABLE TIMING PARAMETERS [V-1] feature.
3.   Stations are assigned this feature according to CLASS OF SERVICE - INDIVIDUAL [C-15] programming in system data.
4.   A station programmed for access to CALL FORWARDING - DON'T ANSWER is automatically allowed CALL FORWARDING - BUSY LINE [C-2].
5.   There is no limitation to the number of stations that can set the CALL FORWARDING - DON'T ANSWER simultaneously.
6.   CALL FORWARDING - DON'T ANSWER can be provided on either a system or an individual basis. That is, when a station does not answer, the CALL FORWARDING - DON'T ANSWER setting by system is available if the station has not set this service.
7.   Individual CALL FORWARDING - DON'T ANSWER takes priority over system basis Call Forwarding.
8.   Call Forwarding on a system basis allows direct incoming trunk calls which encounter a Don't Answer condition to be forwarded to a predetermined station or the ATTENDANT CONSOLE [A-3].

Service Conditions (cont'd)

9. The Attendant answering a Call Forwarding call can identify the called telephone number on the ATTENDANT CONSOLE [A-3] display.

10. CALL FORWARDING - DON'T ANSWER from the Attendant is only activated after pressing the RELEASE key.

11. If the station's own telephone number is set for CALL FORWARDING - DON'T ANSWER, this feature is changed to CALLING PARTY RECOGNITION SERVICE (CALL FORWARDING - ALL CALLS/ BUSY LINE/DON'T ANSWER) [C-103].

12. In CALL FORWARDING - DON'T ANSWER, the following Call Forwarding services are available:
    a.) ISDN trunk to a station
    b.) ISDN trunk to an Attendant Console

D-115 Distinctive Ringing - PRI

General Description

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

Operating Procedure

No manual operation is required.

Service Conditions

1. Ring for Incoming Internal Calls:

   2-second ring

   4-second silence

2. Ring for Incoming External Calls:

   1-second ring

   2-second silence

   OR

   2-second ring

   4-second silence

3. Ringing pattern for CALL BACK [C-1], CALL WAITING - ORIGINATING [C-31], CALL WAITING - TERMINATING [C-12], or OUTGOING TRUNK QUEUING [O-2] call back:

   2-second ring (3 burst)

   4-second silence

4. This feature can be assigned per trunk route via system data programming.

5. If an Off-Premises Station (OPX) or denied station is assigned to a station line, an option is available for that Class of Service to eliminate ringing signals.

6. The Distinctive Ringing interruption rates can be optionally selected on a per system basis. In this case, initialization of the circuit may be required.

7. An option is available on a per trunk group basis to provide one-burst ringing on terminating calls.

8. When calling a third station (THREE-WAY CALLING [T-2], CONSULTATION HOLD - ALL CALLS [C-17], etc.), the ringing signal to the called station depends on the type of facility (station or trunk) on hold.

D-116D Do Not Disturb - D^term - PRI

General Description

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

Operating Procedure

To set DO NOT DISTURB
1. Press the DO NOT DISTURB (DND) key. The associated LED lights and the LCD displays:

```
┌─────────────────────────────────────┐
│  DND  SET                  XXXXXXXX  │
│             (Time Display)           │
│                                      │
└─────────────────────────────────────┘
```

To cancel DO NOT DISTURB
1. Press the DO NOT DISTURB (DND) key. The LED goes out and the LCD displays:

```
┌─────────────────────────────────────┐
│  DND  CANCEL                         │
│             (Time Display)           │
│                                      │
└─────────────────────────────────────┘
```

Service Conditions

1. This service can only be set or cancelled while idle.
2. Lines programmed to ring will not do so while this service is set.
3. While DO NOT DISTURB is set, outgoing calls can be made. The user may answer other lines excluding the prime line.
4. When calling a D^term in DND mode, reorder tone is received, and either DND or REST is displayed on the calling D^term LCD, depending on the station class of the calling D^term. No indication will appear when the called station is a HOTLINE [H-1] in the DND mode.
5. A DIRECT-IN TERMINATION [D-7] call can access a DND station.
6. A DND station in STATION HUNTING - CIRCULAR [S-7], STATION HUNTING - SECRETARIAL [S-8], or STATION HUNTING - TERMINAL [S-9] is skipped.
7. CALL FORWARDING - BUSY LINE [C-2] can be activated for an idle station that has set DND.
8. The following service features are denied to the DND station:

ATTENDANT OVERRIDE	[A-7]
BOSS-SECRETARY OVERRIDE - D^term	[B-5D]
BUSY VERIFICATION	[B-3]
CALL WAITING - ORIGINATING	[C-31]
CALL WAITING - TERMINATING	[C-12]
CALL FORWARDING - INTERCEPT/ANNOUNCEMENT/ATTENDANT	[C-75]
EXECUTIVE RIGHT-OF-WAY	[E-1]
EXECUTIVE RIGHT-OF-WAY - D^term	[E-1D]
VOICE CALL - D^term	[V-2D]

D-117 Data Line Security - PRI

General Description

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

Operating Procedure

No manual operation is required.

Service Conditions

1. When the Attendant is restricted from Camping-On to a Data Security station, the attempted action results in reorder tone.
2. All bridge-on attempts directed toward stations with a DATA LINE SECURITY - PRI call in progress result in a reorder tone.
3. When any of the other features listed above are restricted, reorder tone is transmitted.
4. This feature is activated via system data programming. (Refer to CLASS OF SERVICE - INDIVIDUAL [C-15] for details.)
5. The DATA LINE SECURITY - PRI feature functions on originating and terminating calls.
6. DATA LINE SECURITY - PRI cannot prevent disruptions from interfering with data transmission when the disruption occurs outside the NEAX2400 IMX.
7. The following connections are restricted when DATA LINE SECURITY - PRI is active, since transmitted tones are involved in their operation.

ATTENDANT OVERRIDE	[A-7]
BOSS-SECRETARY OVERRIDE - D^{term}	[B-5D]
BUSY VERIFICATION	[B-3]
CALL WAITING - ORIGINATING	[C-31]
CALL WAITING - TERMINATING	[C-12]
CALL FORWARDING - INTERCEPT/ANNOUNCEMENT - ATTENDANT	[C-75]
EXECUTIVE RIGHT-OF-WAY	[E-1]
EXECUTIVE RIGHT-OF-WAY - D^{term}	[E-1D]
PRIVACY RELEASE	[P-18]
Modem Pooling Connection	
Data Call through Data Module or Data Adapter	

D-118   Data Privacy on Demand - PRI

General Description

This feature allows a 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.

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 access code; receive service set tone.
5. Flash switchhook to return to the 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 cancel code; receive service set tone.
8. To return to the 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 PRIVACY SET for 3 seconds and returns to original connection. The DND lamp flashes as long as DATA PRIVACY ON DEMAND is set.
5. If the DND key is pressed again, PRIVACY CANCEL is displayed for 3 seconds and DATA PRIVACY ON DEMAND - PRI will be cancelled.

Data connection (D^{term}/Data Adapter or Data Module)
No manual operation is required. When a Data Call (Data Adapter/Data Module) is originated, DATA PRIVACY ON DEMAND - PRI is set automatically. When the data call is disconnected, DATA PRIVACY ON DEMAND - PRI is cancelled automatically.

Service Conditions

1. The following connections are restricted when DATA PRIVACY ON DEMAND - PRI is set. All bridge-on attempts directed toward stations, which have set Data Privacy or have a data call in progress, will result in reorder tone.

ATTENDANT OVERRIDE	[A-7]
BUSY VERIFICATION	[B-3]
CALL WAITING - TERMINATING	[C-12]
CALL FORWARDING - INTERCEPT/ANNOUNCEMENT - ATTENDANT	[C-75]
EXECUTIVE RIGHT-OF-WAY	[E-1]
PERIODIC TIME INDICATION TONE	[P-11]
PRIVACY RELEASE	[P-18]
CALL FORWARDING - BUSY LINE set by boss to secretary	

Service Conditions (cont'd)

2. Data Privacy is cancelled automatically when the call is disconnected.

3. When Data Privacy is activated, the associated line cannot be accessed by any NEAX2400 IMX feature.

4. A user can activate this feature at any time during a connection.

5. Data Privacy cannot be activated by an Attendant for a user.

6. This feature can be set for originating and terminating calls.

7. Data Privacy cannot prevent disruptions from interfering with data transmission when the disruption occurs outside the NEAX2400 IMX.

8. This feature requires additional hardware.

9. Data Privacy cannot be set for ATTENDANT CONSOLE [A-3] by the user.

10. Data Privacy can be set only for the call in progress. If the station releases or activates CALL TRANSFER-ALL CALLS [C-11] or EXCLUSIVE HOLD - D^{term} [E-4D], Data Privacy will be cancelled.

D-119   Data Interface - Automatic Answer - PRI

General Description

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

Operating Procedure

To set DATA INTERFACE - AUTOMATIC ANSWER - PRI, select the Attribute Data Entry or change the switch setting for Auto Answer.

The D^{term}/Data Adapter can be set in two ways
1.   Set the D^{term}/Data Adapter for Auto Answer by changing the Terminal Attribute Data II:
     a.) Press the DATA key. The DATA lamp lights steadily and the display shows D.
     b.) Press the DTX key (or ANSWER key). The DTX lamp (or ANSWER lamp) lights steadily.
     c.) The display shows DATA SET.
     d.) Key in 00. The display shows ER CHECK XX YY. Press the # key.
     e.) The display shows AUTO ANS 01 YY.
     f.) Key in 01. The display shows AUTO ANS 01 01.
     g.) Press the # key, and service set tone (two beeps) is heard. Press the DATA key.
     h.) Auto Answer Setup is complete.
2.   Set the D^{term}/Data Adapter for Auto Answer by pressing the DSPY/AUTO key:
     a.) Press the DSPY/AUTO key. The DSPY/AUTO lamp lights steadily.
     b.) Auto Answer Setup is complete.

Note: *ER = DTR*

To set the Data Module for Auto Answer using dip switch #SW-1 in the rear of the unit (Attribute Data Entry via keyboard is ignored, switch settings override keyboard entry):
1.   Set Sw1-2 to the OFF position; (SW1-2: ON=Manual Answer).
2.   Reset the Data Module Power ON/OFF/ON.

In the Auto Answer mode, data communication can be started when the Data Module (DM) connected DTE display shows INCOM DTE XXXX.

In the Auto Answer mode, data communication can be started when the D^{term} display shows:

D   DTE   XXXX
(Time Display)

and

READY   D   DTE   XXXX
(Time Display)

Service Conditions

1. The Auto Answer feature for Data Adapters and Data Modules is affected by the Attribute Data and switch settings pertaining to Equipment Ready (ER) Check.

    a.) If you want the Data Module or Data Adapter to Auto Answer only when the attached DTE's RS-232C pin 20 (DCD) is ON (+ 12 volts), set ER Check - Necessary (normal setting).

    b.) If you want the Data Module or Data Adapter to use Auto Answer without regard to the pin 20 signal from the attached DTE, set ER Check - Not Necessary.

2. When entering Terminal Attribute Data, the ANSWER key can be used instead of the DTX key.

D-120 Data Transparency - PRI

General Description

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

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 NEAX2400 IMX does not alter the data in any manner.

Service Conditions

1. During data call origination and termination involving a Data Adapter or Data Module, certain character string sequences are exchanged as part of the call setup process.
2. After the data connection is established, the Data Module awaits entry of the ESC character followed immediately by -DM as a disconnect request from the DTE.
3. Data transparency does not imply speed and code conversion. If dissimilar devices cannot communicate when connected directly to each other, they will not be able to communicate via the NEAX2400 IMX.

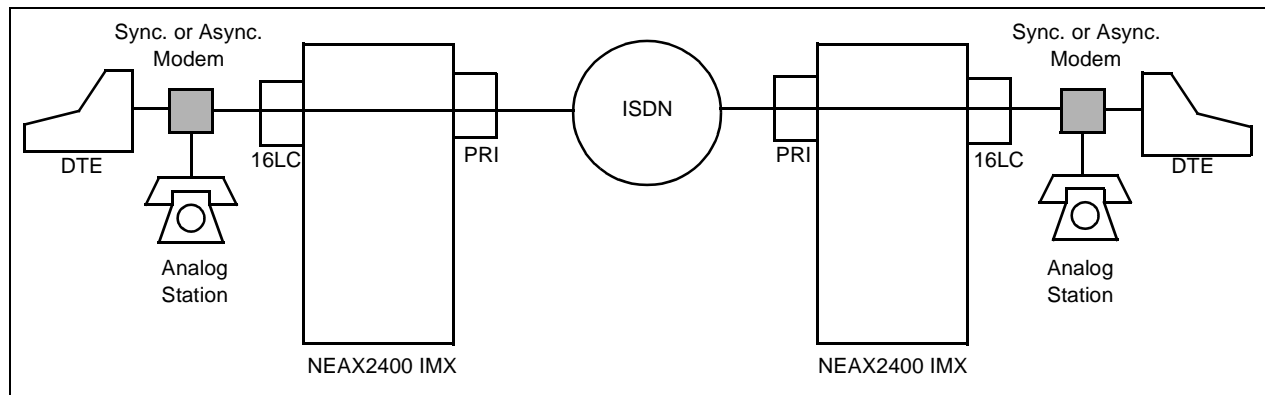# D-121   Data Communications - PRI

General Description

This feature enables data communication between two NEAX2400 IMX, through PRI over Digital Line Link (ISDN). The ISDN link can be accessed through various connections.

Operating Procedure

Modem-to-Modem

The following figure illustrates a typical Modem-to-Modem connection.
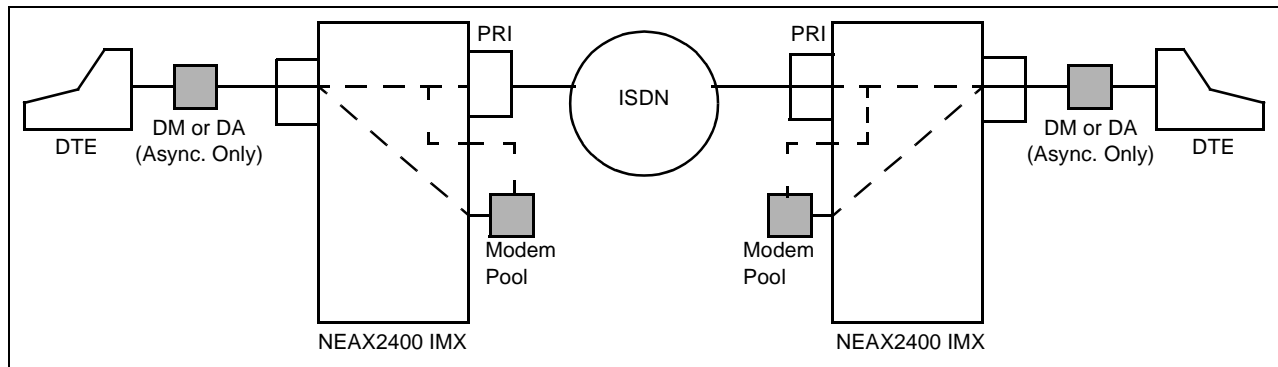

Modem-to-Modem Connection

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

Operating Procedure (cont'd)

Modem Pool to Modem Pool

Modem Pool-to-Modem Pool Connection

Asynchronous Data Terminal connected to a Data Module
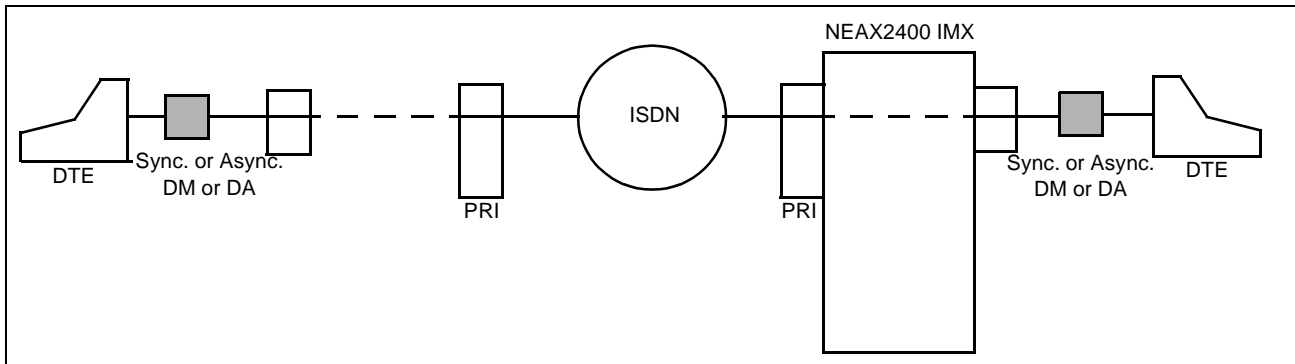
1. Enter DM CALL <ENTER> on the DTE keyboard; READY is returned.
2. Enter the number of the remote DTE: DIAL XXXXX <ENTER>.
3. CALLING is returned and the local modem pool is transferred to ISDN.
4. WAITING is displayed until the call is answered.
5. The remote Data Module or Data Adapter manually or 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 YYY 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. READY D XXX YY is displayed on calling D^{term} (XXX=trunk type, YY=trunk number).
11. Data transmission can begin.

Operating Procedure (cont'd)

Unrestricted Data

Asynchronous DTE to Data Module Connection

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 is 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}) is displayed until the called terminal answers.
5. READY D DTE XXX YY 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.

Service Conditions

Modem and Modem Pool Calls

1. A total of eight modem pool groups may be assigned: eight incoming, eight outgoing, eight bothway, or any combination thereof.

2. Modems must be compatible.

3. Modems in a modem pool may be permanently assigned, end-to-end, to a PRI channel on a dedicated line basis; otherwise, modem pools are normally dynamically assigned on a switched basis to an incoming or outgoing data caller on a PRI channel. In this case, the same PRI channels are available for voice also.

4. The maximum modem speed is 9600 bps. Both asynchronous and synchronous modems may be used in the modem pool. Modems connected to analog extensions may be asynchronous or synchronous.

Unrestricted Data

1. The following communication speeds are supported:
   Asynchronous: 50 ~ 9600 bps
   Synchronous: 2.4K, 4.8K, 9.6K, and 48K bps

2. Attribute Data for remote AUTOMATIC ATTRIBUTE DATA RECOGNITION [A-40] will not be passed over a digital link modem connections.

3. 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 of the MAT to 0. If AMND 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.

4. PRI requires one D-channel of a 24-channel digital line for out-of-band signaling. The other 23 channels (B-channels) can be used for voice or data, or both.

D-122   Data Uniform Numbering Plan - PRI

General Description

This feature enables data stations to be assigned a set of UNIFORM NUMBERS to distinguish data extensions from voice extensions.
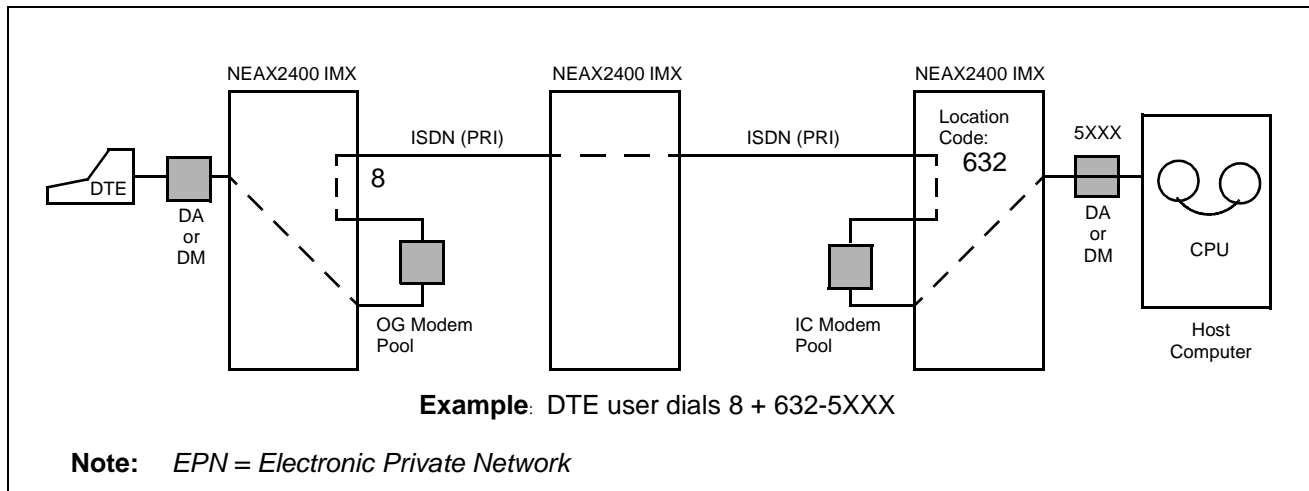
Data Uniform Numbering Plan Connection

Operating Procedure

Originating a Data Adapter/Data Module 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/Data Module 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.

Service Conditions

1.   Careful consideration should be given to numbering plan assignments, especially in larger systems, to avoid unnecessary loss of access codes or duplication of telephone numbers.
2.   There is no limit to the number of groups assigned per system.
3.   Telephone numbers cannot be duplicated between tenants.
4.   Data extensions must contain from two to five digits.
5.   Flexible data telephone numbering can also be used; however, its use is not recommended.
6.   When an access code, an office termination code, and an interoffice data extension are dialed, the access code and the first digit of the office termination code cannot be the same. For example, if 8-RNX-XXXX is dialed to access an interoffice DTE; R cannot equal 8, N can equal 2 - 9, and X can equal 0 - 9.
7.   KEYBOARD DIALING [K-1, K-2] can be used in conjunction with this feature.
8.   Data calls over Tie lines require the use of modem pooling.

D-137   Direct-In Termination (DIT) - PRI

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 - ATTENDANT [C-10], etc., are handled in the same manner as any normal trunk call.

Operating 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].

Service Conditions

1. Any group(s) of trunks can be used, up to the maximum capacity of the NEAX2400 IMX.
2. Bothway trunks can be used for DIRECT-IN TERMINATION, but incoming only trunks are recommended.
3. It is not necessary to order special DID trunks to the telephone company as is required with DIRECT INWARD DIALING [D-8]. However, care should be exercised in the application of Central Office trunk hunting.
4. If the called station is busy, that call is kept ringing until the called station becomes idle, or is forwarded to the ATTENDANT CONSOLE [A-3].
5. If there is no answer at a station, the calling party will continuously receive ringback tone. There is no AUTOMATIC RECALL [A-8] to the Attendant in this case.
6. Once a call is answered, it can be processed by the called station like any normal trunk call.
7. If the station is assigned to a STATION HUNTING - CIRCULAR [S-7], STATION HUNTING - SECRETARIAL [S-8], or STATION HUNTING - TERMINAL [S-9] group, the incoming call will follow the hunt group station assignment. If the station is in a CALL FORWARDING - BUSY LINE [C-2], CALL FORWARDING - DON'T ANSWER [C-3], or CALL FORWARDING - ALL CALLS [C-5] mode, the incoming call is connected to the call forward target station.
8. This feature is normally used where Direct-In service is required on a limited basis. The number of stations thus serviced is effectively limited to the number of trunks available for DIRECT-IN TERMINATION.
9. DIRECT-IN TERMINATION and NIGHT CONNECTION - FIXED [N-1] are mutually exclusive.
10. DIT trunks can be programmed to terminate elsewhere in the Night mode.
11. When the system is in the Night mode of operation and the DIRECT-IN TERMINATION (DIT) station is busy, the call diverts to TAS if provided; otherwise, the call waits on the busy station until it is idle.
12. Only one trunk can be arranged for DIRECT-IN TERMINATION to a particular station line.
13. The DIRECT-IN TERMINATION feature is limited to the following trunk types:
    a.) CO
    b.) automatic-in tie trunk
14. If the assigned station is busy when a call arrives, the call is held waiting. The call waiting tone is not provided to the DIT station. The calling party hears the ringback tone.
15. The DIT call can terminate to a DO NOT DISTURB - D$^{\text{term}}$ [D-11D] station.

Service Conditions (cont'd)

16. The following connections are supported by this service (if the called station is the terminal in an external exchange):

DIT Station / Calling Party	General Trunk	ISDN Trunk
General Trunk	Available in current service	Available in this service.
ISDN Trunk	Available in current service	Available in this service.

17. When the DIT station is busy, the incoming call is held waiting. In this case, if the DIT station belongs to a Station Hunting group, the call follows the hunting assignment.

18. When a station in a different office is assigned as the DIT station, voice/data route selection is activated.

19. When assigning a station in a different office as the DIT station, Speed Calling list numbers are used in system data assignment.

E-14D Elapsed Time Display - D^{term} - PRI

General Description

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

Operating Procedure

No manual operation is required.

Service Conditions

1. The elapsed time is displayed in the eight, left-side positions of the LCD display.
2. The elapsed time can reach a maximum of 9 hours, 59 minutes and 59 seconds. After that time the clock returns to zero.
3. A continuous time display occurs during CONSULTATION HOLD - ALL CALLS [C-17] and THREE-WAY CALLING [T-2].
4. When a call is transferred, the time display of the party receiving the transfer begins from zero.
5. When the D^{term} returns to the original call from CALL TRANSFER - ALL CALLS [C-11] or CALL HOLD [C-6], the elapsed time begins at zero.
6. The elapsed time is not displayed when the station is in a specific condition such as:
    a.) THREE-WAY CALLING [T-2]
    b.) Connected to a trunk with held trunk, as in the case of CONSULTATION HOLD [C-17]

F-21 Flexible Numbering of Stations - PRI

General Description

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

Operating Procedure

No manual operation is required.

Service Conditions

1. Careful consideration should be given to any numbering assignment, especially in larger systems, to avoid the unnecessary loss of access codes or duplication of telephone numbers.
2. There is no limit on the number of groups that can be assigned per system.
3. Where TENANT SERVICE [T-12] is provided, telephone numbers cannot be duplicated between tenants.
4. A combination of one, two, three, four and five digit numbering may be used.
   Example:
   a.) 3 1
   b.) 3 2 1
   c.) 3 2 2 1
   Examples a, b, c, can be assigned as three different stations.
5. The system can distinguish the difference.
6. BUSY LAMP FIELD - FLEXIBLE [B-2] service can be provided only when the defining telephone number digits exceed two.

F-26   Faulty Trunk Report - PRI

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, telephone number, associated time division switch and reported time. This information is displayed at the MAINTENANCE ADMINISTRATION TERMINAL (MAT) [M-18] and/or fault printer.

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.

Service Conditions

1. This feature can be accessed during any two-party connection.
2. The following information appears on FAULT TRUNK REPORT:
    a.) Telephone number
    b.) Trunk route number
    c.) Trunk number
    d.) Time division switch
    e.) Time and date
3. Stations are assigned this feature according to CLASS OF SERVICE - INDIVIDUAL [C-15] programming in system data.
4. When this feature is activated, a supervisory alarm (yellow) appears on the NEAX2400 IMX.

H-14D   Hands-Free Answer Back - D^{term} - PRI

General Description

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

Operating Procedure

To answer a VOICE CALL [V-2D]
1. Press the MIC key; the LED lights.
2. Respond to the call hands-free.

Service Conditions

HANDS-FREE ANSWER BACK - D^{term} - PRI can only be used when responding to a VOICE CALL [V-2D] on the My-Line.

H-15 Hot Line-Outside - PRI

General Description

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

Operating Procedure

To place a HOT LINE - OUTSIDE - PRI call using a single line telephone
1. Station A lifts the handset; hears sender tone first, then ringback tone.
2. Outside party is rung.
3. Outside party 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 feature key.
2. Station A lifts the handset or presses the SPEAKER key; hears sender tone first, then ringback tone.
3. Outside party lifts the handset; conversation proceeds.

Service Conditions

1. The number of hotline stations is limited by the number of stations accommodated in the system.
2. The destination parties for this service use abbreviated call codes prepared in SPEED CALLING - SYSTEM [S-3]. Therefore, the number of destination stations is limited by the capacity of SPEED CALLING - SYSTEM [S-3].
3. When a user is confronted with a situation in which all trunks are busy or all senders are busy at the same time, reorder tone is heard at the hotline stations.
4. Outside connection in BROKERAGE HOTLINE - OUTSIDE [B-12] service can be realized when the LCD indicates:
   a.) Trunk classification such as DDD, Tie, and CCSA and trunk number for an outgoing call
   b.) Time duration, trunk classification, and trunk number for an incoming call.
5. When a user of BROKERAGE HOTLINE - OUTSIDE [B-12] is confronted with a situation in which all trunks are busy or all senders are busy, the user hears reorder tone. No indication is shown on the LCD of the user's D^{term}.
6. STATION MESSAGE DETAIL RECORDING (SMDR) [S-10] is available for outgoing calls with the HOT LINE - OUTSIDE - PRI service.

I-24   Incoming Call Identification - PRI

General Description

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

Operating Procedure

No manual operation is required.

Service Conditions

1. A flashing lamp indicates a call waiting to be answered.
2. A steady lamp indicates an answered call.
3. A maximum of 12 lamp and key groups can be associated with INCOMING CALL IDENTIFICATION-PRI.
4. Lamps and keys may be assigned as follows:

ATND:	Attendant
BUSY:	Call Forwarding - Busy Line
CCSA:	Common Control Switching Arrangement
FX:	Foreign Exchange
ICPT:	Call Forwarding - Intercept
LDN:	Listed Directory Number
NANS:	Call Forwarding - Don't Answer
RECALL:	Recall
TF:	Inter Position Transfer
TIE:	Tie Line
WATS:	Wide Area Telephone Service

5. More than one INCOMING CALL IDENTIFICATION lamp can be duplicated at the ATTENDANT CONSOLE [A-3]. The Attendant can select any incoming call by pressing the associated key.
6. Calls can be answered via the ANSWER key for first-in, first-out priority.
7. ATTENDANT CONSOLE [A-3] is limited to 12 unique INCOMING CALL IDENTIFICATION indications. However, more than one incoming trunk group can be programmed for the same INCOMING CALL IDENTIFICATION.

