Lucent Technologies
Bell Labs Innovations

# Total Separation
# Selective Call Forwarding Feature
# Local Area Signaling Services
# 1A ESS™ Switch

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# 1. Introduction

## Definition

1.01 The **Total Separation of Selective Call Forwarding (TSCF)** feature is a customer feature that enhances the standard single activation version of SCF. TSCF allows SCF and Call Forwarding Variable (CFV) to be active concurrently while Single Activation SCF does not. In addition, the last valid and confirmed remote directory number (RDN) is stored following deactivation if a screening list exists. The RDN is not saved following deactivation of Single Activation SCF. Refer to Part 6 A(6) for information about the Single Activation SCF version.

⇒ **NOTE:**
TSCF is a version of SCF. Consequently, TSCF and Single Activation SCF do not exist as separate features that can both be active at the same time in an office. TSCF items addressed in this document are, in most cases, SCF items. For example, the "TSCF access code" is actually the "SCF access code".

1.02 The SCF feature is a LASS (Local Area Signaling Services) feature that allows a customer to preselect calls that should be forwarded based on the identity attribute of the calling party. An identity attribute may be the CLDN (calling line directory number) or the centrex extension of the calling line. The customer creates a screening list that contains the identity attribute for each calling party whose calls are to be forwarded. A call from a station that has its identity attribute on the customer's screening list is forwarded. All other calls receive standard terminating treatment. Standard terminating treatment implies that the call proceeds through the precedence list established by translations. Translations determine if any other features are active on the line which require action to be performed.

## Reason For Reissue

1.03 This practice is being reissued to include information for the Advanced Intelligent Network (AIN) Release 0.1 Termination Attempt Trigger (TAT) feature impacting Selective Call Forwarding.

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## Background

**1.08** The SCF feature was first introduced in the 1AE9 generic with the requirement that the CFV feature must be active. Since SCF worked in conjunction with CFV, the customer could only modify the SCF RDN via CFV activation. This meant that a two-step procedure was required to use SCF. The customer would first activate CFV and then activate SCF.

**1.09** The Single Activation SCF feature was provided in the 1AE10 generic as the standard version of SCF. Single Activation SCF provides the customer with a one-step procedure for activating SCF. From the user perspective, SCF and CFV are two separate features. However, these features cannot be active at the same time. Refer to Part A(6).

**1.10** The TSCF feature allows SCF and CFV to be active concurrently. The TSCF feature stores the last valid and confirmed RDN as long as the customer screening list has at least one entry.

## Economic Worth

**1.11** With the CFV or Call Forwarding Usage Sensitive-POTS feature, the forwarding of all calls to the remote station can be disadvantageous. The TSCF feature avoids this. Terminating calls are screened based on a customer's preselected list of identity attributes. The identity attributes on the screening list determine which calls are forwarded.

**1.12** The TSCF and CFV features are completely separate and can be used concurrently.

## Availability

**1.13** The TSCF feature is a LASS custom feature and is available in the 1AE10 and later generics. Please contact your Lucent Technologies representative for feature licensing information.

**1.14** The Network Interconnect (NI) and the Inter-Local Access and Transport Area (LATA) Calling Party Number/Billing Number Delivery and Related Services (CPNBND) features are available with the 1AE11 and later generics.

**1.15** The Shared/Split NXX (S/SNXX) enhancement is available with the 1AE10 and later generic programs.

**1.16** The LASS Office Option Feature (LOOF) is available with the 1AE10 and later generic programs.

## Feature Groups

**1.17** The TSCF feature requires LASS optional feature groups 9STSCF or 9SLASA for intraoffice only applications. For interoffice applications, the TSCF feature requires LASS optional feature groups 9STSCF or 9SLASS for interoffice applications. Feature group 9STSCF requires CCS (common channel signaling) for interoffice applications. Refer to Part 6 A(9) for a general description of all the LASS features.

**1.18** The 9SBNI feature group is required to deliver the calling party number (CPN) across LATA boundaries. The Network

Interconnect (NI) feature provides the 1A ESS Switch system with the ability to interface with Interexchange Carriers using the CCS7 Integrated Services User Part Protocol. Refer to Part 6 A(11).

1.19 The CPNBND feature group 9SCNBN is recommended to be loaded on the 1AE11 and later generic programs when the TCAP (transaction capability application part) and SLE (screen list editing) features are loaded.

## Feature Assignment

1.20 The TSCF feature is provided on a single office (intraoffice) basis, or on a multiple office (interoffice) basis. When applied on an interoffice basis, the end offices must be within the LASS boundary area.

1.21 The LASS boundary area is a geographical area within which the telephone company offices are connected by a Common Channel Signaling System 7 (CCS7) network. Refer to Part 6 A(8).

1.22 For inter-LATA delivery of the CPN, the signaling network must be a CCS7 network. If the the LASS boundary area extends beyond a LATA, the NI feature is required in all offices within the network. Refer to Part 6 A(11).

1.23 The TSCF feature may be usage sensitive and available to all lines in a LASS office/boundary area that have a unique LEN (line equipment number). The TSCF feature can also be provided on a subscription basis.

# 2. User Perspective

## User Profile

2.01 The TSCF feature is provided to POTS (plain old telephone service) users and to centrex groups in the 1AE10 and 1AE11 generic programs on a usage-sensitive or subscription basis.

## Customer Premises Equipment

2.02 The TSCF feature requires only a telephone station set at the customer premises. Either DP (dial pulse) or DTMF (dual tone multifrequency) telephones may be used. The TSCF feature is optimized for DTMF customers; extensive use is made of the star (*) and number sign (#). Refer to paragraphs 2.31 and 2.37. A DP customer must dial 11 for * and 12 for #. (A DTMF customer may also dial 11 and 12 instead of * and #.)

## Feature Description

### A. Selective Call Forwarding Screen List Editing

2.03 When a user dials the TSCF access code, a check is made to determine if the line is restricted from using LASS or TSCF. The access code is translated via the prefixed access code translator for POTS lines or via the centrex translator (digit interpreter tables) for centrex lines. If the access code is unassigned for the office or centrex group, the line receives reorder treatment. This translation also checks the line prohibit indicators. The line prohibit indicators are located in the LENCL2 (line equipment number class 2) word. The LENCL2 word contains either the ACRG (access code restriction group) field (POTS lines) or the CAT (centrex access treatment) code field (centrex lines). These fields can be used to deny a line services that are associated with an access code. If access is not allowed, the line receives reorder treatment.

2.04 If the access code is assigned, the restriction field (RESTR) of the primary translation word from the prefixed access code translator or the data word from the centrex digit interpreter table is used to evaluate the ACRG or CAT code for the requesting line.

2.05 If the ACRG/CAT evaluation indicates that the customer is allowed access, the class of service prohibit indicators in the primary translation word of the class of service information translator are checked. This check determines whether the line should be denied access to the TSCF feature because of its service class. The classes of service which should be denied access are listed in paragraph 4.02.

2.06 If the class of service of the user is allowed access to TSCF, option word L of the LEN supplementary auxiliary block is checked. If this word is not assigned and the LASS Office Option Feature (LOOF) is not loaded, no restrictions apply, and the user is allowed access. If this word is not assigned and LOOF is loaded, word 19 of the office options table is used as the default option word L. If the LEN option word L exists or the default option word L is used, it is checked to see if the user is denied access to TSCF. If TSCF is not denied, processing continues. If access to TSCF is not allowed, the line receives LASS denial announcements.

2.07 Further checking is done for restrictions that apply specifically to the LASS screening features. In particular, certain multiline group (MLG) members are restricted from using TSCF (paragraph 4.03).

2.08 If the line is denied access to TSCF for failure to satisfy the preceding conditions, the call is routed to announcement. The customer is prompted for the RDN before control is passed to the Screen List Editing (SLE) primitive. Refer to Part 6 A(9) for further details concerning the LASS primitives. The LASS primitives include: SLE, retrieval of distant line status (RDLS), retrieval of calling line DN (RCLDN), and line history (LH).

2.09 If resources are available, an ATI (ASC [announcement service circuit] trunk interface) is seized and replaces the CDR (customer digit receiver). A SLR (SLE register) replaces the OR (originating register). A SLEB (SLE buffer) is initialized with a current copy of the screening list and the last valid confirmed RDN. At the end of the editing session, the contents of the SLEB are used to update the screening list.

2.10 The RDN editing routine edits and validates (paragraph 4.06) the RDN before beginning the screening list editing session. The RDN must be confirmed before entry to SLE is allowed. If the RDN is valid, a confirmation announcement is played.

2.11 When RDN editing is done, if no previous RDN exists, a TRC (temporary recent change) for TSCF is seized. If an existing RDN is changed, the existing TRC is deleted and a new TRC is seized. If an existing RDN is just confirmed (not changed), the existing TRC remains unchanged. If the new or changed RDN is in another office (interoffice), a 2- or 3-word CORC (customer originated recent change) block is seized. If the office has the CLOG (customer originated recent change log) feature package, the CORC02 message is output on the maintenance TTY.

2.12 Refer to paragraphs 2.48 and 2.49 for system action when the recent change area is full or the office is in the inhibit RC (recent change) mode.

2.13 The SLE primitive returns control to TSCF to verify the validity of an identity attribute which is to be added to the TSCF screening list. The TSCF feature uses the RDLS primitive to verify an identity attribute. The RDLS primitive requires as input the identity attribute to be verified, the client ID, a return address, and the call register address. The TSCF client ID indicates to RDLS that originating characteristics are requested. If the attribute is a centrex extension, the extension is converted to a 10-digit DN.

2.14 The Interlata **CPNBND** feature provides an inter-LATA SLE blocking option that blocks the sending of a Transaction Capability Application Part (TCAP) query message for distant line status of an inter-LATA DN. The RDLS primitive uses 3/6-digit translations to determine if the DN to be added is intraoffice, interoffice, intra-LATA, or inter-LATA. If RDLS identifies the DN as inter-LATA, and the CPNBND feature is loaded, return is to TSCF and the SLE blocking option is checked (paragraph 3.43).

2.15 The inter-LATA SLE blocking option is an office option that blocks or allows a TCAP query for the originating information of an inter-LATA DN. This option, when set to "block", prevents the inter-LATA DN from being placed on the end user's screening list. If the SLE blocking option is set to "block", no return is made to RDLS to send the TCAP query. Instead, TSCF returns long-term denial indication to SLE. If the option is set to "allow", return is made to RDLS to send a TCAP query message. If the CPNBND feature group is not loaded, the TCAP query is sent.

