FEATURE DOCUMENT

NETWORK ATTENDANT FEATURE

ENHANCED PRIVATE SWITCHED COMMUNICATION SERVICE (EPSCS)

2-WIRE NO. 1 ELECTRONIC SWITCHING SYSTEM

NOTICE

Printed in U.S.A.

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INTRODUCTION

1. GENERAL INFORMATION

SCOPE

1.01 This document provides a description of the Network Attendant (NEAT) feature and its operation as implemented in the Enhanced Private Switched Communication Service (EPSCS). *No attempt is made to define the appropriate intrastate or interstate tariff(s) under which EPSCS is provided. Care must be taken when implementing an EPSCS arrangement to insure that the arrangement is consistent with the tariff(s) currently in effect.*

REASON FOR REISSUE

1.02 When this document is reissued, the reason for reissue will be stated in this paragraph.

FEATURE AVAILABILITY

1.03 The NEAT feature is available with the 1E6 generic program of the No. 1 Electronic Switching System (ESS). The NEAT feature package is part of the EPSCS II feature group which may be optionally loaded in the office.

2. DEFINITION/BACKGROUND

DEFINITION

2.01 The Network Attendant feature provides a service arrangement which allows an EPSCS customer, having more than one business location served by separate EPSCS switches, to concentrate attendants at one or more customer locations with separate release link trunk (RLT) groups to the EPSCS switches. The NEAT feature may be used where an attendant is served by:

(a) No. 1/1A ESS Centrex with 51A customer premise system (CPS)

(b) No. 5 Crossbar Centrex

(c) DIMENSION® 2000

BACKGROUND

2.02 Calls to the attendant are routed over release link trunks (RLTs). If the attendant extends the call, all switching actions occur in the EPSCS switch. When attendant functions required to extend the call are completed, the RLT is made available for new attendant calls.

2.03 This RLT arrangement results in fewer trunks required for terminating to the attendant and improved transmission quality after the attendant has extended the call.

DESCRIPTION

3. USER OPERATION

CUSTOMER

3.01 All calls destined for the network attendant come into the EPSCS switch as off-network access line (ONAL) or on-network access line (originating facility) assistance calls. These calls are directed to the attendant over special trunks arranged for release link operation. At the network attendant console, to differentiate the sources of calls incoming to the attendant, various call indicator lamps (CILs) may be assigned.

3.02 At answer, the attendant may either handle the call or extend the call to a requested location. If the call is not extended, the attendant may release the call. If the attendant is required to extend the call, the START key is operated at the console. The calling party [incoming trunk (ICT)] is connected to a 3-port conference circuit and split off during attendant dialing. Dial tone is returned to the attendant to signal that dialing . (via TOUCH-TONE®) the necessary digits to extend the call may now occur. This may include any legal EPSCS dialing pattern composed of 3, 7, or 10 digits plus an optional authorization code.

3.03 At the end of dialing, the calling party is reconnected so that both the calling party and the attendant are on the connection via the 3-port conference circuit, hearing call progress tones.

3.04 Prior to answer, three actions may occur: the originator may abandon, the attendant can release the call, or the attendant may release the destination connection. If the originator abandons, the remaining parties are also disconnected. If the attendant releases from the call the originator can continue to wait for answer or abandon. The attendant can not recall the connection after releasing. If the attendant releases from the destination then the connection is basically in the same condition as explained in paragraph 3.02.

3.05 Actions at the attendant console when the extended call is answered are dependent upon customer options. The call to the attendant may be arranged to automatically release the conference circuit upon answer and establish a direct talking path between the originator and the

outgoing party. This frees the attendant at this point. The other option is for the attendant to get an indication (depending on type of equipment used in the office serving the attendant) of answer but to remain in control of the call until released by operating the RELEASE key at the console.

3.06 If the customer option is for the attendant to remain on the call after the outgoing party answers, various actions may occur.

(a) The incoming party abandons. In this case the attendant and outgoing party remain connected until the attendant releases from the call or the outgoing (or extended) party disconnects. (Note the attendant can not reextend this call.)

(b) The attendant releases from the call. Now a direct path is made between the incoming party and the outgoing (or extended to) party.

(c) The attendant releases from the destination or the outgoing party disconnects. In this case the attendant gets an indication (this depends on the type of equipment used) that the outgoing party is removed and the call goes back to the stage as in paragraph 3.02.

3.07 In any of the above descriptions, when the attendant is on the call, the attendant could have enacted a hold function. In this state the attendant would be free to handle other calls with the option of getting back on the original call. It should be understood that the hold function does not effect the processing of the call. For example, if the customer options are such that the attendant is released from the call when the outgoing party answers, the attendant is released from the call regardless of the state of the hold function.

3.08 The attendant may not originate calls over the release link circuits arranged to terminate the calls listed in paragraph 3.01.

TELEPHONE COMPANY

3.09 Not applicable.

4. SYSTEM OPERATION

HARDWARE

A. Service Circuits

4.01 A 4-wire, 3-port conference bridge circuit SD-1A483 is introduced with the NEAT feature to establish the 3-way connection in order to extend calls.

4.02 A trunk TOUCH-TONE/dial pulse receiver SD-1A390/SD-1A173 is required to provide dial tone and to receive TOUCH-TONE digits when the attendant extends a call.

4.03 A HILO interface circuit SD-1A392 is required for each port of the 4-wire, 3-port conference bridge circuit, and one for each TOUCH-TONE/dial pulse receiver to interface the switching network. Refer to Part 10.

B. Trunk Circuits

4.04 The RLTs used by the NEAT feature must be in specific combinations such as:

- SD-1A361—terminating to an SD-1A163 in a 2-wire office

- SD-1A362—terminating to an SD-1A237 in a 2-wire office.

4.05 The above trunking couplet combinations are for No. 1 ESS offices serving as the EPSCS switch and No. 1/1A ESS offices serving as the switch for the business customer. If a new trunk addition is required for NEAT, it is recommended to use the trunking couplet SD-1A362 and SD-1A237 combination.

4.06 If the business customer's switch is not in a No. 1 or No. 1A ESS office, then the trunking circuits which are used for termination must have the characteristics of the trunking couplet combinations discussed above.

OFFICE DATA STRUCTURES

A. Translations

EPSCS Switch

4.07 The following translations are required at the EPSCS switch to provide the NEAT feature.

(a) 4-Wire, 3-Port Conference Bridge Circuit

(1) *Trunk Network Number-to-Trunk Group Number (TNN-to-TGN)* translations specify the trunk class code and trunk group number. See layout in Fig. 1.

(2) *Trunk Class Code Expansion Table* translations are required to specify trunk usage, multiport trunk, number of ports, and circuit program index. See layout in Fig. 2.

(3) *Trunk Network Number-to-Peripheral Equipment Number (TNN-to-PEN)* translations are required to specify the items given in Fig. 3.

(4) *Route Index Expansion* translations are required to specify the items given in Fig. 4.

(b) Release Link Trunk

(1) *Line Equipment Number (LEN)* translator is used to provide a screening LEN. See layout in Fig. 5. The screening LEN auxiliary block for the RLT must contain an originating major class item equal to 34 (CCSA NAL with CTXN-interstate) or 35 (CCSA NAL with CTXN-intrastate). Also, the RL item must be set to 1 or 3, and the QINH item must be set to 1.

(2) *Supplementary Trunk Group Auxiliary Block* (Fig. 6) requires optional words D and G for RLT. The RLT group must not be marked for either Automatic Calling Station Identification (ACSI) or Automatic Identified Outward Dialing (AIOD) in the EPSCS switch. Therefore the ACSIF item in optional word G is set always to 0.

(3) *Trunk Class Code Expansion Table* is required for the 4-wire circuits (SD-1A361,

SD-1A362) which may be used as RLTs. The Flash Timing (FT) item must be set to 1 (when the trunks are used as RLTs). All other 4-wire trunks should continue to have FT item set to 0. See Fig. 7.

(c) Other 4-Wire Trunks Associated With RLTs

(1) Requirements for the trunk class code expansion table for 4-wire trunks which may be involved in a network attendant call are as follows:

• If an ICT is to be extended to an outgoing trunk via an RLT arrangement, then the conference restricted (CONF) item in word 1 must be set to 0 in either the ICT's TCC expansion table, or the OGT's TCC expansion table, or both.

(2) The following is a list of trunks requiring the above translation change for NEAT interface:

SD-1A362 (CPI 112)

SD-1A366 (CPI 116)

SD-1A367 (CPI 117)

SD-1A368 (CPI 118)

SD-1A371 (CPI 121)

SD-1A374 (CPI 124).

22	21	20 18	17 10	9 0
1	0		TCC	TGN
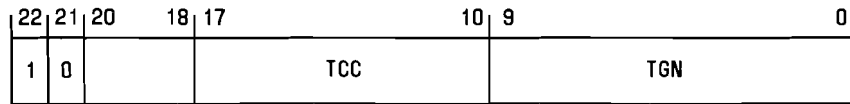
LEGEND: TCC – TRUNK CLASS CODE
TGN – TRUNK GROUP NUMBER

Fig. 1—TNN-TGN/PTW for 4-Wire, 3-Port Conference Bridge Circuit SD-1A483

22	21	19	18	17		11	10	9	8	7		2	1	0
M P T	0 ——————————————————————————————————— 0												TU = 3	
0 ——— 0														
0 ——— 0														
NP = 3		P N T				PAD = 2		CPI = 198						

```
LEGEND:   MPT - MULTIPORT TRUNK = 1
          TU  - TRUNK USAGE = 3
          NP  - NUMBER OF PORTS = 3
          PNT - PRIVATE NETWORK TRUNK = 1
          PAD - EQUAL TO 2 FOR MESSAGE TRUNKS
          CPI - CIRCUIT PROGRAM INDEX = 198
```

Fig. 2—Trunk Class Code Expansion Table Translations for 4-Wire, 3-Port Conference Bridge Circuit

22	20	19	18	17	16	15	14		11	10	9	8	7	6	5	4	3	2	1	0
WRDN = 6				0 ————————————————————————————————— 0																
QUANT = 2					FRAME			*1	QUAD		ROW				FLD					
QUANT = 1					FRAME			ROW				COLUMN								
0 ——— 0																				
VPI = 011				P	TLN		TSF		GRID		SWITCH		LEVEL							
				P	TLN		TSF		GRID		SWITCH		LEVEL							

*1 - HALF

```
LEGEND - WRDN      - NUMBER OF WORDS IN AUXILIARY BLOCK

         QUANT     - QUANTITY OF SIGNAL DISTRIBUTOR POINTS

         FRAME ⎫
         HALF  ⎪
         QUAD  ⎬   - SIGNAL DISTRIBUTOR POINT ASSIGNMENT
         ROW   ⎪
         FLD   ⎭

         QUANT     - QUANTITY OF SUPERVISORY MASTER SCANNER POINTS

         FRAME ⎫
         ROW   ⎬   - SUPERVISORY MASTER SCANNER POINT ASSIGNMENT
         COLUMN⎭

         VPI       - VARIABLE PART INDICATOR = 011 FOR MULTIPORT
                     CONFERENCE TRUNKS

         P         - PORT INDICATOR IS "0" FOR PORT 0 TNN, "1" FOR
                     PORTS 1 AND 2 TNNs

         TLN TSF⎫
         GRID,  ⎪
         SWITCH ⎬   - TNN ASSIGNMENT TO PORT
         LEVEL  ⎭
```

