Lucent Technologies
Bell Labs Innovations

4ESS™ Switch Product Release Document

4E25 Release 4 Generic

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Issue 1, July 2000

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About this information product

Purpose

The purpose of the Product Release Document (PRD) is to provide customers with information pertaining to the new features that are introduced in the *4ESS* switch. A PRD is written to cover the features introduced in full generic releases and quarterly generic releases.

This PRD provides information pertaining to the new features included in the 4E25 Release 4 Generic, plus features that are released as Software Change Packages (SCPs), and features that are Non Release Specific (NRS).

Safety Labels

There are three types of safety labels used in Lucent Technologies documentation: DANGER, WARNING, and CAUTION. This document contains safety labels in the form of CAUTIONS. A CAUTION safety label indicates the presence of a hazard that will or can cause minor personal injury or property damage if the hazard is not avoided.

Scope

The Product Release Document provides customers with information not covered in other *4ESS* switch documentation. It is not a replacement for other documentation such as Standard Lucent Technologies Practices, Task Oriented Practices (TOP), Maintenance Reference Handbooks, etc. that support the *4ESS* switch. The information in this document is intended only for the introduction of the new 4E25 Release 4 and SCP features, not the long-term maintenance. Since other documentation is used for the operation and maintenance of features after their introduction into the *4ESS* switch, this PRD will not be reissued, unless there are added SCP features.

Intended Audience

The document is intended for people involved in testing, provisioning, maintenance, administration, and technical support of the *4ESS* switch. Feature managers, Integrated Test Network (ITN) personnel, field support, Network Control Center (NCC), Product Engineering Control Center (PECC), and National Electronic Switching Assistance Center (NESAC) personnel are examples of some of the people who will use the PRD.

How to Use This Document

The PRD for 4E25 Release 4 Generic and 4E25 SCPs contains 6 new features. Each chapter in this document provides information about these features. The chapters are in numerical order according to feature number. The chapter titles are also the feature names.

The following is a list of the chapters contained in this document with a brief description of each feature:

Chapter 1: Improved ISUP Message Header Reduction for *4ESS*™ Switch API Capacity Feature (564)

This feature consists of two parts. The first part (Feature 564) consists of the removal of Feature 5003 and Feature 5711.

The second part (Feature 564i) is the redesign of the API ISUP Header reduction capability, and will be deployed in Generic 4E26R1. Feature 564i replaces Feature 5003, and provides a more 1B real time efficient solution to reduce the size of ISDN User Part (ISUP) messages. This will provide for improved Attached Processor Interface (API) message throughput.

Chapter 2: Number Pooling Target Architecture Feature (7070)

Competitive demand has led to a shortage of NXX codes even though a significant number remain unassigned. This feature, *Number Pooling Target Architecture*, outlines a better way to use NXX codes to minimize the need for Numbering Plan Area (NPA) relief.

Chapter 3: Elimination of Dual Provisioning - Phase 1 Feature (7217)

The Elimination of Dual Provisioning (EDP) Feature provides the capabilities needed to gracefully stop dual provisioning of AT&T services once those services have transitioned to the Segmentation Directory (SD) environment, and are no longer allowed to revert to the pre-SD environment.

Chapter 4: Segmented Memory Base Capability Feature (7573a)

This feature allows faster access to 12 Megawords (MW) of Call Store in blocks of three MW for transient data uses in the 1B Processor.

Chapter 5: Routing Database Architecture for International Routes Feature (7592a)

This feature adds a Network Management Operations Support (NEMOS) capability to Feature 7592. NEMOS demand message 48 is created, so that NEMOS can request that the *4ESS* switch initiate a test query session to the Network Routing Number (NRN) database.