I-25 Incoming ISDN Call to Tie Line Connection - PRI

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.

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 dial tone signaling).
3. Dial the distant PBX extension number.
4. Press the RELEASE key.
5. The Tie Line and trunk call are connected.

Service Conditions

1. The Attendant can connect a trunk and Tie line call either before or after the distant station goes off-hook.
2. There is no limitation on the number of incoming trunks that can be connected to Tie lines using this feature.
3. TRUNK-TO-TRUNK CONNECTION [T-10] can significantly degrade transmission quality.
4. TRUNK-TO-TRUNK CONNECTION [T-10] can be restricted through route restriction assignments.
5. AUTOMATIC RECALL [A-8] is denied on INCOMING ISDN CALL TO TIE LINE CONNECTION - PRI.
6. Since AUTOMATIC RECALL [A-8] cannot be initiated by a trunk, the ATTENDANT LOCKOUT [A-5] feature is automatically disabled to allow the Attendant to reenter TRUNK-TO-TRUNK CONNECTION [T-10] calls held on the ATTENDANT CONSOLE [A-3].
7. Disconnect supervision can be automatic in some cases; but in others, the Attendant must monitor the connection and manually disconnect after use.

I-26   Indialing Through Main - PRI

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.
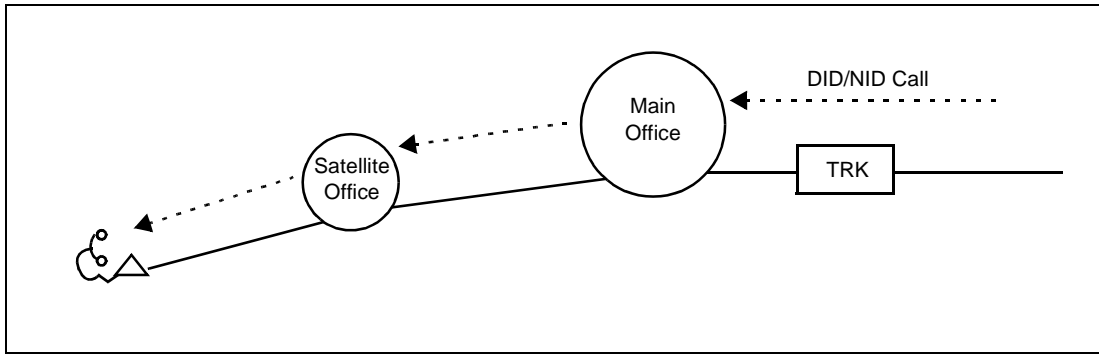
Operating Procedure

1. A four-digit number is received via DID or NID at a main PBX.
2. One or more sets of 1,000 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 1,000 digits, each set of 1,000 digits refers to a separate trunk group; while each trunk group is assigned to a separate incoming switch.
5. When a NEAX2400 IMX 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 can be transmitted to a satellite. A system can also employ separate trunk groups for each 1,000 digits assigned to a satellite.

Service Conditions

None.

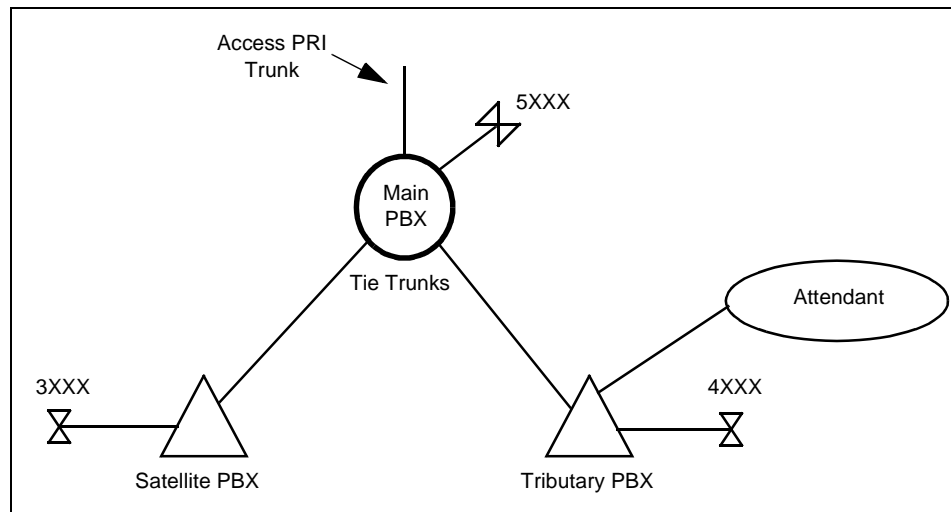# I-27 Inter-PBX Coordinated Station Numbering Plan - PRI

General Description

The INTER-PBX COORDINATED STATION NUMBERING PLAN - PRI 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 three- to seven-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 NEAX2400 IMX switch in the coordinated group.

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 can 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.

Inter-PVX Coordinated Station Numbering Plan

All switches have a coordinated station numbering feature. (See the figure above.)
Example 1: A user at the satellite switch dials 5XXX to call a station at the main switch.
Example 2: A 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.

Interactions

1. LEAST COST ROUTING (LCR) - 3/6-DIGIT PRI [L-31]: The first codes for INTER-PBX COORDINATED STATION NUMBERING calls must be distinct from the assigned LCR access codes. INTER-PBX COORDINATED STATION NUMBERING calls are routed independently of EPN calls. The routing patterns are shared by both LCR and INTER-PBX COORDINATED STATION NUMBERING.

2. UNIFORM NUMBERING PLAN (UNP) [U-4]: INTER-PBX COORDINATED STATION NUMBERING - PRI can be integrated with the EPN UNIFORM NUMBERING PLAN calls. For example, a five-digit coordinated telephone number may also be the same as the last five digits of a seven-digit UNP number.

I-36 Inter-Office Off-Hook Queuing - PRI

General Description

This feature can be employed in a main-satellite configuration to allow a satellite 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.

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 is connected.)
5. If there are no Hold on Queues available, the main location returns 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.

Service Conditions

1. This feature is usually used in conjunction with LEAST COST ROUTING - 3/6-DIGIT - PRI [L-31].
2. There is a maximum of 32 Queuings per Module Group (MG) available in the system. Therefore, only 32 stations/MG can use OFF-HOOK QUEUING [O-7], - PRI [O-28], OUTGOING TRUNK QUEUING [O-2], and - PRI [O-24] simultaneously.
3. 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 3 minutes. After this period, the trunk automatically will be released.
4. When an ISDN trunk becomes available, the dialed number is automatically sent to the connecting Central Office.
5. If all Off-Hook Queuing slots are in use, reorder tone (fast busy tone) is sent to the satellite office.
6. The connecting patterns available for this service are as follows:
    a.) Non-ISDN trunk to ISDN trunk
    b.) CCIS trunk to ISDN trunk
    c.) ISDN trunk to Non-ISDN trunk
    d.) ISDN trunk to CCIS trunk
    e.) ISDN trunk to ISDN trunk
7. In case a call terminates to ISDN trunk, billing starts when the call is placed in a queue.

L-31   Least Cost Routing - 3/6-Digit - PRI

General Description

This feature allows the NEAX2400 IMX to be programmed to route outgoing calls over the most economical facility (WATS, FX, 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.

Operating Procedure

1. Lift the handset; receive dial tone.
2. Dial the access code (usually 9); receive second dial tone.
3. Dial the area code, office code and telephone number.
4. The system automatically completes the call via the most economical route.

Service Conditions

A step-by-step explanation that, when reviewed in conjunction with the following figure, provides a clearer understanding of how the NEAX2400 IMX switch accomplishes Least Cost Routing follows:

1. If dialing a toll or local call (NPA-NXX-XXXX or NXX-XXXX), routing begins with translation of three-digit (NPA or NXX) area or office code. In the case of specific numbers, this translation can result in the immediate selection of the three-digit routing patterns. If the number dialed is an NPA and six-digit translation is required, the NXX code is verified in the SCC (XX) or the FX (XX) Table (**Note 1** and **Note 2**). If the NXX is not located in either table, see number 3. There is a maximum of 256 Outgoing Pattern Routing (OPR) Tables with a maximum of 8 routes for selection.

Note 1: *SCC (XX) is the Special Common Carrier NXX Translation Table.*

Note 2: *FX (XX) is the FX NXX Translation Table.*

2. First choice route option in an NPA pattern will most often be a Specialized Common Carrier. If a trunk is available in this group, further digit translation will be required to determine whether the called number is served by the carrier. NXX digit translation will also be required in instances where a call is routed over a tie or FX trunk. For these purposes, 256 NXX patterns are available.

3. In the case of Specialized Common Carriers, associated NXX patterns return either a YES or NO answer to the switch, indicating whether the dialed number is within the designated service area of the selected SCC. If service is available, the switch seizes the trunk and completes the connection. If the NO answer is returned, the switch searches for the next available trunk group.

4. Calls routed over FX trunk groups may require outpulsing of prefix digit 1, depending upon the NXX number dialed. For this purpose, another group of associated NXX patterns can be used, operating on the same YES/NO principle. A YES answer returned to the switch will result in prefix 1 being added automatically before sending digits to the called central office.

5. When the selected route is an FX trunk group, NXX translation can be used to either allow or disallow the connection. This is accomplished via YES/NO answer from a designated group of NXX patterns, and enables calls to selected central office areas to be effectively restricted to the most economical routes.

Service Conditions (cont'd)

The routing method outlined provides some of the most flexible options available for call routing, and functions as a highly effective method of cost control.
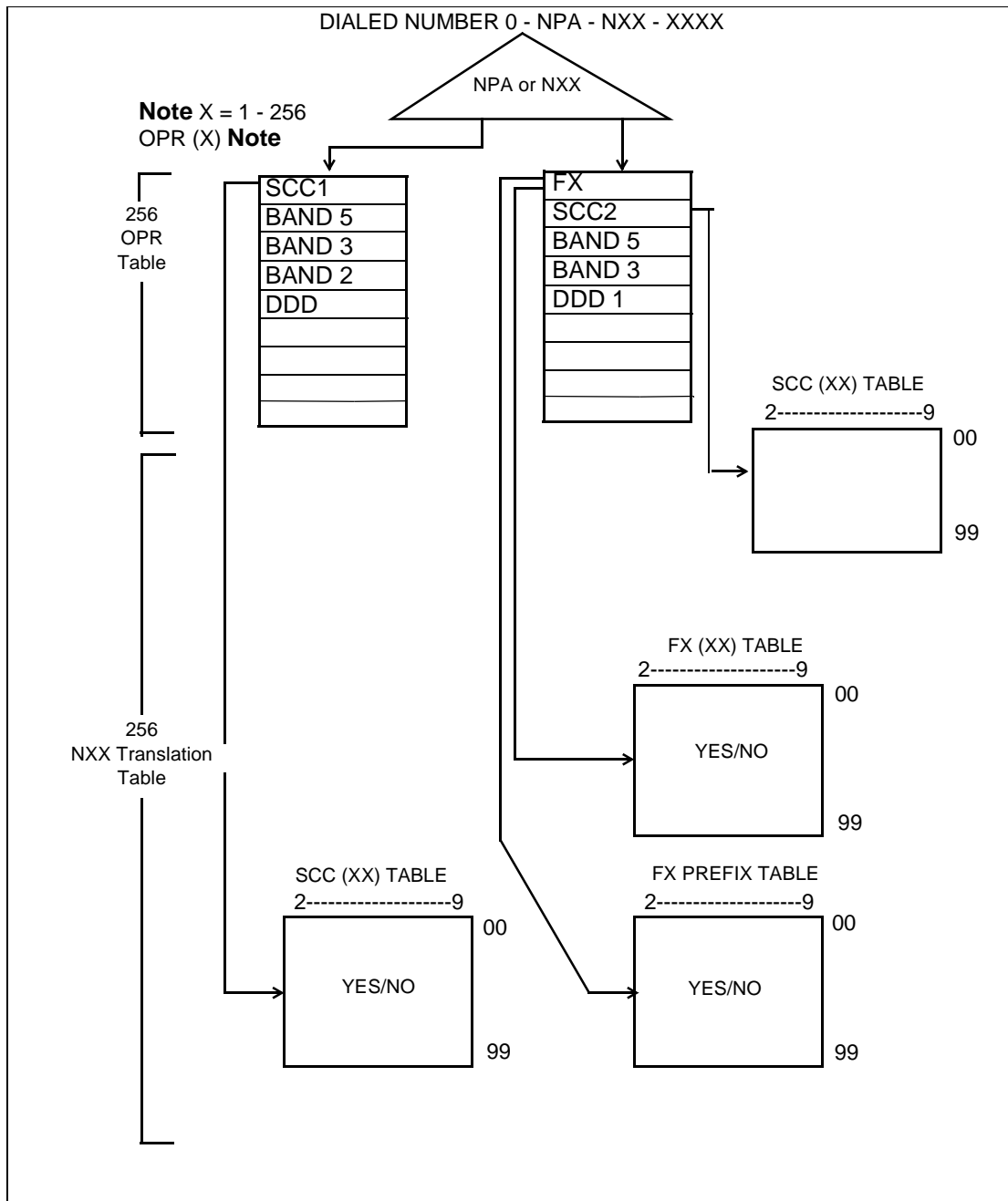
3/6-Digit Least Cost Routing Translation Table

Service Conditions (cont'd)

6. In certain cases, three- and six-digit translation provides sufficient information for identification of the service area. Up to 256 separate Outgoing Routing Patterns are provided for this.

7. Up to eight trunk routes can be in each Outgoing Routing Pattern.

8. STATION MESSAGE DETAIL RECORDING (SMDR) [S-10] may be used in conjunction with LEAST COST ROUTING - 3/6-DIGIT - PRI. The route selected by the switch will be recorded by the STATION MESSAGE DETAIL RECORDING (SMDR) [S-10] unit.

9. Tie Lines can be included in route patterns.

10. Application of NXX patterns provides for inclusion of multiple common carriers serving different areas.

11. When a tie trunk requiring an off-net connection to the local central office is included as a route option, the NEAX2400 IMX can provide a 2.8 second prepause before sending out the selecting signal.

12. Senders (dial pulse or tone) are provided with this feature for dialing.

13. Pre-translation capability minimizes waiting time after dialing. After enough digits are collected to determine a route, the system starts outpulsing before the station completes dialing the entire called number.

14. When LEAST COST ROUTING - 3/6-DIGIT - PRI is provided, the Attendant cannot pass dial tone to a station. The desired number must be dialed by the Attendant.

15. Stations having different Route Restriction Classes, but using the same LEAST COST ROUTING - 3/6-DIGIT - PRI pattern, can be denied access to the last choice trunk route(s) in that pattern. Route Restriction Classes can be set up so that a station dialing an area code can use WATS, FX, and DDD; or only the WATS line, if such an arrangement is desired. This is a form of forced Least Cost Routing.

16. NXX patterns can be programmed to restrict all stations in the system from completing calls to specific NXX numbers over FX trunks.

17. The system includes the ability to detect a dialed DDD number and compare it with a DDD list table to determine if the call is directed to a facility served by the trunk network. If the dialed number is found in the DDD list table, a translation is provided to the seven-digit, on-net number (ABC-XXXX) served by the tie trunk. This allows an expensive public network dialed number to be trapped and automatically be diverted to an available leased facility. If a Tie Line is not available, the call is routed as dialed.

18. The NEAX2400 IMX is capable of converting a maximum of 24 receiving digits into a required 24-digit number entirely. An interdigit pause can be inserted whenever necessary. This provides for an extremely flexible numbering plan for a complex network.

19. CALL-BY-CALL SERVICE SELECTION [C-105] is available on a trunk provisioning basis.

L-32   LCR - Time of Day Routing - PRI

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 eight times per day based on a prearranged time schedule.

Operating Procedure

1.   Lift the handset; receive dial tone.
2.   Dial the access code (usually 9); receive second dial tone.
3.   Dial the area code, office code, and telephone number.
4.   The system automatically completes the call via the most economical route available.

Service Conditions

1.   A maximum of eight patterns can be provided during a 24-hour interval for LCR - TIME OF DAY ROUTING - PRI.
2.   Each pattern can be programmed at a maximum increment of 30 minutes.

L-33 LCR - Attendant Manual Override - PRI

General Description

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

Operating Procedure

To set LCR - ATTENDANT MANUAL OVERRIDE - PRI
1. Press an idle loop key.
2. Dial the LCR - ATTENDANT MANUAL OVERRIDE access code; receive special dial tone.
3. Dial the LCR - TIME OF DAY ROUTING pattern number (1 to 7); 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 access code; receive special dial tone. The display of the LCR - TIME OF DAY ROUTING pattern number is shown.
3. Dial 0 to cancel; receive service set tone.
4. Press the RELEASE key.

Service Conditions

LCR - ATTENDANT MANUAL OVERRIDE - PRI takes precedence over LCR - CLOCKED MANUAL OVERRIDE - PRI [L-35].

L-34   LCR - Automatic Overflow to DDD - PRI

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.

Operating Procedure

No manual operation is required.

Service Conditions

1. Off-net facilities available include Wide Area Telephone Service (WATS) [W-1], Foreign Exchange (FX) and/or Central Office trunk groups.
2. Off-network routes are listed in the LEAST COST ROUTING - 3/6-DIGIT - PRI [L-31] tables (Outgoing Routing Patterns, OPR).
3. The NEAX2400 IMX converts the on-network destination code to either a Listed Directory Number (LDN) for Attendant assistance calls, or to a DIRECT INWARD DIALING (DID) number (where appropriate) for station calls.
4. If no on-network routes are provided to a given destination, up to eight off-network routes may be assigned.

L-35 LCR - Clocked Manual Override - PRI

General Description

This feature permits the NEAX2400 IMX to override the LCR - TIME OF DAY ROUTING - PRI [L-32] pattern during the pre-determined time assigned through the MAT.

Operating Procedure

No manual operation is required.

Service Conditions

LCR - ATTENDANT MANUAL OVERRIDE - PRI [L-33] takes precedence over LCR - CLOCKED MANUAL OVERRIDE - PRI.

L-42 Last Number Call - PRI

General Description

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

Operating Procedure

1. Lift the handset; receive dial tone.
2. Dial the desired party's number.
3. The call has not been established; busy tone or reorder tone is heard.
4. Lift the handset; receive dial tone.
5. Dial the LAST NUMBER CALL access code (max. three digits).
6. The system automatically redials the last number dialed from that station.

Service Conditions

1. The number of dial digits to which this service is applicable is 18 maximum.
2. This service can be activated on a station basis.
3. SPEED CALLING - SYSTEM [S-3], SPEED CALLING - STATION [S-21], or SPEED CALLING - GROUP [S-23] numbers (Abbreviated Digit Codes) can be stored in the LAST NUMBER CALLED memory.
4. Whether the attempted call is established or not, LAST NUMBER CALL is activated.
5. The LENS of stations that can receive this service is limited to Levels 0 through 7, of G0 through G23 of each Unit of each LP.
6. This service feature can be activated when the station accesses the ISDN trunk.
7. This service has a save area on a per-LEN basis. Therefore, the same D^{term} can receive this service regardless of whether the line being used is a sub-line or my line.

L-42D   Last Number Call - D^{term} - PRI

General Description

This feature allows a D^{term} user to redial the numbers previously dialed from the terminal. With this feature, the D^{term} user can choose any destination out of the latest 5 calls stored in system memory, and place a call without having to redial the full number.

Operating Procedure

To check the dialed numbers stored in the memory (up to 5 destinations)
1.   Press the Redial key on a D^{term}.
    a.) The Prime Line lights Green.
    b.) The Speaker Lamp lights Green.
    c.) Receive dial tone from the speaker with the following display on the D^{term}.

```
        LNR [#] / SPEED [_ _ _] - 1
                              811625643

MIC        FDB        FDN      >>>
```

2.   Press the Redial key on the D^{term} again.
    a.) The Prime Line lights Green.
    b.) The Speaker Lamp lights Green.
    c.) Receive dial tone from the speaker with the following display on the D^{term}.

```
        LNR [#] / SPEED [_ _ _] - 2
                                  25191

MIC        FDB        FDN      >>>
```

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

To originate a call:
1.   Press the Redial key on a D^{term}.
    a.) The Prime Line lights Green.
    b.) The Speaker Lamp lights Green.
    c.) Receive dial tone from the speaker with the following display on the D^{term}.

```
        LNR [#] / SPEED [_ _ _] - 1
                              811625643

MIC        FDB        FDN      >>>
```

2.   Repeat the above procedure until you reach your desired destination.

```
        LNR [#] / SPEED [_ _ _] - 4
                               82625191

MIC        FDB        FDN      >>>
```

Operating Procedure (cont'd)

3. Press # to originate your call while the desired destination is being displayed on the D^{term}.
    a.) The Prime Line lights Green.
    b.) The Speaker Lamp lights Green.
    c.) Receive ringback tone from the speaker with the following display on the D^{term}.

```
                              82625191
              10:24  AM  FRI  15
```

4. The called party answers the call.
    a.) The Prime Line lights Green.
    b.) The Speaker Lamp is OFF.

```
                              82625191
              10:24  AM  FRI  15
```

Service Conditions

1. A maximum of 32 digits can be stored, including pause. (The first 24 digits are displayed on the LCD.)
2. This service can be activated on a station basis.
3. In a Step Call, the final combination of digits represents the stored memory. For example, dial 201; 201 is busy. Dial 2; X-202 rings; X-202 is stored in LAST NUMBER redial memory.
4. In the case of CALL FORWARDING - BUSY LINE [C-2], CALL FORWARDING - DON'T ANSWER [C-3], CALL FORWARDING - ALL CALLS [C-5], CALL PICKUP - GROUP [C-7], and STATION HUNTING - CIRCULAR [S-7], STATION HUNTING - SECRETARIAL [S-8], STATION TERMINAL [S-9], the number stored is the number dialed; i.e., intermediate station.
5. The numbers (maximum of five) are stored in the memory in the order dialed. If the number identical to the one in the memory is dialed, that number is recognized as the newest number, and the one already stored will be erased. (No matter how many times the same number is dialed, it is stored only once.)
6. This service is not available if the LAST NUMBER feature key is not assigned on the D^{term}
7. When the Redial key is pressed after all of the stored numbers are displayed, the newest number (the one displayed first) is displayed again, and continues in the same order.
8. When no number is stored in the memory (e.g., after the package initialization), the LCD displays as follows:

```
              LNR [#] / SPEED [_ _ _] - 1
                                              ◄──────  blank

     MIC         FDB         FDN         >>>
```

9. If no key is pressed after the Redial key for 12 seconds, the interdigit timer expires, and the user receives busy tone or reorder tone.
10. If any other key than # is pressed after the Redial key, it is recognized as a speed calling number.
11. If the SPEAKER key is pressed after the Redial key, the user is released from the service.

L-44   LDN Night Connection - PRI

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.

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.

Service Conditions

1. The destination station can be assigned on a per LDN basis.
2. This feature is available for a maximum of 16 LDNs per tenant.
3. A data terminal cannot be used as a destination station for this feature.
4. Call Forwarding service set to Attendant is not available for the destination station.
5. Queuing function of UNIFORM CALL DISTRIBUTION (UCD) [U-1] is not available when all stations within the UCD [U-1] group are busy.
6. Hunting function of STATION HUNTING - CIRCULAR [S-7] is available when the destination station belongs to the Hunt Group.
7. When the destination station is busy, an incoming call is handled as follows:
    a.) The call waits in queue.
    b.) The status of the destination station is periodically checked (every 12 seconds). If the station becomes idle at that time, the caller is connected.
    c.) When several calls are waiting for the same destination station, first-in first-out queue is not available.
8. When tenant switches to Night mode while LDN call terminates at the Attendant, the call is transferred to destination station, depending on the dialed LDN number. If the destination station is in the states listed below, the call cannot be transferred, and either NIGHT CONNECTION OUTSIDE - SYSTEM [N-17] or TRUNK ANSWER FROM ANY STATION (TAS) [T-8] is activated; or caller waits in a queue after receiving ringback tone.
    a.) The system data of this service is not assigned to LDN number.
    b.) LINE LOCKOUT [L-3]/Make Busy
    c.) CALL FORWARDING - ALL CALLS [C-5], CALL FORWARDING - BUSY LINE [C-2], CALL FORWARDING - INTERCEPT/ANNOUNCEMENT/ATTENDANT [C-75] is set to the Attendant.
9. When the system switches over to Day mode, calls waiting in queue are connected to Attendant.

L-46   LDN Night Connection - Outside - PRI

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.

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 ringing signal is sent out to the outside station.
4. The outside station answers the incoming call.

Service Conditions

1. The maximum number of digits in the destination number is eight. SPEED CALLING - SYSTEM [S-3] can be used when more than eight digits are needed.
2. The destination station can be assigned on a per LDN basis.
3. This feature is available for a maximum of 16 LDNs per tenant.
4. LDN NIGHT CONNECTION - OUTSIDE [L-30] will not route an incoming call on an MFC signaling trunk through another MFC signaling trunk.
5. The LDN calls can be routed to stations in either ISDN or non-ISDN network. When the destination station is in non-ISDN network, OGC, OGCA, LCR and LCRC services are available. When the destination station is in ISDN network, only LCR and LCRC services are available.
6. When the digits are sent to the destination station, the caller hears sender tone or does not receive any tone, depending on system data (SYS-1 INDEX-6 b0).
7. When the destination station is busy, the incoming call is placed in a queue and the caller receives ringback tone.
8. When the system switches over to Day mode, calls waiting in queue are connected to Attendant.
9. This service is not available when:
   - a.) The system data of this service is not assigned to LDN number.
   - b.) TOLL RESTRICTION - 3/6-DIGIT [T-7] is activated.
   - c.) The outgoing trunks/routes are busy.
   - d.) LINE LOCKOUT [L-3] is activated.
       In these cases, NIGHT CONNECTION OUTSIDE - SYSTEM [N-17] or TRUNK ANSWER FROM ANY STATION (TAS) [T-8] is available.
       If night service is not assigned, the caller receives busy tone.

Service Conditions (cont'd)

10. When tenant switches to Night mode while LDN call terminates at the Attendant, the call is transferred to destination station, depending on the dialed LDN number. If the destination station is busy, the call is placed in a queue after receiving ringback tone. However, when the destination station is in the status shown below, LDN NIGHT CONNECTION - OUTSIDE - PRI is not activated, and NIGHT CONNECTION OUTSIDE - SYSTEM [N-17] or TAS [T-8] will be activated.

   a.) The system data of this service is not assigned to LDN number.
   b.) TOLL RESTRICTION - 3/6-DIGIT [T-7] is activated.
   c.) The outgoing trunks/routes are busy.
   d.) LINE LOCKOUT [L-3] is activated.
       If night service is not assigned, the caller receives busy tone.

L-49   LCR - Special Line Warning Tone - PRI

General Description

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

Operating Procedure

No manual operation is required.

Service Conditions

Whether to activate this service or not is determined on an alternate route basis.

M-71 Miscellaneous Trunk Access - PRI

General Description

This feature provides access to all types of external and customer provided equipment/facilities such as FX ACCESS [F-2], WATS ACCESS [W-1], CCSA ACCESS [C-14], TIE LINE ACCESS [T-3], and exchange network along with PAGING ACCESS [P-1].

Operating Procedure

MISCELLANEOUS TRUNK ACCESS - PRI is accomplished via system data programming at the MAINTENANCE ADMINISTRATION TERMINAL (MAT) [M-18].

Service Conditions

1. Access to these trunk groups is allowed or denied via MISCELLANEOUS TRUNK RESTRICTION - PRI [M-72].
2. An interface circuit must be provided for each trunk required.

M-72 Miscellaneous Trunk Restriction - PRI

General Description

This feature provides for incoming PRI trunks to be denied access to particular trunk groups such as FX ACCESS [F-2], WATS ACCESS [W-1], CCSA ACCESS [C-14], TIE LINE ACCESS [T-3], exchange network, or PAGING ACCESS [P-1].

Operating Procedure

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

Service Conditions

1. Restricted call attempts can be either intercepted by the Attendant, or reorder tone can be initiated back to the originating user.
2. The CALL TRANSFER - ALL CALLS [C-11] feature operates as follows:
   a.) If the restricted station is the controller, the station cannot add a trunk from which this station is restricted.
   b.) If the restricted station line is not the controller, the controller cannot connect the restricted station line to a trunk from which the station is normally restricted.
3. Two outgoing trunk group restriction tables are provided per system. The Direct Dial Access table is indexed when a user dials the trunk group access code, and the ATTENDANT CONSOLE [A-3] table is indexed on Attendant completed calls. The restriction options per RSC can differ per table, thus allowing Attendant completion of outgoing calls for restricted stations.
4. CALL TRANSFER - ALL CALLS - PRI [C-99]: If a restricted user calls another station, the called station cannot use the Call Transfer feature to connect the calling station to a trunk group to which the restricted station is denied dial access. If transfer is attempted, the controlling station is rung back.
5. TIE LINE ACCESS [T-3]: If the user accesses a tie trunk at a distant PBX, access to outside exchanges can only be controlled by the distant PBX.

M-73   Music On Hold - PRI

General Description

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

Operating Procedure

No manual operation is required since this is a software controlled feature.