Fig. 3—Peripheral Equipment Number Auxiliary Block

```
 22 21 20                          10 9                          0
┌──────┬──────────────────────────┬──────────────────────────────┐
│TYPE  │                          │                              │
│      │        NXT RID           │            TGN               │
│ = 01 │                          │                              │
├──────┴──────────────────────────┴──────────────────────────────┤
│                                                                 │
│ 0 ───────────────────────────────────────────────────────── 0  │
│                                                                 │
└─────────────────────────────────────────────────────────────────┘
```
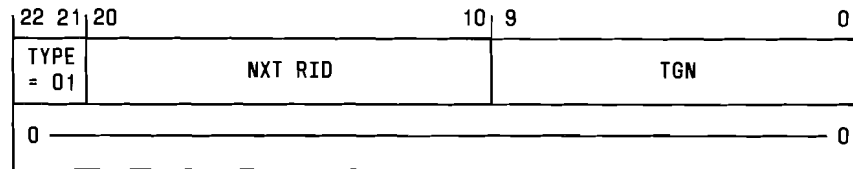
```
LEGEND   TYPE  - TYPE OF ROUTE INDEX EXPANSION TABLE ENTRY.
                 01 WHEN THERE IS NO OUTPULSING FOR NONPREFIXED
                 DIGITS.
       NXT RID  - NEXT ROUTE INDEX
          TGN   - TRUNK GROUP NUMBER.
```

Fig. 4—Route Index Expansion
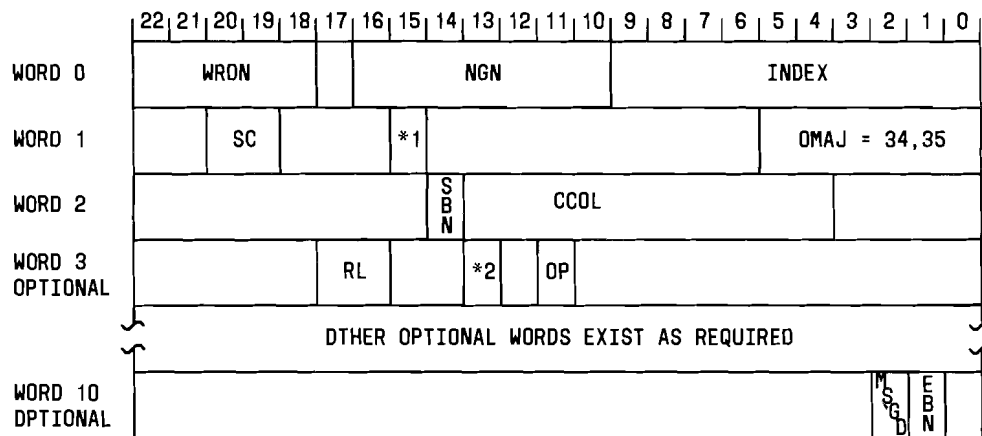
```
        22│21│20│19│18│17│16│15│14│13│12│11│10│ 9│ 8│ 7│ 6│ 5│ 4│ 3│ 2│ 1│ 0
        ┌──────────────┬──┬──────────────────┬─────────────────────────────┐
WORD 0  │     WRDN     │  │       NGN         │          INDEX              │
        ├──┬───────┬───┼──┼─────────────────────────────────────┬──────────┤
WORD 1  │  │  SC   │   │*1│                                     │OMAJ = 34,35│
        ├──┴───────────┴──┼──┬───────────────────┬─────────────┴──────────┤
        │                 │S │                   │                         │
WORD 2  │                 │B │      CCOL          │                         │
        │                 │N │                   │                         │
        ├──────────┬──────┼──┬──┬────┬──────────────────────────────────────┤
WORD 3  │          │  RL  │  │*2│ OP │                                       │
OPTIONAL│          │      │  │  │    │                                       │
        ╰─────────────────────────────────────────────────────────────────╮
        │        OTHER OPTIONAL WORDS EXIST AS REQUIRED                     │
        ╭─────────────────────────────────────────────────────────────────╯
WORD 10 │                                                      │MSDG│EBN│   │
OPTIONAL│                                                      │    │   │   │
        └──────────────────────────────────────────────────────┴────┴───────┘
         *1-LCW3    *2-QINH
```

```
LEGEND - WRDN  - NUMBER OF WORDS IN AUXILIARY BLOCK
         NGN   - NUMBER GROUP NUMBER
         INDEX - INDEX
         SC    - SPEED CALLING INDICATOR
         LCW3  - LEN CLASS WORD 3 INDICATOR
         OMAJ  - ORIGINATING MAJOR CLASS = 34 OR 35
         SBN   - SPECIAL BILLING DIRECTORY NUMBER
         CCOL  - CHART COLUMN
         RL    - RELEASE LINK = "1" IF ATTENDANT SHOULD REMAIN ON THE
                 3-WAY CONNECTIN FOLLOWING OGT ANSWER. EQUAL TO "3"
                 IF ATTENDANT IS TO BE AUTOMATICALLY DROPPED FROM
                 THE 3-WAY CONNECTION FOLLOWING OGT ANSWER
         QINH  - QUEUE INHIBIT - SET TO "1" FOR ALL 4-WIRE TRUNKS WITH
                 MAJOR CLASS OF 34 OR 35, AND AN RL ITEM SET TO
                 NONZERO. THIS IS TO INDICATE THAT OGT QUEUEING IS
                 NOT ALLOWED
         OP    - ORIGINATING PRIORITY
         MSDG  - MESSAGE DETAIL
         EBN   - EXTERNAL BILLING NUMBER
```

Fig. 5—Screening LEN Auxiliary Block for 4-Wire RLT

```
      22 21                                    12 11 10  9   8   7   6   5                0
          ┌───────────────────────────────────┬───┬───────────┬──────────────────────────┐
OPTIONAL  │                                   │ I │           │                          │
WORD D    │                                   │ C │           │                          │
          │                                   │ U │           │                          │
          │                                   │ P │           │                          │
          ├───────────────────────────────────┼───┼───┬───┬───┬───┬──────────────────────┤
          │A│                                  │   │MD │MD │TCM│ S │                      │
OPTIONAL  │C│                                  │   │RI │RO │TYPE│ A │       CUSTID        │
WORD G    │S│                                  │   │   │   │   │ T │                      │
          │I│                                  │   │   │   │   │   │                      │
          │F│                                  │   │   │   │   │   │                      │
          └─┴──────────────────────────────────┴───┴───┴───┴───┴───┴──────────────────────┘
```

LEGEND:
  ICUP – SET AS FOR OTHER EPSCS TRUNK GROUPS.
  ACSIF – ACSI FEATURE INDICATOR BIT. EQUAL TO "0"
            FOR RELEASE LINK TRUNKS.
  MDRI – MESSAGE DETAIL RECORDING ON INCOMING FACILITY
            INDICATOR.
  MDRO – MESSAGE DETAIL RECORDING ON OUTGOING FACILITY
            INDICATOR.
TCM TYPE – TRAVELING CLASS MARKS TYPE.
  SAT – SATELLITE INDICATOR.
  CUSTID – CUSTOMER IDENTIFICATION NUMBER.

Fig. 6—Supplementary Trunk Group Auxiliary Block (Optional Words D and G)

```
      22 21 20 19 18 17 16 15 14 13 12 11 10  9  8  7  6  5  4  3  2  1  0
       ┌──┬──┬──┬──┬──┬──┬──┬──┬──┬─────┬──┬─────┬──┬────────┬──┬──┐
WORD 1 │0 │C │0 │S │W │0 │0 │S │COMP │0 │ OP  │I │ SUPV   │0 │TU│
       │  │O │  │D │D │  │  │G │     │  │     │C │        │  │  │
       │  │N │  │S │D │  │  │  │     │  │     │T │        │  │  │
       │  │F │  │  │  │  │  │  │     │  │     │  │        │  │  │
       ├──┴──┴──┴──┴──┴──┴──┴──┴──┴──┴──┴──┴──┴──┴────────┴──┴──┤
WORD 2 │0 ────────────────────────────────────────────────── 0 │
       ├───────────────────────────────────────────────────────┤
WORD 3 │0 ────────────────────────────────────────────────── 0 │
       ├──────┬──┬────────┬──┬──┬─────────┬─────────────────────┤
WORD 4 │      │P │        │FR│FT│  PAD    │       CPI           │
       │      │N │        │  │  │         │                     │
       │      │T │        │  │  │         │                     │
       └──────┴──┴────────┴──┴──┴─────────┴─────────────────────┘
```

LEGEND: CONF – CONFERENCE RESTRICTED
       SDS – START DIAL SIGNAL ON OUTGOING TRUNK
       WDD – WINK START DELAY
       SG   – STOP-GO PULSE
       COMP – COMPENSATING RESISTANCE
       OP   – OUTPULSING
       ICT – IDLE CIRCUIT TERMINAL
       SUPV – SUPERVISION
       TU   – TRUNK USAGE
       PNT – PRIVATE NETWORK TRUNK
       FR   – FLASH REPEAT
       FT   – FLASH TIMING = "1"
       PAD – EQUAL TO 2 FOR MESSAGE TRUNK
       CPI – CIRCUIT PROGRAM INDEX (SD-1A361/CPI = 111)
              (SD-1A362/CPI = 112)

Fig. 7—Trunk Class Code Expansion Table Associated With RLTs

Centrex Switch

4.08 The following translations are required at the No. 1 or No. 1A office that is serving the attendant. This switch can also be a No. 5 Crossbar office or a DIMENSION®-type private branch exchange. This document only describes translations as if the switch is either No. 1 or No. 1A ESS. For a detailed description of No. 5 Crossbar Centrex DIMENSION operation see references A(10) or A(11) respectively in Part 18.

(a) Centrex end of RLT

(1) A screening LEN must be associated with the incoming end of the RLT in the centrex serving office. The RL item should be set to a 2 in the screening LEN auxiliary block. (See Fig. 5 for the layout.) The value of 2 is required to indicate the call is via an RLT and activate the attendants call indicator lamps on the console.

(2) Trunk Class Code Expansion Table. The TCC of the trunks used for RLT arrangements such as SD-1A163 and SD-1A237, must have the flash repeat (FR) and flash timing (FT) items set to 1 in the centrex serving office. (See Fig. 7.)

(3) Directory Number (DN) translations. See Fig. 8 for a layout of the possible features which may be specified for the attendant console.

B. Parameters/Call Store

EPSCS Switch

4.09 Set card NCF is required for the Network Attendant feature to provide a quantity of 3-port conference registers in the office. The value of this set card has been changed from the sum of the number of trunks with CPI 043 and CPI 073 to include the addition of the number of trunks with CPI 198. (See Fig. 9.) CPI 198 is associated with the new 4-wire 3 port conference bridge circuit SD--1A483.