Chapter 6: Direct Services ANI-Based for Access Value Arrangements/Terminating Switched Access Arrangement--Phase 2 Feature (7862)

This feature enhances the capabilities introduced in Feature 6777, Direct Services Automatic Number Identification (DSA)-Based Architecture for Access Value Arrangement/Terminating Switched Access Arrangement (AVA/TSAA)—Phase 1. Phase 1 did not allow AVA/TSAA processing on calls that also had an ANI match on the Segmentation Directory (SD) database. In these cases, only the ANI-based processing occurred on the calls. Additionally, certain TSAA calls did not receive the correct Network Access Interrupt (NAI) processing.

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1 Improved ISUP Message Header Reduction for *4ESS*™ Switch API Capacity Feature (564)

Overview

Description

This feature consists of two parts. The first part (Feature 564) consists of the removal of Feature 5003 and Feature 5711.

The second part (Feature 564i) is the redesign of the API ISUP Header reduction capability, and will be deployed in Generic 4E26R1. Feature 564i replaces Feature 5003, and provides a more 1B real time efficient solution to reduce the size of ISDN User Part (ISUP) messages. This will provide for improved Attached Processor Interface (API) message throughput.

Purpose

This chapter provides the user with a feature description and transition considerations for Feature 564 only. Feature 564i will be documented in the Product Release Document for 4E26R1, 234-090-261AC.

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Feature Description

Description This feature consists of two parts. The first part (Feature 564) consists of the removal of Feature 5003 (documented in 234-090-221AC) and Feature 5711 (documented in 234-090-231AC). The second part (Feature 564i) is the redesign of the API ISUP Header reduction capability, and will be deployed in Generic 4E26R1.

The API acts as the message interface between the 1B processor, the Common Network Interface (CNI) ring, and the 3B Attached Processor. The total API bandwidth with the 3B21D APS is 85K words per second (~340 Kbytes/sec). This feature reduces the size of the ISUP out of band signaling messages that traverse between the 1B and the CNI ring. Signaling size reduction is accomplished by eliminating non-essential header information data from the ISUP messages. By reducing the size of the ISUP messages, the overall call handling of the API is increased by 20 – 25 %.

This feature improves upon Feature 5003 in that the reduction process is carried out at a lower level in the 1B software process. As such, its impact on 1B real time is much less than 1%.

Benefits This feature improves the overall message throughput of the API

□

Call Flow (Not Affected)

Provisioning (Not Affected)

Recording (Not Affected)

Network Management (Not Affected)

Maintenance/Troubleshooting (Not Affected)

Transition Considerations

Feature Deployment It is not necessary for the 4E25 Release 4 Generic to be deployed in all switches for this feature to be fully operational.

Feature Dependencies This feature provides for the removal of existing features 5003 and 5711, in Generic 4E25R4, in preparation for replacing Feature 5003 with Feature 564i in Generic 4E26R1.

Feature Activation This feature is activated by software deployment.

□

Input/Output Manual Pages (Not Affected)

2 Number Pooling Target Architecture Feature (7070)

Overview

Description Competitive demand has led to a shortage of NXX codes even though a significant number remain unassigned. This feature, *Number Pooling Target Architecture*, outlines a better way to use NXX codes to minimize the need for Numbering Plan Area (NPA) relief.

Purpose This chapter describes the requirements to support the national architecture for number pooling, including the impacts on the following:

- *4ESS*™ switch
- AT&T Local Number Portability Network Control Point (LNP NCP)
- AT&T LNP Service Management System (SMS) interface.

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Feature Description

Introduction

Under the existing guidelines, all Local Exchange Carriers (LECs) require a central office code (NXX) for each rate center in which they wish to assign numbers to new customers or to assign additional numbers to existing customers. All 10,000 numbers in the NXX are normally set aside for the designated carrier to assign. This model worked well in an environment with a single LEC in each geographical area, where the need for new NXXs was driven solely by the underlying subscriber demand for telephone numbers. In the new competitive environment with multiple local service providers, this approach is no longer efficient.