Service Conditions

1. The system is capable of supplying two switch-selectable music channels. Music is generated by three synthesizers included in the package.

2. If another music source (tuner, tape-deck, etc.) is desired, it must be customer provided.

3. The held-call condition can be the result of:

CALL HOLD	[C-6]
CONSULTATION HOLD - ALL CALLS	[C-17]
CALL FORWARDING - INTERCEPT/ANNOUNCEMENT - ATTENDANT	[C-75]
SPLITTING	[S-4]
Attendant Hold	

4. Only one music source, either customer-provided or internal, can be provided per system (system option).

5. ATTENDANT CONSOLE [A-3]: Attendant operations resulting in music provided to the calling party includes the following:

   a.) If the Attendant splits a call prior to completion or after answering an Attendant recall, the calling party or the remaining party (not talking with the Attendant) receives music.

   b.) When incoming calls to the Attendant are answered and the Attendant presses the HOLD key, the held party receives music.

   c.) When the Attendant intercepts a call to a busy station, the calling party is connected to music until the called party answers or the Attendant reenters the switched loop.

6. When a user in a two-party, voice-connection switchhook flashes, the second party is placed on hold and is connected to music.

M-74 Modem Pooling - PRI

General Description

The MODEM POOLING - PRI feature allows any asynchronous or synchronous data station (DTE) connected to a D^{term} Data Adapter or Data Module 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 Modules or Data Adapters through incoming Modem Pools. Modem Pools provide the capability to share modems among users for outgoing and incoming communications. DATA CALL LEAST COST ROUTING - 3/6-DIGIT [D-49] and other standard PBX features can be used for long distance data calls.

Operating Procedure

Outgoing Modem Pooling

To initiate a data call to an outside DTE via analog trunk lines from a Data Module or keyboard dialing Data Adapter
1.   Key in DM CALL <ENTER> from the keyboard of the connected DTE. The DTE's display will show DM CALL, then READY.
2.   Key in the desired DTE extension: DIAL-XXXX <ENTER>. CALLING and WAITING will be displayed. These messages indicate that the Modem Pool is being connected.
3.   After the called modem answers and exchanges carrier signals with the pooled modem, the DTE displays OPEN.
4.   Data communication can begin.

To release from data communication using a Data Adapter or Data Module with keyboard dialing
1.   Key in <ESC>-DM <ENTER> from the keyboard of the attached DTE.
2.   The display will show ACK; key in RLS <ENTER> to release.
3.   The display will show RELEASED, indicating that data communication has been released.

To initiate a data call to an outside DTE via analog trunk lines from a D^{term}/Data Adapter (keypad dialing)
1.   Lift the D^{term}'s handset; receive dial tone.
2.   Dial the analog telephone number (this is a voice call).
3.   When the call is answered and the called modem is switched to the data mode, receive an answer tone (modem tone).
4.   Press the D^{term}'s DTX key; the LED above the key illuminates steadily. The DATA lamp will flash and appears on the D^{term}'s LCD. (XXXX refers to the called DTE number, and will be flashing.) This display indicates that the Modem Pool is being connected.

```
WAIT  D                    XXXX
          (Time Display)
```

Operating Procedure (cont'd)

5. After the called modem and the pooled modem exchange carrier signals, the display shows:

> **READY D**   **XXXX**
> **(Time Display)**

6. Data communication can begin.

To release from data communication using a D^{term}/Data Adapter (keypad dialing)

1. Press the DATA key to disconnect.
2. The display shows RELEASE D XXXX, indicating that data communication has been released.

Incoming Modem Pooling

To receive a data call from an outside DTE via analog trunk lines at a D^{term}/Data Adapter

1. The caller dials the data number of the D^{term} station.
2. If the D^{term}/DTE is set for Auto Answer, a modem of the proper speed will be automatically connected to the call.
3. If the called DTE is set for Auto Answer, modem confirmation tone is heard. If the called DTE is set for Manual Answer, the call must be answered manually at the remote end. The called user can press the DATA key on the D^{term}/Data Adapter. A Modem will be connected to the call.
4. When the Modem is connected, the DATA lamp illuminates steadily. On a D^{term}, the LCD displays READY D XXXX (XXXX refers to the trunk type).

To release from data communication using a D^{term}/Data Adapter (keypad dialing)

1. Calling party goes on-hook.
2. Called party presses the DATA key to disconnect.
3. The display shows RELEASE D XXXX, indicating that data communication has been released.

To receive a data call from an outside DTE via analog trunk lines with a Data Module or a keyboard dialing Data Adapter

1. The remote caller dials the data DTE number via analog trunk lines.
2. A modem is automatically selected and the Data Adapter or Data Module transmits the INCOM message to the local DTE. The caller hears ringback tone.
3. If the called DTE is set for Auto Answer, modem confirmation tone is heard. If the called DTE is set for Manual Answer, the call must be answered manually at the remote end. The called user may key in a READY <ENTER> response from the keyboard of the DTE connected to the Data Module. Auto Answer is set via a switch on the Data Module.
4. A WAITING display indicates that the Modem Pool is being connected. An OPEN message will be indicated at the local DTE when the remote DTE's READY response arrives. OPEN indicates that both parties can communicate with each other via modem.

To release from data communication using a Data Adapter or Data Module with keyboard dialing

1. Key in <ESC>-DM <ENTER> from the keyboard of the attached DTE.
2. The display shows ACK; key in RLS <ENTER> to release.
3. The display shows RELEASED, indicating that data communication has been released.

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 - 3/6-DIGIT [L-6] 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 feature are:

NEC 212 AE	300/1200 bps
NEC DSP2420	300/1200 bps
NEC DATAX	SP2424 AA

Note: *Consult NEC for other types of modems.*

7. Modems can be selected by the user.
8. MODEM POOLING - PRI is also used 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.

M-75   Multiple Call Forwarding - All Calls - PRI

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.

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 access code; receive special dial tone.
3.   Dial the desired target telephone 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 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 access code; receive special dial tone.
3.   Dial the TENANT [T-12] number (two or three digits).
4.   Dial the originating telephone number.
5.   Dial the desired target telephone 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 cancel code; receive special dial tone.
3.   Dial the TENANT SERVICE [T-12] number, (two or three digits).
4.   Dial the originating telephone number; receive service set tone.

Service Conditions

1.   MULTIPLE CALL FORWARDING - ALL CALLS - PRI service can forward a maximum of five times when the called station sets CALL FORWARDING - ALL CALLS [C-5] to a station that has set CALL FORWARDING - ALL CALLS [C-5] or CALL FORWARDING - BUSY LINE [C-2].

2.   MULTIPLE CALL FORWARDING - ALL CALLS service can only be performed by the voice port of a D^{term}, or a single line telephone.

3.   If a calling party has been set to CALL FORWARDING - ALL CALLS [C-5] five times and encounters the sixth CALL FORWARDING - ALL CALLS [C-5], the calling party will not be forwarded; but will receive busy tone when the destination station is busy, or ringback tone if the destination station is idle.

4.   If the destination of CALL FORWARDING - ALL CALLS [C-5] is set to CALL FORWARDING - BUSY LINE [C-2], forwarding occurs.

5.   When combining CALL FORWARDING - ALL CALLS [C-5] and CALL FORWARDING - BUSY LINE [C-2], the calling party hears busy tone, if the fifth destination station is busy.

6.   If the destination in a MULTIPLE CALL FORWARDING - ALL CALLS is busy, and CALL FORWARDING - BUSY LINE [C-2] or CALL FORWARDING - ALL CALLS [C-5] has not been set, the calling party receives busy tone.

Service Conditions (cont'd)

7. If the destination station is busy, the calling station may activate CALL BACK [C-1], CALL WAITING - ORIGINATING [C-31], or EXECUTIVE RIGHT-OF-WAY [E-1] to the destination station.

8. When MULTIPLE CALL FORWARDING - ALL CALLS occurs, the display of the calling party's D^{term} shows the called telephone number and terminating telephone number. The display of the terminating party's D^{term} shows the calling party (station or trunk) and the called number.

9. If the destination station in a combined MULTIPLE CALL FORWARDING - ALL CALLS and CALL FORWARDING - BUSY LINE [C-2] is set to CALL FORWARDING - DON'T ANSWER [C-3], then MULTIPLE CALL FORWARDING - DON'T ANSWER [M-25] is put into effect. If the destination station from the CALL FORWARDING - DON'T ANSWER [C-3] is set to CALL FORWARDING - BUSY LINE [C-2] or CALL FORWARDING - ALL CALLS [C-5], forwarding is restricted.

10. If two stations have CALL FORWARDING - ALL CALLS [C-5] set to each other, an incoming call to either of these stations will not be forwarded; therefore, an infinite loop will not occur.

11. If the incoming call returns to a station that has already taken part in the multiple jump service (Busy or All Calls), then CALL FORWARDING - ALL CALLS [C-5] service from that station will not be performed, and the system will ignore that station's forwarding service.

12. If an incoming call encounters MULTIPLE CALL FORWARDING - ALL CALLS and the destination is the ATTENDANT CONSOLE [A-3], the incoming call appears on the ATND key.

13. If the destination station of MULTIPLE CALL FORWARDING - ALL CALLS - PRI is in a hunt group and is set to CALL FORWARDING - BUSY LINE [C-2] to a station in another hunt group, it can be determined, through system data, whether the calling party hunts to the called party's hunt group or the terminating party's hunt group when forwarded-to stations are busy.

14. If the destination of MULTIPLE CALL FORWARDING - ALL CALLS - PRI is the pilot of a UNIFORM CALL DISTRIBUTION (UCD) [U-1] group, UCD [U-1] is executed.

15. If a member of a UCD [U-1] group is a member of a MULTIPLE CALL FORWARDING - ALL CALLS-PRI sequence, that station is skipped in UCD [U-1] hunting.

16. When users dial their own telephone numbers as the target telephone number after dialing CALL FORWARDING - ALL CALLS access code, CALLING PARTY RECOGNITION SERVICES (DIRECT-IN TERMINATION (DIT)) [C-104] is activated.

N-20   Night Connection - Fixed - PRI

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.

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 station.
2. Calling party hears ringback tone.
3. Ring signal is sent to the Night station.
4. Night station goes off-hook to answer an 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.

Service Conditions

1. Calls being processed or in the hold state, when the Night mode is entered, continue to be processed or held after the mode changeover has been completed.
2. If the Night station to which an incoming call has been directed is busy, the calling party hears ringback tone until the station becomes idle.
3. This service feature can be provided with NIGHT CONNECTION - FLEXIBLE - PRI [N-21] and TRUNK ANSWER FROM ANY STATION (TAS) [T-8] in the same system.
4. If the Night station is set for CALL FORWARDING - ALL CALLS [C-5], incoming ISDN network calls terminated to that station are forwarded to the designated station.
5. Programmed Night stations can use CALL HOLD [C-6], CALL TRANSFER - ATTENDANT [C-10], CALL TRANSFER - ALL CALLS [C-11] and THREE-WAY CALLING [T-2], provided these features are programmed into its CLASS OF SERVICE - INDIVIDUAL [C-15].
6. The Night station is assigned to each trunk, and the same NIGHT CONNECTION - FIXED - PRI can be assigned to several trunks.
7. When the NIGHT CONNECTION - FLEXIBLE - PRI [N-21] feature is provided, assignments can be made by the ATTENDANT CONSOLE [A-3] or Night station using the CALL FORWARDING - ALL CALLS [C-5] feature.
8. CALL FORWARDING - BUSY [C-2], CALL FORWARDING - DON'T ANSWER [C-3]: A Night user can activate the CALL FORWARDING - BUSY [C-2], CALL FORWARDING - DON'T ANSWER [C-3] feature if available to the user. A call ringing at an idle Night station rings for 30 seconds before forwarding. A call forwarded from a busy Night station rings normally at the designated station. A station-to-Attendant call cannot be forwarded to a Night station. An incoming trunk call forwarded from an idle unanswered Night station alerts the designated station with distinctive ringing (system option on ringing type is available).
9. CALL TRANSFER - ALL CALLS [C-11]: When the Night Connection feature is active, the CALL TRANSFER - ALL CALLS [C-11] feature is always enabled, regardless of the class of service of the station assigned to NIGHT CONNECTION - FIXED - PRI.
10. STATION MESSAGE DETAIL RECORDING (SMDR) [S-10]: The SMDR records contain night service calls. The SMDR call record includes the telephone number answering the call.

Service Conditions (cont'd)

11. A fully restricted station cannot be assigned as a Night station.

12. Incoming Restricted Line: When NIGHT CONNECTION - FIXED - PRI or FLEXIBLE - PRI [N-21] is active, the line Class of Service restrictions can be automatically changed when the system is in the Night mode of operation. This allows a station normally restricted during the day to receive incoming calls.

13. Arrangements are provided to route calls normally directed to the Attendant, to a preselected station line within the system when Night service is activated. In addition, incoming calls from specific non-Direct Inward Dialing (DID) exchange network trunks can be arranged to route to specific station lines. The routings are provided on a fixed basis via the MAINTENANCE ADMINISTRATION TERMINAL (MAT) [M-18]. TRUNK ANSWER FROM ANY STATION (TAS) [T-8], when available, can also be provided for night calls not assigned to Night stations. Assignments can be made per incoming trunk.

14. When CALL FORWARDING - ALL CALLS - PRI [C-95] or CALL FORWARDING - BUSY [C-2], CALL FORWARDING - DON'T ANSWER [C-3] is provided and the station is busy, Call Forwarding is implemented on the station line. If the station is in a STATION HUNTING - CIRCULAR [S-7], STATION HUNTING - SECRETARIAL [S-8], or STATION HUNTING - TERMINAL [S-9], Call Forwarding takes place prior to the Station Hunting feature or UCD [U-1].

15. When the system is in the Night mode of operation, incoming calls are directed in the following order:
    a.) NIGHT CONNECTION - FLEXIBLE - PRI [N-21]
    b.) NIGHT CONNECTION - FIXED - PRI [N-20]
    c.) TRUNK ANSWER FROM ANY STATION (TAS) [T-8]

N-21 Night Connection - Flexible - PRI

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.

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.

Service Conditions

1. The NIGHT CONNECTION - FLEXIBLE station can be programmed from either the ATTENDANT CONSOLE [A-3] or the NIGHT CONNECTION - FIXED station.

2. Arrangements are provided to route calls, normally directed to the Attendant, to a preselected station line within the system when Night Service is activated. In addition, incoming calls from specific non-DID exchange network trunks can be arranged to route to the specific station line. The routings can be assigned on a flexible basis by the Attendant or Night station by use of the Call Forwarding feature. These remain in effect until changed. For NIGHT CONNECTION - FLEXIBLE - PRI to function, a telephone number of the night station must be assigned to the trunk via the MAINTENANCE ADMINISTRATION TERMINAL (MAT) [M-18]. In the event of a power failure, the assignments are not lost.

N-22　　　　　Non-Delay Operation - PRI

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.

Operating Procedure

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.

Service Conditions

1. The Attendant can drop out of the connection either before or after the called station answers.
2. There is no AUTOMATIC RECALL [A-8] for station-to-trunk and trunk-to-trunk calls when the called party does not answer.
3. If the station is restricted, the Attendant receives reorder tone when attempting to establish a Central Office connection.
4. When the PASSING DIAL TONE [P-2] feature is provided, once the Attendant has accessed an outgoing trunk, the call can be released from the ATTENDANT CONSOLE [A-3] and the user is allowed to complete dialing.
5. This feature allows the Attendant to place an outgoing call for a user who reached the Attendant via a dial 0 call, without requiring the user to hang up.

N-29   Night Connection Outside - System - PRI

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 NEAX2400 IMX via ISDN network, when Night mode has been set.

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 data.

Service Conditions

1. The priority of this service is higher than TRUNK ANSWER FROM ANY STATION (TAS) [T-8] service, but lower than DIRECT-IN TERMINATION (DIT) [T-7] and NIGHT CONNECTION - FIXED [N-1] services. Therefore, if DIT [D-7] and NIGHT CONNECTION - FIXED [N-1] are set, this service is not activated.
2. If the terminating side is a ring down trunk, a release signal cannot be sent out after communication is established; so the trunk to which the call is transferred must be capable of sending back a release signal.
3. This service cannot be used in combination with CONSECUTIVE SPEED CALLING - SYSTEM [C-62] and SPEED CALLING - OVERRIDE - SYSTEM [S-61] service.
4. The call transfer destination can be fixed on a tenant basis.
5. Whether to activate this service or not can be determined in system data on a tenant basis.
6. The call transfer destination is assigned using Speed Calling numbers.
7. Speed Calling numbers assigned as the transfer destination can be used for SPEED CALLING - SYSTEM [S-3] feature.
8. When night transfer occurs, incoming/outgoing routes will be restricted.

N-31 Nailed-Down Connection - PRI

General Description

This service feature provides the logical equivalence of a hardware connection between ISDN trunk and a 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).

Operating Procedure

No manual operation is required.

Service Conditions

1. The following connections are supported by this service:
    ISDN trunk $\longrightarrow$ ISDN trunk
    ISDN trunk $\longrightarrow$ CCIS trunk
    ISDN trunk $\longrightarrow$ Non-ISDN trunk
2. When a call terminates to B channel of an ISDN trunk engaged in NAILED DOWN CONNECTION, that B channel is treated as busy.
3. When establishing NAILED DOWN CONNECTION, the target station/ trunk needs to be idle.
4. When NAILED DOWN CONNECTION is assigned to a station/trunk already engaged in a call, NAILED DOWN CONNECTION is established after the call in progress is forcibly disconnected. In this case, RESTART message is sent to the called office.
5. If the system/package is reinitialized while NAILED DOWN CONNECTION is established, NAILED DOWN CONNECTION is reestablished after system/package reinitialization.
6. NAILED DOWN CONNECTION cannot be established for the following types of hardware:

    Attendant Console
    Register/sender trunk
    Conference trunk for THREE-WAY CALLING [T-2]
    AMP pool trunk
7. The following services supersede NAILED DOWN CONNECTION - PRI service. Therefore, the stations engaged in NAILED DOWN CONNECTION should be restricted from these services.

CALL FORWARDING - ALL CALLS	[C-5]
PRIVACY RELEASE	[P-18]
STATION HUNTING - CIRCULAR	[S-7]
STATION HUNTING - SECRETARIAL	[S-8]
STATION HUNTING - TERMINAL	[S-9]
Services to be activated when the station is busy	

O-24   Outgoing Trunk Queuing - PRI

General Description

This feature allows a 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 are called back on a first-come, first-served basis.

Operating Procedure

1. Dial the ISDN trunk access code; receive busy tone.
2. Press the switchhook; receive special dial tone.
3. Dial the OUTGOING TRUNK QUEUING access code and receive service set tone.
4. Replace the handset.
   When an ISDN trunk becomes available, a station in the queue is called back.

To cancel
1. Lift the handset; receive dial tone.
2. Dial the OUTGOING TRUNK QUEUING cancel code; receive service set tone.

Service Conditions

1. Once an OUTGOING TRUNK becomes available, the user's station rings for up to 30 seconds. If not answered within that time, the station automatically drops from the queue.
2. When this feature is used in conjunction with SPEED CALLING - SYSTEM [S-3], or LEAST COST ROUTING - 3/6-DIGIT [L-5] where a sender is involved, the sender automatically dials out the called subscriber number when the handset is lifted.
3. If the user wishes to remove himself from the queue prior to being rung, the specified cancellation code must be dialed.
4. Individual stations can initiate only one outgoing trunk queue at a time. Subsequent attempts result in a reorder tone.
5. Stations may be restricted from using this feature in CLASS OF SERVICE - INDIVIDUAL [C-15].
6. This feature is not available for an ATTENDANT CONSOLE [A-3].
7. The maximum number of simultaneous OUTGOING TRUNK QUEUES per system is 256.
8. CALL PICKUP - GROUP [C-7] cannot be used to answer a call directed to another station using the OUTGOING TRUNK QUEUING feature.
9. OUTGOING TRUNK QUEUING is common to all Central Office type groups (DDD, etc.) in the system.
10. OUTGOING TRUNK QUEUING call back returns to the originating station, not the CALL FORWARDING - BUSY LINE [C-2], CALL FORWARDING - DON'T ANSWER [C-3], CALL FORWARDING - ALL CALLS [C-5] terminating station.

Service Conditions (cont'd)

11. OUTGOING TRUNK QUEUING is denied to a station line when the CALL BACK [C-1] or CALL HOLD [C-6] feature is already activated.

12. CALL FORWARDING - INTERCEPT/ANNOUNCEMENT - ATTENDANT [A-1] cannot be used for a call to a station that has activated OUTGOING TRUNK QUEUING.

13. If a user goes on-hook within 6 to 8 seconds after encountering all trunks busy, OUTGOING TRUNK QUEUING can be set automatically to the station.

14. The station is set for OUTGOING TRUNK QUEUING for a maximum of 30 seconds to 1 hour. This time is adjustable through the system database. After this time elapses, OUTGOING TRUNK QUEUING is cancelled automatically.

15. ACCOUNT CODE [A-18] and FORCED ACCOUNT CODE [F-7] information can be recorded on STATION MESSAGE DETAIL RECORDING (SMDR) [S-10] when used in conjunction with OUTGOING TRUNK QUEUING.

Interactions

The stations setting the OUTGOING TRUNK QUEUING - PRI cannot activate the following services.

CALL BACK	[C-1]
CALL WAITING - ORIGINATING	[C-31]
CALL WAITING - TERMINATING	[C-12]
CALL FORWARDING - INTERCEPT/ANNOUNCEMENT - ATTENDANT	[C-75]

O-26   Outgoing Trunk Queuing - Deluxe - PRI

General Description

This feature allows users, according to their Service Feature Class (SFC), to queue for an outgoing ISDN trunk when all call routes are busy. This feature allows specific routes to be queued at a timed interval, depending on the user's SFC. If on-hook queuing is used, the NEAX2400 IMX sends a ringback tone to the station when a trunk becomes available. On- or off-hook queuing can be assigned to stations within a tandem network, as well as stations at main and satellite PBXs.

The NEAX2400 IMX provides an off-hook queuing capability to Attendants and an optional priority queuing feature.

Operating Procedure

On-hook Queuing
1. Dial the ISDN trunk access code; receive busy tone.
2. Press the switchhook, receive special dial tone.
3. Dial the OUTGOING TRUNK QUEUING access code; receive service set tone.
4. To cancel, lift the handset and dial the OUTGOING TRUNK QUEUING cancel code; receive service set tone, and replace the handset.

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

Off-hook Queuing
1. Dial the ISDN trunk access code; receive service set tone when no outgoing ISDN trunks are available. The service set tone indicates that the calling station has been placed in an off- hook queue.
2. To cancel off-hook queuing, replace the handset (on-hook).

Service Conditions
1. Service Feature Index (SFI) 63 must be assigned to operate this feature.
2. If a station is placed in a timed outgoing queue after the system timer is exceeded, any available route in the routing pattern (OPR) assigned can be accessed.
3. Selection of the timed routes to be queued is assigned in the AOPR command and is determined by the OVFT parameter (OF Timed Queue, 1=immediate access).
4. Either on-hook or automatic queue can be used in conjunction with this feature.

Service Conditions (cont'd)

5. Only one type of queuing can be designated for a local station, OPX station, Attendant Console, remote access station, or tie trunk. Queuing can be flexibly assigned throughout a network, as shown in the following table:

Type \ From	Local Station	OPX Station	Attendant Console	Remote Access Trunk	Tie Trunk
1	OHQ	OHQ	OHQ	OHQ	OHQ
2	RBQ	RBQ	OHQ/P	OHQ/P	--- **(Note)**
3	OHQ	OHQ	OHQ/P	OHQ/P	OHQ/P
4	RBQ	OHQ/P	OHQ/P	OHQ/P	OHQ/P
5	RBQ	---	---	---	---

OHQ: Off-Hook Queuing
RBQ: Ringback Queuing
OHQ/P: Off-Hook Queuing with Priority

Note: *RBQ is not provided for a tie trunk.*

6. There are a maximum of thirty-two slots available per local processor for either on- or off-hook queuing.

7. The connecting patterns supported by this service are as follows:

Calling Party \ Outgoing Trunk	General Trunk	CCIS Trunk	ISDN Trunk
Station	Available in current service	Available in current service	Available in ISDN service
Attendant Console	Not available	-	-
Data Adapter/Data Module	Not available	Not available	Not available

Interactions

The stations setting the OUTGOING TRUNK QUEUING - DELUXE - PRI cannot activate the following services.

CALL BACK	[C-1]
CALL WAITING - TERMINATING	[C-12]
CALL WAITING - ORIGINATING	[C-31]
CALL FORWARDING - INTERCEPT/ANNOUNCEMENT - ATTENDANT	[C-75]

O-28   Off-Hook Queuing - PRI
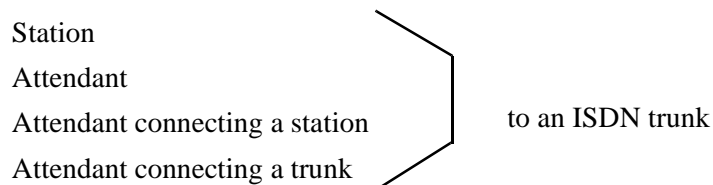
General Description

This service allows a 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.

Operating Procedure

1. Dial the OFF-HOOK QUEUING access code plus the number for ISDN trunks. When no trunks are available, the caller 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 slot is cleared.

Service Conditions

1. This feature is usually used in conjunction with LEAST COST ROUTING - 3/6-DIGIT - PRI [L-31].
2. Maximum 256 stations per system can use OFF-HOOK QUEUING simultaneously.
3. The queue slots are shared by OFF-HOOK QUEUING [O-7], OUTGOING TRUNK QUEUING [O-2], PRI [O-24], INTER-OFFICE OFF-HOOK QUEUING [I-11], and - PRI [I-36].
4. If no queue slots are available, the user receives trunk busy signal.
5. Route class of the LCR can give the choice of the OFF-HOOK QUEUING.
6. CLASS OF SERVICE - INDIVIDUAL [C-15] is applied for each station. This class of service is different from the CLASS OF SERVICE for OUTGOING TRUNK QUEUING - PRI [O-24]. Both services are mutually exclusive.
7. When automatic OUTGOING TRUNK QUEUING [O-2] is in service (system basis), OFF-HOOK QUEUING service is not effective.
8. ACCOUNT CODE [A-18] and FORCED ACCOUNT CODE [F-7] information can be recorded on STATION MESSAGE DETAIL RECORDING (SMDR) [S-10], when used in conjunction with OFF-HOOK QUEUING - PRI.
9. The following connection patterns are available for this feature:

             Station

             Attendant

             Attendant connecting a station   to an ISDN trunk

             Attendant connecting a trunk

O-30   Outgoing Trunk Queuing - Attendant - PRI

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.

Operating Procedure

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

Service Conditions

1.   This feature is used with LEAST COST ROUTING - 3/6-DIGIT - PRI [L-31].
2.   Maximum 256 of stations or ATTENDANT CONSOLES [A-3] can use OFF-HOOK QUEUING [O-7] simultaneously per system.
3.   The queue slots are shared by OFF-HOOK QUEUING [O-7], - PRI [O-28], OUTGOING TRUNK QUEUING [O-2], - PRI [O-24], INTER- OFFICE OFF-HOOK QUEUING [I-11] and - PRI [I-36].
4.   If no queue slots are available, the ATTENDANT CONSOLE [A-3] receives busy tone.
5.   CLASS OF SERVICE - INDIVIDUAL [C-15] is applied to each ATTENDANT CONSOLE [A-3].
6.   OFF-HOOK QUEUING [O-7] is used for this service feature.
7.   The following connection patterns are available for this feature:

Station

Attendant

Attendant connecting a station   to an ISDN trunk

Attendant connecting a trunk
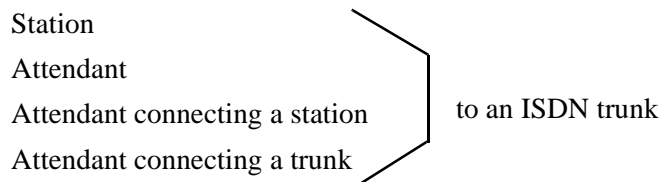
O-32 Overflow - UCD - PRI

General Description

1. When a call from an ISDN trunk has terminated to UNIFORM CALL DISTRIBUTION (UCD) [U-1] Group A and an 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.
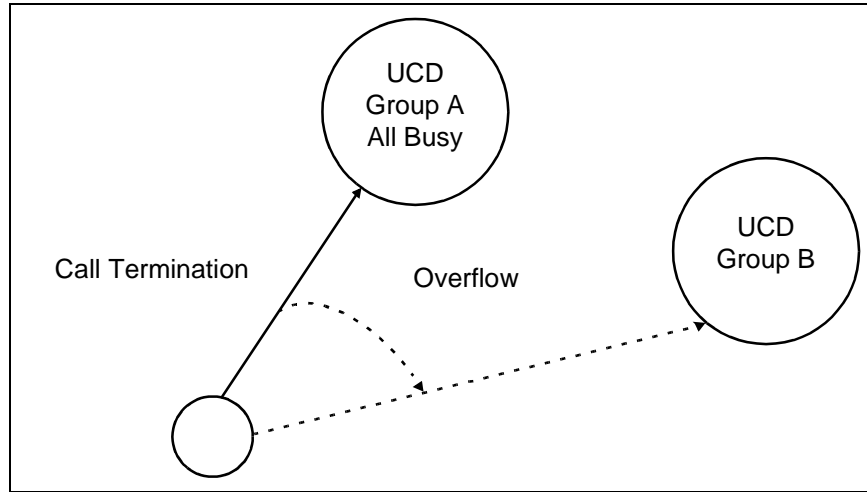
Overflow UCD—Call Transferred to Group B

2. In case all of the stations are busy in Group B, to which the call has been transferred by the OVERFLOW-UCD service, the call is registered in the queue in UCD [U-1] Group A.
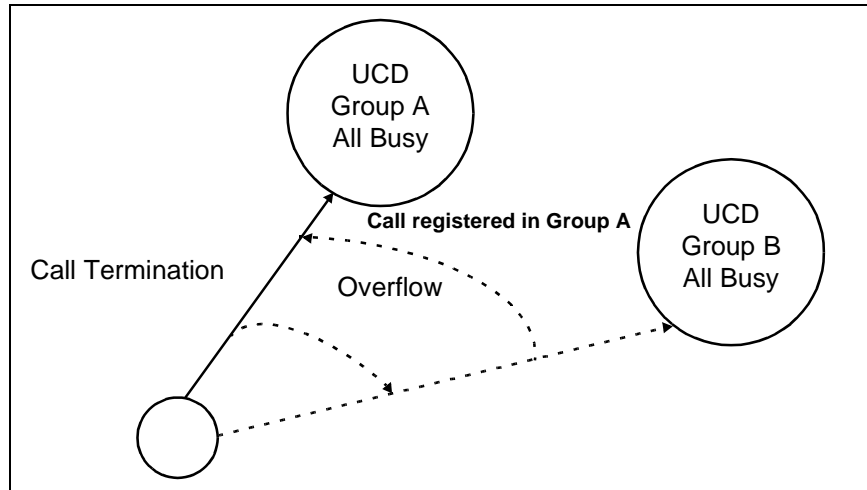
Overflow UCD—Call Registered in Queue in Group A

Operating Procedure

No manual operation is required.