4.10 Set card TT4QC represents a block of variable call store words, the length of which is equal to one plus the number of trunks with CPI equal to 198. (See Fig. 10.)

4.11 Set card NAM includes the usage of the 13-word registers for EPSCS message detail recording type calls. Also represents the quantity of 13-word AMA registers. (See Fig. 11.)

4.12 Q4HTT4C represents a 4-word call store block used as a queue head cell for the 4-wire trunk TOUCH-TONE receiver queue for client registers. (See Fig. 12.)
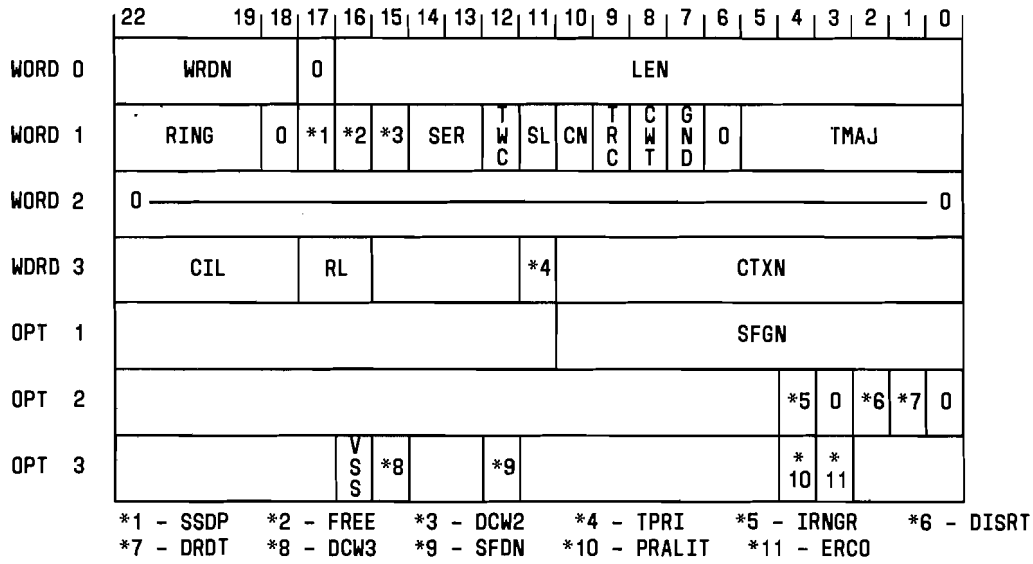
Centrex

4.13 No unique parameter items are required when arranging a No. 1/1A ESS office to interface with the EPSCS NEAT feature.

FEATURE OPERATION

4.14 All calls to the attendant from network facilities will be routed over a trunk group designed for release link trunk (RLT) operation. These trunks, outgoing from the EPSCS switch to the switching entity serving the large business customer, will terminate only to the network attendant. The attendant can *not* originate calls using the RLTs. Each EPSCS switch on the network may have an RLT group connecting to the network attendant. (See Fig. 13.)

4.15 Calls destined for the attendant come into the EPSCS switch via ONALs or from on-network access lines as assistance calls. A seizure of an RLT at the EPSCS switch results in an off-hook signal being sent to the switch serving the network attendant. The switch serving the network attendant connects a receiver to the RLT to receive call identification digits and sends a start pulse signal to the EPSCS switch consisting of a 100- to 350-millisecond off-hook wink. When the call is announced on the console, the attendant answers the call and an off-hook signal is sent to the EPSCS switch over the RLT.

4.16 The call is established and supervised by the EPSCS switch. The switch serving the attendant establishes a talking path between the RLT and the attendant loop. The call is routed to the attendant after the source identifying digits are outpulsed to the switch serving the attendant and digit analysis has occurred. The EPSCS switch establishes a talking path between the originating facility (ICT) and the RLT.

	22 19	18	17	16	15	14 13 12 11	10 9 8 7 6 5 4 3 2 1 0
WORD 0	WRDN	0					LEN
WORD 1	RING	0	*1	*2	*3	SER, TWC, SL, CN, TRC, CWT, GND	0, TMAJ
WORD 2	0 ———————————————————————————— 0						
WORD 3	CIL, RL				*4		CTXN
OPT 1						SFGN	
OPT 2							*5, 0, *6, *7, 0
OPT 3	VSS, *8, *9						*10, *11

*1 – SSDP *2 – FREE *3 – DCW2 *4 – TPRI *5 – IRNGR *6 – DISRT
*7 – DRDT *8 – DCW3 *9 – SFDN *10 – PRALIT *11 – ERCO

```
LEGEND: WRDN   - NUMBER OF WORDS IN AUXILIARY BLOCK
        LEN    - SCREENING LEN OF CONSOLE
        RING   - RING COMBINATION
        SSDP   - SPECIAL SIGNAL DISTRIBUTOR POINT
        FREE   - FREE CALL
        DCW2   - DN CLASS WORD 2
        SER    - SERIES COMPLETION CODE
        TWC    - FLASH FOR 3-WAY CALLING
        SL     - SPECIAL LINE
        CN     - COIN PHONE
        TRC    - CALL TRACE
        CWT    - CALL WAITING
        GND    - GROUND START
        TMAJ   - TERMINATING MAJOR CLASS
        CIL    - CALL INDICATOR LAMP NUMBER
        RL     - RELEASE LINK
        TPRI   - TERMINATING PRIORITY
        CTXN   - CENTREX GROUP NUMBER
        SFGN   - SIMULATED FACILITY GROUP NUMBER
        IRNGR  - INHIBIT RING REMINDER
        DISRT  - DISABLE DISTINCTIVE RING/TONE
        DRDT   - DISTINCTIVE RING/DISTINCTIVE TONE
        VSS    - VOICE STORAGE SYSTEM
        DCW3   - DIRECTORY NUMBER CLASS 3 WORD INDICATOR
        SFDN   - SIMULATED FACILITIES DIRECTORY NUMBER
        PRALIT - IF NOT TESTED BY ALIT SET TO "1", OTHERWISE SET TO "0"
        ERCO   - EXTENDED RINGING CYCLE OPTION
```

Fig. 8—DN Auxiliary Block—Centrex Attendant

37	23	22	0
NCF		CF + 21	
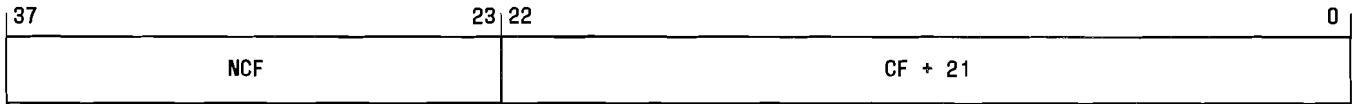
```
LEGEND: NCF = SPECIFIES QUANTITY OF CONFERENCE REGISTERS
        CF+21 = ADDRESS OF CONFERENCE REGISTER
```

Fig. 9—Parameter Word (I4CF) in I4REGS Table

37	23	22	0
TT4QC + 1		QTT4C	
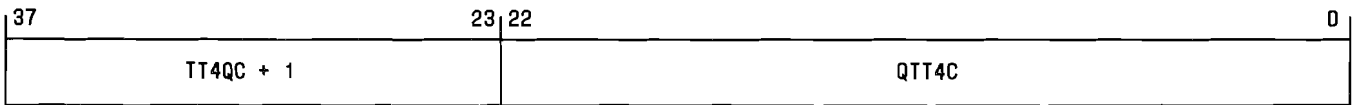
```
LEGEND: TT4QC = SET CARD VALUE TO SPECIFY LENGTH OF TOUCH-TONE RECEIVER QUEUE.
        QTT4C = START ADDRESS OF RECEIVER QUEUE.
```

Fig. 10—Parameter Word in D6HFLQ Table

37	23	22	0
NAM		AM	
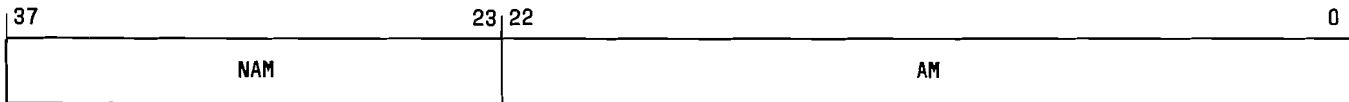
```
LEGEND: NAM = SPECIFIES QUANTITY OF AMA REGISTERS.
        AM = START ADDRESS OF FIRST AMA REGISTER.
```

Fig. 11—Parameter Word (I4AMA) in I4REGS Table

Q4HTT4C

QTT4C

| 22 | 21 | 20 | | 0 |

LOAD POINTER	(START)