Because metropolitan areas contain many rate centers and many carriers seek to serve each rate center, the number of NXXs needed (the product of the two) has dramatically increased the rate of NXX exhaust, requiring much more frequent introduction of new NPAs. While the industry has generally taken NPA relief in stride (dividing mostly along the lines of incumbents favoring overlays and new entrants geographic splits), regulators in several states have become frustrated at what they view as the industry's inefficient use of numbering resources. This has led to delays in granting relief and consequent difficulty in obtaining numbers for new entrants, including AT&T. Even where competitive demand has led to a shortage of NXX codes, there often remains a significant number of unassigned numbers in the NXX codes. Number pooling is proposed as a way to better utilize the NXX codes and thus delay the need for NPA relief.

Two states have already ordered number pooling and the Federal Communications Commission (FCC) has directed the North American Numbering Council to lead efforts to come up with a national architecture for number pooling (deployed in December 1999). The requirements described in this chapter are intended to support that architecture.

Number Pooling Definition

Number pooling is essentially a scheme to share an NXX among service providers so that each provider is not required to have a separate NXX for each rate center served. More formally, the Industry Numbering Committee (INC) defines number pooling as: *Pooling of geographic numbers in a Local Number Portability (LNP) environment is a number administration and assignment process which allocates numbering resources to a shared reservoir associated with a designated geographic area*.

Initially, the designated geographic area is limited to an existing rate center within a geographic NPA. An NXX is pooled or shared among carriers allowing the assignment of numbers to carriers in smaller blocks than blocks of 10,000 numbers (for example, in blocks of 1000 numbers (NXX-X) or by individual line numbers). The current focus of the industry (and as described in this chapter) is on thousands block number pooling. The reference in the INC definition to a *local number portability environment* alludes to the crucial fact that LNP makes number pooling feasible by divorcing call routing from the normal machinery of NXX code assignment in the Local Exchange Routing Guide (LERG).

Number Assignment and Call Routing

Pre-LNP Environment

Historically, NXXs were administered by a Central Office (CO) Code Administrator, usually the incumbent LEC. A carrier was assigned at least one NXX for each rate center the carrier served and the carrier, serving switch, and rate center associated with the NXX were identified in the LERG. Since an NXX corresponded to a single rate center, it could be used to perform call rating and local/toll discrimination. Because all 10,000 numbers were associated with a single switch, the first 6 digits of a number (NPA-NXX) were sufficient to determine where to route a call.

LNP with LRN Environment

In an LNP environment, the number assignment process is not changed. NXXs continue to be administered by the CO Code Administrator. Carriers still require an NXX for each rate center they wish to serve, and all 10,000 numbers in the NXX are set aside for the carrier to use. With local service provider portability, customers are allowed to change carriers while keeping their numbers but are required to remain within the rate center. This restriction keeps the association between NXX and rate center intact, preserving normal call rating and local/toll discrimination based on the NPA-NXX of the dialed number.

LNP changes call routing, however, because when a customer ports, his or her number is no longer served by the carrier and switch that the NXX is identified with in the LERG. Therefore, call routing can no longer be performed based on the first 6 digits (NPA-NXX) of the dialed number. To maintain the 6-digit routing infrastructure, each carrier End Office (EO) switch is assigned a Location Routing Number (LRN) in the format NPA-NXX-XXXX. The NPA-NXX of the LRN is one that is LERG-assigned to the carrier and EO switch. Routing remains based on an NPA-NXX but of the LRN rather than of the dialed number. During call processing, a query to an LNP routing database [known as a Number Portability Database (NPDB)] is performed. If the number is ported, an LRN is returned from the NPDB. If the number is not ported, only the dialed number is returned. Based on the first 6 digits of the returned number (NPA-NXX of either an LRN or the dialed number), the call can be routed to the correct serving office.

The information that carriers populate into their LNP NPDBs is obtained from the industry regional Number Portability Administration Center Service Management System (NPAC SMS). The regional NPAC SMS broadcasts updates to the telephone number/LRN associations and is the master source for LNP information.

Number Pooling Environment

In a number pooling environment, there is a change in the existing number assignment process. Carriers still need numbers from a different NXX in each rate center they serve, but instead of a whole NXX with 10,000 numbers being assigned to one carrier, the NXX and numbers are shared among many carriers. The levels of sharing that have been discussed include at the thousands block level and at the individual line number level. The current focus of the industry is on the thousands block level.