Service Conditions

1. An overflow group must be a UCD [U-1] group.
2. One overflow group can be provided for one UCD [U-1] group.
3. Overflow is performed only once.
4. An overflow group cannot be registered into a queue.
5. A NEAX2400 IMX system can be provided with one overflow group.

P-37 Peg Count - PRI

General Description

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

Operating Procedure

Refer to System Operation and Maintenance Manual.

Service Conditions

1. All information required for this feature is registered at the MAT [M-18].
2. The following information is obtainable.
   a.) Terminal Traffic
      • Traffic measurement of each port
   b.) Route Traffic
      • Traffic measurement of each trunk route
   c.) Station Peg Count:
      • Number of call originations attempted
      • Number of station-to-station or station-to-ATTENDANT CONSOLE [A-3] calls attempted
      • Number of station-to-trunk calls attempted
      • Number of call originations abandoned
      • Number of trunk-to-station calls terminated
      • Number of total calls terminated to station
      • Number of calls unanswered within a predetermined time
      • Number of calls answered
      • Number of calls unanswered
      • Number of calls hearing busy tone and forwarded to the ATTENDANT CONSOLE [A-3]
   d.) Attendant Peg Count:
      • Number of incoming calls per INCOMING CALL IDENTIFICATION [I-2] lamp
      • Number of calls answered per INCOMING CALL IDENTIFICATION [I-2] busy
   e.) Route Peg Count:
      • Number of times trunk route seizure attempted
      • Number of times all trunks busy reached
      • Number of times trunk seized
      • Number of calls terminated to trunk route
      • Number of incoming calls that seized register
      • Number of incoming calls directed to ATTENDANT CONSOLE [A-3]
      • Number of incoming calls directed to station
      • Number of incoming calls directed to tandem connection
      • Number of incoming calls abandoned
3. The above information can be registered and cancelled as required.
4. The measurement information printout cycle can be any period of time ranging from 30 minutes to 120 minutes (in 10-minute increments), as required.

Service Conditions (cont'd)

5. Traffic measurement duration time is designated for more than 1 hour. If the traffic measurement duration time is not designated, the measurement is performed indefinitely until a stop command is entered on the MAT [M-18].

	IMX
Station Peg Count	TN = 1-255
Route Peg Count	RT = 1-255
ATT Peg Count - Incoming	TN = 1-255
ATT Peg Count - Answer	ATT = 1-16

P-38   Primary Call Restriction - PRI

General Description

This feature allows the NEAX2400 IMX 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.

Operating Procedure

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

Service Conditions

1. A maximum of 50 restricted code numbers is available per tenant.
2. The maximum length of a restricted code is 24 digits.
3. Any group of digits can be used for restriction within a maximum of 24 digits.
   Example: XXX-555-1212   (X ... irrelevant)
4. The restriction code can specify the PRSC to which the restriction applies.

Interactions

The Restriction checking order is as follows:
1. Route Restriction
2. Facility Restriction
3. Priority Restriction (PRSC)
4. Toll Restriction
5. Area Code Restriction
6. Primary Call Restriction

P-39   PRI Trunk to Tie Line Connection With Pad Control

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.

Operating Procedure

No manual operation is required.

Service Conditions

1.   PAD CONTROL (2dB) is not switched in for the following connections:
     a.) Tie line to CO trunk/Tie/CCSA
     b.) CCSA to CO trunk/Tie/CCSA
     c.) CO trunk to Tie/CCSA
     d.) THREE-WAY CALLING [T-2] used in conjunction with TRUNK-TO-TRUNK CONNECTION [T-10].

P-47   Paging Transfer - PRI

General Description

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

Operating Procedure

When a user is engaged in a call from the ISDN network
1. User presses the switchhook; receives special dial tone.
2. User dials the Paging access code; receives continuous ringback tone for approximately one second.
3. User pages the desired party.

Two methods that the paged party 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 user replaces the handset after the page. By dialing the Paging Answer access code, the paged party is directly connected to the party on hold.

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

Service Conditions

1. Paging trunks can be assigned a maximum of six routes.
2. Either one of the two answering methods can be selected as per the related system data. The table below shows the related system data assignment.

No.	Sys.	Index	Bit	Bit Content	Answering System
1	1	73	0, 1	00	No Answering
				01	Non-Delay
				11	Paging Transfer Supervision

3. When the paging route has been accessed, but the paging call remains unanswered for a predetermined time, the paging service is automatically cleared. The timer for the paging unanswer is set by the related system data.

P-49 PRI Failsafe Routing

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).

Operating Procedure

No manual operation is required.

Service Conditions

1. This service is not available for the following call origination.

    a.) Tandem connection from MFC trunk

    b.) Call origination by Data Adapter/Data Module.

2. When there is no alternative route, the call is treated as all routes busy.

3. The following services are not available when all routes are busy.

INTER-OFFICE OFF-HOOK QUEUING	[I-11]
OFF-HOOK QUEUING	[O-7]
OUTGOING TRUNK BUSY ANNOUNCEMENTS	[O-21]
OUTGOING TRUNK QUEUING	[O-2]
OUTGOING TRUNK QUEUING - D^{term}	[O-2D]
OUTGOING TRUNK QUEUING - ATTENDANT	[O-16]
ROUTE RESTRICTION - ANNOUNCEMENT	[R-27]

4. Authorization code cannot be dialed in case of tandem connection from ISDN trunk.

R-35   Restriction From Outgoing Calls - PRI

General Description

This feature automatically denies preselected station lines within the NEAX2400 IMX the ability to place outgoing ISDN calls without Attendant assistance.

Operating Procedure

Operation is fully automatic so that restricted stations receive reorder tone upon attempting to place a restricted call.

Service Conditions

1. This feature is programmable via system data programming from the MAINTENANCE ADMINISTRATION TERMINAL (MAT) [M-18].

2. Non-restricted stations within the system can activate CALL TRANSFER - ALL CALLS [C-11] to outgoing calls to stations restricted by this feature.

3. Only the Attendant can permit restricted stations to place outgoing calls by NON-DELAY OPERATION [N-3].

4. Refer to CLASS OF SERVICE - INDIVIDUAL [C-15] and DAY/NIGHT CLASS OF SERVICE [D-15] for further details.

5. Station line access to a given trunk group is controlled by assigning a Route Restriction Class (RSC) to each line. There can be a maximum of 15 different RSCs (RSC1 - 15) per system, each of which can be programmed to restrict an assigned station from 0 or more trunk group (maximum 255 trunk groups).

6. Two outgoing trunk group restriction tables are provided per system. The Direct Dial Access table is indexed when a user dials the trunk group access code, and the ATTENDANT CONSOLE [A-3] table is indexed on Attendant completed calls. The restriction options per RSC can differ per table, allowing the Attendant completion of outgoing calls for restricted stations.

7. CALL TRANSFER - ALL CALLS [C-11]: If a restricted user calls another station, the called station cannot use this feature to connect the calling station to a trunk group to which the restricted station is denied dial access. If transfer is attempted, the controlling station is rung back.

8. TIE LINE ACCESS [T-3]: If the user accesses a tie trunk to a distant PBX, access to outside exchanges can be controlled only by the distant PBX.

9. THREE-WAY CALLING [T-2]: If a restricted user calls another station, the called station cannot add-on an outside exchange party via a trunk group in which the restricted station is denied dial access. An attempt to add-on (SHF) results in a split connection.

10. Night Service: Restrictions can be changed for a given station when the system is switched to the Night mode of operation.

S-82 Speed Calling - System - PRI

General Description

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

Operating Procedure

To operate
1. Lift handset; receive dial tone.
2. Dial the Speed Calling access code (maximum three digits).
3. Dial the abbreviated call code (maximum four digits). The call is completed.

Service Conditions

1. Speed Calling codes programmed into system data are accessible by all stations with a CLASS OF SERVICE - INDIVIDUAL [C-15] permitting Speed Calling.
2. Each abbreviated call code can store a maximum of 24 digits, including access codes.
3. The maximum number of Speed Calling numbers that can be stored in the system is 1000.
4. Speed Calling numbers are programmed via system data entry from the MAINTENANCE ADMINISTRATION TERMINAL (MAT) [M-18].
5. Stations can be denied access to Speed Calling via CLASS OF SERVICE - INDIVIDUAL [C-15] assignment in system data. Speed Calling can also be allowed or denied on either a system or tenant-wide basis.
6. TOLL DENIAL/TOLL DIVERSION [T-6] and TOLL RESTRICTION - 3/6- DIGIT [T-7] may or may not be applied to Speed Calling, as desired.
7. LEAST COST ROUTING - 3/6-DIGIT [L-5] can be provided via Speed Calling access.

S-82D   Speed Calling - System - D^{term} - PRI

General Description

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

Operating Procedure

To operate (D^{term})

1. Press the SPEED CALLING - SYSTEM (SPEED - SYS) key; receive dial tone.
2. Dial the abbreviated call code (maximum of four digits). The LCD displays:

```
                                        XXXX
              (Time Display)
```

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 SPEED CALLING - ONE TOUCH key

1. Press a feature key, then a SPEED CALLING - ONE TOUCH key, the LCD displays previously stored digits.
2. Dial the SPEED CALLING - SYSTEM [S-3] access code and the abbreviated call code.
3. Press a feature key. The LCD displays:

```
       SPEED   SET
              (Time Display)
```

4. To access, press the SPEED CALLING - ONE TOUCH key.

    The abbreviated calling code can be stored along with the access code in the SPEED CALLING - ONE TOUCH [S-26D] key. Add a pause (RECALL key) between access code and calling code.

Service Conditions

1. SPEED CALLING - SYSTEM [S-3] codes programmed into system data are accessible to all stations with a CLASS OF SERVICE - INDIVIDUAL [C-15] permitting Speed Calling.
2. Each abbreviated call code can store a maximum of 24 digits, including access codes.
3. The standard number of Speed Calling numbers stored in the system is 1000.
4. Speed Calling numbers are programmed via system data from the MAINTENANCE ADMINISTRATION TERMINAL (MAT) [M-18].
5. Stations can be denied access to Speed Calling via CLASS OF SERVICE - INDIVIDUAL [C-15] assignment in system data. SPEED CALLING - SYSTEM [S-3] can also be allowed or denied on either a system- or tenant-wide basis.
6. TOLL DENIAL/TOLL DIVERSION - PRI [T-40] and TOLL RESTRICTION - 3/6-DIGIT - PRI [T-41] may or may not be applied to Speed Calling, depending on preference.
7. LEAST COST ROUTING - 3/6-DIGIT - PRI [L-31] can be provided via Speed Calling access.

S-83   Station Message Detail Recording - PRI

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 telephone number
- Called telephone number (24 digits maximum)
- Route Number
- Start of Call Time
- Disconnect Time
- Year, Month and Date
- Attendant Handled
- ACCOUNT CODE [A-18] (16 digits maximum)
- FORCED ACCOUNT CODE [F-7]
- AUTHORIZATION CODE [A-20] (16 digits maximum)

Additional FCCS format

- Called Party Type (Attendant Console/Station)
- Call Start/Call End Time (Millisecond)
- Call Metering
- FPC/User Group/Telephone Number (Calling Party)
- FPC/User Group/Telephone Number (Called Party)
- FPC of the node providing the route for call
- Logical Route Number
- FPC of the node providing the first-choice route
- First-choice Logical Route Number

Operating Procedure

No manual operation is required. Call record outputs are produced automatically.

Service Conditions

1. STATION MESSAGE DETAIL RECORDING (SMDR) information facilitates analysis of PRI trunk traffic, and can be readily applied for cost allocation or billing purposes.
2. SMDR can be programmed to record either all outgoing calls or only toll calls, depending upon user requirements.
3. Both incomplete and abandoned calls are discarded by the SMDR.
4. When ROUTE ADVANCE [R-6] or LEAST COST ROUTING - 3/6-DIGIT - PRI [L-31] is provided with the system, SMDR records the route number selected.
5. The maximum number of digits dialed cannot exceed 24.
6. When customer-owned computer equipment is connected via RS232C interface, SMDR information is transmitted directly to the computer as each call record is completed.
7. If the outgoing call is directed to a trunk that cannot give answer supervision from Central Office, the call time begins a specific number of seconds (set in system data) after the last digit is dialed.

Service Conditions (cont'd)

8. If the distance between the system and the processing computer exceeds 50 feet (15 meters), an asynchronous-type modem should be used.

9. RS232C Interface specifications:

Synchronization:	Asynchronous
Data Speed:	9600 bps max.
Code:	ASCII 7-bit + parity bit
Maximum Distance:	50 ft. (15m) without modem

10. NEAX/ASTRA CCS [N-11], NEAX/ASTRA CCS - PRI [N-23] feature provides for collection, storage, analysis and processing of SMDR information on premises. Detailed and extensive management reports are made readily available to the user.

11. The figure at the end of this feature illustrates a typical SMDR/ASTRA arrangement.

12. The NEAX2400 IMX can accommodate up to 7 active ports or 4 redundant ports. Additional hardware is required.

13. Supervision on the status of the external RS232C terminal is not performed.

14. SMDR for the ATTENDANT CONSOLE [A-3] starts at the Attendant's answer and is completed by the Attendant's release.

15. FORCED ACCOUNT CODE [F-7] can be recorded on SMDR, for INWATS and CO incoming calls, when used in conjunction with the REMOTE ACCESS TO SYSTEM [R-2] service feature.

16. FORCED ACCOUNT CODE [F-7] cannot be registered on SMDR if the incoming REMOTE ACCESS TO SYSTEM [R-2] calls are terminated to stations via night service or DID.

17. For REMOTE ACCESS TO SYSTEM [R-2] tandem connections, the FORCED ACCOUNT CODE [F-7] is registered for outgoing trunks only.

18. Data rate output is 30, 600, 1200, 2400, 4800, 9600 bps asynchronous ASCII (switch-select).

19. A maximum of 28,000 simultaneous calls can be stored in the system memory (active calls). When a call is completed, the record is sent to the output device and is removed from memory.

20. If an overflow of active calls occurs, calls are allowed to complete and are not recorded.

21. CALL TRANSFER - ALL CALLS [C-11]: The first or last station (system option) on the call is the number recorded in the called number field. Also available as a system option is the provision of a separate call record for each station.

22. CALL FORWARDING - INTERCEPT/ANNOUNCEMENT - ATTENDANT [C-75]: The called telephone number is recorded for Attendant-assisted incoming calls.

23. ATTENDANT-CONTROLLED CONFERENCE [A-2]: If the Attendant adds a trunk to the conference, the Attendant conference line terminal is recorded.

24. LEAST COST ROUTING - 3/6-DIGIT - PRI [L-31]: The calling party can dial an SMDR account code before the LCR access code. The called number is recorded (as modified for sending).

25. If an ACCOUNT CODE [A-18] is dialed, the maximum digits of the called number is 22.

26. CALL FORWARDING - BUSY LINE [C-2], CALL FORWARDING - DON'T ANSWER [C-3], CALL FORWARDING - ALL CALLS [C-5]: The forwarded to station is the number recorded in the called number field.

27. CALL PICKUP - GROUP [C-7]: The station picking up the call is the number recorded in the called number field.

28. CENTRALIZED ATTENDANT SERVICE (CAS) [C-20]: The SMDR record is provided for calls extended outward by a CAS Attendant.

Service Conditions (cont'd)

29. DIRECT INWARD DIALING (DID) [D-8] trunk calls: If the call is to the Attendant, the Attendant can input an account code before extending the call.

30. INDIVIDUAL TRUNK ACCESS [I-4]: The Attendant cannot dial in an SMDR account code before using direct trunk selection.

31. Incoming tie trunk calls: If an incoming call to the Attendant is extended, the Attendant can input an account code.

32. CALL FORWARDING - INTERCEPT/ANNOUNCEMENT [C-25]: When an incoming trunk call receives intercept treatment routing it to the Attendant, SMDR functions as if the Attendant was dialed directly.

33. Night service: When the system is in the night service mode, SMDR records calls routed to the Night station (answering station).

34. CALL-BY-CALL SERVICE SELECTION - PRI [C-105]: Only Trunk Provisioning service is available.

35. OUTGOING TRUNK QUEUING [O-2]: The SMDR records the dialed account code. When the caller is called back with a trunk, the account code does not need to be reentered.

36. REMOTE ACCESS TO SYSTEM [R-2]: If the call is terminated in the PBX or tandeming through the PBX, the remote access trunk and route numbers are recorded. A FORCED ACCOUNT CODE [F-7] can be requested upon entry to the network via remote access. If a FORCED ACCOUNT CODE [F-7] is used, it can be recorded by SMDR.

37. SERIAL CALL [S-15]: The duration of the total call is recorded on the last station call.

38. STATION HUNTING - CIRCULAR [S-7], STATION HUNTING - SECRETARIAL [S-8], STATION HUNTING - TERMINAL [S-9]: The hunted-to station is recorded in the called number field.

39. TANDEM SWITCHING OF TIE TRUNKS 2/4 WIRE [T-1] calls: The calling number is the incoming trunk route plus trunk number; the called number is the number dialed.

40. CALL WAITING - TERMINATING [C-12], CALL WAITING - ORIGINATING [C-31]: The called number is recorded and SMDR recording of call duration begins when the station answers.

41. UNIFORM CALL DISTRIBUTION (UCD) [U-1]: The calling number is the incoming trunk route plus the trunk number. If the call is to a PBX station, the station answering the number is recorded as the dialed number.

42. On an incoming trunk call to the Attendant, the Attendant call record starts upon answer and completes when the Attendant releases. A station call record starts when the Attendant releases and completes when the station goes on-hook. If required, a station record will not be generated if the station does not answer.

43. A system option is available to allow or restrict call completion in the case where a failure occurs in transmitting SMDR data from the Local Processor to the I/O port.

44. Additional hardware is required to implement this feature.

Service Conditions (cont'd)

The following figure illustrates a typical NEAX/ASTRA connection.
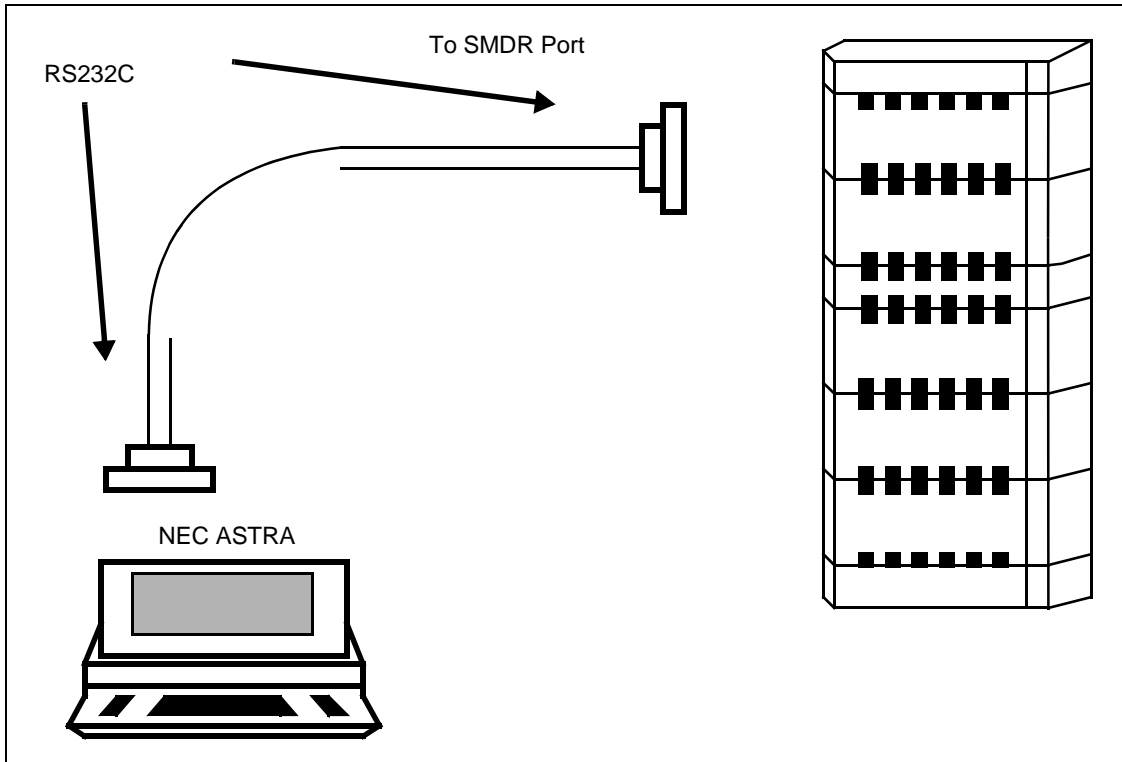
NEAX/ASTRA Computer Connection

S-84 Speed Calling - Station - PRI

General Description

This feature allows a user to dial frequently called ISDN network numbers using fewer digits (abbreviated call codes) than normally required. With this feature, a user can establish personal abbreviated codes.

Operating Procedure

1. Lift handset or press SPEAKER key; receive dial tone.
2. Dial the SPEED CALLING access code (one or two digits).
3. Dial the abbreviated call code (one or two digits); call is completed.

To operate from a D^{term}

1. Press Redial key; receive dial tone. The LCD displays:

> **LNR[#] / SPEED [_ _]**
> **(Time Display)**

2. Press the desired call code; call is completed.

Service Conditions

1. SPEED CALLING - STATION codes are programmed into RAM per Module Group.
2. Each abbreviated call code can store a maximum of 24 digits, including access codes.
3. A maximum of 100 stations per Module Group can be equipped with SPEED CALLING - STATION.
4. 100 memory blocks per Module Group are assigned for Speed Calling. A maximum of 10 numbers can be stored in each memory block.
5. One station can be assigned 10 memory blocks for Speed Calling; therefore, it can be programmed for 100 numbers maximum.
6. TOLL DENIAL/TOLL DIVERSION [T-6] and TOLL RESTRICTION - 3/6-DIGIT [T-7] may or may not be applied to Speed Calling, as desired.
7. LEAST COST ROUTING - 3/6-DIGIT [L-5] can be provided via Speed Calling access.
8. Each individual station equipped with this feature programs their own personal Speed Calling numbers.
9. If SPEED CALLING - STATION - PRI is assigned to a Module Group, SPEED CALLING - GROUP - PRI [S-85] shares the same memory tables; so careful consideration should be taken when programming.
10. SPEED CALLING-STATION data is retained in memory, even if the system is reinitialized or in the event of a power failure, by means of a hard disk for a system.
11. SPEED CALLING - STATION - PRI data remains even if system is reinitialized.
12. Stations can be added or removed from a group only via the MAINTENANCE ADMINISTRATION TERMINAL (MAT) [M-18].
13. A user cannot dial the called party sub-address as abbreviated codes.

S-85   Speed Calling - Group - PRI

General Description

This feature allows a user to share a group of common ISDN network Speed Calling numbers with other members in the group.

Operating Procedure

1.   Lift handset; receive dial tone.
2.   Dial the Speed Calling access code (one or two digits).
3.   Dial the abbreviated call code (one or two digits).
4.   Call is completed.

To operate from a D^{term}

1.   Press the Redial key; receive dial tone. The LCD displays:

> **LNR[#] / SPEED [_ _]**
> **(Time Display)**

2.   Press the desired call code; call is completed.

Service Conditions

1.   A maximum of 100 memory blocks per Module Group can be equipped for SPEED CALLING - GROUP. A maximum of 10 Speed Calling numbers per memory block can be assigned.
2.   A station is assigned blocks as primary stations, and associate stations to that group as secondary stations. The primary station can program 10 memory blocks commonly used as Speed Calling numbers for that group; therefore, a group can consist of 100 Speed Calling numbers maximum.
3.   Each abbreviated call code can store a maximum of 24 digits, including access codes.
4.   A station can be assigned as a primary station for only one group of memory blocks.
5.   There is no limit to the number of secondary stations assigned to one Primary group.
6.   Secondary and primary stations must belong to the same Module Group.
7.   A secondary station can only be assigned to one Primary group.
8.   TOLL DENIAL/TOLL DIVERSION and TOLL RESTRICTION - 3/6-DIGIT [T-40] may or may not be applied to Speed Calling, as desired.
9.   LEAST COST ROUTING - 3/6-DIGIT [L-31] can be provided via Speed Calling access.
10. SPEED CALLING - GROUP - PRI and SPEED CALLING - STATION - PRI [S-84] use the same block of memory tables.
11. SPEED CALLING - GROUP - PRI data remains even if system is reinitialized or in the event of a power failure.
12. A pause can be programmed using the * button of a PB pad. This uses one of the 24 digits available. Rotary type phones cannot store a pause. A pause lasts 2.8 seconds.
13. A user cannot dial the called party subaddress as abbreviated codes.

S-86 Simultaneous Voice and Data Transmissions - PRI

General Description

This feature is provided by NEC's proprietary NEAX2400 IMX 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 2-pair cable. Voice and data calls can be placed to different locations via PRI.

Operating Procedure

To place a voice call
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 illuminates 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 call is in progress
1. While a voice call is in progress, user A presses the DTX key.
2. On user A's D^{term}, the DTX LED illuminates, the DATA LED flashes, and displays:

```
D          DTE              XXXX
           (Time Display)
```

3. When user B answers, both parties' DATA LEDs illuminate steadily; both LCDs display:

```
READY   D   DTE              XXXX
            (Time Display)
```

Data communication can begin.

4. The voice call is not interrupted during this process. After 5 seconds, the voice call display returns. The DSPY/AUTO key can be pressed to return the following display:

```
READY    D   DTE             XXXX
             (Time Display)
```

Operating Procedure (cont'd)

To place a data call to a different location or while no voice call is in progress

1. Press the DATA key on the D^{term}. The LED above the key illuminates and D appears on the LCD.
2. Use the keypad to dial the desired DTE extension; display shows:

```
┌─────────────────────────────────────┐
│                                      │
│   D                    XXXX          │
│          (Time Display)              │
│                                      │
│                                      │
└─────────────────────────────────────┘
```

(XXXX refers to the called extension number).

3. The DATA LED flashes, and the following appears (flashing) on LCD:

```
┌─────────────────────────────────────┐
│                                      │
│   D     DTE            XXXX          │
│          (Time Display)              │
│                                      │
└─────────────────────────────────────┘
```

4. When the called DTE answers, display shows:

```
┌─────────────────────────────────────┐
│                                      │
│   READY   D   DTE         XXXX       │
│          (Time Display)              │
│                                      │
└─────────────────────────────────────┘
```

5. Data communication can begin.

S-87   Synchronous Data Switching - PRI

General Description

A synchronous DTE connected to a D^{term}/Data Adapter can communicate via the NEAX2400 IMX with a synchronous DTE connected to a synchronous Data Module or synchronous D^{term}/Data Adapter.

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 illuminates and D appears on the LCD.
2.   Use the keypad to dial the desired DTE extension:

```
┌─────────────────────────────────────────┐
│  D                             XXXX       │
│              (Time Display)               │
│                                           │
└─────────────────────────────────────────┘
```

(XXXX refers to the called extension number.)
3.   The DATA LED flashes and the following appears flashing on the LCD:

```
┌─────────────────────────────────────────┐
│  D             D   DTE         XXXX       │
│              (Time Display)               │
│                                           │
└─────────────────────────────────────────┘
```

4.   When the called DTE answers, display shows:

```
┌─────────────────────────────────────────┐
│  READY         D   DTE         XXXX       │
│              (Time Display)               │
│                                           │
└─────────────────────────────────────────┘
```

5.   A transparent data path is established, and data communication can begin.
    To terminate the data call, either user can press the DATA key. For five seconds, the other party's LCD displays:

```
┌─────────────────────────────────────────┐
│  RELEASE     D   DTE          XXXX        │
│              (Time Display)               │
│                                           │
└─────────────────────────────────────────┘
```

Both parties' DATA and DTX LEDs will be extinguished.