| 1 | CLIENT REGISTER ADDRESS |

ENTRY TYPES

QUEUE END

UNLOAD POINTER

QUEUE END

QTT4C + TT4QC

TOP POINTER

VARIABLE CALL STORE

Fig. 12—Trunk TOUCH-TONE Receiver Queue

ONAL

ONAL

EPSCS A

EPSCS B

RLT

RLT

ATTENDANT

DIMENSION 2000 PBX
NO. 5 CROSSBAR CENTREX
NO. 1 ESS CENTREX
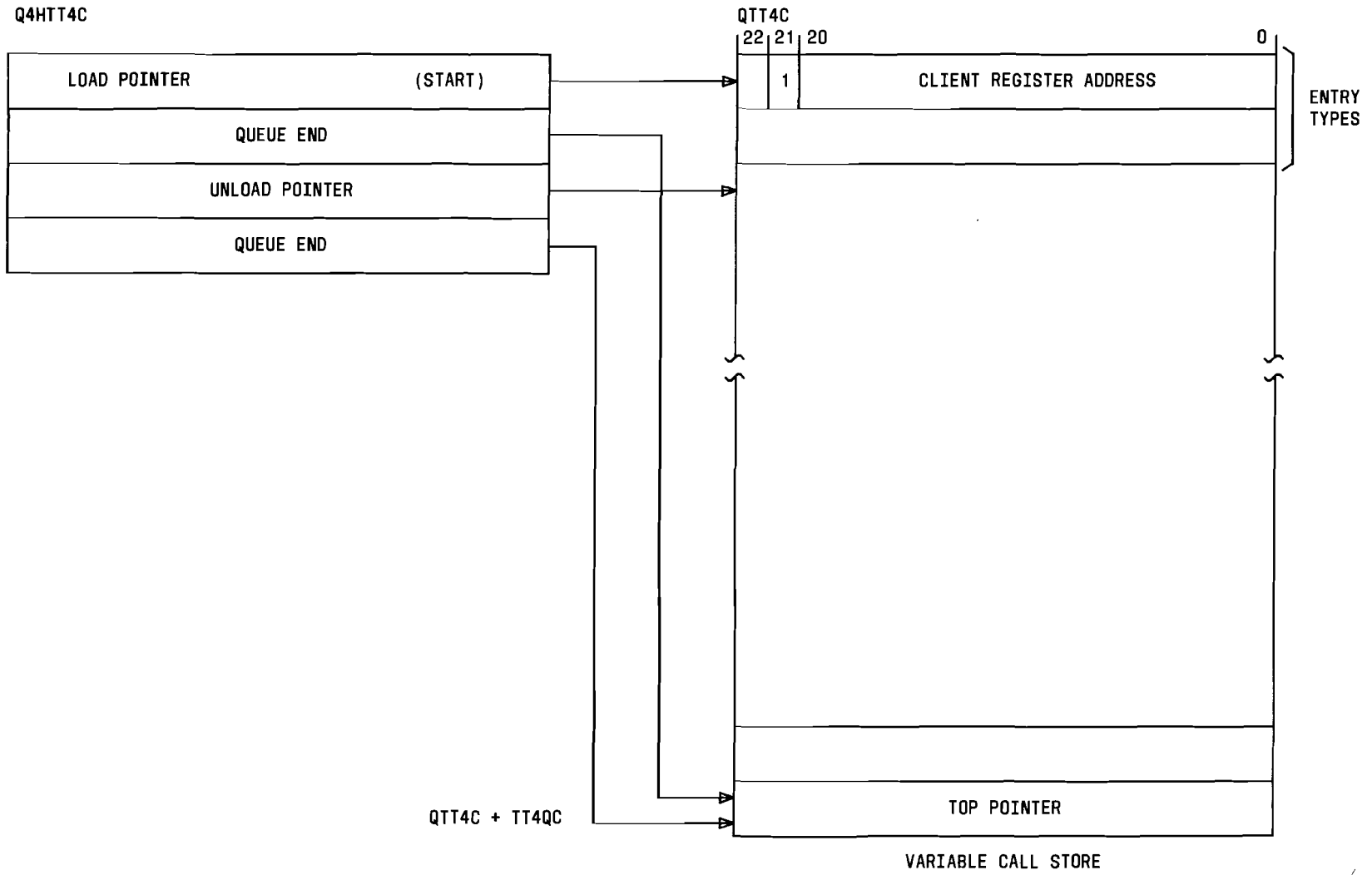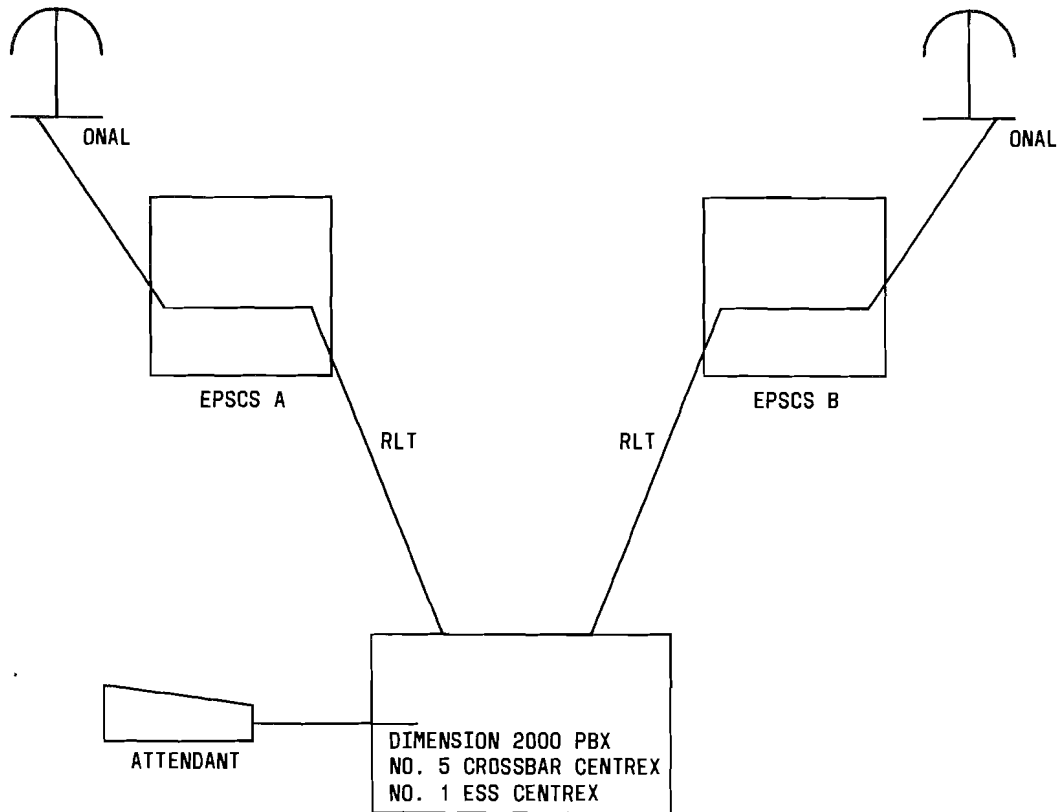
EACH EPSCS LOCATION HAS AN RLT TRUNK GROUP TO ROUTE CALLS TO THE ATTENDANT

Fig. 13—Typical Network Attendant Arrangement

4.17 The attendant may service the call or extend the call. When assistance calls are serviced, the attendant may release. An on-hook signal is sent to the EPSCS switch. If the ICT is still on the call, 11-second disconnect timing is begun. At the end of the disconnect timing, the ICT to RLT path is taken down in the EPSCS switch. An on-hook signal is returned to the switch serving the attendant. The attendant loop and RLT are made idle. Note that the network attendant console becomes immediately available upon attendant release action. (The 11-second disconnect timing is done only at the EPSCS switch end.) The attendant loop is idled when the final on-hook signal is received from the EPSCS switch.

4.18 If the attendant is required to extend the call, a 400- to 600-msec on-hook flash is passed from the attendant's switch to the EPSCS

switch over the RLT. The EPSCS switch seizes a 4-wire, 3-port conference bridge SD-1A483 and initializes a 3-port conference register. The calling party (ICT) is connected to one port of the bridge and split off during attendant dialing. A trunk TOUCH-TONE receiver is attached to the RLT and dial tone is returned to the attendant. The attendant now dials the required digits to extend the call. These digits may include any legitimate EPSCS dialing pattern composed of 3, 7, or 10 digits plus an optional authorization code. Digit analysis is performed in the EPSCS switch.

4.19 The attendant's call is routed from the EPSCS switch over the network facilities to the called party. At the end of dialing by the attendant, the calling party, the attendant, and the OGT are connected to the 3-port conference circuit so that call progress tones can be heard.

4.20 If the ICT abandons prior to answer, the outgoing trunk, 3-port conference register, 3-port conference circuit, ICT and the RLT will be idled at the EPSCS switch and the RLT and attendant loop will be idled at the switch serving the attendant. If the ICT abandons after the answer signal was received on the outgoing trunk, or if this call was routed off-network via a customer premises switching system, the RLT, 3-port conference circuit, 3-port conference register and the outgoing trunk remain associated with the call until normal disconnect supervision is established.

4.21 If the attendant releases prior to answer, the call is released from the attendant loop. The call does not enter a temporary hold state as occurs on some non-RLT calls. The switch serving the attendant sends an on-hook signal to the EPSCS switch. The RLT is dropped from the 3-port connection. However, the 3-port conference circuit is held until answer is detected. When the off-hook answer signal is received, the 3-port conference circuit is idled. The ICT and OGT are connected in a talking path directly through the network. (See Fig. 14 for full call sequences.) It is important to note that if the call terminates to a PBX that does not send answer, the 3-port conference circuit is left up for the duration of the call thus affecting the engineering of 3-port conference circuits and the transmission quality of the call.

4.22 If the attendant chooses to work on another loop while awaiting answer on the extended call, the RLT call can be put in a hold state at the attendant console. This frees the attendant to service another call but does not idle that particular loop circuit or RLT.

4.23 When the extended call is answered either with the attendant on the call or on hold, the change in the network connection can occur in two ways dependent on a release link (RL) item in the screening LEN (see Fig. 5) of the RLT in the EPSCS office.

4.24 If this RL item is set to 3, the talking path drops back to an ICT to OGT connection after the answer signal is received from the OGT end. The 3-port conference register and circuit are idled. The RLT is idled after an on-hook signal is sent from the EPSCS switch over the RLT, to the switch serving the attendant. No action by attendant is required.

4.25 If the RL item is set to 1 at answer, a flash is sent to the switch serving the attendant. A 3-way talking path is established including the attendant. The attendant may disconnect from the call by operating the release key. The talking path reverts to a direct ICT to OGT connection idling the 3-port register, 3-port circuit, RLT, and attendant loop circuit.

4.26 If the attempt to extend the original call fails, the calling party is busy, or the wrong person is reached, the attendant can drop back to the original call connection by sending an on-hook flash to the EPSCS switch via the RLT. The OGT associated with the extended call and the 3-port conference circuit are idled. At this time the attendant may reextend the call or release the call.

NO. 1 ESS CENTREX SERVING 51A CPS
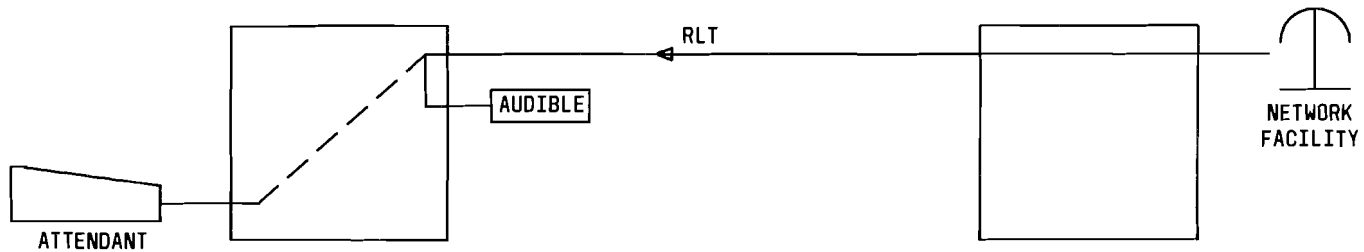NO. 5 CROSSBAR CENTREX/
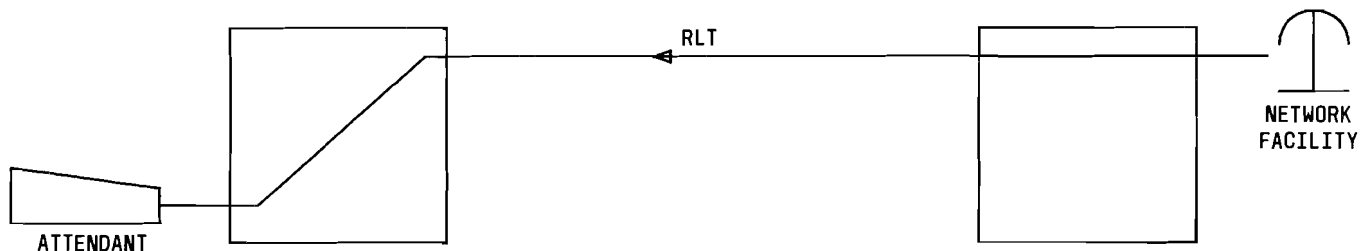DIMENSION 2000 PBX

EPSCS
"A OFFICE"