For thousands block number pooling (NXX-X number pooling), an NXX is assigned to a single carrier in the LERG. This carrier is known as the code holder for the NXX. Blocks of 1,000 numbers (NXX-X) are assigned to various carriers known as the block holders of the thousands blocks. Because NXXs are shared, number pooling requires the oversight of a neutral third party administrator for the following tasks in accordance with industry guidelines:

- To establish a pool (determine which NXXs and blocks are available to be shared)
- To maintain the pool (track availability of resources and replenish the pool as needed)
- To assign resources (blocks) from it to carriers.

Because the NXX is still associated with a particular rate center, call rating and local/toll discrimination can still be performed based on the first 6 digits (NPA-NXX) of the calling and called party telephone numbers. Routing of pooled numbers is built upon the LRN infrastructure developed for LNP so that 7-digit routing is not required. Numbers in blocks assigned to carriers other than the code holder are treated as being ported to the block holder and must be populated in the NPAC SMS and carriers' LNP NPDBs. When a number is activated/placed into the NPAC SMS and carriers' LNP NPDBs, the number is associated there with the relevant LNP information (that is, LRN of the block holder) and routing is based on the result of an NPDB query.

Architecture

The architecture for number pooling is based on the LNP architecture. Number pooling reuses the capabilities developed and implemented for LNP (that is, querying an NPDB, routing on an LRN). Building upon these capabilities and specific to number pooling are capabilities to support Pre-port with Efficient Data Representation (EDR) and switch call processing rules.

Pre-port with Efficient Data Representation

The target architecture for thousands block number pooling is Pre-port with EDR. Under the pre-port architecture, all 1,000 numbers of a block assigned to a service provider are ported to that service provider (the block holder) immediately upon block assignment. The numbers in the block are associated with the block holder's LNP information such as the LRN and 10-digit Global Title Translation (GTT) information. This prevents inadvertent assignment of numbers by the code holder and does not require porting as part of the customer assignment process since the numbers are already associated with the block holder. Pre-port makes the block holder responsible for unallocated number treatment and for LIDB queries (that is, for bill-to-third number calls) for unassigned numbers in a block. Pooled numbers that are ported away from the block holder and then are disconnected return or "snapback" to the block holder from both a number administration (right to reassign) and network routing (responsibility for unassigned number treatment) perspective.

Pre-port also greatly increases the demands on NPDB record storage capacity because all 1,000 numbers of a pooled block are activated into the NPAC SMS and service providers' NPDBs at once. If each number has to be represented by a single record, the record storage capacity of service providers' NPDBs could quickly be exhausted. EDR provides support to meet the demands with an efficient representation of pooled numbers where a single record can replace a large number of records with the same LNP information (i.e., a block of 1000 numbers all with the same LRN of the block holder).

Switch Call Processing Rules

In order to provide unallocated number treatment for unassigned numbers in a block, switch administration is needed to mark these numbers as "reserved" on the block holder's switch. Without marking the pooled numbers as "reserved", a call to an unassigned number routed to the block holder via the block holder's LRN is released with the American National Standards Institute (ANSI) Cause Code 26

indicating a misrouted LRN call. However, the call is not a misrouted LRN call. Therefore, for such pooled numbers, the block holder must provision its switch to provide unallocated number treatment instead of ANSI Cause Code 26 treatment by marking the numbers as "reserved". See **Call to an Unallocated Pooled Number** described later in this chapter.

When an unassigned pooled number is assigned to a customer and then is ported away, the block holder must re-provision the switch to play ANSI Cause Code 26 treatment for this number. If a call to this number is routed to this switch with an LRN, this call is truly a misrouted LRN call. To accomplish this, the ported away number is marked as "ported out". See **Call to a Ported Pooled Number** described later in this chapter.