2.16 The **S/SNXX** enhancement optionally allows a TCAP query to be sent for a number that has a shared or split NXX. A shared NXX is when all ten thousand DNs for that NXX are shared between switches. A split NXX is when thousand's blocks of numbers are assigned (split) to different switches. The 3/6-digit translations identify these numbers as

intraoffice. The RDLS primitive uses terminating DN translation to get the status information for intraoffice DNs. Terminating DN translations indicate that these numbers point to a route index and RDLS would normally return indication that the number is unassigned. With the S/SNXX enhancement active (paragraph 3.44), if DN translations return a route index with an outpulsing trunk indicated and a terminating major class of trunk group without ringing, a TCAP message is formatted and sent for the shared/split DN.

2.17 If RDLS is successful, the following status information is returned to TSCF:

- Valid DN (assigned)
- Input DN matches calling line DN
- Originating major class code
- Multistatus indicator (1AE9 only)
- Temporarily-out-of-service indicator (1AE10 and later)

If the number is added to the list, an announcement is played.

2.18 A failure to verify the identity attribute is returned to SLE by TSCF if any of the following conditions exist:

- Resources required by RDLS are unavailable
- RDLS request times out
- DN or centrex extension input by user does not match the DN or centrex extension that would be retrieved by RCLDN
- DN is a multiparty line
- DN or centrex extension (centrex only) is denied origination
- DN is temporarily out-of-service – this information is available only for a DN in another office that is not a 1A ESS Switch.

If the number cannot be validated, an announcement is played.

2.19 When SLE processing is done, SLE returns control to the TSCF feature. The SLR contains required AMA (automatic message accounting) data. The AMA routine processes the data and writes an AMA record. A new and modified list indicator is added to the AMA record. The following SLR information is formatted and passed to the AMA routine:

- Start and end times of the editing session
- Number of entries on the screening list
- Status of the screening list
- Customer billing DN
- Client ID

After the necessary information is copied from the SLR, the register is released, and return is made to the main program.

**B. Terminations to TSCF Lines**

2.20 Initially, on any call terminating in an office with the LASS TSCF feature, the identity attribute of the calling party is received from the originating office (if the office is in the CCS7 network). As mentioned previously, the identity attribute may be the CLDN or centrex extension.

2.21 The criteria for selectively forwarding calls terminating to TSCF lines follow. (Refer to Figure 1.)

(a) The terminating line has the TSCF feature.

(b) The TSCF feature is active.

(c) The calling party identity is obtainable (that is, there is CCS connectivity between the originating and terminating offices).

(d) There is a match between the identity attribute of the calling party and an identity attribute on the screening list.

2.22 During normal call processing, if the terminating DN has a TSCF CORC, the identity attribute of the calling party is compared to the entries in the screening list. If a match is found, the call is forwarded to the TSCF RDN. If the identity attribute does not match any entry in the screen list, the call proceeds with normal terminating call treatment. If the CFV feature is active, the call is forwarded via the CFV RDN.

2.23 For forwarded calls, ring reminder (RNGR) may be provided at the base station depending on the ring reminder option of the base station.

2.24 The remote station may also have a LASS screening feature active. If so, the CLDN of the originating party, not the CLDN of the base station, is used for screening at the remote station.

## Special Planning Considerations

2.25 Currently, there are no specifications available that provide instructions on how to route LASS inter-LATA TCAP messages (neither the query messages nor the response messages). If CPNBND is loaded and the blocking option is set to "allow", a TCAP message is sent from the originating end office but it may not be possible to deliver it to its destination. Or, the terminating office may not be able to correctly deliver the response back to the originating office. The inter-LATA application of the TCAP issue currently is not resolved. Therefore, if the SLE blocking option is not set to "block", it is the responsibility of the operating telephone companies to make the necessary routing translations in their STPs (signal transfer points). These translation changes should allow TCAP messages to be routed across LATA boundaries to assure that TCAP messages for LASS are appropriately delivered.

## Activation

### A. Screen List Editing

2.26 The TSCF activation includes the following two processes:

(a) Defining/modifying the RDN. (Refer to Figure 2.)

(b) Creating/editing the TSCF screening list (Figure 3).

#### Edit the Remote Directory Number

2.27 To access TSCF, the user goes off-hook and dials the TSCF activation code. The user is told through audible announcements that TSCF has been accessed. If the RDN (or centrex extension) exists, it is voiced back to the user. The user may retain or change the RDN. This includes the 5-digit CAC (10XXX). In 1AE12 and later offices, the RDN dialed by the customer will determine if a 5 or 7 digit (101XXXX) CAC is voiced back. When the office enters the post-permissive period and only a 7-digit CAC is allowed to be dialed, only a 7-digit CAC will be voiced backed. If TSCF is not yet active, and no RDN exists, the user must enter the RDN before proceeding with the SLE process.

2.28 The RDN can be in any of the following formats:

(a) [10XXX] + [1] + 7/10-digit DN + [#] (end of dialing sign). (The base station is not carrier restricted.)

(b) [10XXX] + 1/2-digit speed call access code + [#]. (The speed call access code must be defined previously with a valid DN.)

(c) [101XXXX] + [1] + 7/10-digit DN + [#] (end of dialing sign). This dialing pattern is valid only if the base is not carrier restricted and the office is on 1AE12 and later.

(d) [101XXXX] + 1/2-digit speed call access code + [#]. The speed call access code must be defined previously with a valid DN. This Dialing pattern is only valid with 1AE12 and later generics.

(e) Centrex extension (centrex intragroup forwarding).

(f) Centrex Extension Trigger (data type 8, subtype 1 or 2). Refer to Part 6 A(10) for information about the ASP/SSP Feature.

(g) Centrex extension (data type 2), Centrex attendant (data type 6) or Centrex Extension Trigger (data type 8, subtype 1 or 2) when the line is assigned the ASP/SSP Off-Hook Delay (OHD) capability. For information about the ASP/SSP Feature, refer to Part 6 A(10).

Brackets symbolize optional information within.

2.29 If an RDN is entered, it is validated and voiced back to the user for confirmation. The RDN must be confirmed before entry to SLE. Note that RDLS is not used to validate the RDN. In the case of an invalid RDN (paragraph 4.06), the user is informed and given three additional chances to reenter the DN. The invalid number is repeated to the customer in the error announcement. No courtesy call is placed to the RDN as in CFV.

2.30 A valid and confirmed RDN is stored in the switch as long as the customer has access to the TSCF feature and has at least one identity attribute on the screening list. The screening list can be in the active or inactive mode.

2.31 The POTS user can use special characters "*" and "#" during the LASS TSCF RDN entering sequence. These characters may be used when entering an RDN (to nullify the timing interval) as in the SLE session (paragraph 2.37). The centrex common block translations have been modified to allow centrex customers to use the "*" and "#" during an RDN entering sequence. Refer to paragraph 3.32. This modification is required because these characters are already used in some centrex dialing patterns (for example, *9).

**Edit the TSCF Screening List**

2.32 After entering/modifying the RDN, the user is told that the SCF service is on and informed of the number of entries on the TSCF screening list. This includes the number of private entries.

2.33 A TSCF screening list is activated when it is initially created during TSCF activation. A deactivated TSCF screening list is also activated by dialing the TSCF activation code. The TSCF feature is ON when the RDN is valid and confirmed, and the screening list is active with at least one identity attribute on it.

2.34 The SLE primitive allows TSCF users to build and manipulate a list of numbers (typically DNs) that TSCF utilizes during call processing. The user is guided by SLE. The SLE interactive procedure allows users to tailor a screening list to their satisfaction. Refer to Part 6 A(9) for more information concerning the SLE primitive.

2.35 Although the SLE primitive interfaces with individual users, it is transparent to the user who perceives only the interaction with the TSCF feature. When editing a screening list (Figure 3), SLE allows a user to accomplish the following:

- Create a list
- Add entries
- Delete entries
- Hear the list
- Obtain instructions

2.36 The SLE primitive is activated when a user dials the TSCF activation code. The user also controls SLE operation by dialing valid digit strings. A DP or DTMF telephone may be used, however, a DTMF telephone is more efficient. The following defines valid types of character strings that may be dialed (input) for use with SLE.

(a) A **command** is an input string that causes immediate system action (play instructions, read list, delete entry, add entry, delete list).

(b) A **subcode** is a 2-digit string that implies further input is required (for example, subcode 02 is used to prefix centrex extensions).

(c) An **identity attribute** is an entry on the screening list (DN, centrex extension). An identity attribute may be added from the incoming line history block (ILHB) by dialing 01.

2.37 When collecting digits in a LASS SLE session, a timing interval is defined to determine the amount of time that should elapse between the collection of digits. If this timing interval is exceeded, time-out occurs and digit collection ceases. Also, when entering a DN, the user waits for the timing interval to elapse before the DN can be processed. Customers with DP telephones must wait for time-out. Customers with DTMF telephones can nullify this timing interval. The special character "#" can be used to indicate end-of-dialing, and an entered DN will be processed immediately. In case of misdialing a DN, the special character "*" nullifies the timing interval and cancels the processing of the entered digits; at this point, the user may redial the desired DN.

2.38 The user can terminate the activation session at any time by simply going back on-hook. A TSCF activation session is considered successful if the RDN is valid and confirmed, and the screening list contains at least one identity attribute.

**B. Selective Call Forwarding Terminations**

2.39 With TSCF, call forwarding is activated when the RDN is entered prior to editing the TSCF screening list. Subsequent calls terminating to the line when TSCF is active are forwarded if the calling party number is specified on the TSCF screening list. Forwarding will terminate to the destination dictated by the RDN unless the remote number is treated as an ASP/SSP trigger, in which case the Service Control Point (SCP) is queried for routing instructions. For information about ASP/SSP, refer to Part 6 A(10).

2.40 Terminating call treatment for TSCF has the ability to have both TSCF and CFV active at the same time. Refer to Figure 1. The TSCF feature has precedence over CFV. This means that if both features are active, the call forwards via TSCF, if appropriate; if TSCF does not apply, the call is forwarded via CFV.

2.41 For all generic programs, on forwarded calls, ring reminder is provided at the base station if the line has the ring reminder option; the call proceeds with the call forwarding function. For calls that are not forwarded, standard terminating treatment is provided (termination to the base station).

## Deactivation

2.42 When the user deactivates the TSCF feature (Figure 4), the screening list can be saved or removed. To deactivate TSCF, the user goes off-hook and dials a unique deactivation code for TSCF. The user is told the number of entries, including private entries, on the screening list. The customer may terminate the deactivation session by going back on-hook.