NETWORK
FACILITY

ATTENDANT

RCVR

A. CALL DESTINED FOR ATTENDANT ORIGINATES OVER NETWORK FACILITY

RLT

RCVR

XMTR

NETWORK
FACILITY

RCVR
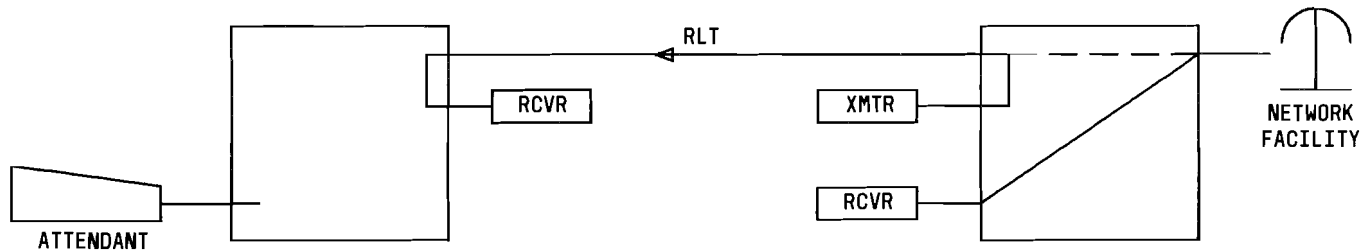
ATTENDANT

B. IF THE SWITCH SERVING THE ATTENDANT IS A NO. 1
ESS OR NO. 5 XBAR, OUTPULSE DIGITS AS SHOWN

RLT

AUDIBLE

NETWORK
FACILITY

ATTENDANT

C. CALL IS ROUTED TO ATTENDANT, AWAIT ANSWER

RLT

NETWORK
FACILITY

ATTENDANT

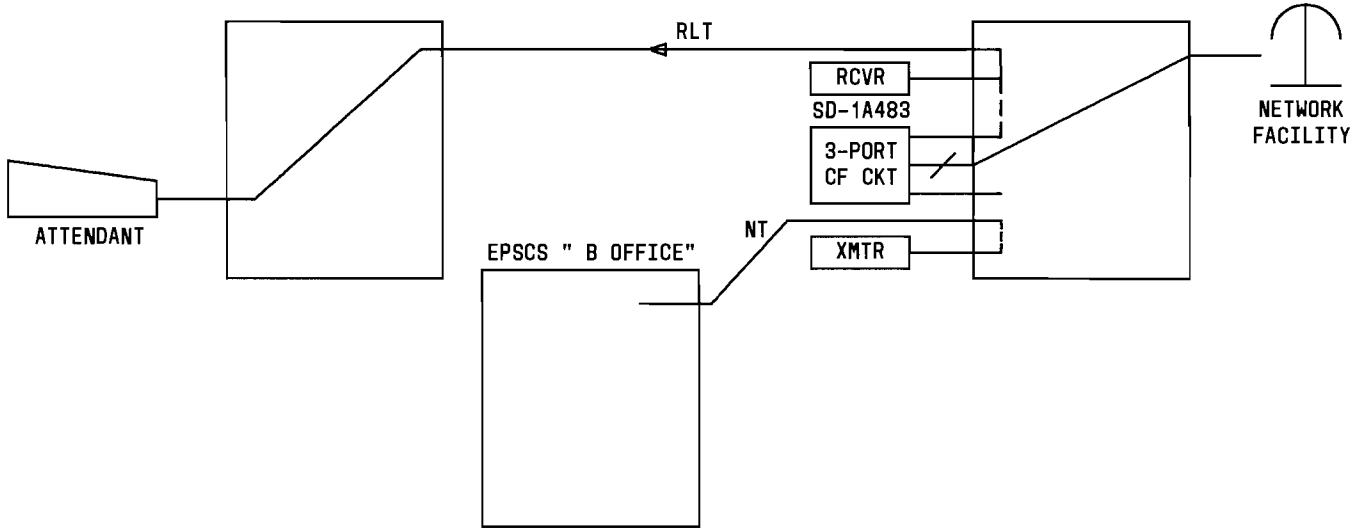D. ATTENDANT ANSWERS TALKING PATH ESTABLISHED

Fig. 14—Symbolic Operation of Network Attendant Calls (Sheet 1)

NO. 1 ESS CENTREX SERVING
51A CPS/NO. 5 XBAR CENTREX OR
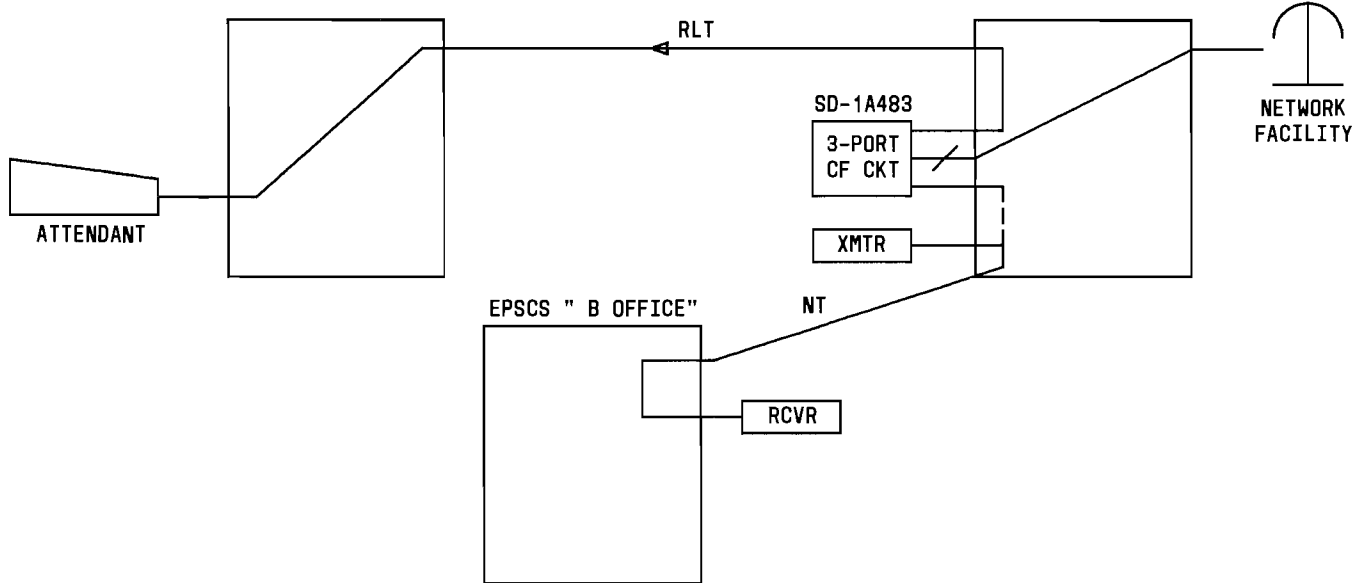DIMENSION 2000 PBX

EPSCS
"A OFFICE"

RLT

ATTENDANT

RCVR

SD-1A483

3-PORT
CF CKT
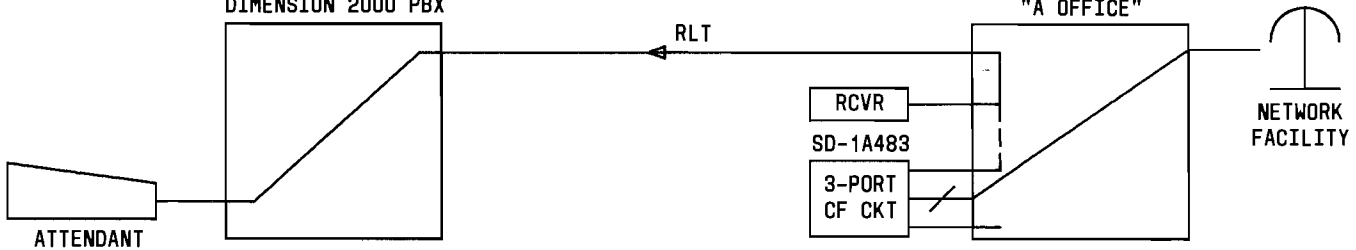
NETWORK
FACILITY

E. ATTENDANT OPERATES START KEY, RECEIVES DIAL TONE, BEGINS DILAING

RLT

ATTENDANT

RCVR

SD-1A483

3-PORT
CF CKT

XMTR

NETWORK
FACILITY

EPSCS " B OFFICE"

NT

F. DIALING COMPLETE, RDUTE CALL VIA NETWORK TRUNK (NT)

RLT

ATTENDANT

SD-1A483

3-PORT
CF CKT

XMTR

NETWORK
FACILITY

EPSCS " B OFFICE"

NT

RCVR

G. OUTPULSE DIGITS TO EPSCS "B OFFICE" VIA NETWORK TRUNK (NT)

Fig. 14—Symbolic Operation of Network Attendant Calls (Sheet 2)