Service Conditions

1. Synchronous communication speeds of 2.4K, 4.8K, 9.6K, and 48 kbps are supported.

2. Synchronous DTEs connected to synchronous Data Adapters via a D^{term} can originate calls to other synchronous DTEs.

3. Synchronous DTEs connected to synchronous Data Modules originate calls to other synchronous DTEs by using V25 bis procedure or the DATA HOT LINE [D-77] feature. Two synchronous Data Modules can also communicate via a Nailed Down Connection. Refer to NAILED DOWN CONNECTION [N-9] for details.

4. Synchronous DTEs connected to the NEAX2400 IMX must accept timing signals from the NEAX2400 IMX. This type of timing is referred to as External Timing.

5. Data Modules and Data Adapters are DCE devices.

6. Attribute Data must be assigned for the sync./async. Data Adapter.

S-88 SMDR for Data Call - RS232C - PRI

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 used, permitting direct interface with a customer-owned computer system. All output is in ASCII format, and includes the following:

- Calling telephone number
- Called telephone number (24 digits maximum)
- Route Number
- Start of Call Time
- Disconnect Time
- Year, Month and Date
- Attendant Handled

Operating Procedure

No manual operation is required. Call records are output automatically.

Service Conditions

1. STATION MESSAGE DETAIL RECORDING (SMDR) information facilitates analysis of trunk and data port traffic, and can be used for cost allocation or billing purposes.
2. SMDR can be programmed to record all outgoing calls or only toll calls, depending upon user requirements.
3. Incomplete and abandoned calls are discarded by SMDR, depending upon system and other data assignment.
4. If DATA CALL ROUTE ADVANCE [D-52] or DATA CALL LEAST COST ROUTING - 3/6-DIGIT [D-49] is provided with the system, SMDR records the route numbers selected for outgoing calls.
5. The maximum number of dialed digits cannot exceed 24.
6. When customer-owned computer equipment is connected via the RS232C interface, SMDR information is transmitted directly to the computer as each call record is compiled.
7. If an outgoing call is directed to a trunk that cannot accept answer supervision from the Central Office, the call start time will be a 30-second default (timing variable in system data) after the last digit is dialed. (This timing is variable in system data.)
8. If the distance between the RS232C I/O port and the processing computer exceeds 50 feet (15 meters), an asynchronous-type modem should be used.
9. RS232C Interface specifications:

Synchronization:	Asynchronous
Data Speed:	9600 bps max.
Code:	ASCII 7-bit + parity bit
Maximum Distance:	50 ft. (15m) without modem

10. The NEAX/ASTRA COMPUTER COMMUNICATION SYSTEM (CCS) [N-11] feature provides for collection, storage, analysis and processing of SMDR information on the premises. Detailed management reports are made readily available to the user.

Service Conditions (cont'd)

11. The NEAX2400 IMX can accommodate up to two active ports or two redundant ports. Additional hardware is required.

12. Supervision on the status of the external RS232C terminal is not performed.

13. Data rate output is 300, 600, 1200, 2400, 4800, and 9600 bps asynchronous ASCII (switch selectable).

14. A maximum of 28,000 simultaneous calls can be stored in the system memory (active calls). The call record is sent to the output device and removed from memory upon completion.

15. Calls are allowed to complete if overflow active calls occur.

16. Local (intraswitched) data calls are not tracked. DATA CALL PEG COUNT [D-50] or DATA TERMINAL TRAFFIC MEASUREMENT [D-21] can be used for local data traffic information.

S-89   Speed Calling Override - System - PRI

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. A station can use this feature if it has been assigned the appropriate Service Feature Class (SFC).

Operating Procedure

1.   Lift the handset (includes SPEAKER key operation on D^{term}); receive dial tone.
2.   Dial the Speed Calling access code (three digits).
3.   Dial the abbreviated call code (four digits).
4.   If the station is allowed this call, the call is completed; if not, the station hears reorder tone.

To operate from a D^{term}

1.   Press LNR/SPEED key; receive dial tone. The LCD displays:

```
LNR [ * ] / SPEED [ _ _ ]
                    (Time Display)
```

2.   Press the desired call code.
3.   If the station is allowed this call, the call is completed; if not, the station hears reorder tone.

Service Conditions

1.   This service cannot be received in the case of an outgoing call that uses OUTGOING TRUNK QUEUING [O-2].
2.   This service cannot be used in combination with CONSECUTIVE SPEED CALLING - SYSTEM [C-62].
3.   This service cannot be used if the calling station is holding another line.
4.   The ATTENDANT CONSOLE [A-3] cannot activate this service feature.

S-107 Station Individual Trunk Access - PRI

General Description

This feature permits a station to access an individual ISDN trunk via dial access.

Operating Procedure

1. Lift the handset; receive the dial tone.
2. Dial the feature access code, trunk route number, trunk number, and desired telephone number; receive the ringback tone.
3. When the called party answers, communication can begin.

Service Conditions

1. The trunk route number that can be designated is from 1 to 1024. The trunk number that can be designated is from 1 to 255.
2. When the designated trunk is busy, the caller receives busy tone.
3. This service cannot be activated to an incoming trunk.
4. Minimum number of digits required to activate this feature is (number of digits of access code) + 6.
5. The call is not originated until the number of digits of the destination telephone number reaches the maximum number of digits of office code determined in system data.

T-37 Tandem Switching of Tie Trunks - 2/4-Wire - PRI

General Description

This feature allows PRI trunk-to-tie-trunk connections through the NEAX2400 IMX, 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.

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 NEAX2400 IMX.
3. Dial 9; receive dial tone from the distant PBX or local Central Office.
4. Dial the Central Office exchange number (local or toll).

Service Conditions

1. When using the 2-wire application, there may be an appreciable decrease in transmission decibel levels.
2. The 4-wire E&M Trunk package provides amplification/attenuation, so that the desired transmitting and receiving levels can be maintained, providing the overall tandem system with transparency.
3. When Tie trunks are busy, the calling station receives busy tone.
4. Each incoming Tie trunk can have various restrictions for Tie Line-to-Central Office calling.
5. Careful consideration should be given to access code numbering plans to avoid unnecessary loss of access codes and code duplication within the same system.
6. Tandem switching can also be accomplished via the ATTENDANT CONSOLE [A-3].
7. There is no limitation to the allowable number of tandem switching connections.

Interactions

1. TOLL DENIAL/TOLL DIVERSION [T-6]: If TOLL DENIAL is applied to an incoming Tie trunk group, the calling user is routed to reorder tone if an attempt is made to dial-access a toll call.
2. The TOLL RESTRICTION - 3/6-DIGIT [T-7] feature is assigned on a per incoming Tie trunk group basis. The distant calling user is routed to reorder tone if an attempt is made to dial a restricted number code.
3. STATION MESSAGE DETAIL RECORDING (SMDR) [S-10]: On tandem connections, the incoming Tie trunk group route number and outgoing trunk number are recorded.
4. Two outgoing trunk group restriction tables are provided per system. The Direct Dial Access table is indexed when a distant user dials the trunk group access code, and the ATTENDANT CONSOLE [A-3] table is indexed on Attendant completed calls.

T-38   Three-Way Calling - PRI

General Description

This feature enables any user to add another party to an existing ISDN network connection, establishing a three-way conference.

Operating Procedure

1.   Place the original party on hold.
2.   Press the switchhook; receive special dial tone.
3.   Dial the desired number; receive an answer.
4.   Announce the conference and press switchhook again.
5.   THREE-WAY CALLING - PRI is now established.

Service Conditions

1.   The originating party can hang up at any time. The other two parties remain connected.
2.   Any combination of parties (internal or external) can be included in THREE-WAY CALLING - PRI.
3.   The maximum number of simultaneous three-way calls is dependent on the quantity of conference-function trunks within the system. The conference function is included in the INT and TSW-INT cards.
4.   The THREE-WAY CALLING - PRI feature is not restricted by the line class of service assigned to the user's line; therefore, a fully restricted station can transfer a call to another station or the ATTENDANT CONSOLE [A-3].

T-38D   Three-Way Calling - D^{term} - PRI

General Description

This feature enables a D^{term} user to establish a three-way conference by connecting an additional party to an already existing conversation.

Operating Procedure

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 is now established. The LCD displays:

```
CONF
            (Time Display)
```

Service Conditions

1. Originating party can hang up at any time. The other two parties are not disconnected.
2. Any combination of parties (internal or external) can be included in THREE-WAY CALLING - D^{term} - PRI.
3. The maximum number of simultaneous three-way calls is dependent on the quantity of conference-function trunks within the system. The conference function is included in the INT and TSW- INT cards.
4. The THREE-WAY CALLING - D^{term} - PRI feature is not restricted by the line class of service assigned to the user's line; therefore, a fully restricted station can transfer a call to another station or the ATTENDANT CONSOLE [A-3].

T-40 Toll Denial/Toll Diversion - PRI

General Description

This feature prohibits users from placing long distance calls over the specific ISDN network trunks. Restricted calls are routed to either an ATTENDANT CONSOLE [A-3] (diversion) or to the reorder tone (denial).

Operating Procedure

No manual operation is required once this feature is programmed into system data.

Service Conditions

1. TOLL DENIAL/TOLL DIVERSION - PRI is an industry standard 0/1 type.
2. Immediately after dialing any area code with a second digit 0 or second digit 1, the user is restricted.
3. Restricted calls are normally routed to reorder tone. Restriction can be programmed to give the user reorder tone or to divert him/her to the ATTENDANT CONSOLE [A-3] when the user accesses DIRECT OUTWARD DIALING [D-9].
4. This feature is applied to individual stations on a route restriction basis.
5. TOLL DENIAL/TOLL DIVERSION - PRI is set on a per TENANT [T-12] basis.
6. The 0/1 toll denial and toll diversion feature cannot be used together for the same tenant.
7. The 0/1 toll denial and toll diversion feature is assigned on a per-line (RSC) Class of Service and/or per-incoming-dial-repeating-tie-trunk group basis. When provided, the feature is applicable on a per-trunk-group basis.

T-41 Toll Restriction - 3/6 Digit - PRI

General Description

This feature allows the NEAX2400 IMX to be programmed to restrict outgoing ISDN calls according to the specific area and/or Central Office codes. This restriction is controlled on the basis of a three-digit area code or six-digit area and office code numbering plan.

Operating Procedure

No manual operation is required.

Service Conditions

1. The programmed restriction pattern may consist of either those codes to be allowed, or those codes to be denied.
2. The TOLL RESTRICTION - 3/6-DIGIT - PRI feature is assigned on a per-line CLASS OF SERVICE - INDIVIDUAL [C-15] basis.
3. The system can be programmed to ignore digit 1 prefixing an area code pattern.
4. When a toll call is denied, reorder tone is returned to the calling party. If desired, the calling party can be routed to the ATTENDANT CONSOLE [A-3]. See TOLL DENIAL/TOLL DIVERSION - PRI [T-40].
5. Each trunk group is assigned its own TOLL RESTRICTION table.
6. THROUGH DIALING feature: The Through Dialing feature does not override the TOLL RESTRICTION feature.
7. The TOLL DENIAL/DIVERSION - PRI [T-40] and TOLL RESTRICTION - 3/6-DIGIT - PRI features are assigned on a per-tenant basis.

U-6   Uniform Call Distribution (UCD) - PRI

General Description

This feature distributes incoming calls from ISDN trunk to a group of up to 100 stations. Calls are distributed to idle stations, in a circular pattern, in the order which they arrive.
If a station transfers a call to a busy UCD group, the call can wait in queue until a station in the group becomes idle.

Operating Procedure

To transfer a call to a busy UCD group

1. All the stations in a UCD group are busy.
2. A user not in the group answers an incoming call (trunk or station).
3. The user dials the UCD pilot number after pressing the switchhook or the TRANSFER key.

      a.) The user hears busy tone.
      b.) The calling party is held.

4. The station goes on-hook.

      The calling party hears ringback tone. (during queuing)

5. The UCD group becomes idle.

      a.) The call terminates to an idle station in the UCD group.
      b.) The calling party is hearing ringback tone. (during ringing)

6. The idle station answers the call.

      Now the calling party is connected to the UCD station.

Service Conditions

1. The maximum number of UCD groups is 63.
2. Up to 100 stations can be programmed into a single UCD group.
3. UCD groups are assigned through the MAINTENANCE ADMINISTRATION TERMINAL (MAT) [M-18].
4. Stations are arranged in STATION HUNTING - CIRCULAR [S-7] group. A call to the group starts at the first idle station after the last station that received a call.
5. If all of the group's stations are busy, the call waits in a queue. The caller hears the ringback tone. The first call in the queue will be answered first.
6. A station can block UCD calls by dialing a Make Busy code (1 to 3 digits), or by pressing the DND or BYO key (if it is a D^{term}). The station can still make calls and receive calls to its own telephone number.
7. Each UCD group is assigned a UCD group number, allowing DIRECT INWARD DIALING [D-8] calls to be routed to selected groups.

Service Conditions (cont'd)

8. If the Attendant transfers a call to a busy UCD group, the call waits in queue until a station in the group becomes idle. However, a station cannot transfer a call to a busy UCD group.

9. Incoming calls to individual stations in the group are not distributed around the group; only calls to the UCD group number use the circular distribution.

10. Each UCD group has a controlling station. Only the controlling station or the Attendant can activate or deactivate CALL FORWARDING - ALL CALLS [C-5] when the UCD group number is not a phantom number. UCD does not work at the CALL FORWARDING - ALL CALLS [C-5] destination, even if the destination station is a controlling station.

11. If CALL FORWARDING - ALL CALLS [C-5] is set on a controlling station and the destination station is idle, a call to the UCD group is transferred. If the designated station is busy, the user hears busy tone.

12. If CALL FORWARDING - ALL CALLS [C-5] is set on a non-controlling station, that station is skipped in any UCD hunt.

13. The Attendant can use BUSY VERIFICATION [B-3] to check the busy/idle condition of the UCD stations. This feature cannot determine if the user used the Make Busy feature.

14. CALL WAITING - ORIGINATING [C-31] can be activated by an individual UCD station toward another station within the system. Also, another user can activate this feature toward an individual UCD group station.

15. CALL WAITING - TERMINATING [C-12], when assigned to an individual UCD group station, allows the calling station to wait on the called station's line when it is busy. The group user can be connected to the waiting call by hanging up; the station rings and the call is connected when the caller goes off-hook. These calls have priority over UCD calls in the queue.

16. CALL BACK [C-1] can be activated by an individual UCD group station toward another station. Also, another station can activate this feature toward an individual UCD station. CALL BACK [C-1] can be activated toward a UCD group number when all stations and UCD queue are busy. CALL BACK [C-1] is set to the controlling station.

17. A UCD group number can be used as the destination station of DIRECT-IN TERMINATION [D-7] or NIGHT CONNECTION - FIXED [N-1], NIGHT CONNECTION - FLEXIBLE [N-2].

18. When a phantom number is assigned to the controlling station of a UCD group, the phantom number is the UCD group number.

19. UCD queueing has precedence over CALL FORWARDING - INTERCEPT/ANNOUNCEMENT - ATTENDANT [A-1]. During queuing block, the CALL FORWARDING - INTERCEPT/ANNOUNCEMENT - ATTENDANT [A-1] is valid. The Attendant hears reorder tone when the CALL FORWARDING - INTERCEPT/ANNOUNCEMENT - ATTENDANT [A-1] is restricted.

Service Conditions (cont'd)

20. Three types of traffic measurements can be provided for the UCD feature.
    - a.) UCD route peg count:
        - Count of incoming calls from each route to each UCD group
        - Count of calls answered by UCD
        - Count of other calls (abandoned, restricted, blocked)
        - Maximum number of routes is 255
    - b.) UCD group peg count:
        - Count of incoming calls to each UCD group
        - Count of answered calls
        - Count of other calls (abandoned, restricted, blocked)
    - c.) UCD station peg count:
        - Count of incoming calls to each station in each UCD group
        - Count of answered calls
        - Count of other calls (abandoned, restricted, blocked)

21. UCD Station Peg Count:

FROM 07/24 09:00 to 07/24 10:00					
UCD GROUP	TN	STN	INCOMING	ANSWER	ABANDON
1	XXX	XXXX	XXXXXX	XXXXXX	XXXXXX
GROUP TOTAL			XXXXXXX	XXXXXXX	XXXXXXX
2	XXX	XXXX	XXXXXX	XXXXXX	XXXXXX

22. UCD Group Peg Count:

FROM 07/24 09:00 to 07/24 10:00			
UCD GROUP	INCOMING	ANSWER	OTHER
1	12	6	6
2	12	6	6
TOTAL	24	12	12

23. The total number of incoming calls for which the UCD queuing feature is available, and other incoming calls such as intraoffice, tie line, etc., is 640 per system.
    Calls above these limits are terminated by a busy tone connection.

Service Conditions (cont'd)

24. The following connections are supported by this service.

| Calling Party \ Called Party	UCD		UCD Delay Announcement
	Station	**DA**	
ISDN trunk	Available	Not Available	Available
Call Transfer (holding ISDN trunk)	Available	Not Available	Not Available
Attendant connecting an incoming call from ISDN trunk to station	Available	Not Available	Available

25. When a call is transferred to the UCD group and encounters all stations busy, the call is not placed in a queue and the caller receives busy tone.

26. UCD is available for the following incoming calls:

   CALLING PARTY RECOGNITION SERVICE
   (DIRECT-IN TERMINATION (DIT))   [C-104]
   Call termination by sub-address
   CALL TRANSFER - ALL CALLS   [C-11]
   Call transferred by Attendant
   DIRECT-IN TERMINATION (DIT)   [D-7]
   DIRECT INWARD DIALING (DID)   [D-8] from ISDN trunk

27. DATA QUEUING [D-126] is not available for incoming ISDN calls.

28. When an incoming call remains in a queue for 90 seconds, the call is automatically released.

29. When Delay Announcement is provided, billing starts from the beginning of the announcement.

30. When an incoming call from an ISDN trunk terminates to a busy UCD group, CALL WAITING - ORIGINATING [C-31] and STEP CALL [S-13] cannot be activated.

31. When an incoming call from an ISDN trunk terminates to the Attendant and is transferred to a busy UCD group, the following services can be activated.

   CALL FORWARDING - INTERCEPT/ANNOUNCEMENT - ATTENDANT [A-1]
   CALL BACK   [C-1]
   EXECUTIVE RIGHT-OF-WAY   [E-1]

32. When an incoming call from an ISDN trunk terminates to a station and is transferred to a busy UCD group, STEP CALL [S-13] service is available, but CALL WAITING - ORIGINATING [C-31] service cannot be activated.

A-77   Accunet Access

General Description

Communication using 56 kbps, 64 kbps (restricted) or 64 kbps (unrestricted) is possible with terminals connected to AT&T's ACCUNET network.
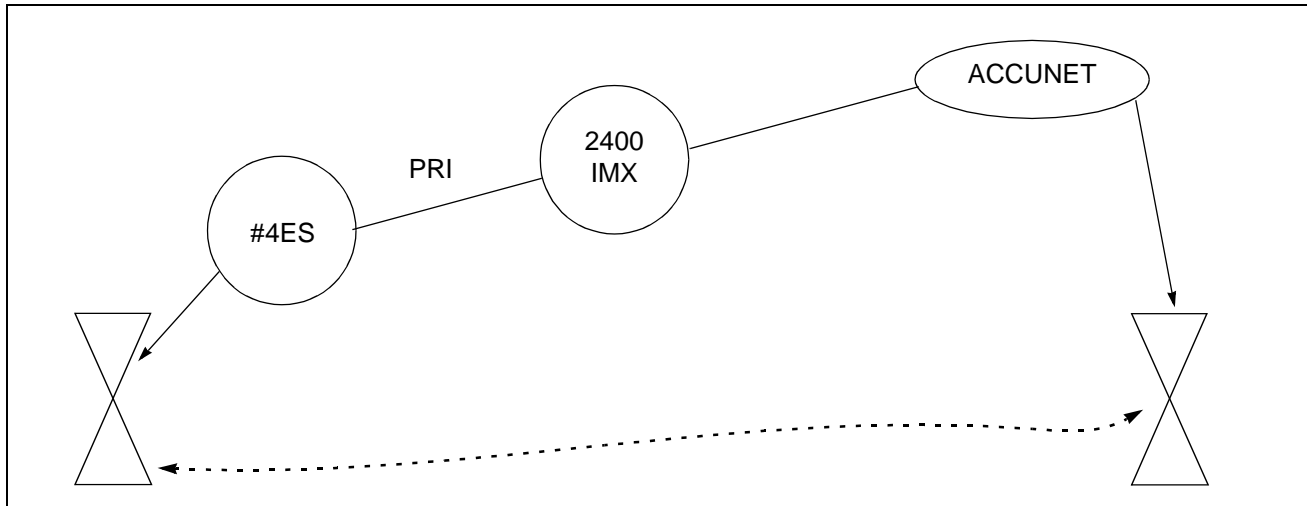
Accunet Access Connection

Operating Procedure

No manual operation is required.

Service Conditions

1. The NEAX2400 IMX does not determine communication compatibility; that is dependent on the terminal types.
2. Data terminals that can be accommodated by the NEAX2400 IMX are basically terminals with a transmission speed of 64 kbps. Communication by terminals with other transmission speeds is not guaranteed.

A-136 Advice of Charge (AOC) - Receipt and Display of AOC from a Foreign Q-SIG Network

General Description

This feature provides the calling station which originated a call to ISDN network using Q-SIG 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.

Operating Procedure

No manual operation is required.

Service Conditions

1. D^{term}, ISDN terminal, PS terminal (allowed to display the charge information) is available for this service. Attendant Console is not available for this service.

2. This feature is effective on condition that the call is originated to the ISDN network through ETS 300 172 line.

3. 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 a call is originated.
               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.

4. This feature supports the total billing information only when the call is completed.

5. Maximum number of digits for the charge display is 6 digits. When the charge exceeds the digits, the LCD displays $999,999.

6. Charge information of more than ten digit 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.

7. 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 for free of charge.

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]/- ALL CALLS [C-5] is activated with this feature, the call charge is sent to the calling station.

Interactions (cont'd)

3.   When CALL FORWARDING - DON'T ANSWER [C-3] is activated with this feature, the call charge is not sent.

4.   When CALL FORWARDING PS INCOMING CALL INCOMPLETE [C-155] 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.

C-103   Calling Party Recognition Service (CF - All Calls/Busy Line/Don't Answer)

General Description

With existing services, like CALL FOWARDING - ALL CALLS [C-5], CALL FORWARDING - BUSY LINE [C-2], and CALL FORWARDING - DON'T ANSWER [C-3], all terminating calls are forwarded to a predetermined station. In ISDN, a forwarded-to station can be changed according to the calling station number. Since the calling telephone number is provided by the Central Office, this service can provide variable forwarded-to telephone numbers, depending upon the calling party telephone number.

Operating Procedure

When users dial their own telephone numbers as the target telephone number after dialing CALL FORWARDING - ALL CALLS - PRI [C-95] access code, CALLING PARTY RECOGNITION SERVICES (DIRECT-IN TERMINATION (DIT)) [C-104] is activated.

Service Conditions

1. The feature is available only when a call is incoming to the station directly from the PRI-DID line. It is not applicable to calls incoming from the PRI line via an Attendant Console.
2. Calls can be forwarded up to five times when MULTIPLE CALL FORWARDING [M-40, M-41, M-42] features are provided.
3. When the called station has set CALLING PARTY RECOGNITION SERVICE (DIRECT-IN TERMINATION (DIT)) [C-104] and CALL FORWARDING - BUSY LINE [C-2], incoming calls are forwarded to the destination station providing the forwarding station is busy, DND, or in lockout.
4. When the called station has set CALLING PARTY RECOGNITION SERVICE (DIRECT-IN TERMINATION (DIT)) [C-104] and CALL FORWARDING - DON'T ANSWER [C-3], incoming calls not answered are forwarded to the destination station.
5. For the procedure on setting/cancelling of call forwarding features, refer to System Operations Manual.
6. This service is not available when the destination telephone number exceeds 13 digits.

C-104   Calling Party Recognition Service (Direct-In-Termination (DIT))

General Description

This feature provides an incoming DIT call via an ISDN trunk to be connected to a predetermined station. This application can be used for a station, modem, or data call.

Operating Procedure

No manual operation is required.

Service Conditions

1.   For incoming calls in a Primary Rate Interface trunk, this service feature is activated when the called number is not present in the setup message. This would occur when a DID call does not provide the sub-address service. The call is then terminated to a DIT station assigned to that incoming trunk.

2.   This service is not available when the destination telephone number exceeds 13 digits.

C-105 Call-By-Call Service Selection

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 can be used on any available channel.

Operating Procedure

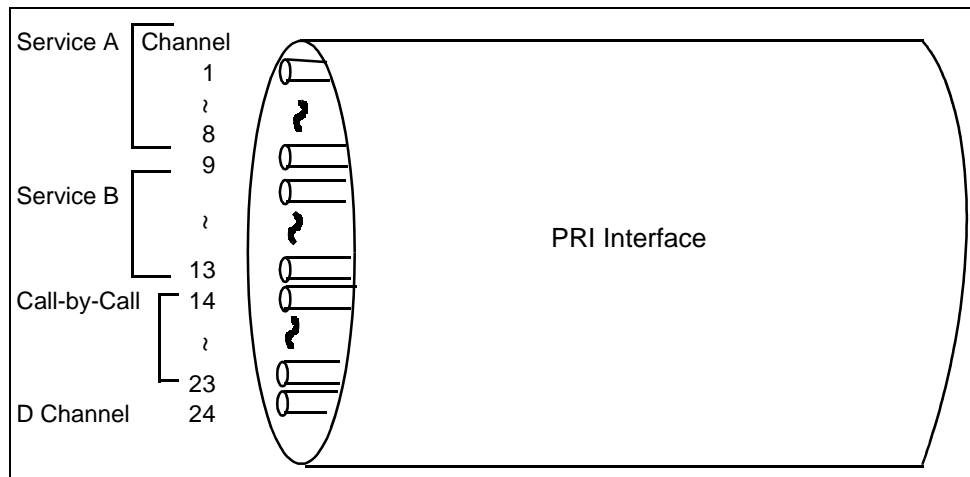No manual operation is required.

Service Conditions

1. The services that can be designated include ACCUNET, MEGACOM, MEGATON 800, and SDN.
2. Channel selection is possible by the LCR function only.
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: *During call termination, there is no indication of which service is being used.*

C-106 Call-By-Call Pool Management

General Description

A single PRI interface can be used in common by the TRUNK PROVISIONING SERVICE SELECTION [T-42] and CALL-BY-CALL SERVICE SELECTION [C-105]. If all channels used by the TRUNK PROVISIONING SERVICE SELECTION are busy, it is possible to select the channels as used by the CALL-BY-CALL SERVICE SELECTION [C-105].

Call-by-Call Pool Management

Operating Procedure

No manual operation is required.

Service Conditions

1. The services that can be designated include ACCUNET, MEGACOM, MEGACOM 800, and SDN.
2. Channel selection is possible by the LCR function only.

C-112   Calling Party Information Transfer

General Description

When a station places a call via ISDN trunk and when the call is transferred to a station accommodated in CCIS network, this feature allows calling party number (max. 16 digits), attribute data, and calling party sub-address (max. 8 digits) from ISDN network/ISDN terminal to be transferred to the destination office.

Operating Procedure

No manual operation is required. Setup message is sent to the destination station or ISDN network connected to the destination office automatically.

Service Conditions

1.   This service is activated in the cases outlined below.

Note: *Initial Address Message with Additional Information (IAI) sent in the enhanced format (16 digits). When this service is not activated, IAI is sent in the current format (8 digits).*

a.)   When the called office receives the setup message from ISDN network/ISDN terminal (any vendor), and when both the called and destination offices in the CCIS network are applicable to this service.
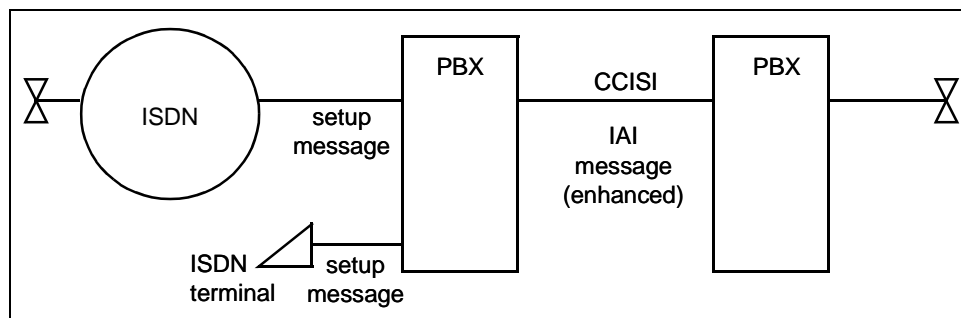
Calling Party Information Transfer—Case 1

Service Conditions (cont'd)

        b.) When IAI message is sent in the enhanced format via CCIS network, and when both the called and destination offices in the CCIS network are applicable to this service.
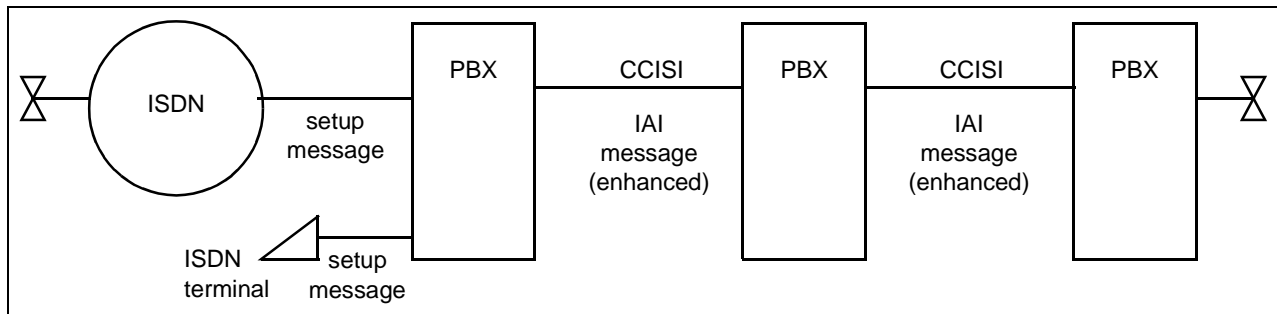
Calling Party Information—Case 2

Note: *Whether the called office is applicable to this service or not is designated in route class data by MAT command (ARTE).*

    2.   When the originating telephone number exceeds 24 digits, an asterisk (*) is assigned to the 24th character position.