2.43 During the deactivation session, the user may choose one of the following actions:

- Delete all entries on the list
- Delete only the private entries

If the user simply goes back on-hook, the existing screening list entries are saved and put in an inactive mode. The RDN is saved if it is confirmed and valid. The RDN is removed if the customer is denied access via RC (recent change) or removes all entries on the TSCF screening list.

## Abnormal Operations

2.44 If the activation or deactivation access code dialed is unassigned, standard error treatment is provided. If the user is not permitted access to the TSCF feature, reorder/LASS announcement is provided when the access code is dialed.

2.45 If after dialing the activation/deactivation access code, there is a lack of system resources before an ASC is connected, reorder is returned (for example, no ASC circuits available or an SLR is not available).

2.46 If the ASC is unavailable, the screen list editing session is terminated. For system failures not related to the ASC, a "no resources" announcement is played via the ASC before ending the editing session.

2.47 If the connection to the ASC has been established, but an SLEB is unavailable, the customer receives a denial announcement via the ASC and dial tone is returned. If a TSCF deactivation is attempted, the user is told that their TSCF service is now off, then a "no resources" announcement is provided.

2.48 The following occurs during a TSCF activation attempt when the office is in the INH:RCSOURCE mode. If both CFV and SLE are inhibited, the results are the same as when only CFV is inhibited.

(a) When the office is in the inhibit CFV mode, reorder/"Denied LASS" 13A recorded announcement is provided and dial tone is returned.

(b) When the office is in the inhibit SLE mode, a "no resources" denial announcement is provided via the ASC and dial tone is returned.

For each of these cases, the resulting treatment is the same whether the screening list exists or not. If a screening list exists, its status remains unchanged.

2.49 The following occurs during a TSCF deactivation attempt when the office is in the INH:RCSOURCE mode. If both CFV and SLE are inhibited, the results are the same as when only SLE is inhibited.

(a) If the office is in the inhibit CFV mode and a screening list does not exist on this line, a "no list" error announcement is provided via the ASC and dial tone tone is returned.

(b) If the office is in the inhibit CFV mode and a screening list does exist on this line, the deactivation is allowed. The TSCF RDN TRC is also removed if one exists.

(c) If the office is in the inhibit SLE mode, the user is told that their TSCF service is now off. A "no resources" denial announcement is then provided via the

ASC and dial tone is returned. This treatment is the same whether or not a screening list exists for the line at the time of the deactivation attempt. If a TSCF RDN TRC exists, it is removed.

2.50 Incorrect dialing by the user results in error announcements. Generally, after dialing incorrectly, a user may continue with the SLE procedure; the call is not terminated. The system responds with an error announcement when either of the following occurs:

(a) Invalid subcode/command

(b) Incomplete dialing (not enough digits)

(c) Entry of extra digits

2.51 There are two cases when time-out occurs during SLE: interdigital time-out and time-out between user actions. The system responds with an error announcement indicating a dialing error in the case of interdigital time-out. In the case of time-out between user actions, the user is prompted for more input. This occurs whether the action is successful or unsuccessful. If the user does not dial within a specified timing interval after the prompt, the instructions are played. If the user fails to dial after four consecutive prompts, the call is dropped.

2.52 If an invalid RDN is entered and the maximum has not been exceeded, an announcement voices back the invalid RDN. The user is prompted to reenter the RDN. Otherwise, the user is disconnected after receiving the error announcement. If the maximum error count (4) has been exceeded, an error announcement is returned through the ASC telling the user to consult the written instructions and try again later.

2.53 Abandon can be an abnormal termination of SLE. If abandon occurs before actions requested by the user are executed, the last action requested by the user is ignored and the SLE procedure is terminated. All previous successful actions are preserved (successful actions are indicated via announcements). If a user goes on-hook before an entered identity attribute is verified (a real-time break is taken to verify an interoffice identity attribute), SLE treats the call as abandoned. If an activation is unsuccessful, the previous state of TSCF is preserved. An announcement is provided to indicate success or failure of the verification attempt.

2.54 If a user attempts to add the last calling line directory number (CLDN) from the ILHB to the TSCF screening list, and the CLDN is not available, an announcement is given. The CLDN may not be available if, for example, the last incoming call originated outside the LASS area. Since line history blocks (LHBs) are not maintained in duplicated call store on the 1AE12 and later generics, the CLDN may be temporarily unavailable when switch resource limitations prevent retrieval of the ILHB. An announcement is also given for this situation. Refer to Part 6 A(9) for details about LHB structures available on each generic.

2.55 An abnormality related to TSCF occurs when the identity of a calling party, previously specified on the screening list, cannot be obtained. This may be caused by lack of CCS7 connectivity for the interoffice call, CCS7 failure or major far-end overload/outage. When this happens, determination of whether the call should be forwarded cannot be made. As a result, the calls are not forwarded via TSCF regardless of the specification of the calling party identity on the TSCF screening list.

## Interactions

2.56 Customers may subscribe to TSCF and/or CFV. These two features may be active at the same time. The TSCF feature has precedence over the CFV feature (Figure 1).

2.57 The Selective Call Rejection feature has precedence over TSCF. However, TSCF has precedence over the following features:

- Call Forwarding Busy Line
- Call Forwarding Don't Answer
- Call Waiting Terminating

2.58 The TSCF does not allow calls to be forwarded via Call Forwarding Over Private Facilities.

2.59 In a centrex environment, CTX-CFO (centrex call forwarding outside) must be allowed in order to designate an RDN that is outside the centrex group.

2.60 The ASP/SSP feature impacts TSCF as follows (refer to Part 6 A(10) for detailed information about the ASP/SSP feature):

(a) For a POTS or Centrex line, call forwarding processing of the RDN may detect a Dialed Number Trigger. When this happens, an ASP/SSP query message will be sent to the SCP database and the call will forward using the routing information returned from the SCP. Dialed Number Trigger processing is provided in the 9FASP2 feature package.

(b) For a Centrex line, the RDN could be an extension built as a Centrex Extension Trigger. If this is the case, an ASP/SSP query message will be sent to the SCP database during call forwarding processing and the call will forward using the routing information returned from the SCP. Centrex Extension Trigger processing is provided in the 9FASP1 feature package.

(c) If the POTS or Centrex line is assigned the OHD capability, an ASP/SSP query will always be sent to the SCP database during call forwarding processing unless "No Query" indication is specified for the RDN digits. If "No Query" is indicated, then an ASP/SSP query will be sent to the SCP only if a Dialed Number or Centrex Extension Trigger is detected for the RDN digits. If the SCP is not queried, then forwarding will be to the destination dictated by switch-based translations of the RDN. OHD trigger processing is provided in the 9FASP3 feature package.

(d) When a Centrex customer enters a Centrex extension as the RDN, the dialed digits (1 to 7 digits) are stored in the CORC block and in the Screen List Head Table Option Word E if the extension is built as a Centrex Extension Trigger. If the Centrex customer's line is assigned OHD, then an extension entered for the RDN is always stored in its dialed format in the CORC block and in the Screen List Head Table Option Word E regardless of whether the extension is a Centrex Extension Trigger. Note that storing the RDN in its dialed digits format differs from storage of an extension when neither OHD nor Centrex Extension Triggers apply. In this case, the extension is stored as its corresponding 7-digit number with an indicator set to inform TSCF to voice back only the extension digits during subsequent activations.

(e) When the RDN is a Centrex extension and an OHD or Centrex Extension Trigger ASP/SSP query is sent to the SCP database, forwarding is considered intragroup even if the routing information forwards the call outside the Centrex group (that is, CTX-CFO is not applicable).

**2.61** The AIN Release 0.1 Protocol Feature has the ability to provide new calling party identification information for triggered calls. The Service Control Point (SCP) database may optionally provide Calling Party ID information that supersedes all prior Calling Party information for the call. For more information about the AIN Release 0.1 Protocol and Capabilities, refer to Part 6A(12).

## Restriction Capability

**2.62** Each of the LASS usage-sensitive features can be denied to certain classes of lines (paragraph 4.02). The telephone company determines the features that are included in each service class. On a class of service basis, the RC:CCOL recent change message can be used to turn TSCF on or off.

**2.63** The LASS usage-sensitive features can also be denied to a specific line. On a per line basis, the ACRG/CAT code field in the LENCL2 word is used to determine if a usage-sensitive LASS feature can be accessed. The RC:LINE recent change message is used to turn TSCF on or off for a specific line. Refer to Part 6 A(2) and A(3) for the keywords associated with RC:CCOL and RC:LINE.

**2.64** In addition to the ACRG/CAT code mechanism of feature denial, each line has an option word L in the LEN supplementary auxiliary block to deny TSCF on a per line basis. This allows for greater flexibility than can be achieved via the ACRG/CAT code mechanism. The word contains an indicator for each feature that is used to allow/disallow access to the requested feature. If allowed, this indicator also specifies

whether the customer is subscription or usage sensitive. Refer to Part 6 A(3).

2.65 An alternative mechanism to restricting all lines access to LASS features is to implement the LASS Office Option Feature (LOOF). LOOF eliminates the need for ACRG/CAT codes in offices implementing the LASS features on a subscription only basis by allowing all lines to dial the LASS feature access codes. After the access code is dialed, normal ACRG/CAT screening still applies but is not required. The second level of screening is performed on a class of service basis. The final level of restriction is the option word L check. LOOF, if loaded, will provide all lines without an option word L a default option word L from word 19 of the office options table. Word 19 of the office options table is the recent change default and, if LOOF is loaded, will also be the call processing default for all lines without an option word L. If a line has been assigned LASS features and has an LEN option word L, then the individual LEN option word L is used instead of the office default option word L. LOOF is controlled by fast feature 069.

# 3. Engineering

3.01 These guidelines are for planning purposes only. The COEES (Central Office Equipment Engineering System) Information System Document, Index 38, should be used to manually order and engineer the 1A ESS Switch. The standard recommended automated procedure is COEES-MO (Mechanized Ordering).

## Hardware

3.02 The TSCF feature requires the following hardware:

- CDR
- Tone or recorded announcement circuit (SD-1A218-01)
- ASC (SD-6A003-01) and ATI (TM 504). Refer to COEES Index 61.

3.03 For interoffice applications, the TSCF feature requires the hardware necessary to allow the switch to communicate over a CCS7 network. Refer to Part 6 A(8).

## Software

### A. Base Generic Program

3.04 The TSCF feature uses some base program store. For further information concerning memory usage, refer to Part 6 B(2).

3.05 The TSCF feature is a custom feature available in the 1AE10 and later generic programs.

### B. Optionally Loaded Feature Groups

3.06 The TSCF custom feature is available in the optionally loaded feature group 9STSCF. Part 4 describes the feature package/group set card dependencies for 9STSCF. Refer to Part 6 B(2) for information about other feature packages needed for TSCF. Refer to Part 6 B(5) for feature package word size information.