NO. 1 ESS CENTREX SERVING
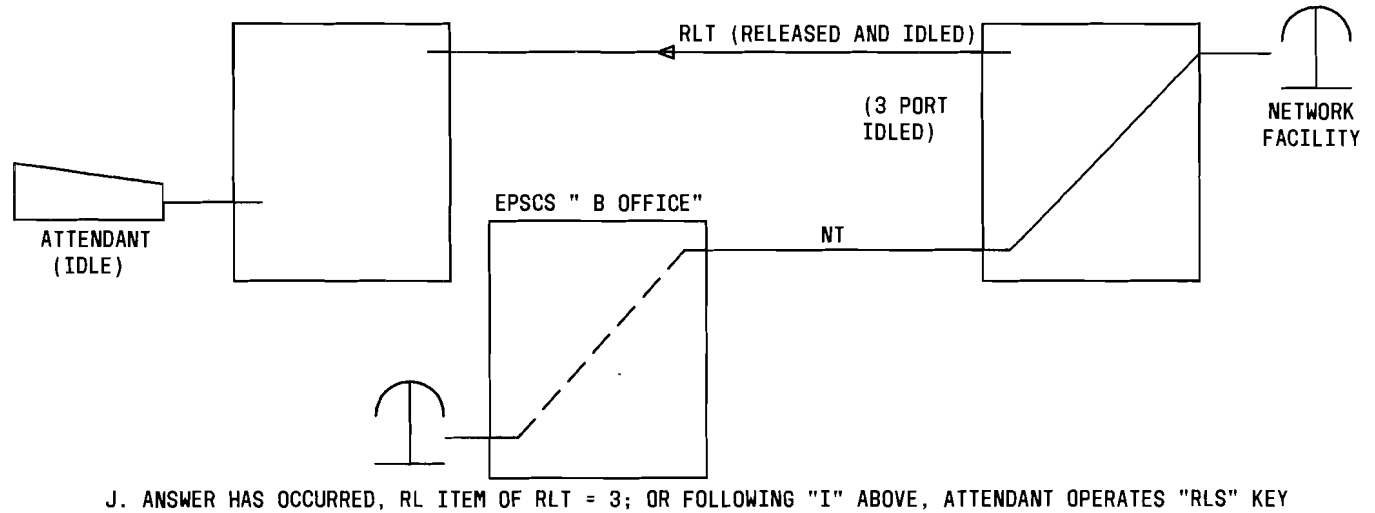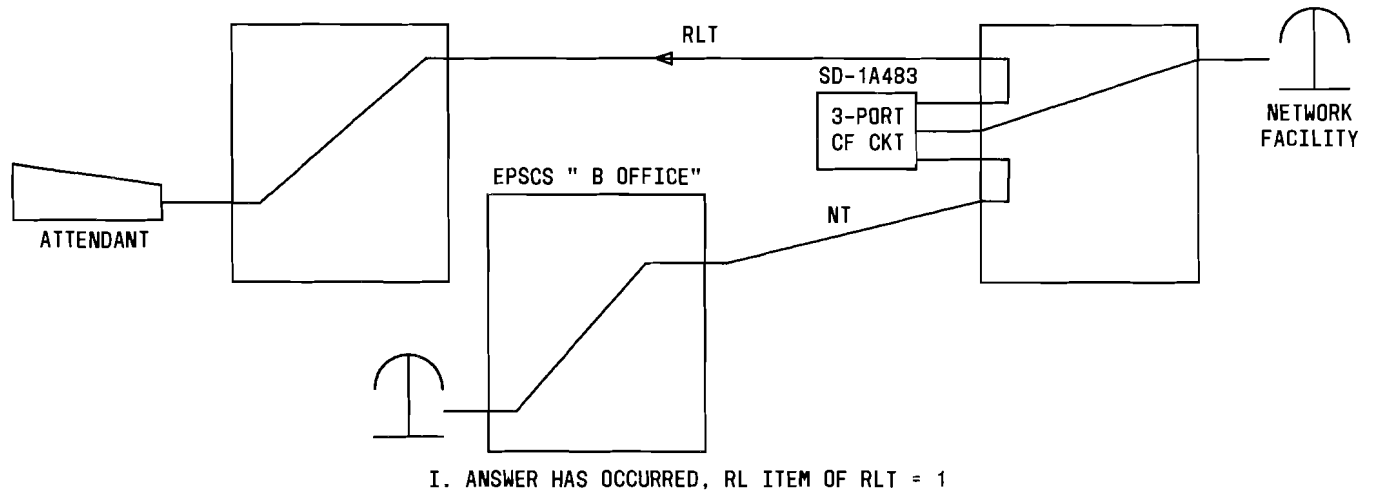51A CPS/NO. 5 XBAR CENTREX OR
DIMENSION 2000 PBX

EPSCS "A OFFICE"

RLT

SD-1A483

3-PORT CF CKT

NETWORK FACILITY

EPSCS " B OFFICE"

NT

ATTENDANT

AUDIBLE

RINGING

H. OUTPULSING COMPLETE, DESTINATION RINGING

RLT

SD-1A483

3-PORT CF CKT

NETWORK FACILITY

EPSCS " B OFFICE"

NT

ATTENDANT

I. ANSWER HAS OCCURRED, RL ITEM OF RLT = 1

RLT (RELEASED AND IDLED)

(3 PORT IDLED)

NETWORK FACILITY

EPSCS " B OFFICE"

NT

ATTENDANT (IDLE)

J. ANSWER HAS OCCURRED, RL ITEM OF RLT = 3; OR FOLLOWING "I" ABOVE, ATTENDANT OPERATES "RLS" KEY
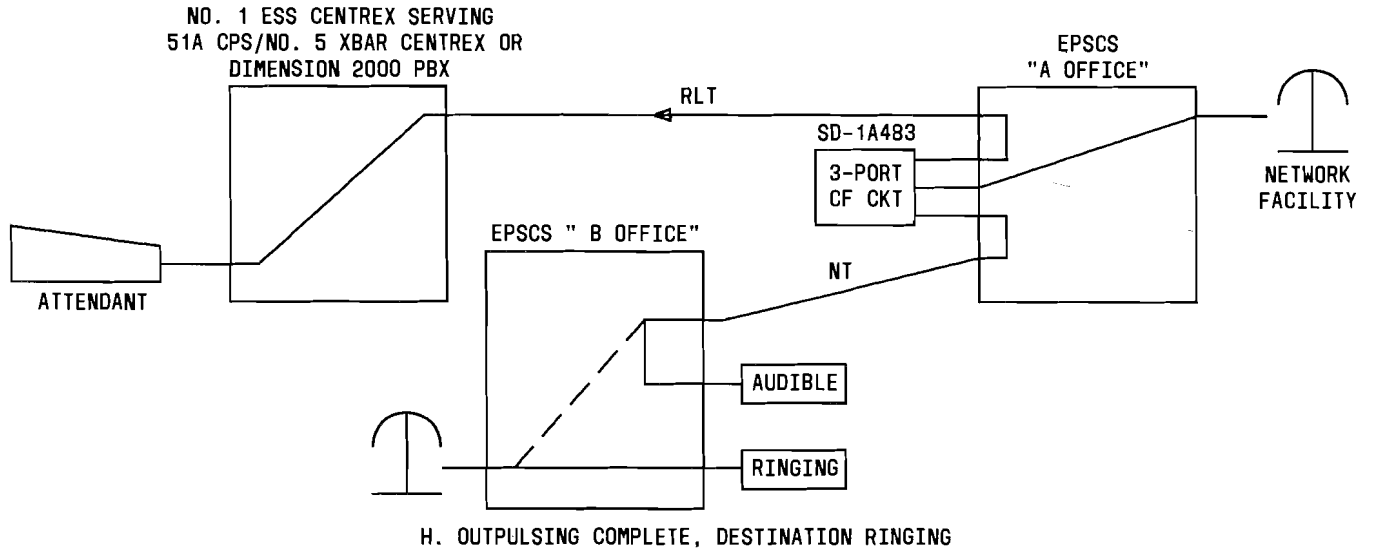
Fig. 14—Symbolic Operation of Network Attendant Calls (Sheet 3)

4.27 Signaling between the switch serving the attendant and the EPSCS switch and the proper reaction to these signals is the basis of the Network Attendant feature. The signaling is simple, consisting only of on-hooks and off-hooks. However, the simplicity requires that the two switches be operating in unison to establish and complete the extended calls. With so few signals available, occasionally the call status indicated on the attendant console may not be in step with the actual call status. The call events and associated signals are summarized in Table A and Table B.

4.28 *Outgoing Trunk Queueing*—The originating party may encounter an all trunks busy condition when the attempt to seize the RLT is initiated in the EPSCS switch. If the EPSCS is equipped with OGT queueing, the calling party at the option of the EPSCS customer may be allowed to queue for the RLT. Calls extended by the attendant may also encounter a busy condition. It is not possible to implement queueing capabilities on the extended call. The screening LEN of the RLT is built to prevent OGT queueing for the extended call.

4.29 *Digit Analysis/MDR*—When extending the call, the network attendant has access to all legitimate EPSCS dialing patterns. These dialing patterns may include authorization codes. The EPSCS switch analyzes the dialed digits, chooses the most efficient routing for the call and creates the message detail records (MDR) when required. For a detailed description of the MDR interface see reference A(1) in Part 18.

4.30 *Interface With EPSCS Facilities*—The Network Attendant feature allows for connecting the 4-wire, 3-port conference circuit to any 4-wire incoming or outgoing trunk. This includes the Meet-Me Conference feature and Direct Access Lines.

4.31 *Large Business Customer Equipment*—If the switch serving the attendant is a No. 1/1A ESS, the digits received from the EPSCS are translated to determine which call indicator lamp (CIL) to light. The assignment of the CILs aid the attendant in determining the type of incoming call. If the switch serving the attendant is a No. 5 Crossbar Centrex office, the interface requires that a 0 be outpulsed from the EPSCS to the Centrex to indicate on-network assistance calls. The digit 8 should be outpulsed to indicate an off-network assistance call.

If the attendant location is served by a DIMENSION 2000 PBX, the attendant is able to distinguish on-network and off-network attendant calls by the terminating trunk group. However, the attendant is not able to distinguish between a local assistance (dial 0) call and an off-network call.

TABLE A

SIGNALS TOWARD EPSCS SWITCH

CALL STATE AND CONSOLE KEY REQUESTS	SIGNAL
RLT Idle	On-hook
Receiver Ready	Standard Off-hook Start Wink (100 to 350 milliseconds)
Attendant Answer	Off-hook
Start Key	On-hook Flash (400 to 600 milliseconds)
RLS DEST Key	On-hook Flash (400 to 600 milliseconds)
RLS Key*	On-hook (> 600 milliseconds)

*On a DIMENSION console this will be either the RLS RLT Key (if the extended call has not been answered) or the RLS Key (if the extended call has been answered).

TABLE B

SIGNALS TOWARD SWITCH SERVING NETWORK ATTENDANT

CALL STATE	SIGNAL
RLT Idle	On-hook
RLT Seizure	Off-hook
Destination Answer	On-hook Flash (400 to 600 milliseconds)
Destination Abandon	On-hook Flash (400 to 600 milliseconds)
Abandon	On-hook (> 600 milliseconds)

CHARACTERISTICS

5. FEATURE ASSIGNMENT

5.01 The Network Attendant feature is provided on a per EPSCS customer basis.

6. LIMITATIONS

OPERATIONAL

6.01 Calls extended by the attendant may encounter an all trunks busy condition. Queueing capabilities on the extended call are not available. The screening LEN of the RLT is built to prevent OGT queueing for the extended call (QINH = 1).

6.02 Incoming calls to the attendant enter the EPSCS switch via FX-ONALs, WATS ONALs, or local ONALs to **guarantee** that the EPSCS switch has access to the MDR associated with the initial call. If the call enters the EPSCS switch via a network trunk, there would be no MDR associated with the call to the attendant. The MDR data that is sent to the customer network control center (CNCC) for the subsequent extended call would be incomplete due to the loss of the initial MDR. For a detailed description of the MDR, see reference A(1) in Part 18.

6.03 If a call to the attendant is extended to another release link attendant at the same switch, normal call completion is allowed. However if the second attendant tries to further extend, the attempt to flash for dial tone is ignored by the EPSCS switch until the first attendant releases.

ASSIGNMENT

6.04 Not applicable.

7. INTERACTIONS

7.01 Not applicable.

8. RESTRICTION CAPABILITY

8.01 If an FX-ONAL call to the network attendant is attempted, and all RLTs and queues (if provided) are busy, the calling party continues to receive audible ringing signal from the FX office. Delay announcement is not heard in this situation.

INCORPORATION INTO SYSTEM

9. INSTALLATION/ADDITION/DELETION

9.01 See flowchart in Fig. 15 for procedures to add trunking associated with the Network Attendant feature located at the EPSCS switch.

9.02 See flowchart in Fig. 16 for procedures to add trunking associated with the Network Attendant feature located at the business customer's switch.