    3.   The following attribute data sent from ISDN network/ISDN terminal is transferred to the destination office in CCIS network, or ISDN network connected to the destination office.

        a.) Bearer Capability (BC)
        b.) Low Layer Capability (LLC)
        c.) High Layer Capability (HLC)

    4.   Calling party sub-address (maximum of eight digits) sent from ISDN network/ISDN terminal is transferred to the ISDN terminal accommodated in the office in CCIS network. If the calling party sub-address exceeds eight digits, an asterisk (*) is assigned to the eighth character position.

C-148   Call Completion to Busy Subscriber (CCBS)

General Description

This feature provides the Call Back service through the Q-SIG network. (This service is called Supplementary Service – Call Completion to Busy Subscriber (SS-CCBS), based on ETS 300 366.) SS-CCBS can be set from a calling station which has dialed a busy station over the Q-SIG network. When this is done, the calling station is rung as soon as the busy station becomes available. Upon answering, the desired station automatically rings.

Operating Procedure

To set CCBS (Call Completion to Busy Subscriber)
1.   Hooking + access code

      a.) Hear busy tone.
      b.) Press the switchhook.
      c.) Dial the CCBS set code; receive service set tone.
      d.) Hang up.
2.   Last number + access code

      a.) Hear busy tone.
      b.) Dial the last number of the target telephone number.
      c.) Dial the CCBS set code; receive service set tone.
      d.) Hang up.
3. D^{term} feature key

      a.) Hear busy tone.
      b.) Press the Camp-on feature key; receive service set tone.
      c.) Hang up.

To cancel CCBS
1.   Access Code

      a.) Go off-hook; receive dial tone.
      b.) Dial the CCBS cancel code; receive service set tone.
      c.) Hang up.
2. D^{term} feature key

      a.) Go off-hook; receive dial tone.
      b.) Dial the CCBS cancel code; receive service set tone.
      c.) Hang up.

Service Conditions

1. This service is provided in the network where the Q-SIG link is established between ends: it cannot be done using the other signaling systems.

2. This service is activated on the basis of SS-CCBS provided by ETS 300 366.
   The methods are as below:
   - Path Reservation: non reservation method or path reservation method (selectable)
   - Retention of signaling connection: connection retention method
   - Service retention: service cancellation method

3. Information transfer specifications are as follows:
   - Information transfer rate: 64 kbps
   - Information transfer capability: voice, 3.1 kHz audio, 7 kHz audio

Conditions of a calling party

1. This service cannot be set when a calling station is:
   - activating Call Back [C-1] or engaged in Call Back
   - activating Call Back - CCIS [C-44] or engaged in Call Back - CCIS
   - activating Call Hold [C-6]
   - restricted.

2. A calling station may set CCBS only just after disconnection as a result of a called station busy.

3. This service can only be activated from D^{term}s or analog stations. It cannot be done from the Attendant Console or I interface terminal.

4. If CCBS Call Back is not answered within 30 seconds (flexible by no-answer timer), ringing stops and CCBS is cancelled.

5. A station cannot activate CCBS to more than one station at a time. Multiple CCBS is not allowed. The number of simultaneous CCBSs per LP is:
   480 (max. number of calls) – (number of ISDN calls caused + number of CCBS under transaction).

6. CCBS is not activated if a calling station is in the Line Lock Out or Make Busy status when called back. However, if that station is called back after returning to the normal status, CCBS may be activated.

7. If all the trunks for Q-SIG are busy (if there are no idle trunks) when a setting station is called back, CCBS is not activated and cancelled.

8. The following are the conditions when the path reservation method is used.
   a.) If no answer returns for the path reservation requirement within 30 seconds, CCBS is cancelled.
   b.) If an error message returns for the path reservation requirement, each of the following operations is made:

remote User Busy Again	: waiting for the called station to become idle.
failure To Much	: CCBS is cancelled
failed Due To Interworking	: CCBS is cancelled
unspecified	: CCBS is cancelled
others	: CCBS is cancelled

Service Conditions (cont'd)

Conditions of a called station

1. This service cannot be set when a called station is:
   - in the Line Lockout status
   - in the Make Busy status
   - activating Call Back [C-1] or engaged in Call Back
   - activating Call Back – CCIS [C-44] or engaged in Call Back – CCIS
   - activating Call Hold [C-6]
   - engaged in Attendant Camp-on with Tone Indication [A-1]
   - restricted

2. This service can only be activated to D^{term}s or analog stations. It cannot be set to the Attendant Console or I interface terminal.

3. CCBS can be set only when a called station is engaged in a station call or trunk call.

4. Once CCBS is set, it remains effective until cancelled. However, if a called station activates Line Lockout without being idle or in the case of Call Back time-out, CCBS which has been set is cancelled automatically.

5. CCBS cannot be set by more than one station at a time. Multiple CCBS is not allowed. The number of simultaneous CCBSs per LP is:
   480 (maximum number of calls) – (number of ISDN calls caused + number of CCBSs under transaction).

6. If a calling station does not answer Call Back within 30 seconds, CCBS is cancelled from a called station.

7. Even when a called station is in a Station Hunting [S-7, S-8, S-9] group, CCBS is set to the called station.

8. When a called station is in the Call Forwarding – All Calls mode, CCBS is set against the call forward target station.

9. The following are the conditions when the path reservation method is used.
   a.) If the called station is busy again upon receiving the path reservation requirement, CCBS is postponed.
   b.) If the called station is busy again when Called Back after the path reservation is completed, CCBS is cancelled.
   c.) If the analog called station goes off-hook during the path reservation (during Call Back to the calling party), reorder tone is sent (call origination is not available); in case of the D^{term} station, call origination using the called line is not available.
   When the calling station answers Call Back during this off-hook status, the analog station is connected, or the D^{term} station is rung.

Conditions of the Q-SIG network

1. Each office in the Q-SIG network must have a different office number from the others. Also, an office must be connected from every office in the network by dialing the same number. However, a connection using Sub-address present [S-96] service is not available. (In the case of using Uniform Numbering Plan, each telephone number must be different in the network.)

Service Conditions (cont'd)

2. If a Q-SIG data link is down during CCBS assignment, this CCBS is not assigned. If the link is down while a calling station is canceling its CCBS assignment operation, only CCBS to that station is cancelled.
(Since the message is not sent to the station to which CCBS is set, CCBS to that station is not cancelled.)
If the link is down during Call Back, CCBS to a called station is cancelled.
(Since the message is not sent to the calling station, CCBS to that station is not cancelled.)
If the link is down when a calling station answers to Call Back, CCBS to that station is cancelled.
(Since the message is not sent to the called station, CCBS to that station is not cancelled.)

3. When a Q-SIG data link has been down upon CCBS assignment, and if another link is available, this link may be used for sending a setting message, Q-SIG routes only. Path reservation (if used) and CCBS Call Back are established via the route which has been used for sending a CCBS setting message; the other routes cannot be used. If all B-channels of the relevant route cannot be used (B-channel selection cannot be made) and path reservation or CCBS Call Back cannot be activated, the following operation is made as path reservation/CCBS Call Back failure:

    a.) Failure at a calling office   : service is cancelled and busy tone is sent to the calling station.

    b.) Failure at the intermediate office: path reservation or CCBS Call Back error message is sent to the calling station

                                  : CCBS cancellation message is sent to the called station.

C-152 Call Completion on No Reply (CCNR)

General Description

This service (Supplementary Service - Call Completion on No Reply (SS-CCNR), based on ETS 300 366), allows the Camp-On service through the Q-SIG network. When the called station does not answer, the calling station can set CCNR. When this service is set, the calling station rings back as soon as the called station becomes idle, and upon answering, the desired station is automatically rung.

Operating Procedure

To set CCNR (Call Completion on No Reply)
1. Dial the desired telephone number; hear ringback tone.
2. Press hookswitch and dial the CCNR set code; receive service set tone. If the caller is using D^{term}, press the Camp-On key.
3. Replace the handset.

To cancel CCNR
1. Lift the handset; receive dial tone.
2. Dial the CCNR cancel code; receive service set tone. If the caller is using D^{term}, press the Camp-On key.
3. Replace the handset.

Note: *Since there is no standard operation provided by ETS 300 366, the operation depends on the terminals used by the caller.*

Service Conditions

1. Q-SIG CIRCUIT SWITCHED BASIC CALL - ETSI VERSION [Q-4] should be available.
2. This service is available in the network where the end to end Q-SIG link is established. (It is not available using the other signaling systems.)
3. This service is activated based on SS-CCNR provided by ETS 300 366, and the methods are used:
    a.) Path reservation: non-reservation method or path reservation method (selectable)
    b.) Retention of signaling connection: connection retention method
    c.) Service retention: service cancellation method
4. The bearer capability and data transmission specifications are as follows:
    a.) Data transmission speed: 64 kbps
    b.) Bearer Capability: voice, 3.1 kHz audio, 7 kHz audio

Service Conditions of the calling station
1. When the calling station is in the following status, CCNR cannot be set:
    a.) when the station has set Camp-On, or when Camp-On is set to the station
    b.) when the station has set Camp-On - CCIS, or when Camp-On - CCIS is set to the station
    c.) when the station is holding a call (CALL HOLD [C-6])
    d.) when the service is restricted.
2. This service can be set only from the D^{term} or the DP station.

Service Conditions (cont'd)

3. When the calling station does not answer the recall within 30 seconds (this timing can be changed by the no answer timer), ringing stops, and CCNR service is cancelled.

4. A station cannot activate CCNR to more than one station at a time; i.e., multiple CCNR is not allowed. The number of simultaneous CCNRs per LP is as follows:

    480 (maximum number of calls) - (number of current ISDN calls + number of CCNRs being set)

5. If the calling station is in line lockout/make busy status when called back, CCNR is cancelled. However, if the calling station is recalled after returning to the normal status, CCNR is activated.

6. If all the Q-SIG tie line trunks are busy when the calling station is recalled, CCNR is cancelled.

7. If the station setting CCNR is engaged in another call when called back, CCNR is activated when the station is released from the call.

8. CALL WAITING - ORIGINATING [C-31] is restricted.

9. The following are the conditions when the path reservation method is used.

    a.) if no answer returns for the path reservation requirement within 30 seconds, CCNR is cancelled.

    b.) if an error message returns for the path reservation requirement, each of the following operations is made:

remote User Busy Again	: waiting for the called station to become idle.
failure To Much	: CCNR is cancelled
failed Due To Interworking	: CCNR is cancelled
unspecified	: CCNR is cancelled
others	: CCNR is cancelled

Service Conditions of the called station

1. When the called station is in the following status, CCNR cannot be set:

    a.) when the station is in line lockout status

    b.) when the station is in make busy status

    c.) when the station has set Camp-On, or when Camp-On is set to the station

    d.) when the station has set Camp-On - CCIS, or when Camp-On - CCIS is set to the station.

    e.) when the station is holding a call (CALL HOLD [C-6])

    f.) when ATTENDANT CAMP-ON WITH TONE INDICATION [A-1] is set to the station

    g.) when the service is restricted.

2. This service can be set only to the D^{term} or the DP station.

3. Once CCNR is set, it remains effective until the service is cancelled. However, if the called station activates line lockout without being idle, or if the calling station does not answer the recall within the predetermined time interval, CCNR is cancelled automatically.

4. CCNR cannot be set to more than one station at a time; i.e., multiple CCNR is not allowed. The number of simultaneous CCNRs per LP is as follows:

    480 (maximum number of calls) - (number of current ISDN calls + number of CCNRs being set)

5. If the calling station does not answer the recall within 30 seconds (this timing can be changed by the no answer timer), CCNR is cancelled from the called station.

6. If the called station belongs to a Station Hunting [S-7,S-8,S-9] group, CCNR is set to the called station (not to the hunt group).

Service Conditions (cont'd)

Service Conditions of the called station

7. If the called station has set one of the following Call Forwarding services, CCNR is set to the called station.

> CALL FORWARDING - BUSY LINE [C-2]
> CALL FORWARDING - DON'T ANSWER [C-3]
> CALL FORWARDING - BUSY LINE - OUTSIDE [C-60]
> CALL FORWARDING - DON'T ANSWER -OUTSIDE [C-74]

8. If the called station has set Call Forwarding - All Calls [C-5] or Call Forwarding - All Calls - Outside [C-28], CCNR is restricted.

9. CALL WAITING - TERMINATING [C-12] is restricted.

10. The following are the conditions when the path reservation method is used.

    a.) if the called station is busy again upon receiving the path reservation requirement, CCNR is postponed.

    b.) if the called station is busy again when Called Back after the path reservation is completed, CCNR is cancelled.

    c.) if the analog called station goes off - hook during the path reservation (during Call Back to the calling party), reader tone is sent (call origination is not available); in case of the D^{term} station, call origination using the called line is not available.
    When the calling station answers Call Back during this off - hook status, the analog station is connected, or the D^{term} station is rung.

11. The numbering plan should be considered so that each office in the Q-SIG network has the unique office number and can be connected to every other office in the network by dialing the same number. However, connection using sub-address service is not available. (In case of using Uniform Numbering Plan, each telephone number must be different from the others in the network.)

12. In case of Q-SIG data link failure during CCNR service, the following conditions occur:

    a.) If the failure occurs while the calling station is setting CCNR, CCNR is not set.

    b.) If the failure occurs while the calling station is cancelling CCNR, CCNR is cancelled only on the calling station side. If the message is not sent to the called station, the service is not cancelled on the called station side.

    c.) If the failure occurs while the calling station is recalled, CCNR is cancelled only on the called station side. If the message is not sent to the calling station, the service is not cancelled on the calling station side.

    d.) If the failure occurs when the calling station is answering the recall, CCNR is cancelled only on the calling station side. If the message is not sent to the called station, the service is not cancelled on the called station side.

Service Conditions of Q-SIG network

13. Alternate routing:

    a.) If the Q-SIG data link failure occurs during CCNR service, and if there is an alternate route available (provided it is a Q-SIG route), the message is sent on that route.

    b.) Path reservation (if used) and CCNR recall to the calling station are activated on the route that was used for sending the CCNR setting message; alternate routing is not available. If that route is busy and the calling station cannot be recalled (B-channel selection cannot be made), following operation is made as path reservation/CCNR recall failure:
    Failure at the calling office : Service is cancelled, and busy tone is sent to the calling station.
    Failure at the tandem office : Path reservation or CCNR recall error message is sent to the calling station, and CCNR cancellation message is sent to the called station.

C-153   Calling Name ID Presentation (CNIP)/ Connected Name ID Presentation (CONP)

General Description

This service (Supplementary Service - Calling Name Identification Presentation (SS-CNIP)/Connected Name Identification Presentation (SS-CONP), based on ETS 300 238) allows the name display service through the Q-SIG network. When the calling station places a call over the Q-SIG network, the Name ID of the calling station displays on the D^{term} LCD of the called station (CNIP service). Also, the called station Name ID displays on the D^{term} LCD of the calling station (CONP service). When the calling station is connected to a station in the CCIS network via Q-SIG network (tandem connection), the CNIP/CONP service and NAME DISPLAY - SYSTEM - CCIS [N-37] service interact to display the name information on the D^{term} LCDs of both sides.

Operating Procedure

No manual operation is required.

Service Conditions

1.   Q-SIG CIRCUIT SWITCHED BASIC CALL - ETSI VERSION [Q-4] should be available.
2.   This service is available in the network where the end to end Q-SIG link is established or in the network consisting of Q-SIG link and CCIS lines. However, in the following cases, this service is not available:
    a.) when the call is routed over the office where Q-SIG Name ID notification service is not available.
    b.) when the call is routed over the office where NAME DISPLAY - SYSTEM - CCIS [N-37] is not available.
3.   The routes to the office where Q-SIG Name ID notification service is available must be separated from the routes to the office where the service is not available.
4.   Even when the call is forwarded, the Name ID displayed on the calling station D^{term} LCD during ringing is that of the dialed station.
5.   When the call is forwarded to the other office (e.g., CALL FORWARDING - ALL CALLS - CCIS [C-45]), the Name ID displayed on the calling station D^{term} LCD is that of the terminating station (target station).
6.   CONP service is available when the called station is busy or in line lockout status. However, when the call is restricted, the Name ID does not display.
7.   When the either of the calling/called station places the other on Consultation Hold and blind transfers the call by Voice Call, the Name ID is not displayed to the transfer destination station.
8.   This service and CALLING PARTY INFORMATION TRANSFER [C-112] cannot be activated together.
9.   The Bearer Capability and data transmission specifications are as follows:
    a.) Data transmission speed: 64 kbps
    b.) Bearer capability: voice, 3.1 kHz audio, 7 kHz audio
10.   If there is no Name ID for the calling/called station, the calling/called number displays instead of the Name ID.

Service Conditions (cont'd)

11. The Name ID may consist of either 8 or 16 digits; however, a maximum of 50 digits can be transferred at the tandem office. The following table shows how the Name ID displays when 8-digit display notification and 16-digit notification are used simultaneously.

Calling Office Called Office → (No. of Name ID Digits)	Calling Station Name ID Display	Called Station Name ID Display
16 → 8	16-digit display in middle line (8 digits from the right are left blank)	8-digit display in upper line (first 8 digits are displayed)
8 → 16	8-digit display in upper line (first 8 digits are displayed)	16-digit display in middle line (8 digits from right are left blank)
8 → 16 → 8	8-digit display in upper line	8-digit display in upper line
16 → 8 → 16	16-digit display in middle line	16-digit display in middle line

12. Even though the D^{term} with 24-digit LCD display is used, only 8 or 16-digit display service is provided. In this case, 8 segments from the left are left blank and 16 segments from the right are used for the information display.

13. When 16-digit Name ID notification is assigned, multilines cannot be assigned on the D^{term}.

14. When the call to Q-SIG line is originated using the D^{term} subline, the Name ID of the subline is notified (in case of 8-digit display).

15. The called station Name ID is notified to the calling station only when the called number is the prime line of the called station (in case of both 8/16-digit display).

16. The information to be displayed may consist of alphanumeric characters and symbols stated in ISO-8859-1.

17. D^{term} with LCD display is required to activate this service.

18. When the Name ID that is restricted from displaying is received, it is not displayed.

19. This service is available when the calling/called station is in the following status or has set the following services:

CALL FORWARDING - ALL CALLS - CCIS	[C-45]
CALL FORWARDING - BUSY LINE - CCIS	[C-46]
CALL FORWARDING - DON'T ANSWER - CCIS	[C-47]
CALL PICKUP	[C-7]
CALL WAITING - ORIGINATING/TERMINATING	[C-31/12]
DO NOT DISTURB - CCIS	[D-76]
INTER-OFFICE OFF-HOOK QUEUING	[I-11]
OUTGOING TRUNK QUEUING	[O-2]
STEP CALL - CCIS	[S-59]
Answering a parked call	
Recalled from a held call	
Receiving a call from UCD [U-1] queuing	
Trunk Camp-On	

C-158   Call Forwarding Supplementary Service (SS-CF) with Rerouting

General Description

This feature provides Call Forwarding service activated following ETS 300 257 protocol (SS-CF). By using this feature, all incoming calls can be forwarded automatically after the destination is programmed against the called party. Also, rerouting function is activated with SS-CF service.
The functions of this feature are divided into the following:

   1.   Call Forwarding - Supplementary Service

        Example) The service activation procedures below are explained under this condition.
                 Station A : Calling Station
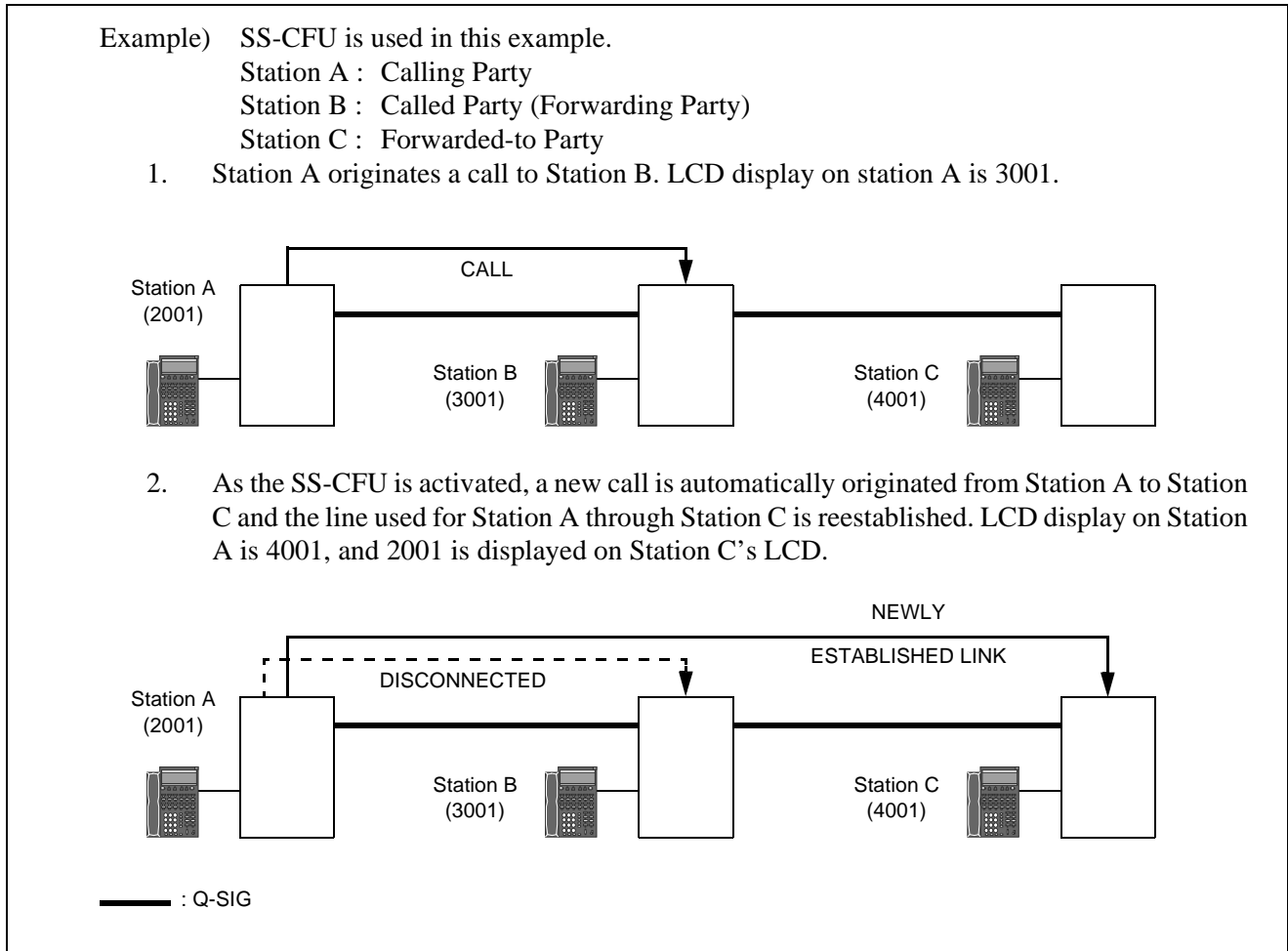   Station B : Called Station (Forwarding Station)
                 Station C : Forwarded-to Station
       a.)   Supplementary Service - Call Forwarding Unconditional (SS-CFU)
             All incoming calls routed to the station are forwarded to the designated destination automatically.
             (1) Station A originates a call to Station B.
             (2) The call is forwarded to Station C.
       b.)   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.
       c.)   Supplementary Service - Call Forwarding No Reply (SS-CFNR)
             When the called station is 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.

General Description (cont'd)

2. Rerouting Function
   In order 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-to Party

1. Station A originates a call to Station B. LCD display on station A is 3001.

CALL

Station A
(2001)

Station B
(3001)

Station C
(4001)

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.

NEWLY
ESTABLISHED LINK
DISCONNECTED

Station A
(2001)

Station B
(3001)

Station C
(4001)

──── : Q-SIG

Operating Procedure

To set the service

The SS-CF service setting should not be duplicated. The following operations (either by the access code or by the feature/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; receive dial tone.
2.   Dial each access code for setting the corresponding Call Forwarding service; receive special dial tone.
3.   Dial the destination's number; receive service set tone.
4.   Replace the handset.

Using the feature/soft key
1.   Lift the handset; receive dial tone.
2.   Press each feature/soft key for setting the corresponding Call Forwarding service; receive special dial tone.
3.   Dial the destination's number; receive service set tone.
4.   Replace the handset.

To cancel the service

Using the access code
1.   Lift the handset; receive dial tone.
2.   Dial each access code for canceling the corresponding Call Forwarding service; receive service set tone.
3.   Replace the handset.

Using the feature/soft key
1.   Lift the handset; receive dial tone.
2.   Press each feature/soft key for canceling the corresponding Call Forwarding service; receive service set tone.
3.   Replace the handset.

Service Conditions

Call Forwarding - Supplementary Service
1.   The conditions for service set/cancel are the same as those of CALL FORWARDING - ALL CALLS [C-5]/BUSY LINE[C-2]/DON'T ANSWER[C-3].
2.   The allowable terminals for this service are a D^{term}, analog station, ISDN terminal, PCS and Attendant Console.
3.   This feature is available with ETS 300 172 interface.
4.   This feature is restricted by the Service Feature Restriction Class (SFC) that denies CALL FORWARDING - BUSY LINE [C-2]/DON'T ANSWER [C-3]/ALL CALLS [C-5].
5.   The name display for supplementary information is available with this feature if Name Identification supplementary services (ETS 300 238) are 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 those of Name ID function provided as the supplementary service of Q-SIG. Refer to CALLING NAME IDENTIFICATION (CNIP)/CONNECTED NAME IDENTIFICATION PRESENTATION (CONP) [C-153].
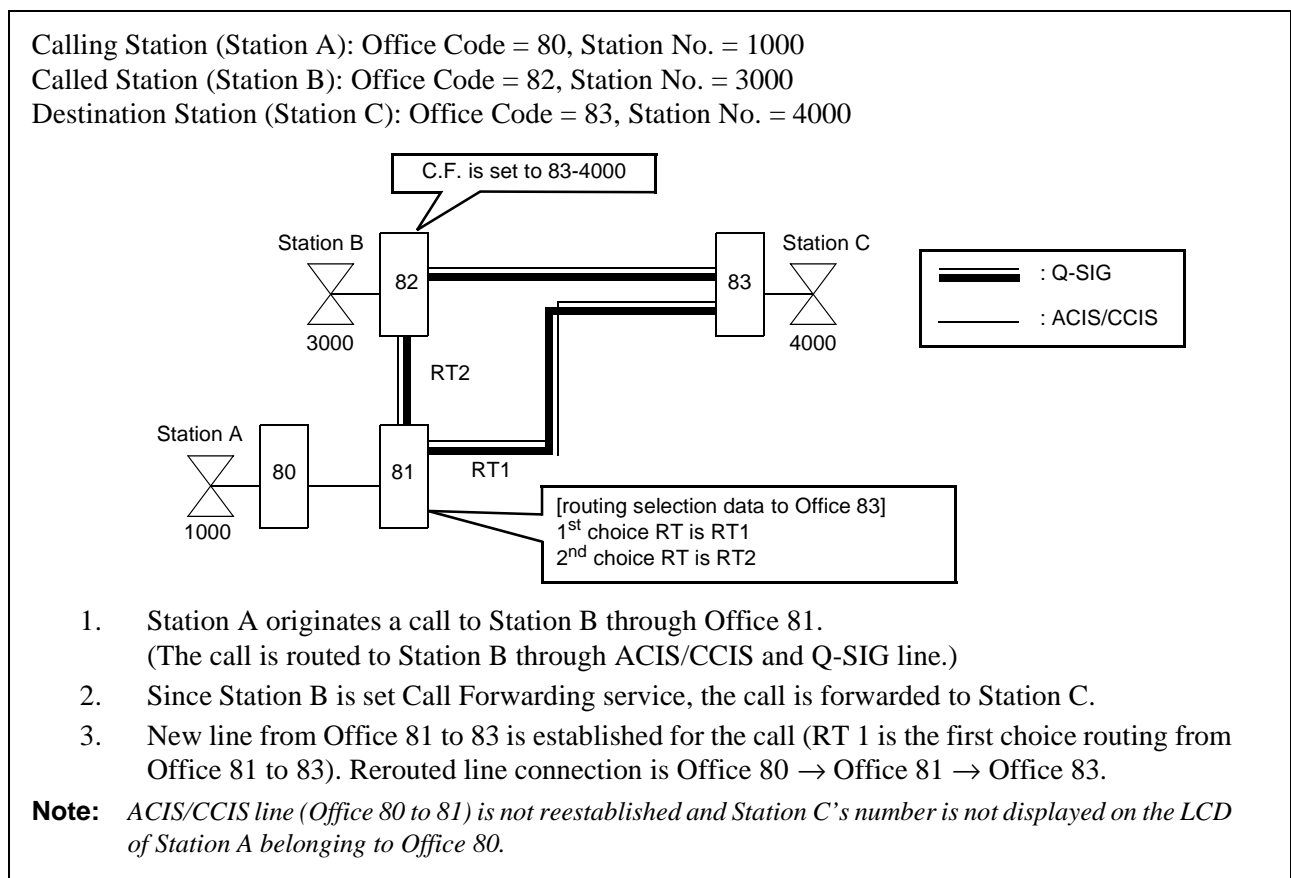
Service Conditions (cont'd)

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 times 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.
    - The number of times 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 is performed the preprogrammed number of times.