### C. Parameters/Call Store Areas

3.07 Refer to Part 6 B(4) and B(5) for comprehensive parameter information.

### Parameters

3.08 Parameter word L9LASS determines which LASS features are in the office. If 9STSCF is set, bits 2 and 6 of L9LASS should be set to 1.

3.09 Parameter L9SCF_SIZE (set card LASCFE) is required for TSCF. It defines the size of the TSCF screening list (the maximum number of entries) per customer in an office.

3.10 The following parameters are related to the TSCF feature:

(a) Parameter L9EDIT_BUF_ADMIN contains the starting address of the SLEB busy/idle head cell.

(b) Parameter L9EDIT_BUF_NSIZE contains the number of SLEBs provided and the size of an SLEB.

(c) Parameter L9EDIT_BUF_PTR contains the starting address of the SLEB block.

(d) Parameter R2SLEDB contains the address and length of the call store table (RSLEKMDB) used by SLE to build KMDB (keyword message data block) information.

3.11 Parameter B6LASS is the Compool defined address and size of the LASS traffic count block. The LASS traffic count block is 50 words in length.

3.12 Parameter B6SLE contains the Compool defined address and size of the SLE traffic count block. The SLE traffic count block is six words in length.

3.13 Parameter C7BATBTA contains the starting address of the BATB (buffer administration timing block) table. This group of call store blocks provides the means for applications to store data over the real-time breaks involved in interoffice information exchange. The BATB table is allocated in unprotected variable DCS. Parameter word C7BATBTA + 1 contains the number of 6-word BATBs in the table. Parameter C7BATBTA + 2 contains two parameter values. The MAXTIME field contains the maximum timer value that a BATB may have. The MAXNOTIFY field contains the maximum number of clients that may be notified of time-out in a real-time segment.

3.14 The TSCF feature requires ILHBs to store the last CLDN. Refer to Part 6 A(9) for the parameters needed on each generic to implement LHBs.

**Call Store**

3.15 Refer to Part 6 B(3) for call store data layout information.

3.16 If CCS7 is used, the BATB table is required to provide timing on interoffice RDLS TCAP queries. When the message interface processor is loaded, and set card BATBS (paragraph 4.18) is nonzero, the size of the BATB table is equal to six times set card BATBS plus six. Otherwise, no BATB table is built.

3.17 The TSCF feature requires ILHBs to store the last CLDN. Refer to Part 6 A(9) for LHB call store options on each generic.

3.18 The SLEB table (set card LASLEB), in unrestricted DCS, is a contiguous block of memory allocated for the total number of SLEBs. When SLE changes screen list information for a line, it seizes an SLEB. The SLE links the SLEB to a TRC (temporary recent change) register and loads new screen list data in the SLEB. Upon termination of the editing session, a request is queued to the RC system to process the change. After processing, the TRC register is removed and the SLEB is restored to the idle link list. Administration (seize and release) of the SLEBs uses a busy/idle head cell with one bit allocated per SLEB.

3.19 Table RSLEKMDB (SLE service order KMDB), located in DCS, is required for SLE customer originated messages.

3.20 The size of the Originating Registers (&OR), Cathode Ray Tube Originating Register (&CRTOR) and SXS Foreign Exchange SR Registers (&SOR) is defined in the Parameter Guide PG-1A.

3.21 The SLR is a senior call register in RDCS (restricted duplicated call store) used for storing screen list editor information. The length of the SLR is 28 words. The number of SLRs is equal to set card NSLR.

3.22 The SLE requires the use of TRC registers (set card TRCR) to process changes to the screening lists. A TRC register is required for linking the SLEBs for the duration of an editing session. The number of additional TRC registers required is equal to the number of SLEBs (set card LASLEB).

3.23 Two types of AMA records are written for TSCF. These are: event records and continuation records. An event record is generated whenever a customer accesses or edits the TSCF screening list. A continuation record is written on a daily basis for each customer that has a TSCF list. In many cases, existing AMA registers will suffice.

3.24 System resources related to call forwarding must be engineered to handle the TSCF usage. Such system resources include CORC blocks, TRC registers, and TPT (temporary transfer) registers.

3.25 Two-word CORC blocks (set card CORC02) are used to specify the RDN when no 10XXX/101XXXX access code is dialed. The additional 2-word blocks required are only for those TSCF lines that have TSCF and CFV active concurrently.

3.26 Three-word CORC blocks (set card CORC03) are used to specify the RDN when a 10XXX/101XXXX access code is dialed. The additional 3-word blocks required are only for those TSCF lines that have TSCF and CFV active concurrently.

3.27 Additional TRC registers are required for TSCF lines that have TSCF and CFV active concurrently.

3.28 Additional TPT call forwarding registers are required for TSCF lines that have TSCF and CFV active concurrently.

**D. Translations**

3.29 The following translations are required or are affected by the TSCF feature. Refer to Part 6 A(3) for further details concerning TSCF translations. Refer to Part 6 B(6) and B(7) for comprehensive translation information.

3.30 The ASC trunk translations include the following:

(a) One 9-word TNN-PEN (trunk network number to peripheral equipment number) miscellaneous trunk frame circuit auxiliary block per ATI circuit.

(b) One 3-word TNN-PEN supplementary auxiliary block per ATI circuit.

(c) A 4-word TCC (trunk class code) expansion block for the ATI circuit.

(d) One word per ATI circuit trunk group for the TGN (trunk group number) translator.

3.31 The following translations are affected by the ATI circuits.

(a) PRI (pseudo route index)

(b) RI (route index)

(c) MSN-TNN (master scanner number to trunk network number)

(d) TNN-TGN (trunk network number to trunk group number).

3.32 A 2-bit field is defined in the centrex common block. This 2-bit field in word 23, bits 9 and 10, allows the centrex customer four possible options for using special characters (# and *) when entering an RDN. Refer to Table A.

3.33 Each LEN supplementary auxiliary block requires an option word L that contains two bits indicating the individual line access mode: usage sensitive, subscription, or denied access. This word is required only if the customer chooses to subscribe to or be denied access to one or more of the LASS features.

3.34 Each LEN supplementary auxiliary block requires an option word F that contains the address of the SLHT (screen list head table) when a line has a screening list.

3.35 The SLHT is required for each customer with one or more screen lists. The SLHT contains the addresses of the SLABs (screen list auxiliary blocks).

3.36 The SLHT also includes Option Word E which is required for TSCF. This option increases the SLHT by three words. Option Word E permanently stores the last valid and confirmed RDN. The information is stored in Option Word E in the same format as it is stored in the 2- and 3-word CORC blocks excluding the CORC ID and the CORC audit bit. Option Word E of the SLHT is removed if all entries are removed from the TSCF screening list. Refer to Figure 5.

3.37 A SLEB is required for the TSCF screening list during each TSCF editing session. Bits 12 through 23 of SLEB administrative word 4 contains the carrier code (XXX) or CIC Index (1AE12) of the TSCF RDN, if applicable. Administrative words 5 and 6 contain the RDN and various control indicators (4-digit voice back, centrex extension, ASP/SSP extension, and prefix). The RDN information is stored in the same format as it is stored in the 2- and 3-word CORC blocks excluding the CORC ID and the CORC audit bit.

3.38 Upon activation of TSCF or during any TSCF editing session that changes either the RDN or the TSCF screening list, an SLEB is set up. If a TSCF SLEB exists for a DN, it may contain a new RDN. This new RDN information in the SLEB is used to voice back the RDN upon activations of SCF instead of using option E of the SLHT. This situation occurs if RC has not had time to process the SLEB, therefore, option E contains the old RDN and the SLEB contains the new RDN. First a check is made for an SLEB. If one exists, the data in the SLEB is used to retrieve the RDN. If none exists, the data from option E in the SLHT is used.

3.39 For offices with generic programs prior to 1AE10.03 that are updating to 1AE10.03 or later, a situation could exist where a CORC exists but there is no RDN in option E. If no RDN exists in option E, the RDN is taken from the CORC block.

3.40 A 3-word or 4-word class of service information auxiliary block is required for every class of service that is denied one or more of the LASS features.

3.41 Word 0, bits 7 through 9, of the office options table translator defines the timing interval in the originating switch to wait for the response to the query message. The range of the value in this bit field is 1 to 6. If set to all 0's, the timing interval is 3 seconds. If set to all 1's, the timing interval is 6 seconds.

3.42 Interoffice RDLS TCAP signaling requires word 1, bit 17 in the office options table be set to 1. If TCAP is loaded, and bit 17 is set to 0, the office will not send interoffice RDLS TCAP signaling messages.

3.43 Word 10, bit 8 of the office options table is used to allow or block TCAP queries for the originating characteristics of an inter-LATA DN. If set to 0 (default case - block), inter-LATA DNs are prevented from being placed on the user's screening list of any SLE feature since the TCAP query is blocked. If this bit is set to 1 (do not block), the TCAP query is sent.

3.44 Word 10, bit 10 of the office options table is used for the S/SNXX enhancement. If this item is set to 1, a TCAP query is sent for shared/split NXX DNs. If bit 10 of word 10 is 0, a TCAP query is not sent for shared/split NXX DNs and the number is not allowed on the user's screening list.

3.45 Word 18 in the office options table translator contains the office AMA mode indicators for the TSCF feature. The indicator is used to specify when AMA records should be written. The options per feature are:

(1) Never write AMA records.

(2) Always write AMA records.

(3) Write AMA records for usage-sensitive customers only.

3.46 Word 19 of the office options table contains the office default option word L. This value represents the office default handling for the type of access this feature is given (usage sensitive, subscription, denied access, or unused). The default option word L is consulted by RC when building a customer's LEN supplementary auxiliary block option word L for the first time. When a LASS feature is added to a line for the first time, the default option word L is used by RC to build out the remaining fields of the customer's option word L. If the default option word L is set to deny all LASS features, RC builds all unspecified feature fields the same as the default option word L which, in this case, is denied access. If the LASS Office Option Feature (LOOF) is loaded, word 19 of the office options table is used as the default option word L by call processing if the LEN supplementary auxiliary block option word L does not exist.

3.47 The TSCF access codes are assigned in the prefixed access code translator and the centrex translator (centrex common block and centrex digit interpreter tables). Adding the assignments in the prefixed access code translator and centrex translators is done by the standard RC procedure for those translators.

### Real Time

3.48 For the real time penalty due to LASS, refer to COEES Information System Document, Indices 38 (LASS), 60 (1AE10 CCS7), and 47 (1AE9 base). For the impact of the ISPI (Intelligent Simplex Peripheral Interface) feature, refer to COEES Information System Document, Index 43.