9.03 Feature set cards that are required in the EPSCS office by the NEAT feature are:

9SEPS2 — EPSCS II feature group

9FNEAT — Network Attendant for EPSCS

NCF — Number of Conference Registers

NAM — Number of 13-Word AMA Registers

TT4QC — Quantity of 4-Wire Trunk TOUCH-TONE Receiver Queue Entries for Client Registers
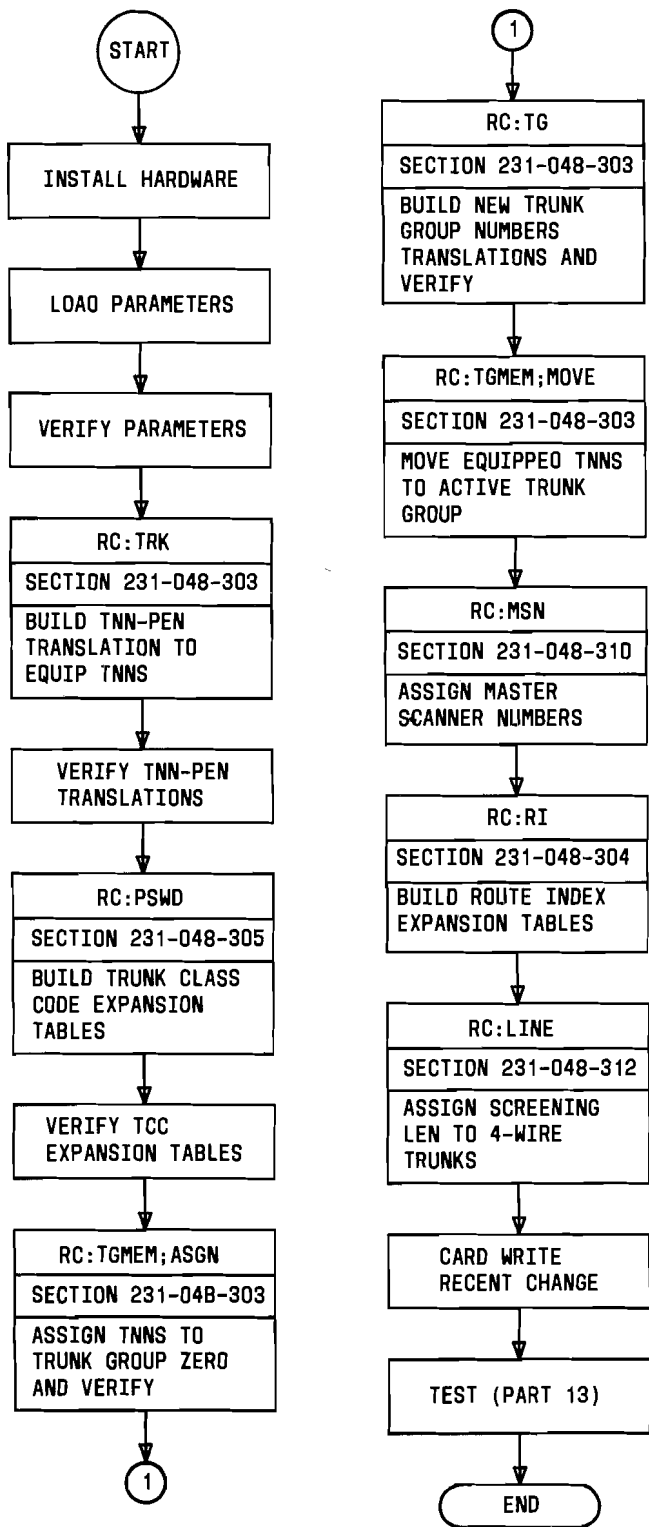
START

INSTALL HARDWARE

LOAO PARAMETERS

VERIFY PARAMETERS

RC:TRK

SECTION 231-048-303

BUILD TNN-PEN
TRANSLATION TO
EQUIP TNNS

VERIFY TNN-PEN
TRANSLATIONS

RC:PSWD

SECTION 231-048-305

BUILD TRUNK CLASS
CODE EXPANSION
TABLES

VERIFY TCC
EXPANSION TABLES

RC:TGMEM;ASGN

SECTION 231-048-303

ASSIGN TNNS TO
TRUNK GROUP ZERO
AND VERIFY

1

1

RC:TG

SECTION 231-048-303

BUILD NEW TRUNK
GROUP NUMBERS
TRANSLATIONS AND
VERIFY

RC:TGMEM;MOVE

SECTION 231-048-303

MOVE EQUIPPEO TNNS
TO ACTIVE TRUNK
GROUP

RC:MSN

SECTION 231-048-310

ASSIGN MASTER
SCANNER NUMBERS

RC:RI

SECTION 231-048-304

BUILD ROUTE INDEX
EXPANSION TABLES

RC:LINE

SECTION 231-048-312

ASSIGN SCREENING
LEN TO 4-WIRE
TRUNKS

CARD WRITE
RECENT CHANGE

TEST (PART 13)

END

Fig. 15—Installation/Growth Translations for NEAT at EPSCS Switch

---

START

INSTALL HARDWARE

RC:TRK

SECTION 231-048-303

BUILD TNN-PEN
TRANSLATIONS TO
EQUIP TNNS

VERIFY TNN-PEN
TRANSLATIONS

RC:PSWD

SECTION 231-048-305

BUILD TRUNK CLASS
CODE EXPANSION

VERIFY TCC
EXPANSION TABLES

RC:MSN

SECTION 231-048-310

ASSIGN MASTER
SCANNER NUMBERS

VERIFY MSN
TRANSLATIONS

RC:TGMEM;ASGN

SECTION 231-048-303

ASSIGN TNNS TO
TRUNK GROUP
ZERO AND VERIFY

1

1

RC:TG

SECTION 231-048-303

BUILD NEW TRUNK
GROUP NUMBER
TRANSLATIONS AND
VERIFY

RC:TGMEM;MOVE

SECTION 231-048-303

MOVE EQUIPPEO
TNNS TO ACTIVE
TRUNK GROUP

RC:RI

SECTION 231-048-304

BUILD ROUTE
INDEX EXPANSION
TABLES AND VERIFY

RC:LINE

SECTION 231-048-312

ASSIGN DIRECTORY
NUMBER AND
SCREENING LEN

CARD WRITE
RECENT CHANGE
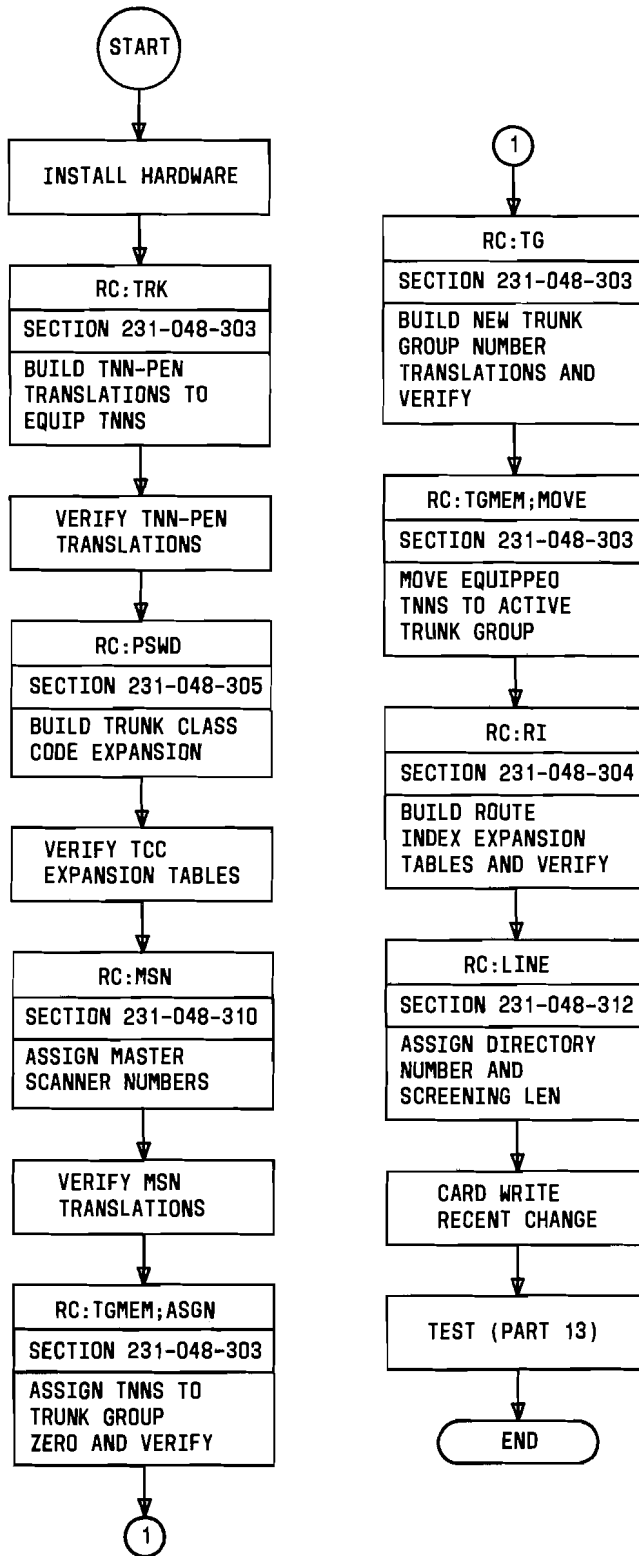
TEST (PART 13)

END

Fig. 16—Installation/Growth Translations for NEAT at Business Customer's Switch

10. HARDWARE REQUIREMENTS

Note: This part contains cost factors and determination of quantities. Central Office Equipment Engineering System (COEES) Planning and Mechanized Ordering Modules are the recommended procedures for developing these requirements. However, for planning purposes or if COEES is not available, the following guidelines may be used.

10.01 The 4-wire, 3-port conference circuit SD-1A483, J1A033MR is provided for this feature. See Table C for further details.

10.02 HILO interface circuit SD-1A392 J1A090BH is required with the use of 4-wire trunks and 4-wire, 3-port conference circuits. See Table C for further details.

10.03 Trunking couplet combinations can be used for RLT operation in the following manner assuming the attendant's switch is a No. 1/1A ESS. If not, the 2-wire trunk should have signaling characteristics which can handle all the signals indicated in Table A and Table B.

- SD-1A361 (HILO 4-wire) terminating to an SD-1A163 in a 2-wire office

- SD-1A362 (HILO 4-wire) terminating to an SD-1A237 in a 2-wire office.

10.04 The quantities of the release link trunks are provided on the basis of forecast customer demand. Queueing into the network attendant may impact the number of trunks desired. Likewise, the number of RLTs provided should be coordinated with the queue size. Adequate queue slots should be provided with a long enough time-out to ensure that no calls overflow and go "high and wet."

10.05 The determination of the amount of 4-wire, 3-port conference circuits is also dependent on forecast customer demand. There should be as many 4-wire, 3-port conference circuits as there are RLTs accessing the EPSCS switch that serves the network attendant. The 4-wire, 3-port conference circuits are provided in a common pool to all users.