9. When the forwarded party or the forwarded trunk is busy:
    SS-CFU: The call is forwarded. The caller hears busy tone.
    SS-CFB: The call is forwarded. The caller hears 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 busy tone.
    SS-CFB: The call is not forwarded. The caller hears 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 does not exceed the preprogrammed number):
    Example 1) Station A originates a call to Station B, and Station B is set to forward a call to Station C. Station C is set to forward a call 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 is set to forward a call to Station C. Station C is set to forward a call to Station D and then Station D is set to forward a call 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 Q-SIG, the displayed number is as follows:
    - On the caller's LCD, the display that indicates the connected party's number is not changed until the forwarded destination answers the call. (If using 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 destination's LCD, the display is the same as when the call is forwarded using the CALL FORWARDING service.

Service Conditions (cont'd)

Rerouting Function
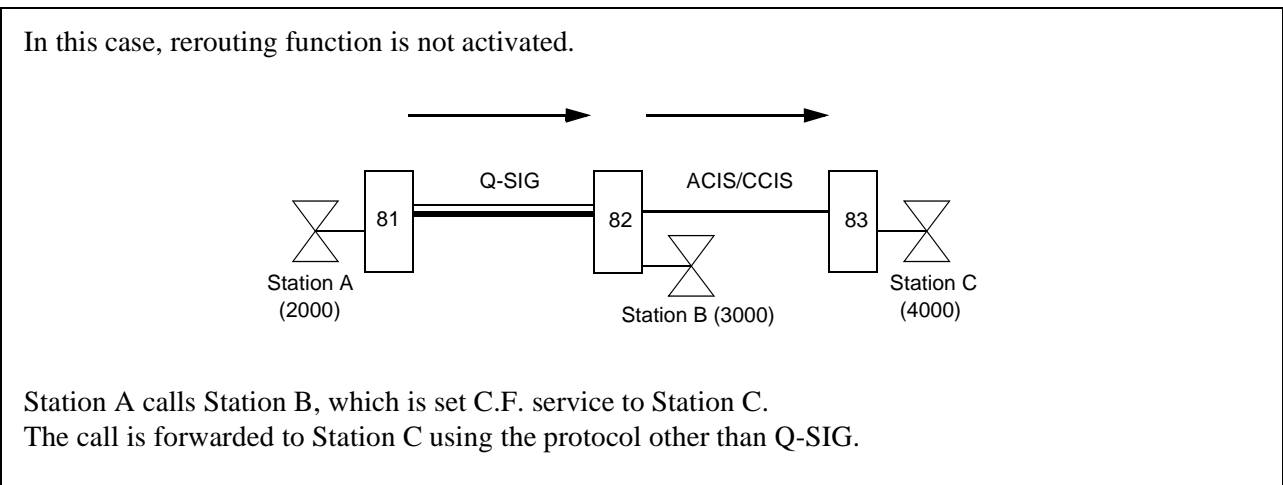
1. Rerouting function is available when:

   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.) Each of the calling party and the called party is a D^{term} or analog station. (When either of them is an ISDN terminal, PS terminal or Attendant Console, Call Forwarding service is activated without rerouting function). As for the forwarded-to station, any terminal is available for this service.

   e.) Another service is activated on the calling party.

2. Rerouting function is also available for the call in the case below.

Calling Station (Station A): Office Code = 80, Station No. = 1000
Called Station (Station B): Office Code = 82, Station No. = 3000
Destination Station (Station C): Office Code = 83, Station No. = 4000

1. Station A originates a call to Station B through Office 81.
   (The call is routed to Station B through ACIS/CCIS and Q-SIG line.)

2. Since Station B is set Call Forwarding service, the call is forwarded to Station C.

3. New line from Office 81 to 83 is established for the call (RT 1 is the first choice routing from Office 81 to 83). Rerouted line connection is Office 80 → Office 81 → Office 83.

Note: *ACIS/CCIS line (Office 80 to 81) is not reestablished and Station C's number is not displayed on the LCD of Station A belonging to Office 80.*
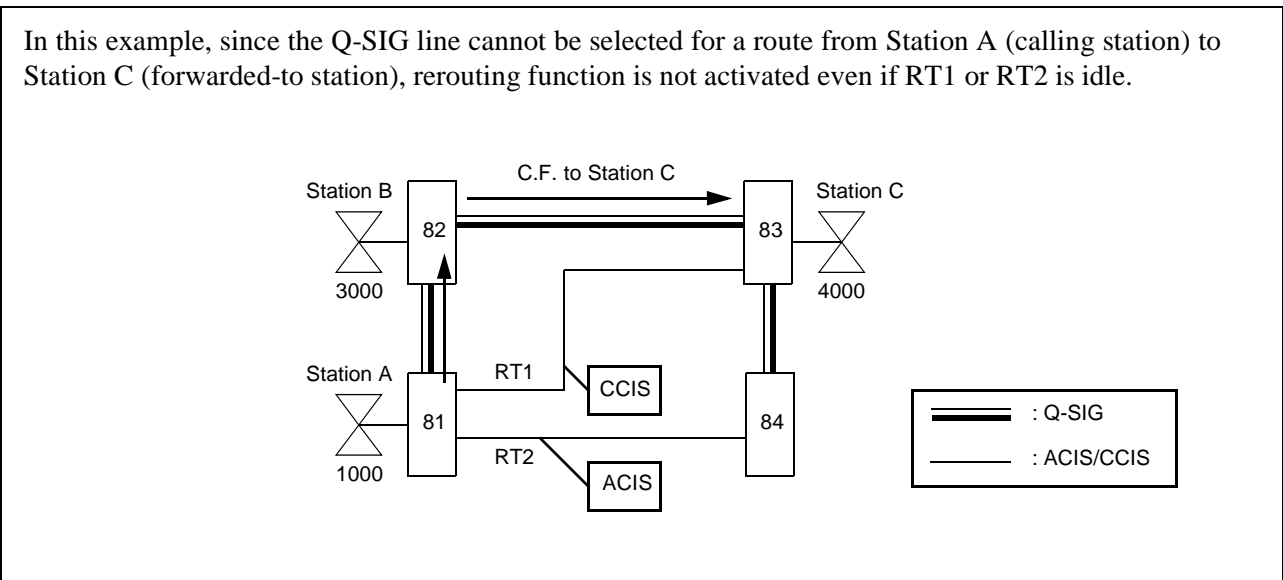
3. When interworking through FCCS link, rerouting function is activated with no restriction.

4. When station-to-station connection is established between a calling party and a called party, the called party and the forwarded party, rerouting function is not activated (Station-to-station connection in an FCCS network is also applied to this conditions).

Service Conditions (cont'd)

5.   When the selected route for forwarding a call (from the called station to the forwarded-to station) is other than Q-SIG line, Call Forwarding service is activated without rerouting function. See the figure below.
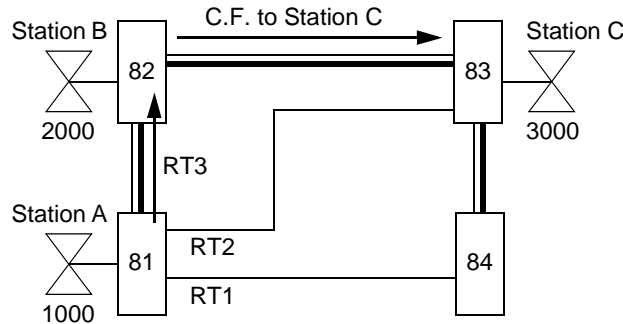
In this case, rerouting function is not activated.

Station A calls Station B, which is set C.F. service to Station C.
The call is forwarded to Station C using the protocol other than Q-SIG.

6.   When there is no route that supports Q-SIG 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 line cannot be selected for a route from Station A (calling station) to Station C (forwarded-to station), rerouting function is not activated even if RT1 or RT2 is idle.
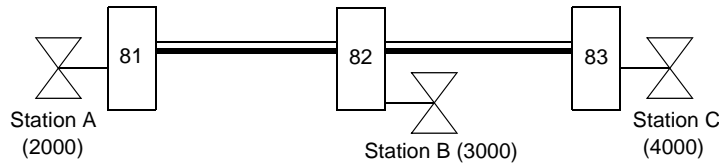
Service Conditions (cont'd)

7. Reestablished route is decided by the routing selection pattern data programmed at the office where the calling party is accommodated or at 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 Example 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
RT 1 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 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.

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-to station no matter when (before of 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 the 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 following 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 following 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 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 [C-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 reorder tone.

6. When OUTGOING TRUNK QUEUING [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).

Interactions (cont'd)

7. When the OFF HOOK QUEUING [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 QUEUING 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 QUEUING, the calling number display or the name display is not provided.

8. When the call forwarded by this feature is forwarded by AUTOMATIC ANNOUNCEMENT - CALLED PS OUT OF ZONE [A-129]/CALL FORWARDING PS INCOMING CALL INCOMPLETE [C-155] service due to that 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:

    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:

    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.

C-159   Call Transfer Supplementary Service (SS-CT) with Rerouting

General Description

This feature provides CALL TRANSFER activated to be followed by ETS 300 260 protocol (SS-CT). By using this feature, the station can hold the handling call to transfer to the remote terminal. The rerouting function is also activated with SS-CT service.

The functions of this feature are divided into the following:

 1.   Call Transfer - Supplementary Service

  Example) Station A : Calling Party
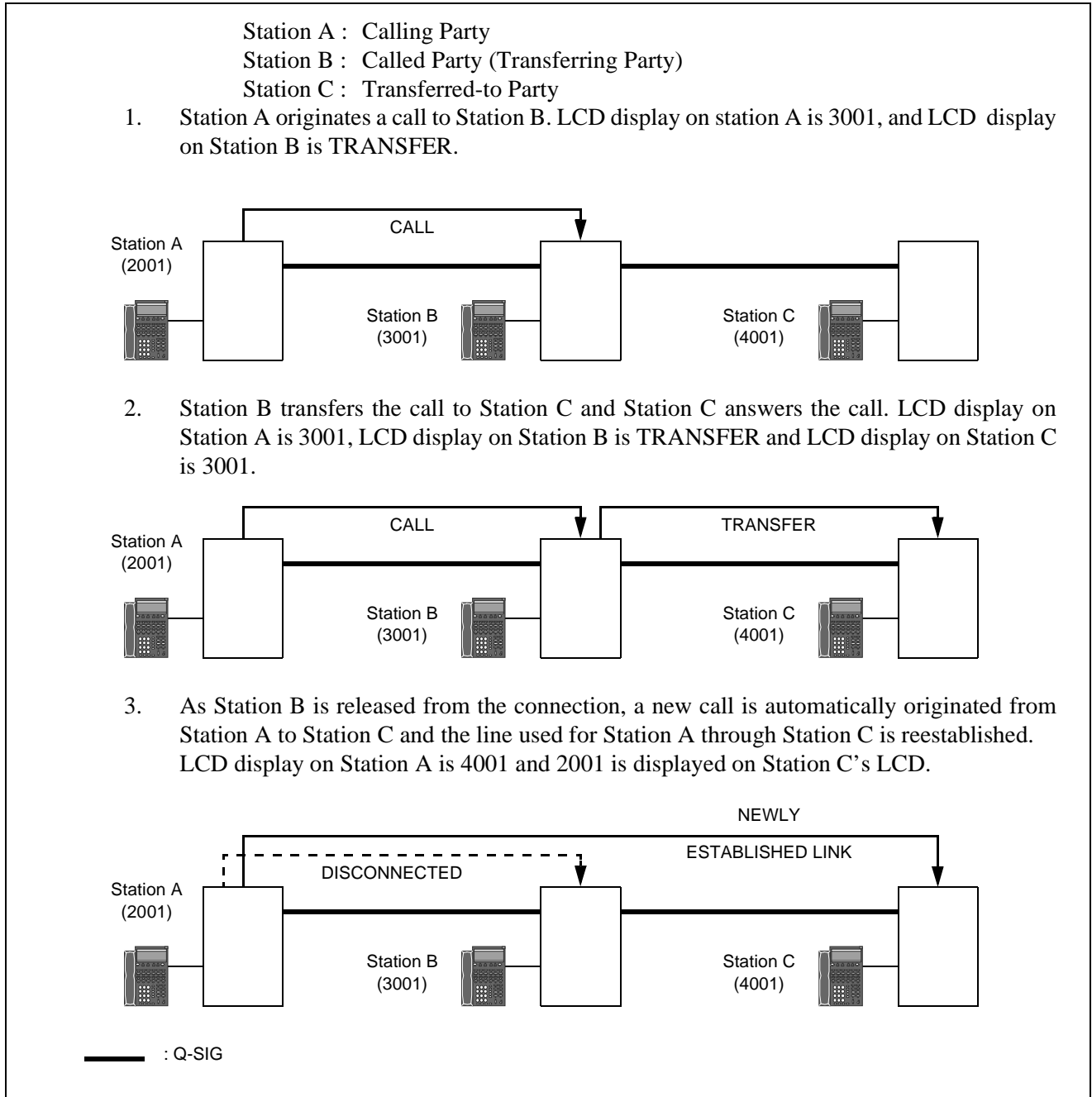   Station B : Called Party (Transferring Party)
       Station C : Transferred-to Station

  a.)   When the intermediate party is disconnected after the transferred-to party answers the call:
   (1) Station B holds a call from Station A.
   (2) Station B calls Station C and Station C answers the call.
   (3) Station A is connected to Station C as Station B is disconnected.

  b.)   When the intermediate party is disconnected before the transferred-to 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 the call, and the tone Station A receives changes from the hold tone to the ringback tone.
   (4) Station A is connected with Station C.

General Description (cont'd)

2. Rerouting Function
   In order to prevent holding the unnecessary line, the line from the calling party to the transferred 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 (Transferring Party)
Station C :   Transferred-to 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.

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 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.

━━━━━ : Q-SIG

Operating Procedure

This feature is operated when the station is in the two-party connection.

To set the service
1. Perform the switch hook flash; receive special dial tone.
2. Dial the destination's number; receive ringback tone.
3. The destination party answers the call.
4. The user replaces the handset. **Note**
5. The calling party and the transferred-to party are connected.

Note: *The user may replace the handset before the transferred-to party answers the call. In that case, the caller hears ringback tone in place of hold tone.*

Service Conditions

Call Transfer - Supplementary Service
1. This service is available for a D^{term}, analog station, ISDN terminal, PCS terminal, or Attendant Console.
2. This feature is available with ETS 300 172 interface.
3. Bearer Capability information available 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 be used to switch the connected party to the held party.
5. If the transferring party hangs up before the destination answers the call (transfers a call by BLIND TRANSFER) and the transferred-to party is busy, the transferring party is recalled.
6. If the call transferred is to be released from the connection after the destination answers the call, the switchhook flash is available for the transferring party to place back the original connection in case 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 special dial tone (before dialing the destination's number), the caller hears 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 reorder tone. In this case, the transferring party can perform the switchhook flash to reconnect with the calling party.
9. In this service, an incoming call via the COT cannot be transferred using BLIND TRANSFER service.
10. When the service used is to be interworked with an interface except Q-SIG, the displayed number is not changed at the calling station. The display is the same as before the SS-CT service activated and the LCD of the calling station displays the called station (transferring party). However, the LCD of the 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.
    c.) Transmission speed rate is 64 kbps.

Service Conditions (cont'd)

         d.)   Each calling party, the called party and the destination station is a D^{term} or analog station.

         e.)   Another service is activated on the calling party, called party and destination station.

2.   Rerouting function is also available for the call as in the following case.
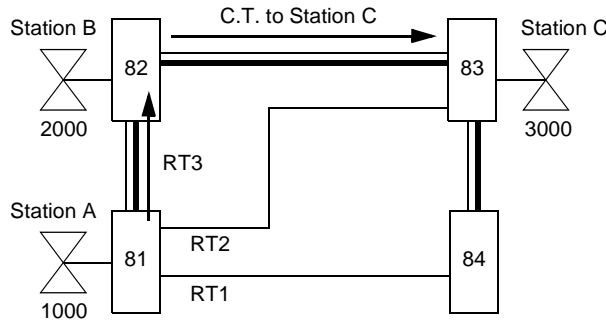

Calling Station (Station A): Office Code = 80, Station No. = 1000
Called Station (Station B): Office Code = 82, Station No. = 3000
Destination Station (Station C): Office Code = 83, Station No. = 4000

1.   Station A originates a call to Station B through Office 81.
   (The call is routed to Station B through ACIS/CCIS and Q-SIG line.)

2.   Station B transfers the call from Station A to Station C; Station B is released from the connection.

3.   New line from Office 81 to 83 is established for the call (RT 1 is the first choice routing from Office 81 to 83). Rerouted line connection is Office 80 → Office 81 → Office 83.

Note: *ACIS/CCIS line (Office 80 to 81) is not reestablished and Station C's number is not displayed on the LCD of Station A belonging to Office 80.*

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4.   When interworking through FCCS link, rerouting function is activated with no restriction.

5.   When station-to-station connection is established between a calling party and a called party, the called party and the transferred-to party, rerouting function is not activated.

6.   When rerouting function is not available or the activation is failed, Call Transfer service is activated without rerouting function.
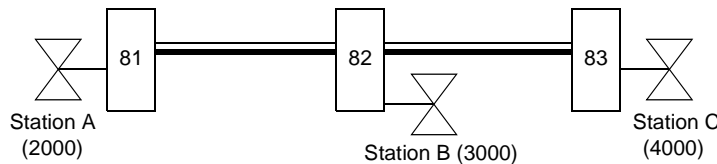
Service Conditions (cont'd)

7. Reestablished route is decided by the routing selection pattern data programmed at the office where the calling party is accommodated, or at the gateway PBX office to the called station. Therefore, an improper route or the route that is the same as before the rerouting function may be selected depending on the office data.

For Example 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
RT 1 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 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.

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. However, the station which operated CALL PARK can use the SS-CT service for 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 which the call is transferred with the SS-CT service is busy, a new call can be originated using STEP CALL.

4. When OUTGOING TRUNK QUEUING [O-2, 2D]/OFF HOOK QUEUING [O-7, 7D]/INTER-OFFICE OFF HOOK QUEUING [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 be released 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 using the BLIND TRANSFER service, it is not counted.

6. This feature requires 24DTI circuit card.

7. When this service is operated by using BLIND TRANSFER, the number that indicates the connected party at the calling party's LCD is different between CALL TRANSFER service activated through Q-SIG and the service activated through CCIS.
   - Q-SIG - The display of the calling party is changed from the transferring party's number (calling party's number) to the destination's number at the moment the transferring party is released 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, which is set Call Forwarding - Don't Answer, and is released before the destination station answers the call, Call Forwarding - Don't Answer is not effective while rerouting function is activated.

C-164   CCIS Tandem Call - Calling Party Number (CPN) Delivery to ISDN & Q-SIG Networks

General Description

This feature allows the call from a Tie Line (CCIS line or Q-SIG) station or Attendant Console for INDIVIDUAL ATTENDANT ACCESS [I-6], to be sent to the public ISDN network (AT&T, NT, NI-2) and Q-SIG network. 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 assignments is available.

Operating Procedure

No manual operation is required.

Service Conditions

1. This feature 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 are not deleted automatically as normal operation.
4. In case the number of digits of the registered number is less than that of the 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.
5. When assigning more than 8-digit number (including the office code of the self office) to be received from the CCIS line, the number must be assigned as Physical Telephone Number because Physical Station Number is sent as the calling party number.
6. This feature is not available for the call originated using OAI/ACD feature.

D-123   Direct Inward Dialing (DID) Addressing
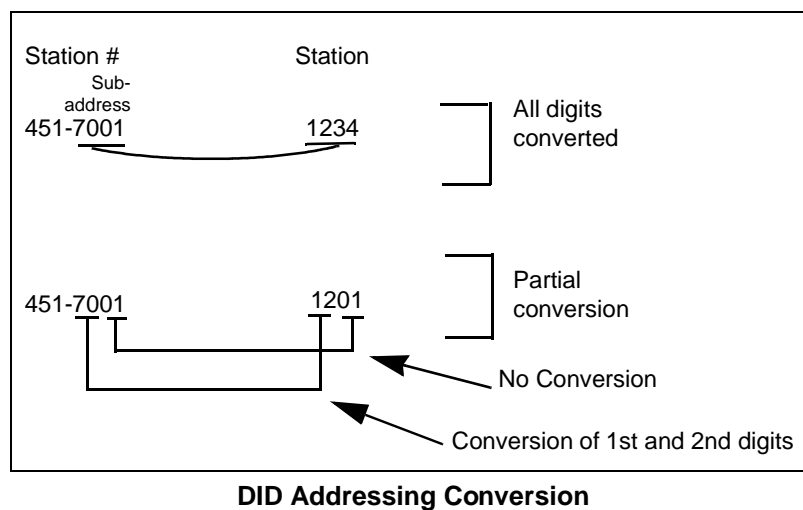
General Description

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.

Operating Procedure

No manual operation is required.

Service Conditions

1. The DIRECT INWARD DIALING (DID) numbering plan provided from the ISDN office determines the number of stations that can take advantage of this service.
2. If the network is notified that the destination station for the DID call is busy or a connection-controlled station, the network gives the calling station a busy tone. (This depends upon call forwarding services being in service.)
3. The DID number can be converted to a telephone number in the PBX.

DID Addressing Conversion

D-152 D Channel Backup - PRI

General Description

This feature provides a backup D-channel in non-facility associated signaling, by which even if the primary D-channel encounters link down, etc., the backup D-channel may be active.

Operating Procedure

Manual switch-over is available by:
- designating the required route by means of MAT command (CDBU).
- pull up MB switch on a circuit card of the active D-channel. (Circuit card Make Busy)
- switching on the LB#3 switch on a circuit card of the active D-channel. (Dch handler Make Busy request)

Service Conditions

1. This service may be provided when non-facility associated signaling is employed.
2. The protocol for network interface is AT&T or Nortel.
3. Main and backup D-channels, and all controlled B-channels, must be assigned in the same LP.
4. If the 2DCH circuit card is used, assignment of both main and backup D-channels is not permitted on the same circuit card.
5. Start/completion of D-channel switch-over displays as a system message.
6. The switch-over status may be displayed from the MAT.
7. Switch-over from the MAT must be done only when both main and backup links are established. (Pulling up MB switch or switching on the LB#3 switch on a circuit card is not restricted.)
8. Office data for the backup D-channel must not be changed during switch-over.
9. A speech path is kept during and after switch-over.
10. Send/received messages in firmware during a layer 2 failure are cleared.
11. Identification of the active D-channel cannot be determined by the LED on the circuit cards. (It is available by reading the memory from the MAT command.)
12. Just after the system/LP initialization, the primary D-channel is ACT. However, if the backup D-channel is established before the primary D-channel is done, backup D-channel is ACT.
13. Timer value of T321 may be determined by system data. Its default value is 30 seconds.
14. Backup timer value may be determined by system data. Its default value is 0 second.
15. This service supports T309. (This is used to set the recovery time from both main and backup D-channels lost link.)

E-23   Event Based CCIS - ISDN Transport

General Description

This feature provides Virtual Tie Line service 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.

Operating Procedure

No manual operation is required.

Service Conditions

1. The ISDN Primary Rate Interface (PRI) trunk is used for this feature.
2. The following ISDN interfaces are available:

     No.4ESS
     DMS100
     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 respectively. For E-CCIS, 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 an 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 E-CCIS, DID Number is required for each D-channel.
     d.) alternate route for the E-CCIS line cannot be assigned.
5. Each trunk for E-CCIS line cannot be used for the public ISDN line.
6. An E-CCIS signal channel and E-CCIS voice channels controlled by that signal channel must be assigned in the same turn. (Each channel used for an E-CCIS line must be controlled by a single D-channel.)
7. The number of routes that can be assigned for E-CCIS is up to five routes per D-channel.
8. When Verification of Connection is in service, and if the last four digits of the received number are different from those of the called number assigned by System Data, the connection is not established.
9. Release Timer of an E-CCIS line should be assigned for each channel (the value is assigned on a route basis). When assigned time goes up after call completion, the E-CCIS line is released. The timer may be 15 sec., 30 sec., 1 min., 2 min., 5 min., 10 min., 1 hr., immediately after call completion (for a voice channel only) or not released. If there is no assignment, 3-minute timer is set. If immediately after call completion is set for the signal channel, 1-minute timer is set.

Service Conditions (cont'd)

10. The following are the conditions of E-CCIS setup, Release Timer setting and E-CCIS release:
    a.) Conditions of E-CCIS setup:
       - If no voice channels are set up when a call occurs, a voice channel and the signal channel are set up at the same time.
       - If the signal channel is set up and no voice channels are released (Release Timer is being activated), or if the signal channel is set up and no voice channels are set up, a voice channel is set up when a call occurs.
       - If no channels are set up when the signal controlled by the signal channel only (MCI, MW lamp control, etc.) occurs, the signal channel is set up.
    b.) Conditions of Release Timer setting:
       - When the signal controlled by the signal channel only is transmitted or received, Release Timer of the signal channel is activated.
       - At the time of call completion, Release Timer of a voice channel is activated.
    c.) Conditions of E-CCIS release:
       - If all the voice channels but one are released and Release Timer of the signal channel has not been set, the established voice channel and the signal channel are released at the same time when Release Timer of the voice channel expires (at the time of call completion, if Release Timer is set at immediately after call completion).
       - When Release Timer of a voice channel expires, and if another voice channel or the other voice channels are setup, that voice channel is released.
         If all the voice channels but one are released, and when Release Timer of the established voice channel expires while Release Timer of the signal channel is being activated, the voice channel is released.
       - If Release Timer of the signal channel expires when no voice channels are set up, the signal channel is released.
       - If Release Timer of the signal channel expires (Release Timer has not been assigned.) when one or more voice channels are set up, no channels are released.
11. If all the E-CCIS routes are used, the connection can be established using the alternate route.
12. When the connection is not established due to line failure, etc., system message is output.
13. Bearer capability for voice channels of the E-CCIS line can be selected on a route basis, unrestricted digital or speech. However, Bearer capability for a signal channel is unrestricted digital only.
14. If speech is selected for bearer capability for a signal channel of the E-CCIS line, data communication using that E-CCIS route is restricted.
15. When the signal channel of the E-CCIS line is set up, the message control signal (such as the MCI message) is sent to an E-CCIS route immediately. If not, the signal channel of the E-CCIS line is set up, and then the message control signal is transmitted.
16. If patrol operation is performed for the E-CCIS turn, that E-CCIS line should be in the status of Release Timer time out.
17. A trunk used at the time of call origination is selected from the trunk which has been set up for the E-CCIS line. If two or more trunks have been set up, a trunk is selected by Trunk Route Data.

Service Conditions (cont'd)

18.   If line failure occurs, the alternate route is used when system message is received from ISDN network, according to priority.

The alternate route can be used when the call is:

   a.) originated from a station.
   b.) originated from a station while holding a station call.
   c.) originated from a station while holding a trunk call.
   d.) originated using Tandem connection.
   e.) originated from an Attendant.
   f.) originated from an Attendant while holding a station call.
   g.) originated from an Attendant while holding a trunk call.

The alternate route cannot be used when the call is:

   a.) originated from an ISDN terminal or a PS terminal.
   b.) a data call.
   c.) originated from an MFC trunk using Tandem connection.
       If no alternate route is assigned, all the outgoing routes are busy.

When the alternate route is used, the following services cannot be used:

OFF-HOOK QUEUING	[O-7]
OUTGOING TRUNK QUEUING	[O-2]
INTER-OFFICE OFF-HOOK QUEUING	[I-11]
ROUTE RESTRICTION - ANNOUNCEMENT	[R-27]
OUTGOING TRUNK BUSY - ANNOUNCEMENT	[O-21]

Dialing of AUTHORIZATION CODE [A-20] in case of the Tandem connection via the ISDN trunk.

19.   The following features are available for the E-CCIS line:

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	[C46]
CALL FORWARDING - DON'T ANSWER - CCIS	[C47]
CALL FORWARDING - INTERCEPT	[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]

Service Conditions (cont'd)

DATA COMMUNICATION - CCIS	[D-41]
DATA INTERFACE - AUTOMATIC ANSWER - CCIS	[D-65]
DATA LINE SECURITY - CCIS	[D-66]
DATA LINE PRIVACY - CCIS	[D-67]
DATA PRIVACY ON DEMAND - CCIS	[D-68]
DATA TRANSPARENCY - CCIS	[D-69]
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]
DIALED NUMBER DISPLAY - RECALL - CCIS	[D-91]
DUAL HOLD D^{term} - CCIS	[D-93D]
EXECTIVE 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]
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]

Service Conditions (cont'd)

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]

20. The following features are available only when the attribute data of ISDN calls for the E-CCIS line is assigned for data calls:

ASYNCHRONOUS DATA SWITCHING	[A-44]
DATA COMMUNICATION	[D-41]
DATA INTERFACE - AUTOMATIC ANSWER	[D-65]
DATA LINE SECURITY	[D-66]
DATA LINE PRIVACY	[D-67]
DATA PRIVACY ON DEMAND	[D-68]
DATA TRANSPARENCY	[D-69]
DATA HOTLINE - CCIS	[D-86]
MODEM POOLING - CCIS	[M-39]

21. 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]

E-24 Event Based CCIS - Q-SIG Transport

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.