3.49 During call processing, resources are consumed when comparing a calling party identity attribute to the screening list. This has minimal impact on resources used by standard CFV treatment. In many cases, when calls are not forwarded, there is a savings of resources.

## 4. Implementation

4.01 The TSCF feature is installed with or without other LASS features. For detailed LASS installation procedures, refer to Part 6 A(3).

### Assignment Restriction

4.02 Customers with the following types of lines are denied access to the SCF feature:

(a) Two-party/multiparty.

(b) Manual (POTS and centrex). These lines may be allowed access via recent change message RC:SLE.

(c) Private branch exchange (PBX).

(d) Remote Switching System (RSS).

(e) Centrex attendant with console.

Customers with the following types of lines should be denied access to the SCF feature:

(a) Coin lines.

(b) Coinless public lines.

(c) Denied terminating treatment lines.

(d) Hotel/Motel lines.

4.03 One TSCF screening list is allowed per multiline hunt group (MLHG) and is built and controlled by terminal 1 [the listed DN (LDN)] of the MLHG. Calls terminating to the LDN or to any hunting DN within the MLHG are screened against the screening list for terminal 1. Calls to any nonhunt DN within the MLHG are not screened. In addition, a nonhunt DN within the MLHG cannot have its own screening list. If terminal 1 of the MLHG is an ESS switch line and the MLHG contains both ESS switch and RSS lines, these types of lines (ESS switch and RSS) are provided TSCF treatment. An RSS line cannot have screening lists. If terminal 1 is an RSS line, TSCF treatment is denied to the group.

4.04 In a MLG with no hunting members, every member of the MLG can have a screening list. In this case, calls to a member of the MLG will only be screened against the member's own screening list.

4.05 Additionally, there are restrictions on the types of lines that can be specified on a TSCF screening list. A line is invalid if:

(a) The line is unassigned.

(b) The line cannot originate a call to the owner of the TSCF list.

(c) The line is not associated with a unique identity attribute.

4.06 The TSCF RDN must conform to the formats in paragraph 2.28. Additionally, the RDN is invalid if it is:

- A free number
- Unassigned
- An intercept number
- The base station DN
- A 950-1XXX number.

If the call type of the RDN indicates interoffice, the TROK item in the RI expansion table is checked to determine if call forwarding is allowed over the outgoing trunk.

## Set Cards

4.07 The following set cards are required by or affect the TSCF feature. Refer to Part 6 A(3) and A(9) for additional TSCF and LASS set card information. Refer to Part 6 B(4) and B(5) for comprehensive set card information.

### A. LASS Feature Groups

4.08 Set card 9STSCF, if set to 1, allows SCF and CFV to be active concurrently.

4.09 The following feature group set cards apply to LASS.

- **9SLASA** defines the intraoffice only feature group for LASS. Feature groups 9SDRNG and 9SSLE and feature packages 9FACRB and 9FLASS are required for 9SLASA.
- **9SLASS** defines the intra/interoffice feature group for LASS. Feature group 9SLASS requires 9SCILC and FF051; FF024 and FF051; or 9SISUP, 9SMIP, and 9STCAP. Feature groups 9SDRNG and 9SSLE and feature packages 9FACRB and 9FLASS are also required for 9SLASS.
- **9SSLE** defines the feature group for SLE. Feature package 9FSLE and feature groups 9SISPI and 9SVMI1 are required for 9SSLE.

4.10 If all the LASS features are loaded, 9SLASS (interoffice) or 9SLASA (intraoffice) is set to 1. If only some of the features are to be provided, LASS Unbundling is required. With LASS Unbundling, only set card 9STSCF is submitted. Feature group 9STSCF requires 9SSLE and feature package 9FLASS.

4.11 Set card **9SCNBN** provides SLE features including TSCF with the ability to block inter-LATA TCAP status query messages. Feature group 9SCNBN contains feature package 9F008 and requires feature groups 9STCAP and 9SSLE.

**B. General LASS Set Cards**

4.12 The following feature package set cards apply to LASS:

- **9FLASS** defines the feature package for LASS.
- **9FISPI** defines the feature package for ISPI.
- **9FSLE** defines the feature package for SLE.
- **9FCNBN** defines the feature package for CPNBND.

4.13 The LH primitive requires the presence of certain set cards. Refer to Part 6 A(9) for specific information.

4.14 Set card **FF050** defines the SLEPR (SLE Privacy) optional feature. If FF050 is set to 1, an identity attribute (DN) on a customer's screening list from an ILHB is marked as private only if the privacy bit for the entry is set in the ILHB. If the privacy bit is not set, the entry is public. If FF050 is set to 0, all entries from the ILHB are marked as private. Set card 9SSLE must be set to 1 for SLEPR.

4.15 Set card **FF069** defines the LOOF optional feature. If FF069 is set to 1, then all lines without an individual option word L in the supplemental auxiliary block will use the office default option word L. The office option table word 19 defines the call processing/recent change default option word L. LOOF eliminates the need to restrict nonsubscribers access to LASS features by using the ACRG/CAT codes in the PACT/CTXDIT translators thus simplifying recent change procedures required to implement the LASS features. If set card FF069 is set to 0, LASS feature access defaults to usage sensitive access if no option word L exists in the LEN supplementary auxiliary block.

4.16 The SLE primitive requires the following set cards:

- **LASCFE** specifies the maximum number of entries a customer can have on a SCF screen list. The default value is 3.
- **LASLEB** specifies the number of SLEBs. The value of this set card is equal to NSLR + NRCSBQ.
- **NSLR** defines the number of SLRs. The value of NSLR is equal to the number of ATI circuits dedicated for LASS plus 1.
- **NRCSBQ** defines the number of RC batch queue entries required for SLE customer originated RC messages. The value of this set card is equal to NSLR.
- **NRCBQ** is an existing set card which defines the number of RC batch queue entries.

4.17 The following set cards should be modified for TSCF:

- **CORC02** and **CORC03** define the number of 2- and 3-word CORC blocks.
- **NTR** defines the number of TPT call forwarding registers.
- **TRCR** defines the number of TRC registers.

4.18 The following set cards are required by TSCF for RDLS CCS7 TCAP signaling messages. (Refer to COEES Information System Document, Index 60 for all the set cards required by CCS7 and to Part 6 A(8) for a general description of CCS7.)

- **9SMIP** defines the feature group for the CCS7 message interface processor.
- **9STCAP** defines the feature group for TCAP. The CCS7 feature requires TCAP protocol for interoffice LASS; 9SMIP is required for 9STCAP.
- **9SBNI** defines the feature group for the NI feature. The NI feature allows the use of an inter-LATA CCS7 network.
- **SNLASS** defines the SCCP (Signaling Connection Control Part) SSN (subsystem number) used for LASS features when CCS7 signaling is used.
- **STLASS** defines the global title translation type value to be used by the LASS features when using global title routing.
- **BATBS** defines the number of BATBs (buffer administration timing blocks) (used with 9STCAP). The minimum value is 0 and the maximum value is 150.

## Library Subsystem

4.19 Offices on a pre-1AE10.02 load are required to run the library package created for Single Activation of SCF. Library

package APT47 (J6A002AC-1, List 47, Issue 13 and later) is required for feature group 9SLASS, 9SLASA, 9SCF, or 9STSCF for updating from 1AE9 or 1AE10.01 to 1AE10.02 or later PPUs.

### Translation Forms

4.20 The following translation forms, detailed in Part 6 B(6), are applicable to the TSCF feature:

- ESS 1101 – Directory Number Record
- ESS 1107A/B – Supplementary Information Record/Centrex Group Supplementary Information Record
- ESS 1109 – Centrex Group Record
- ESS 1115 – Multiline Group Record
- ESS 1303 – Trunk and Service Circuit Route Index Record
- ESS 1304 – Rate and Route Chart
- ESS 1500E – Recent Change Limits Record.

### Recent Change Messages

4.21 Refer to Part 6 A(3) for comprehensive information concerning installation of all LASS features (including TSCF).

### Verification

4.22 The TR43 message is modified so both the active SCF RDN and the active CFV RDN can be displayed.

4.23 The TRCID item in the message provided by the CLOG feature indicates whether the CORC is for SCF or CFV. If the message includes the keyword "EXTG", then the RDN digits for the "TO" keyword are the stored dialed extension digits for a potential OHD or Centrex Extension Trigger (see paragraph 2.60).

## 5. Administration

### Measurements

5.01 The following TMC (type measurement code) 148 traffic counts apply specifically to the TSCF feature:

| EGO | DEFINITION |
|---|---|
| 26 | SCF Screen List Access Peg Count |
| 27 | SCF Calls Forwarded Peg Count. |

5.02 In addition, peg counts apply for each successful completion of activation/deactivation of the CORC block as in the CFV/Call Forwarding Usage Sensitive – POTS features.

5.03 The following TMC 149 traffic counts apply to the SLE primitive:

| EGO | DEFINITION |
|---|---|
| 0 | Screen List Edit Buffer Count |
| 1 | Screen List Edit Buffer Overflow Count |
| 2 | Screen List Edit Buffer Usage Count |
| 3 | Screen List Edit Call Register Usage Count. |

### Automatic Message Accounting

5.04 Refer to Part 6 A(9) for further TSCF AMA information and A(5) or B(1) for comprehensive AMA information.

5.05 Two types of records can be generated for the TSCF feature based on the office AMA options and the individual line billing options.

(a) An event record can be made each time the TSCF access code is entered by a customer to access/edit the screening list. Charges can be made based on activities and/or resources used during the editing session or as a single event.

(b) A daily record can be generated for each customer who has a TSCF list

whether currently active or not. This allows billing for use of memory to store the list.

5.06 For POTS and centrex (1AE10 and 1AE11) generic program), billing is based on the use of the SLE functions and the existence of the TSCF screening list. In the 1AE9 generic program, centrex customers are billed on a subscription basis as determined by the number of lines in the centrex group. Centrex and POTS AMA records are generated similarly.

5.07 The AMA record for LASS has a unique service feature code for the TSCF feature. The far end NPA + DN is populated in the billing record with the RDN.