TABLE C

CIRCUIT INFORMATION

USE	SD NO.	ORDER CODE	POINTS PER CIRCUIT		J-SPEC NO.	NO. CKTS PER UNIT	2-INCH MTG PLATES PER UNIT	TRUNK FRAME	NUMBER INTERFACE CKTS(1A392) REQUIRED
			SCAN	SIGNAL DISTRIBUTOR					
4-Wire 3-Port Conference Circuit	1A483	19800	3	6	1A033 (MR)	2	2	Misc.	3
HILO Interface Circuit	1A392	14200	0	0	1A090 (BH)	2	Plug-in	H(U)/ H(M)	—
2-Way Trunk RLT Operation	1A361	11100	2	3	1A090 (BA)	2	Plug-in	H(U)	1
2-Way Trunk RLT Operation	1A362-	11200	2	3	1A090 (BB)	2	Plug-in	H(U)	1

11. SOFTWARE REQUIREMENTS

Note: This part contains cost factors and determination of quantities. Central Office Equipment Engineering System (COEES) Planning and Mechanized Ordering Modules are the recommended procedures for developing these requirements. However, for planning purposes or if COEES is not available, the following guidelines may be used.

MEMORY

A. Fixed

11.01 The following memory is required whether or not the Network Attendant feature is used.

- *Base (program store):* Approximately 101 words

- *Parameters (program store):* 3 words shared

- *Call Store (compool defined):* 4 words.

B. Conditional

11.02 The following memory is required when the Network Attendant feature is activated:

- *Generic Program (program store):* Feature package 9FNEAT with 4458 words including 428 words patch.

- *Call Store:*

(a) Variable words depending on value of set card TT4QC + 1. (Minimum value of 2.)

(b) 34 words per 4-wire, 3-port conference register specified for the NEAT feature.

C. Variable

11.03 The following memory is required when the Network Attendant feature is applied:

- *Translations (program store):*

(a) TNN-TGN/PTW—1-word per 4-wire, 3-port conference bridge circuit.

(b) Trunk Group Number Supplementary Translations—1 word per RLT trunk group.

(c) TNN-to-PEN Translator—6 words per each 4-wire, 3-port conference bridge circuit.

(d) Route Index Expansion Table—2 words per route index unique to the NEAT feature.

(e) Trunk Class Expansion Table—4 words per trunk class code built for the unique trunk groups to the NEAT feature.

(f) Line Equipment Number (LEN) Translator (Screening)—5 words per screening LEN.

11.04 Currently (through 1E5), the number of 3-port conference registers (set card NCF) engineered for an office is equal to the sum of the two types of 2-wire, 3-port conference circuits in the office:

NCF = number of trunks with CPI 043 plus number of trunks with CPI 073

With the introduction of the Network Attendant feature, the number of 4-wire, 3-port's must be added in to determine the value of set card NCF. Hence, for 1E6 and future generic programs:

NCF = number of trunks with CPI 043 plus number of trunks with CPI 073 plus number of trunks with CPI 198.

Refer to item C(1) in Part 18.

REAL TIME IMPACT

11.05 The No. 1 ESS real time requirements for the NEAT feature are as follows:

(a) Extension of call by the attendant to an access line or access trunk and release of the attendant from the call requires approximately 16,000 cycles.

(b) Extension of call by the attendant to a Direct Access Line (DAL) and release of attendant requires approximately 16,240 cycles.

(c) Extension of call by the network attendant to a Meet-Me Conference arrangement and the release of the attendant from the call requires approximately 15,000 cycles.

11.06 For switch planning and capacity analysis, 16,000 cycles per call may be used.

11.07 The cycle time for No. 1 ESS office is 5.5 microseconds.

12. DATA ASSIGNMENTS AND RECORDS

TRANSLATION FORMS

12.01 At the EPSCS office, record keeping forms used for the Network Attendant feature are required for business customer and trunk translation data. Refer to C(2) in Part 18 for detailed information on translation forms. Translation forms associated with the Network Attendant feature are as follows:

- ESS 1101—Directory Number Record: Form 1101 is used to associate a particular DN with a LEN, class information, and related data. Attendant consoles are associated with originating characteristics by using a screening LEN for attendant originated calls and for the related CIL and TGB lamp indications. Screening LENs and DNs are associated with a trunk group on Form 1208. Attendant class information recorded includes the attendant class code, equipment, and feature data.

- ESS 1107A/B—Centrex Group Supplementary Information Record: This supplementary information record is used for translation information that is not recorded on other forms. Translation information such as assignment of optional CIL, type of entry, entry number, additional data, release link data, etc., are recorded on this form.

- ESS 1202—Trunk Group Record: This form associates TNNs with a TGN and its trunk class code.

- ESS 1203—Trunk Network Number Record: Data for each equipped TNN is provided to associate each TNN with its TGN, TCC, equipment location, and trunk order code.

- ESS 1204—Trunk Class Code Record: This form is used to associate a 3-digit trunk class code number with a 4-word memory assignment for trunk class code expansion. TCC expansion provides trunk group requirements and characteristics including the flash timing and flash repeating capabilities required for RLTs.

- ESS 1303—Trunk and Service Circuit Route Index Record: This form associates each assigned route index with a TGN, outpulsing data (if required), and the next RI.

- ESS 1306—Line Class Code Record: This form provides line class code, chart class column, screening LEN, and originating/terminating major class data for business customer stations, attendant positions, and tie trunks.

- ESS 1400—Traffic Register Assignment Record: This form relates the type of measurements to an equipment group or office count. The RLTs and 3-port conference circuits may be measured using peg, usage, and overflow counts.

RECENT CHANGES

12.02 No unique RC messages are introduced with this feature. Refer to Fig. 15 and 16 and to references A(3), A(4), A(5), and A(6) in Part 18 for the RC messages used to implement the NEAT feature.

13. TESTING

13.01 Teletypewriter input and output messages found in references B(1) and B(2) in Part 18 can be used to verify the translations for the NEAT feature. These messages are:

(a) VFY-DN input message verifies entries in the directory number (DN) translations. System response should be OK followed by a TR01 output message.

(b) VFY-LEN input message verifies entries in the line equipment number (LEN) translations. System response should be OK followed by a TR03 output message.

(c) VFY-TNN input message verifies entries in the trunk network number translations. System response should be OK followed by a TR14 output message.

(d) VFY-TKGN input message verifies entries in the trunk group translations. System response should be OK followed by a TR10 output message.

(e) VFY-EXP input message verifies entries in the route index expansion table translations. System response should be OK followed by a TR05 output message.

(f) V-CUSTID-CCB input message verifies entries in the EPSCS common block translations. System response should be OK followed by a TR67 output message.

(g) T-READ input message is used to verify various table data translations. System response should be OK followed by a TWO2 output message.

(h) VFY-MSN input message verifies entries in the master scanner number (MSN) translations. System response should be OK followed by a TR12 output message.

13.02 Several test calls over different facilities that use the NEAT feature verify the proper system operation.

14. OTHER PLANNING TOPICS

14.01 Not applicable.

ADMINISTRATION

15. MEASUREMENTS

15.01 Two new traffic counts (TMC 111) are available with the Network Attendant feature. These counts are given as part of hourly schedule H or C and selected quarter-hour DA 15. The counts available, along with the equipment group or office count (EGO), are given below:

EGO	DEFINITION
120	***EPSCS-Network Attendant Call Peg Count:*** Measures the number of times 3-port conference circuits are used on EPSCS Network Attendant calls.
121	***EPSCS-Network Attendant Call Usage:*** Measures the standard usage of 3-port conference circuits provided on a 100-second scan basis. Usage is derived by counting the number of conference registers in use on Network Attendant calls.

15.02 In addition to the above counts, peg counts and usage counts are available on the RLT trunk groups.

15.03 Normal trunk group measurements are available for the NEAT feature at the EPSCS switch and the business customer's switch.

16. CHARGING

AUTOMATIC MESSAGE ACCOUNTING

16.01 Not applicable.

UNIFORM SERVICE ORDER CODES

16.02 The uniform service order codes (USOCs) applicable to the NEAT feature may be found in the USOC Manual and/or Traffic FCC No. 260.

SUPPLEMENTARY INFORMATION

17. GLOSSARY

17.01 Not applicable.

18. REFERENCES

A. Bell System Practices

(1) Section 231-190-130—Feature Document—Network Message Detail Recording—Enhanced Private Switched Communications Service—2-Wire No. 1 Electronic Switching System

(2) Section 231-090-060—51A Customer Premises System Attendant Position—Universal Cordless Telephone Console With Data Link and Switched Loop Features—2-Wire No. 1 and No. 1A Electronic Switching Systems

(3) Section 231-048-309—Centrex-Co/ESSX-1 Recent Change Formats for CTXCB, CTXDI, CTXEXR, CXDICH, DITABS, DLG, FLXDG, FLXRD, and FLXRS (1E6 and 1AE6 Generic Programs)—2-Wire No. 1 and No. 1A Electronic Switching Systems

(4) Section 231-118-343—Recent Change Implementation Procedures for Enhanced Private Switched Communication Service (EPSCS II) (1E6 Generic Program)—2-Wire No. 1 and No. 1A Electronic Switching Systems

(5) Section 231-048-303—Trunk Translation Recent Change Formats for TG, TGBVT, TRK, CFTRK, TGMEM, CCIS and TKCONV (1E6 and 1AE6 Generic Programs)—2-Wire No. 1 and No. 1A Electronic Switching Systems

(6) Section 231-048-304—Rate and Route Translation Recent Change Formats for NOCNOG, DNHT, NOGRAC, RATPAT, DIGTRN, CCOL, RI, CHRGX, DITABS, TNDM, IDDD, TDXD, and RLST (1E6 and 1AE6 Generic Programs)—2-Wire No. 1 and No. 1A Electronic Switching Systems

(7) Section 231-060-210—Service Circuits, Network Switching Engineering, No. 1 and No. 1A Electronic Switching Systems

(8) Section 231-190-127—Feature Document—Enhanced Private Switched Communications Service Feature—2-Wire No. 1 Electronic Switching System

(9) Section 540-576-301—Centrex Station Equipment and Attendant Equipment 51A CPS (Customer Premises System) Using 27A- and 47A-Type or 1B- and 2B-Type Telephone Consoles With Switched Loop Operation—Method of Operation—2-Wire No. 1 Electronic Switching System

(10) Section 540-575-322—Attendant Equipment 1-, 2-, and 9A-Type Telephone Console and 622-Type Telephone Set—With Switched Loop Termination—Method of Operation No. 5 Crossbar Centrex-CO—Arranged for Phase 1 Centrex

(11) Section 554-191-112—DIMENSION PBX—Attendant Console Feature.

B. **Teletypewriter Input and Output Manuals**

(1) Input Message Manual IM-1A001—2-Wire No. 1 Electronic Switching System

(2) Output Message Manual OM-1A001—2-Wire No. 1 Electronic Switching System.

C. **Other Documentation**

(1) Office Parameter Specifications PA-591001, 2-Wire No. 1 Electronic Switching System

(2) Translation Guide—TG1A

(3) Translation Output Configuration PA-591003, No. 1 Electronic Switching System

(4) Parameter Guide PG-1, No. 1 Electronic Switching System

(5) Trunk Specification Document—J-1A063A-1—2-Wire No. 1 and No. 1A Electronic Switching Systems.