Operating Procedure

No manual operation is required.

Service Conditions

1. The ISDN Primary Rate Interface (PRI) trunk is used for this feature.
2. The 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 the D-channel of ISDN.
4. This feature is activated between two PBXs directly connected each other. Therefore, this feature is not available for the 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 and 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 for each D-channel.
8. Each channel used for an E-CCIS line must be controlled by a single D-channel (i.e., Each channel must be assigned to a single ISDN line.).
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 by DESTINATION of the AEVT command is output to the SMDR Record in place of a telephone number.
    c.) Billing information on E-CCIS line does not include Access Code or Converted Number.
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 all the channels are busy.
12. The release timer is activated when the CCIS call is disconnected.

Service Conditions (cont'd)

13. The following features are available for the E-CCIS line:

ASYNCHRONOUS DATA SWITCHING - CCIS	[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]
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]

Service Conditions (cont'd)

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: *This feature is available when the attribute data of ISDN calls for the E-CCIS line is assigned for data calls.*

I-28 ISDN Individual Calling Line Identification (ICLID)

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.
There are two types of calling party numbers; Automatic Number Identification (ANI), used for accounting; and Station Identification (SID).

Operating Procedure

No manual operation is required.

Service Conditions

1. For intra-office connection only, ANI is delivered to the called party.
2. For intra-office connection through public ISDN, only ANI is delivered to the called-party.
3. The DIRECT INWARD DIALING (DID) number can be converted to a telephone number in the PBX.
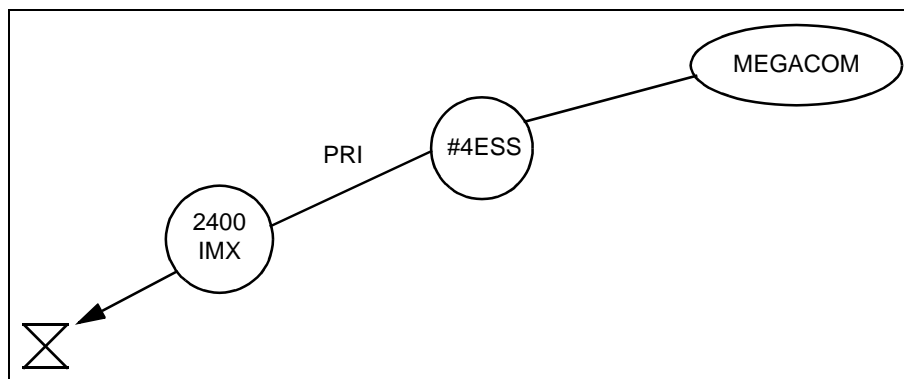
ISDN ICLID Connection

M-76 Megacom Access

General Description

AT&T's MEGACOM (WATS) network can be used.
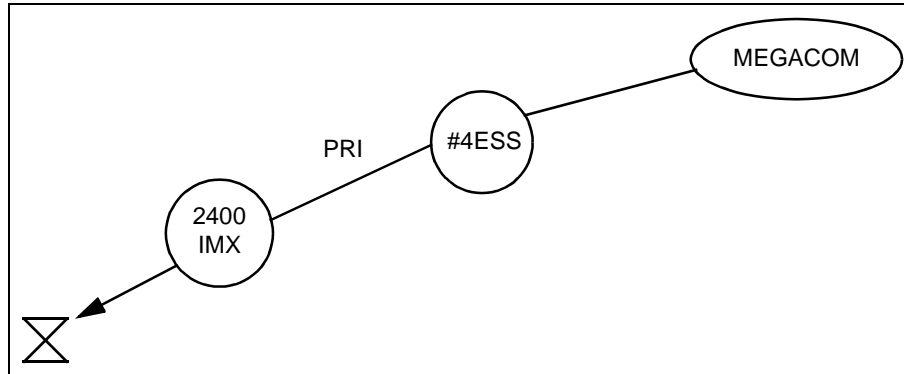
Megacom Access Connection

Operating Procedure

No manual operation is required.

Service Conditions

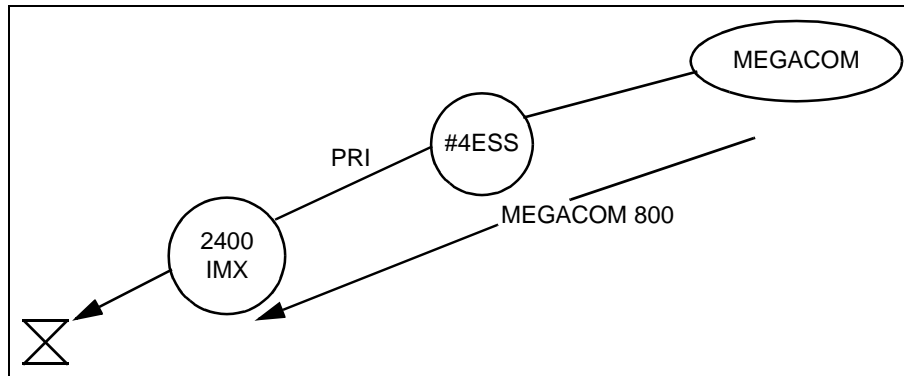The available WATS service is limited to Maximal Subscribed WATS Band (MSB).

Note: *The parameter band service where zone is specified on a call-by-call basis is provided by the #5ESS only.*

M-77 Megacom 800 Service

General Description

AT&T's MEGACOM 800 (INWARD WATS) network can be used.

Megacom 800 Service Connection

Operating Procedure

No manual operation is required.

Service Conditions

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.
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.

N-39 NI-1 BRI Terminal Support

General Description

This feature supports the Bellcore BRI protocol, National ISDN-1 for connection of Voice and Data circuit switched terminals.

The PBX may send Endpoint Identifier (EPID) to the terminals by receiving their Service Profile Identification (SPID) and provide supplementary service (CALL TRANSFER) by Feature Identifier (FID) assigned on each terminal. The National ISDN-1 Hold feature is also supported.

The PBX enables the N-ISDN1 terminal to display a calling number upon call termination by delivering a SETUP message with the information element of Display Text.

The N-ISDN1 terminal may also display Call Hold or Call Transfer service when it is activated.

Operating Procedure

SPID and FID are assigned according to the N-ISDN1 terminals.

Service Conditions

1. The SPID is assigned in each terminal (A telephone number + 00 is preferred.). An SPID number of 20 digits or the less may be assigned.
2. The EPID the PBX sends to a terminal is in response to the SPID received from the terminal. The User Service Identifier (USID) in EPID is a value using first 2 digits of SPID, and Terminal Identifier (TID) in EPID is the value using last 2 digits of SPID. However, if the last 2 digits of SPID is 63 or higher, TID is 62. When SPID is 1 digit, USID is the first digit plus 0. SPID and TID is the value using SPID.
3. Since Electronic Key Telephone Service (EKTS) is not supported, USID which is included in EPID upon sending a SETUP message to a terminal, is fixed 127 and TID is omitted.
4. The maximum number of patterns for FID is 31 (from 1 to 31), allowing the many different terminal types using different FID fixed values.
5. FID ranges from 1 to 127.
6. An FID pattern is assigned for the number of the station using the B1-channel (even Level). Since the B2-channel is controlled according to the FID pattern assigned to the B1-channel, assignment to the B2-channel is not needed. Therefore if station data of the N-ISDN1 terminal is assigned only to the B2-channel, this service is not activated.
7. Display Text on the SETUP message, which is delivered to the N-ISDN1 terminal from the PBX, is the same as the calling party number.
8. The disconnection (DISC) message including Display Text to clear the display is delivered when a call is disconnected from the PBX.

Service Conditions (cont'd)

9. The following are Display Texts which can be displayed on the N-ISDN1 terminal:

Display Number	Display Text	Message	Situation causing delivery of display to user
FC-13	Transfer to:	HOLD or INFO	Transfer request with call reference value of a non-conference related call
FC-19	Transfer denied Try again later	INFO	Transfer request rejected because call not established
HC-1	Call Held	HOLD ACK	If call successfully held
HC-2	Held Call Cleared	clearing	Held call cleared by held user or switch
HC-5	You are on hold	NOTIFY	Notification indicator information coded to remote-hold
HC-6	Request denied	HOLD REJ	Cause #50 in HOLD REJ message
		INFO	Hold procedure unsuccessful with transfer request
CC-5	Connected	CONN ACK	Sent to called party in CONN ACK
		NOTIFY	Notification indicator information coded to remote-hold release
CC-23	Call blocked Try again later	RET REJ	Cause #34 in RET REJ message Cause #44 in RET REJ message

10. Circuit card PA-8ILCE-A is required.

N-40 Non-Facility Associated Signaling - PRI

General Description

This feature expands the number of B-channels controlled by one D-channel in a system.

Operating Procedure

No manual operation is required.

Service Conditions

1. Limitations on the number of B-channels controlled by one D-channel in a system are explained below. The limitations depend on the system traffic, so those are shown at each system.
   Transaction abilities are as follows:
   a.) When the system is composed of ISDN terminals/ISDN trunks only and ACD service is available (IOT : OG : IC = 40 : 30 : 30):

System	OG + IC	IOT + OG + IC
IMX	9,670BHC	16,120BHC

   b.) If the mean conversation time is 2 minutes and the used line rate is 85%, the following estimated traffic may be needed for non-facility associated signaling:

The number of Bch	Estimated traffic
47 (DTI 2)	1,290BHC
71 (DTI 3)	1,980BHC
95 (DTI 4)	2,640BHC
119 (DTI 5)	3,340BHC
143 (DTI 6)	3,940BHC
167 (DTI 7)	4,660BHC
191 (DTI 8)	5,350BHC

   c.) The maximum number of B channels which can be controlled by one D channel is 191.

N-42   National ISDN - 2 PRI

General Description

This feature enables a basic connection to the N (National) – ISDN2 network and supports Non-facility Associated Signaling – PRI [N-40] service, D channel Backup – PRI [D-152] service, etc., via this network.

Operating Procedure

No manual operation is required.

Service Conditions

1. The network protocol should be NI-2 (National ISDN2).
2. Conditions on D channel Backup – PRI service are the same as those on existing D channel Backup – PRI service. However, protocol identifier should be 0×43.
3. This service does not support the features in the network side.
4. This service does not support the Virtual Tie Line (Time Link).
5. This service does not support the calls having the BEARER information element of which data speed is $N \times 64$ kbps.
6. The following issues of firmware are required to be equipped on the circuit cards:

Circuit Card	
PA-24PRTB	Contact NEC Engineering for firmware requirements.
PA-24DTR	Contact NEC Engineering for firmware requirements.

P-58 PRI Terminal Support

General Description

This feature permits terminals which support the AT&T 4ESS protocol and H0/H11 services. The PBX acts as the terminal network.

## Operating Procedure

No manual operation is required.

Service Conditions

1. The protocol for AT&T network is used. The AT&T 4ESS protocol is used for this application.
2. Calls for B/H0/H11 type services can be switched.
3. Connected terminals must have the AT&T protocol.
4. Channel negotiation is not performed for calls using the H0/H11 services.
5. The SMDR record shows the call as a tandem connection. The SMDR record for the H0/H11 channel is the same as for B type call. SMDR information is not sent to terminals.
6. Service peg is not available.
7. Route peg count service for either H0/H11 channel is performed as one count, when the trunks are seized regardless of the number of the trunks.
8. Traffic measurement is performed for all trunks used for either H0/H11 channel.
9. Individual Trunk Access service is not available when the trunks are controlled as the H0/H11 channel.
10. Busy lamp field control is not supported.

Q-4 Q-SIG Circuit Switched Basic Call - ETSI Version

General Description

This feature provides a tie-line connection between the NEAX2400 IMX and the other Q-SIG PBX using the ISDN protocol in conformity with ETS 300 172 standardized by ETSI (European Telecommunications Standards Institute).
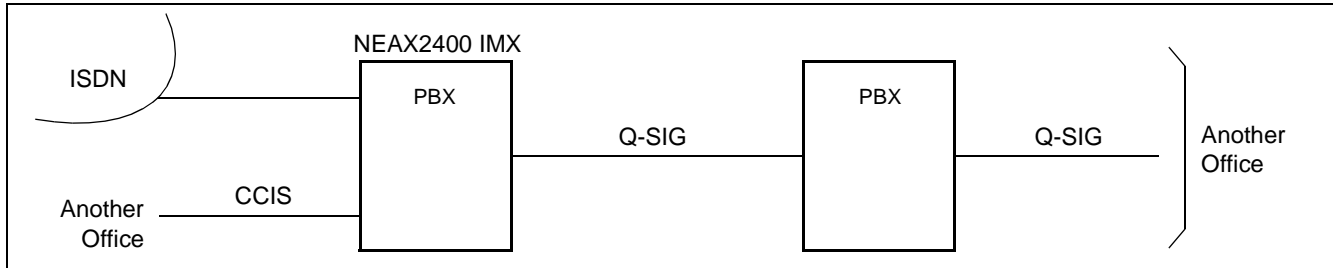
Note 1: *Layer 2 interface should be in conformity with Q.921.*

Note 2: *Connection to other vendor's PBXs requires prior System Interworking Tests. Direct all inquires regarding which PBXs the IMX System can be connected to or on arranging for testing with a particular vendor's PBX to NEC America, Inc. Corporation Networks Group Product Management department.*

Operating Procedure

No manual operation is required.

Service Conditions

1.   Layer 2 and less should be activated normally.
2.   Redundancy structure
        a.) One D channel can control maximum 60 B-channels.
        b.) Control using the nB + D interface is available.
3.   Split call (LCRC) from an Attendant console, data terminal or I terminal is not supported.
4.   The Multi-rate bearer service is available.

   Multi-rate bearer service: Desirably multiplied value of 64 (64 kbps x n -desired number) is available for the data transmission speed in addition to the current speed such as 384K (64K x 6), 1536K (64K x 24) and 1920K (64K x 30).

   Following are the service conditions 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.)
5.   The User-to-User Signaling (UUS) can be sent via Q-SIG interface.
   Following 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.

Service Conditions (cont'd)

  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 follow:
   Pattern 1: The ISDN tandem connection (Either ISDN (a) or ISDN (b) is Q-SIG interface.)
   Pattern 2: The interface used in the terminating office is Q-SIG.
   Pattern 3: The interface used in the originating office is Q-SIG.

Interactions

The following services can be provided in conjunction with this feature:

  a.) Common station/voice service
   CALL FORWARDING – ALL CALLS – CCIS [C-45] **Note 1**
   CALL FORWARDING – BUSY LINE – CCIS [C-46] **Note 1**
   CALL FORWARDING – DON'T ANSWER– CCIS [C-47] **Note 1**
   CALLING PARTY INFORMATION TRANSFER [C-112] **Note 1**
   DIRECT-IN TERMINATION – CCIS [D-74] **Note 1**
   CALL TRANSFER – ALL CALLS – CCIS [C-50] **Note 1**
   HOT LINE – CCIS [H-12] **Note 1**
   DO NOT DISTURB – CCIS [D-76] **Note 1**
   CALLING NUMBER DISPLAY – CCIS [C-52]

  b.) Attendant Console service
   DIGITAL DISPLAY – TRUNK – CCIS [D-73]
   SPEED CALLING – SYSTEM [S-3] **Note 2**
   CALL QUEUING [C-9]

  c.) Network features
   TRUNK-TO-TRUNK CONNECTION [T-10]
   OUTGOING TRUNK BUSY – ANNOUNCEMENT [O-21]
   BROKERAGE HOT LINE – OUTSIDE [B-12]
   LCR – AUTOMATIC OVERFLOW TO DDD – EPN [L-13]
   LCR – TIME OF DAY ROUTING [L-10]
   LCR – CLOCKED MANUAL OVERRIDE – EPN [L-14]
   LCR – ATTENDANT MANUAL OVERRIDE – EPN [L-12]
   LCR – SPECIAL LINE WARNING TONE – EPN [L-16]
   TIE LINE CONNECTION WITH PAD CONTROL [T-5]

Note 1: *Service not based on the specification of Q-SIG supplementary service.*
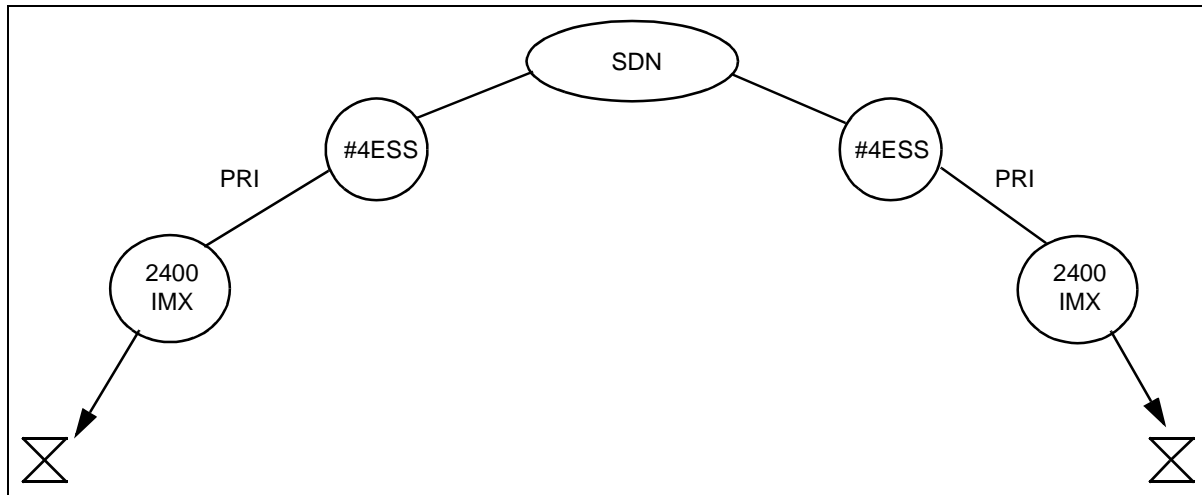
Note 2: *Service provided with some limitations.*

S-90   SDN Access

General Description

AT&T's Software Defined Network (SDN) can be used.

SDN Access Connection

Operating Procedure

No manual operation is required.

Service Conditions

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.
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.

S-91　　　　　SID to Network - Present

General Description

This ISDN feature allows the ISDN network to be informed of the calling party telephone number (SID) when a call originates from a terminal connected to the NEAX2400 IMX.

Operating Procedure

No manual operation is required. Calling telephone number is sent to the ISDN network automatically.

Service Conditions

1. The data provided as the calling telephone number is assigned via MAT for each ISDN circuit. In addition, if no data has been assigned as the calling telephone number, the NEAX2400 IMX does not provide any information to the network.
2. A maximum of 24 digits can be assigned as the calling telephone number.
3. Transmission of SID to the ISDN network can be restricted temporarily. For the details, refer to Station Feature Class (SFC) of service.
4. The use of SID information is dependent on the delivery of that information by local regulations.

S-92 SID to Network - Privacy

General Description

This ISDN feature enables the originating user to control the transfer of Station Identification Numbers in the network by means of AUTHORIZATION CODE [A-20] dialing through the NEAX2400 IMX.

Operating Procedure

No manual operation is required.

Service Conditions

1. The originating telephone number is transmitted unless restricted by Service Feature Class.
2. The use of SID information is dependent on the delivery of that information by local regulations.
3. This service is currently not supported by #4ESS.
4. Currently this feature can only be used by D^{term}s, analog telephones, or terminals connected to the NEAX2400 IMX.

S-93   SID to Terminating User - Display

General Description

This ISDN feature provides a visual display of the originating station's number and sub-address information on a D^{term} or multi-function telephone terminal for incoming ISDN calls. This provides the terminal user with a quick and accurate way to identify the originating station's number (Station Identification Number, SID).

Operating Procedure

No manual operation is required. The originating telephone number is automatically displayed on the D^{term}.

Service Conditions

1. This feature is available on the D^{term} Series E terminals.
2. A maximum of 24 digits forming the originating party's number, including the PBX access code, can be displayed. When the originating station's number exceeds 24 digits, the first 23 are displayed, with the 24th character position indicated by an asterisk.
   As for sub-address, a maximum of eight digits can be displayed. If the sub-address exceeds eight digits, the first seven are displayed, with the eighth character position indicated by an asterisk. Following is an example of the display when the originating party's number is 0337986341 and sub-address is 826236630.

8 2 6 2 3 6 6 *   Sub Address
0 3 3 7 9 8 6 3 4 1   Telephone Number

3. When TRANSFER MESSAGE [T-44] is activated, the originating telephone number is displayed on the LCD of the destination station D^{term} (max. 24 digits). The originating telephone number is displayed on the upper line of LCD when it is less than eight digits and on the lower line when it is more than eight digits. Also, when the originating telephone number exceeds 24 digits, the first 23 are displayed with the 24th character position indicated by an asterisk.
   Example:
   a.) Originating telephone number=4605830 (7 digits)

4 6 0 5 8 3 0
(Time Display)

   b.) Originating telephone number=4605830179 (10 digits)

 | |
   |---|
   | |
   | **4 6 0 5 8 3 0 1 7 9** |

Service Conditions (cont'd)

c.) Originating telephone number=46058301791234567 (17 digits)

```
4 6 0 5 8 3 0 1 7 9 1 2 3 4 5 *
```

4. When a data call comes in, the originating party's number is displayed on the D^{term} when a data adapter is being used, or on the connected terminal when a Data Module is being used.

5. When an audio or unrestricted call is received, DTE is displayed before the originating station's number.

6. Either SID or Automatic Number Identification (ANI) information can be displayed on the D^{term} LCD, depending on the station service class of the called station.

S-94 SID to Terminating User - DTE

General Description

This ISDN feature permits a DTE connected to a terminating D^{term} via a data adapter to receive the originating telephone number, sent from the ISDN network.
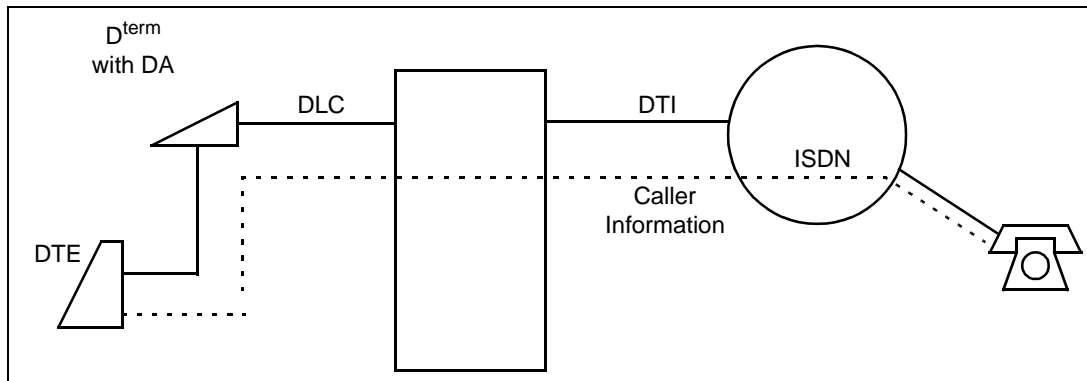
SID to Terminating User-DTE Connection

Operating Procedure

No manual operation is required.

Service Conditions

1. The originating telephone number is included in the incoming data information. This can also include the PBX access code.
2. If the calling number exceeds eight characters (seven digits and a * or #), only the first eight are displayed.

S-95 Sub-Address Addressing

General Description

This ISDN feature permits an incoming call to be directed to a designated station by using called party sub-address information.

Operating Procedure

No manual operation is required.

Service Conditions

1. If no called party sub-address is received, the call is automatically terminated to the ATTENDANT CONSOLE [A-3]. If there is no ATTENDANT CONSOLE [A-3], it is terminated at a preselected Night Connection station. If there is no Night Connection station, it is routed to a preassigned station by the DIT feature.

2. If the called-party sub address is routed to a busy or restricted station, the network is informed of the busy state, and the network provides the calling station with busy tone.

S-96 Sub Address - Present

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 NEAX2400 IMX. This feature requires dialing of the called party telephone number and the called party sub-address.

Operating Procedure

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 (#).
ISDN automatically recognizes the sub-address and transfers this information to the destination party.
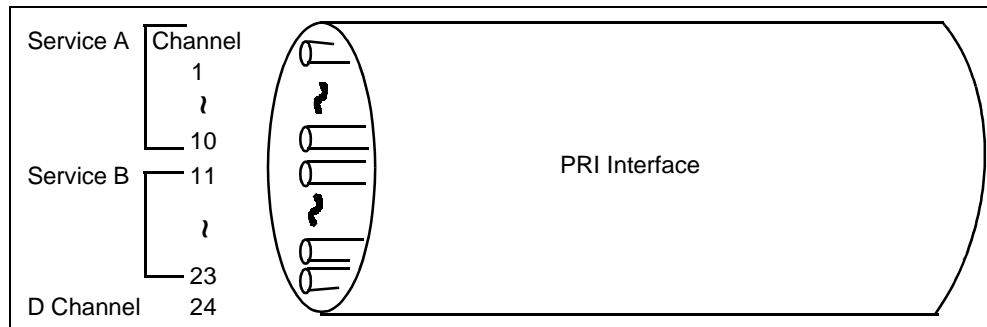
Service Conditions

1. If the calling party fails to dial the called party sub-address, ISDN does not transfer any called sub-address information to the destination party.

2. If the calling party does not wish to provide a called party sub-address, the call must terminate with a # (Timing Start). If a # is not entered, a Timing Start operation begins. The Timing Start uses the interdigit time-out operation.

3. Sub-address dialing is available only on those telephone terminals that can generate push button (DTMF) signals.

4. The called party number and called party sub-address must not exceed 28 digits and an asterisk (*) and/or a pound (#).

5. Whether a called party sub-address can be dialed or not is determined by the access code. If the access code is 9, the called party sub-address can be dialed. If the access code is 8, the called party sub-address cannot be dialed.

6. This feature cannot be used when a call is originated to ISDN using Speed Calling or Call Forwarding features.

T-42 Trunk Provisioning Service Selection

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.

Trunk Provisioning Service Channel Selection

Operating Procedure

No manual operation is required.

Service Conditions

1. The services that can be designated include ACCUNET, MEGACOM, MEGACOM 800, and SDN.
2. Channel selection is possible by LCR function only.

T-44   Transfer Message (TRM)

General Description

When a station calls another telephone that has set CALL TRANSFER - ALL CALLS - CCIS [C-50], this feature allows the originating telephone number (SID) to be sent to the destination station via Transfer Message (TRM) signal.

Operating Procedure

No manual operation is required. When CALL TRANSFER - ALL CALLS - CCIS [C-50] is activated, the originating telephone number is sent to the destination station automatically.

Service Conditions

1. The number of digits to which this service is applicable is 16 maximum.
2. When the destination station is accommodated in ISDN network, the destination telephone number is also sent to the originating station.

V-18   Virtual Tie Line

General Description

This service feature provides Virtual Tie Line service by setting up a connection between two 2400 PBXs via the ISDN network during a designated period of time. While Virtual Tie Line is set, one of the B-channels on the setup connection is used as a CCIS No. 7 signal channel, and the other B-channels as CCIS No. 7 voice channels.

Operating Procedure

No manual operation is required.

Service Conditions

1. The route for Virtual Tie Line service is distinguished from general B-channel routes of other ISDN trunks. Also, trunks designated for this feature cannot be used as a general B-channel route.

2. The call setup for Virtual Tie Line is available only from the originating office.

3. In the processing of an incoming Virtual Tie Line call, channel selection is made at the terminating office.

4. The number of channels that can be set for Virtual Tie Line is up to 18 channels (3 H0 channels).

5. The number of routes that can be set for Virtual Tie Line is up to three routes per interface.

6. The channels set for Virtual Tie Line must consist of successive channels that form H0 channels, and each H0 channel is limited as follows:

    1 ch to 6 ch
    7 ch to 12 ch
    13 ch to 18 ch
    19 ch to 24 ch **Note**

7. The signal channel used on Virtual Tie Line must always correspond to the last channel in the H0 channel unit.

    Example: ckt (circuit) =6   (6th channel)
               ckt   =12   (12th channel)
               ckt   =18   (18th channel)
               ckt   =24   (24th channel) **Note**

Note: *This applies only if you have non-associated Dchannel handling.*

8. If there is no Virtual Tie Line data assigned for the day, service status of the previous day continues. Therefore, make sure to assign the data for the next day when setting the service-end time as 23:50.

9. Common Channel Handler (CCH) to be used on Virtual Tie Line corresponds to the route on a one-to-one basis. Therefore, when several routes of Virtual Tie Line are set on a DTI, the same number of CCHs are required.

10. When there is a call connected to the Virtual Tie Line at the time designated to cancel the connection, the connection is extended by 10 minutes (max. 30 minutes) to wait for the call to be released. After 30 minutes, the calls connected to the line are forcibly released. However, when the time set for Virtual Tie Line service is less than 30 minutes, this procedure is not guaranteed.

11. When setting the connection for this service, that connection is not charged. However, calls using Virtual Tie Line are charged as general CCIS calls.

12. PEG COUNT [P-7] is not activated when setting the connection for this service. However, calls using Virtual Tie Line are subject to this feature as general CCIS calls.

13. In case of Virtual Tie Line network, an alternative route for signal transmission cannot be assigned. (Setting of the alternative route is available in case of general CCIS calls.)