# 6. Supplementary Information

## References

**A. LT Practices**

(1) 231-090-074 – *Call Forwarding Variable Feature*

(2) 231-318-325 – *ACT, CFV, DNRNGE, LINE, MLHG, MOVE, SCLIST, SLE, TWOPTY, VEND Line Recent Change Format*

(3) 231-318-340 – *Local Area Signaling Services (LASS) Recent Change Implementation Procedures*

(4) 231-365-005 – *Intelligent Simplex Peripheral Interface Description, Implementation, and Maintenance*

(5) 231-390-063 – *Automatic Message Accounting Feature*

(6) 231-390-236 – *Selective Call Forwarding Feature Local Area Signaling Services*

(7) 231-390-292 – *Call Forwarding Usage Sensitive Feature*

(8) 231-390-500 – *Common Channel Signaling System 7 Feature General Description*

(9) 231-390-515 – *Local Area Signaling Services (LASS) CCS7 Feature*

(10) 231-390-519 – *Advanced Services Platform/Service Switching Point (ASP/SSP) Feature Document*

(11) 231-390-521 – *Network Interconnect Feature*

(12) 231-390-522 – *Advanced Intelligent Network (AIN) Release 0.1 Protocol and Capabilities Feature Document*

**B. Other Documentation**

(1) *TR-TSY-000508 LSS-GR-AMA Section 8.1.*

(2) *COEES Information System Engineering Document Index 38*

(3) *Data Layout Document PK-6A006*

(4) *Office Parameter Specification PA-6A001*

(5) *Parameter Guide PG-1A*

(6) *Translation Guide TG-1A*

(7) *Translation Output Configuration PA-6A002*

# 7. Abbreviations and Acronyms

## A

**ACRG**
Access Code Restriction Group

**AIN**
Advanced Intelligent Network

**AMA**
Automatic Message Accounting

**ASC**
Announcement Service Circuit

**ASP**
Advanced Services Platform

**ATI**
ASC trunk interface

## B

**BATB**
Buffer Administration Timing Block

## C

**CAT**
Centrex Access Treatment

**CCS**
Common Channel Signaling

**CCS7**
Common Channel Signaling System 7

**CDR**
Customer Digit Receiver

**CFV**
Call Forwarding Variable

**CLDN**
Calling Line Directory Number

**CLOG**
Customer Originated Recent Change Log

**COEES**
Central Office Equipment Engineering System

**COEES-MO**
COEES Mechanized Ordering

**CORC**
Customer Originated Recent Change

**CPN**
Calling Party Number

**CPNBND**
Interlata Calling Party Number/Billing Number Delivery and Related Services

**CRT**
Cathode Ray Tube

**CTX-CFO**
Centrex Call Forwarding Outside

## D

**DN**
Directory Number

**DP**
Dial Pulse

**DTMF**
Dual Tone Multifrequency

## I

**ILHB**
Incoming Line History Block

## K

**KMDB**
Keyword Message Data Block

## L

**LASS**
Local Area Signaling Services

**LATA**
Local Access and Transport Area

**LDN**
Listed DN

**LEC**
Local Exchange Carrier

**LEN**
Line Equipment Number

**LENCL2**
Line Equipment Number Class 2

**LH**
Line History

**LHB**
Line History Block

**LOOF**
LASS Office Option Feature

**LSF**
Line Switch Frame

**LSF/LSC**
Line Switch Frame/Line Switch Circuit

## M

**MLG**
Multiline Group

**MLHG**
Multiline Hunt Group

**MSN-TNN**
Master Scanner Number to Trunk Network Number

## N

**NI**
Network Interconnect

## O

**OHD**
Off-Hook Delay

**OR**
Originating Register

## P

**PBX**
Private Branch Exchange

**POTS**
Plain Old Telephone Service

**PPU**
Periodic Partial Update

**PRI**
Pseudo Route Index

## R

**RC**
Recent Change

**RCLDN**
Retrieval of Calling Line DN

**RDCS**
Restricted Duplicated Call Store

**RDLS**
Retrieval of Distant Line Status

**RDN**
Remote Directory Number

**RESTR**
Restriction Field

**RI**
Route Index

**RNGR**
Ring Reminder

**RSS**
Remote Switching System

## S

**S/SNXX**
Shared/Split NXX

**SCF**
Selective Call Forwarding

**SCP**
Service Control Point

**SLAB**
Screen List Auxiliary Block

**SLE**
Screen List Editing

**SLEB**
SLE Buffer

**SLHT**
Screen List Head Table

**SLR**
SLE Register

**SSP**
Service Switching Point

**STP**
Signal Transfer Point

## T

**TAT**
Termination Attempt Trigger

**TCAP**
Transaction Capability Application Part

**TCC**
Trunk Class Code

**TGN**
Trunk Group Number

**TIRM**
Technical Information Resource Management

**TMC**
Type Measurement Code

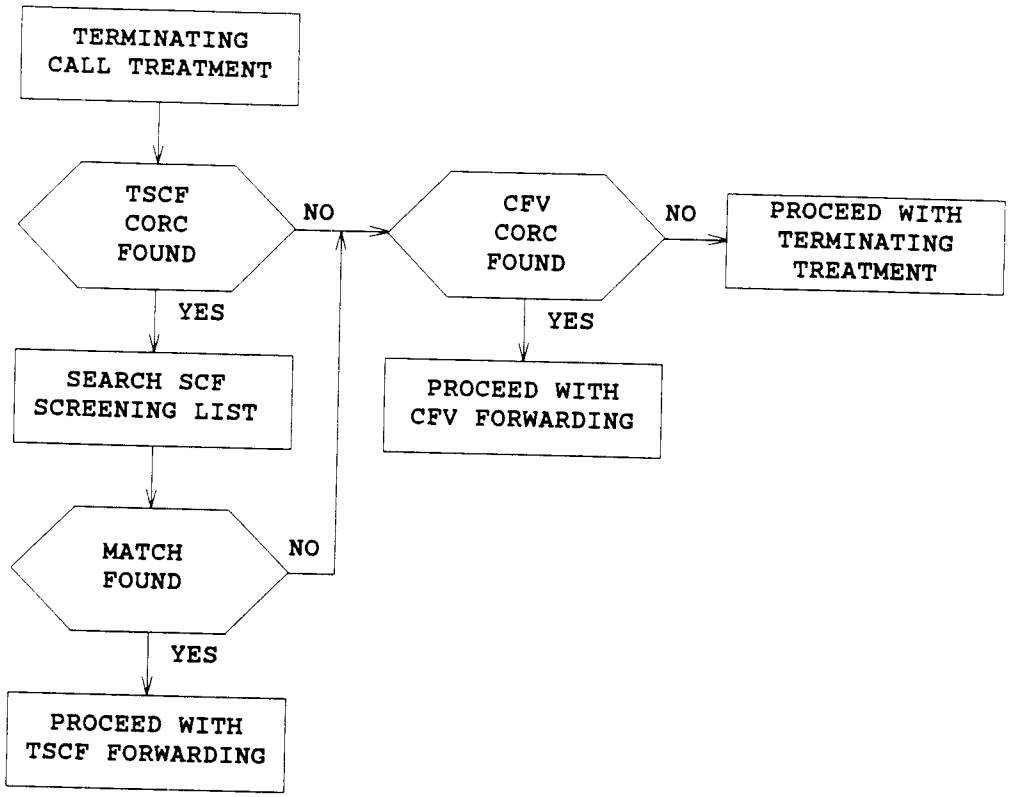
**TNN-PEN**
Trunk Network Number to Peripheral Equipment Number

**TNN-TGN**
Trunk Network Number to Trunk Group Number

**TPT**
Temporary Transfer

**TRC**
Temporary Recent Change

**TSCF**
Total Separation of Selective Call Forwarding




NOTE:

1. The CORC is used to enter the remote DN.

**Figure 1. TSCF Termination Treatment**

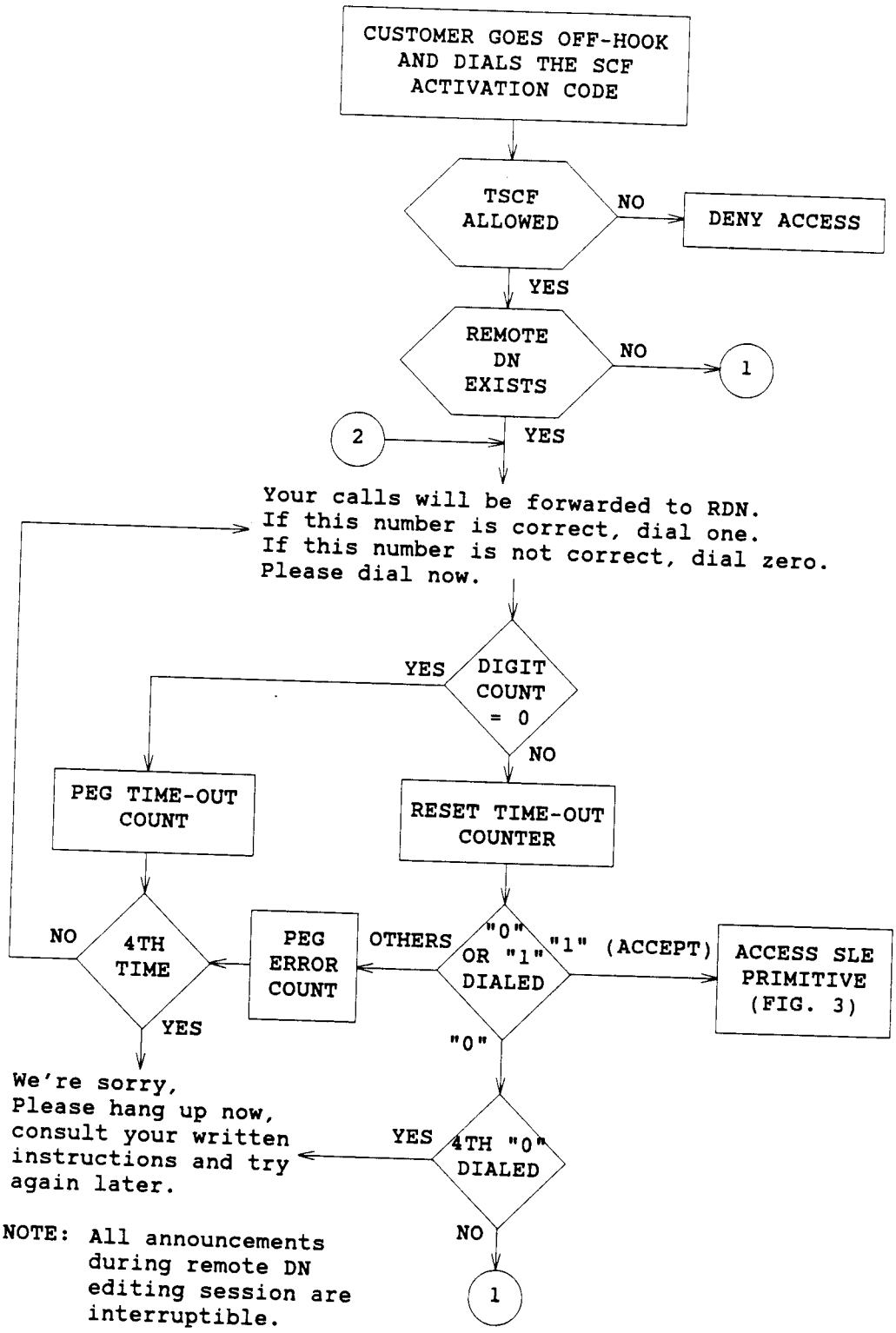



**Figure 2. Entering/Editing TSCF Remote DN (Sheet 1 of 2)**

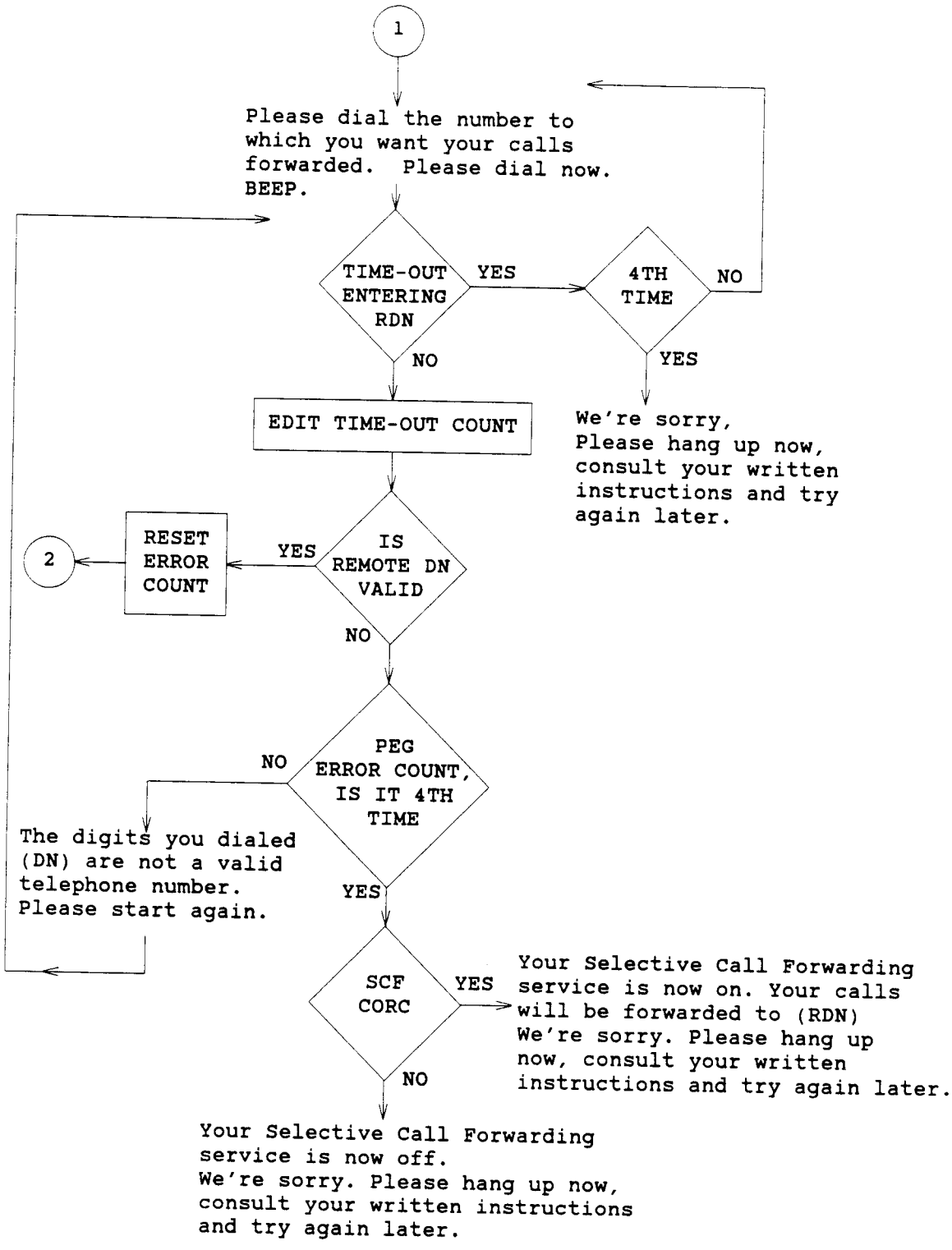
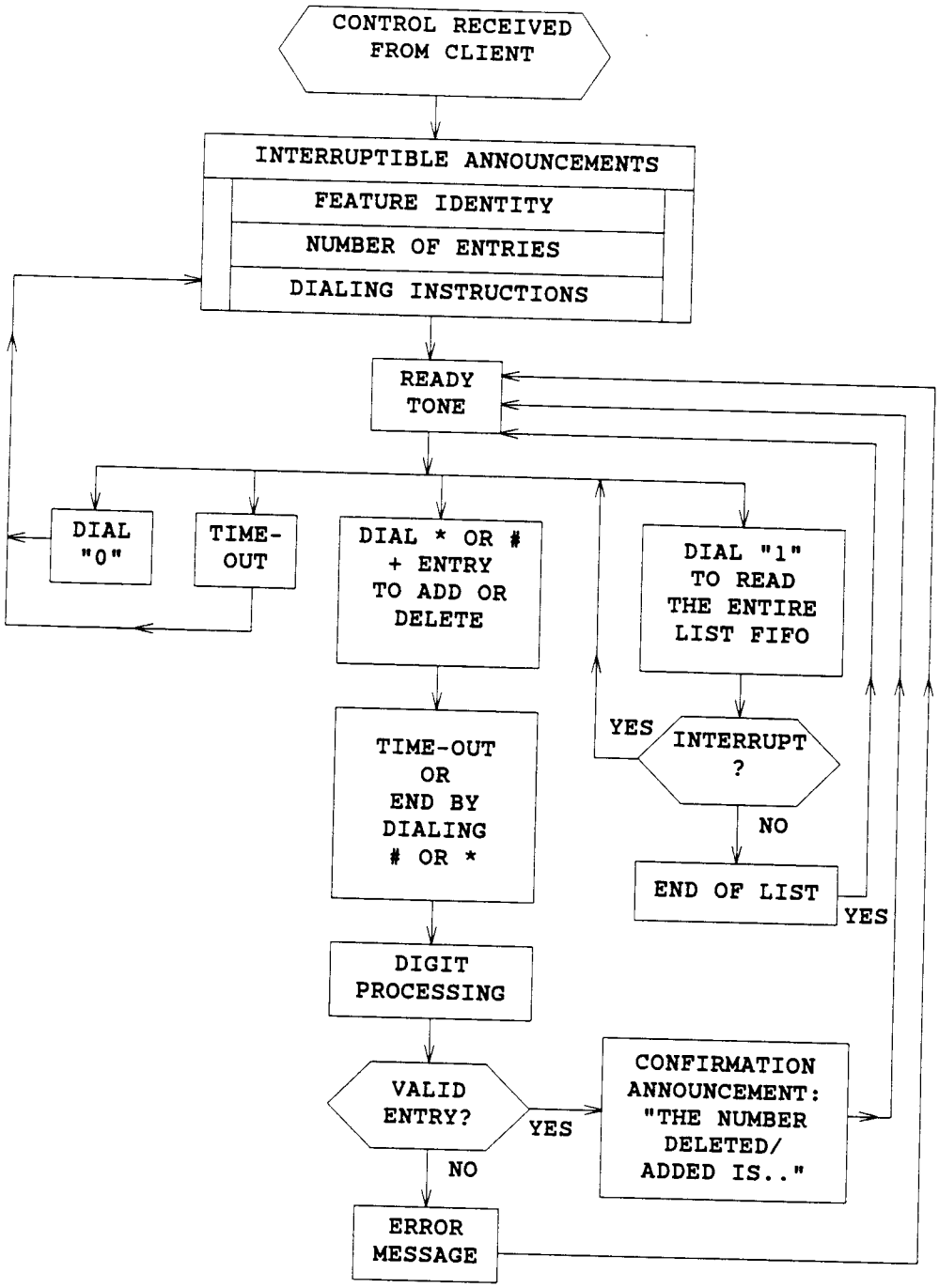



**Figure 2. Entering/Editing TSCF Remote DN (Sheet 2 of 2)**




LEGEND:

FIFO - FIRST IN, FIRST-OUT

**Figure 3. Screen List Editing Activation Sequence**

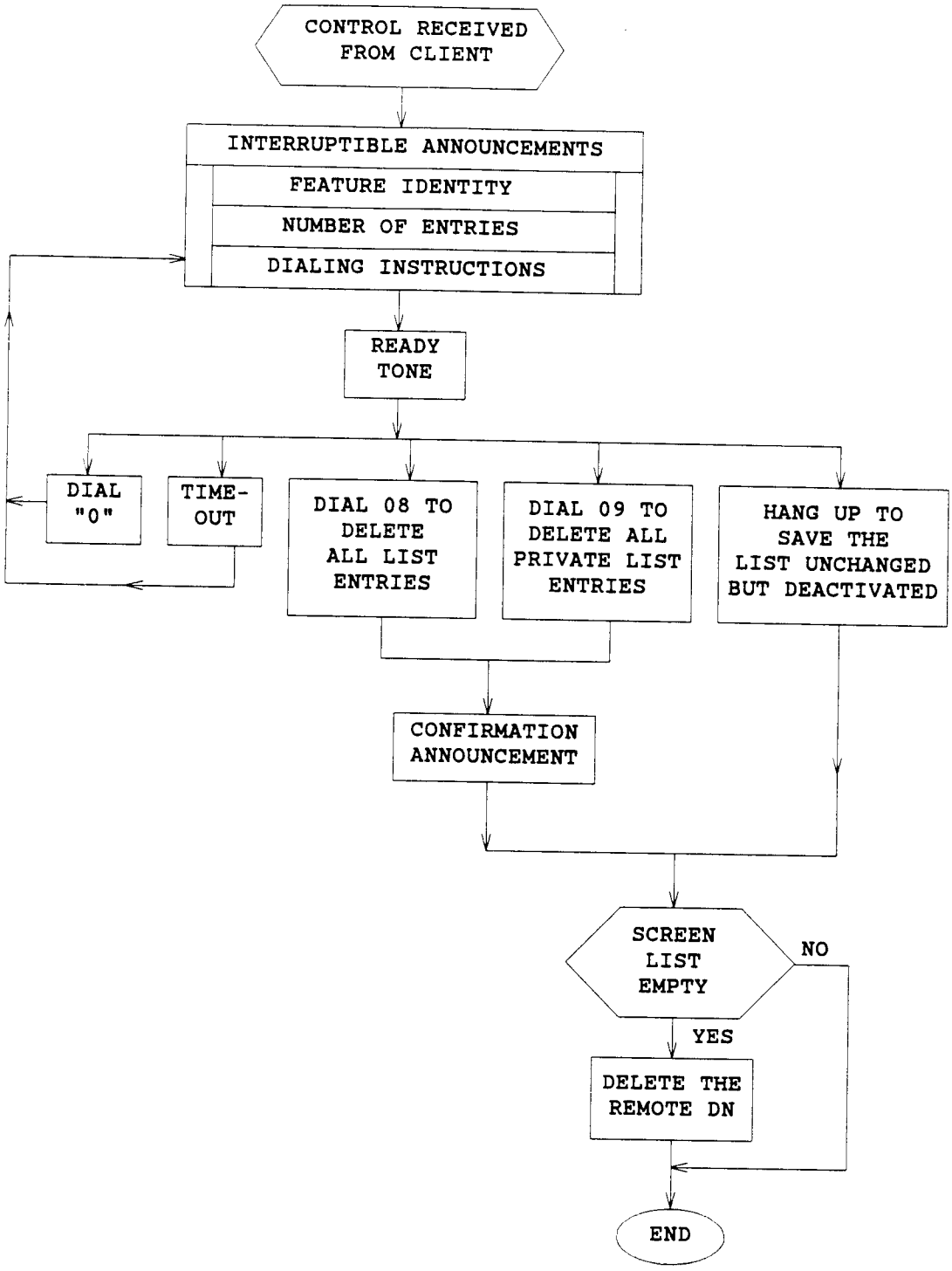



**Figure 4. Screen List Editing Deactivation Sequence**

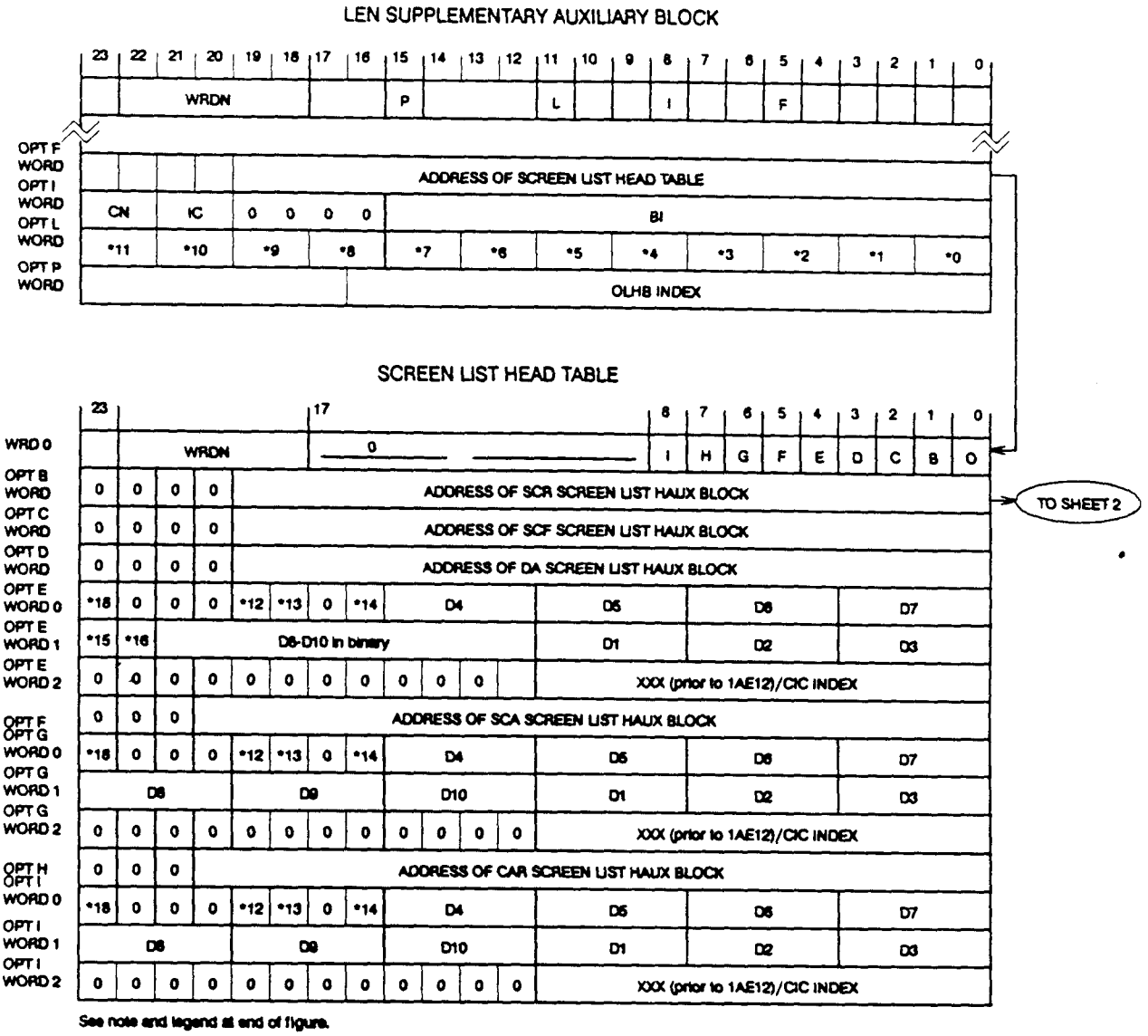
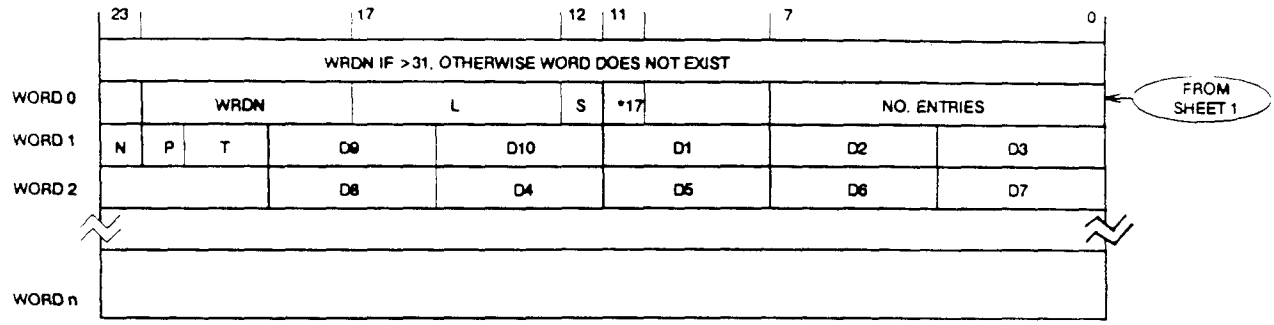



**Figure 5. LASS Screening Lists (Sheet 1 of 2)**

SCREEN LIST HAUX BLOCK




Note: Each entry for SCR, SCF, SCA, CAR, and DA screen lists is 2 words.

LEGEND:

*0 - AR access type field
*1 - COT access type field
*2 - DA access type field
*3 - SCR access type field
*4 - SCF access type field
*5 - AC access type field
*6 - AR2 access type field
*7 - SCA access type field
*8 - CAR access type field
*9 - *11 - Reserved for future use

Access Type Fields *0 through *11:
00 - Usage sensitive access
01 - Subscription access
10 - Denied access
11 - Unused

*12 - Centrex Extension Indicator
1 = 7-digit DN stored for Centrex extension (corresponding extension should be voiced back when confirming the RDN)

*13 - ASP/SSP Extension Indicator
1 = BCD extension digits stored

*14 - Prefix Indicator
*15 - City-Wide Centrex Remote Access to CFPF Indicator
*16 - 10-Digit Indicator
*17 - NAT (Nonacceptance Treatment Indicator)
0 = PRI - Announcement Option
1 = RDN - Forwarding Option

*18 - 4-Digit Voice Back Indicator

BI - Billing Index; values = 1 to 65535 (Always 1 for flat rate customers)

IC - ICLID Feature Assignment
00 = ICLID not assigned
01 = Flat-rate ICLID assigned
10 = Usage sensitive ICLID assigned
11 = Reserved for future use

CN - CNAM Feature Assignment
00 = CNAM not assigned
01 = Flat-rate CNAM assigned
10 = Usage sensitive CNAM assigned
11 = Reserved for future use

OLHB INDEX - Outgoing line history block index for AR subscribers

L - List type ID
1 = Option B - SCR
2 = Option C - SCF
3 = Option D - DA
4 = Option F - SCA
5 = Option H - CAR
6-17 invalid

S - List status
1 = active
0 = inactive

NO. ENTRIES - Number of entries in list

N - NPA dialed indicator
1 = Yes (D1-D3 = NPA input by customer, voice back with DN)
0 = No (D1-D3 = NPA derived by software, do not voice back with DN)

P - DN Enter from Line History Indicator
1 = Yes; private (no voice back of number)

0 = No; not private

T - Type of entry
0 - DN
1 - Centrex extension
2-3 - unused

D1-D10 = 10 digits = NPA + DN "or"
D8-D10 = Zero (if centrex extension)
D1-D7 = Centrex extension digits (if centrex extension)

CIC INDEX - Effective with 1AE12 generic

XXX - Carrier code prior to 1AE12

**Figure 5. LASS Screening Lists (Sheet 2 of 2)**

**Table A. Special Dialing Characters For Remote Directory Number Editing**

| Bits 9 and 10 | Special Characters | Definition |
|---|---|---|
| 00 | * and # | Not treated as special characters during the remote DN entering sequence (Default). In this case, time-out occurs even when an * or # is entered. |
| 01 | * Only | Treated as a special character during the remote DN entering sequence. In this case, delayed time-out does not occur after the * is entered. |
| 10 | # Only | Treated as a special character during the remote DN entering sequence. In this case, delayed time-out does not occur after the # is entered. |
| 11 | * and # | Both treated as special characters during the remote DN entering sequence. In this case, delayed time-out does not occur after the * or # is entered. |

**Note 1**: These options do not affect how the # and * are currently used in SCF screen list editing.

**Note 2**: If the * and # are used as LASS remote DN editing characters, they cannot be part of the remote DN entering process (e.g., *9 for outside dialing).

# FEEDBACK FORM

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1A ESS™ Switch

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Issue Date: August 1996

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