The following summarizes the call processing associated with the "reserved number" and "ported out" markings when no valid routing treatment is found. If a valid routing treatment is found, the call will be routed based on the routing treatment.

1. If the "reserved number" marking is set and the "ported out" marking is not set, then unallocated number treatment, instead of ANSI Cause Code 26 treatment, is provided.

2. If the "reserved number" marking is set and the "ported out" marking is set, then ANSI Cause Code 26 treatment is provided. Although the "reserved number" marking is set, since the number has been ported away, an LRN routed call to the switch would be a misrouted LRN call. Therefore, ANSI Cause Code 26 treatment is the proper treatment.

3. If the "reserved number" marking is not set and the "ported out" marking is not set, then regular call processing applies per the current LNP capabilities. ANSI Cause Code 26 treatment is provided since the number is not found on the switch.

4. If the "reserved number" marking is not set and the "ported out" marking is set, then ANSI Cause Code 26 treatment is provided per the current LNP capabilities.

Table 2-A summarizes the reserved number and ported out call processing rules.

Table 2-A - Switch Call processing Rules Associated with Reserved Number and Ported Out Markings (No Valid routing Treatment)

Reserved Number	Ported Out	Treatment
1	0	Unallocated Number
1	1	ANSI Cause Code 26
0	0	Regular Call Processing (ANSI Cause Code 26
0	1	ANSI Cause Code 26

Note that the call processing changes are associated only with the "reserved number" marking being set. Without the "reserved number" marking being set, the current LNP capabilities apply. The "ported out" marking only has effect on call processing within the context of the "reserved number" marking being set. Outside of the "reserved number" marking being set, the "ported out" marking is ignored for call processing.

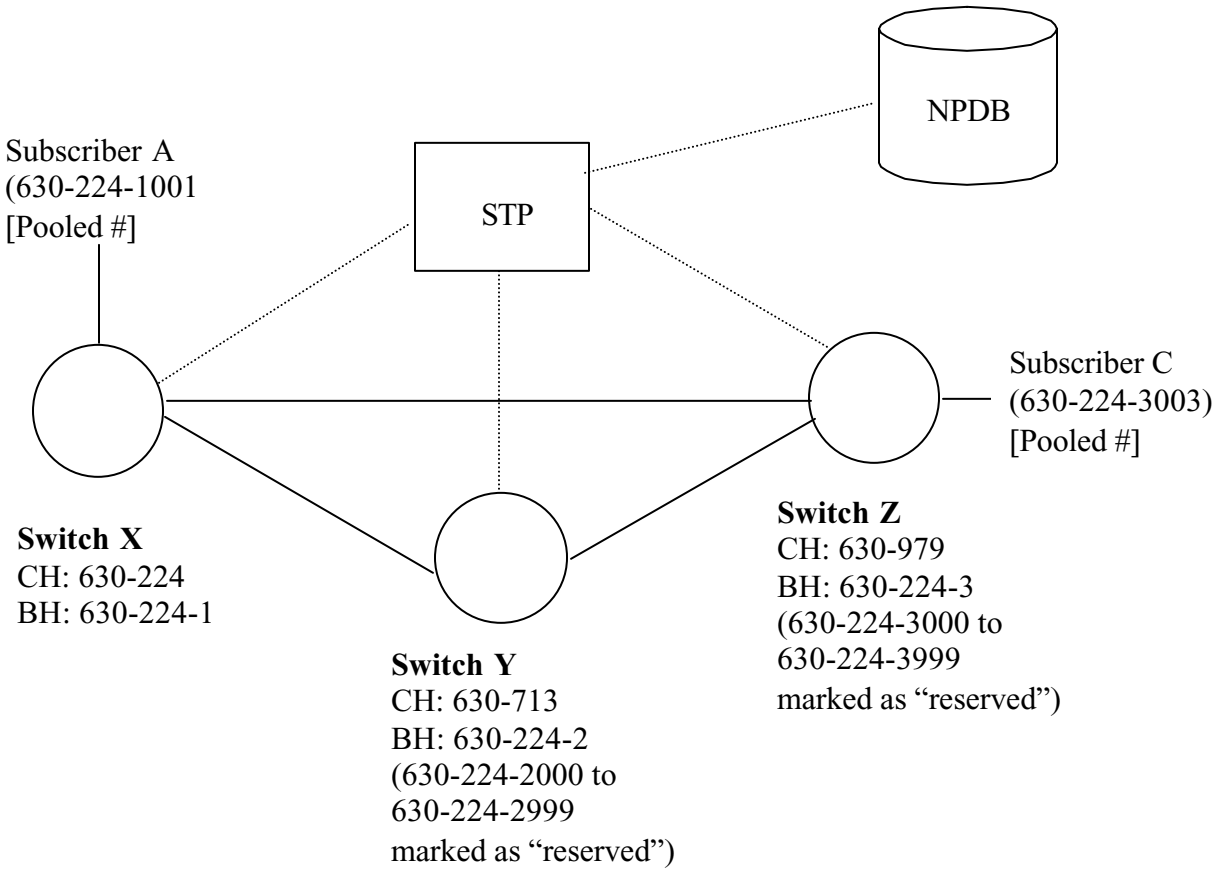
□

Call Flows

General

For the following two call flows, NPA-NXX 630-224 is a pooled NPA-NXX. Service Provider X is the code holder. Also, the 1000-1999 block is assigned to block holder X. The 2000-2999 block is assigned to block holder Y. The 3000-3999 block is assigned to block holder Z. Block holders X, Y, and Z activate all their numbers into the NPAC SMS, and therefore, into the service providers' NPDBs. Also, block holder X assigns 630-224-1001 to subscriber A and block holder Z assigns 630-224-3003 to subscriber C. See Figure 2-1.

Figure 2-1 - Example of a Pooled Number



Legend:
NPDB Number Portability Database
STP Signal Transfer Point

Call to a Pooled Number Assigned to a Subscriber

The following call flow (Subscriber A calls Subscriber C) shows that call routing to a pooled number is based on existing LNP capabilities.

1. Subscriber A dials the telephone number of Subscriber C (630-224-3003). Switch X determines that this is a local call and applies LNP processing. Because 630-224 is opened for portability and 630-224-3003 is not being served by the switch, Switch X launches an LNP query to the NPDB.

2. The NPDB determines that 630-224-3003 is associated with the LRN of Switch Z (630-979-XXXX) and returns this LRN to Switch X.

3. Switch X routes the call to Switch Z based on the received LRN. The Integrated Services Digital Network User Part (ISUP) Initial Address Message (IAM) contains the LRN (630-979-XXXX) in the Called Party Number (CdPN) parameter, the dialed number (630-224-3003) in the ported number Generic Address Parameter (GAP), and Bit M of the Forward Call Indicator (FCI) set to 1.

4. Switch Z receives the call, recognizes its own LRN, and uses the number in the GAP (630-224-3003) to complete the call to Subscriber C. **End of Call Flow**.

Call to an Unallocated Pooled Number

The following call flow (Subscriber A calls 630-224-3002 which is an unassigned number in block holder Z's block) shows that call routing to an unallocated pooled number is based on existing LNP capabilities. However, the block holder must provision its pooled numbers as "reserved" on the switch to provide unallocated number treatment.

1. Subscriber A dials 630-224-3002. Switch X determines that this is a local call and applies LNP processing. Because 630-224 is opened for portability and 630-224-3002 is not being served by the switch, Switch X launches an LNP query to the NPDB.

2. The NPDB determines that 630-224-3002 is associated with the LRN of Switch Z (630-979-XXXX) and returns this LRN to Switch X.

3. Switch X routes the call to Switch Z based on the received LRN. The ISUP IAM contains the LRN (630-979-XXXX) in the CdPN parameter, the dialed number (630-224-3002) in the ported number GAP, and Bit M of the FCI set to 1.

4. Switch Z receives the call, recognizes its own LRN, and uses the number in the GAP (630-224-3002). Because the 3000-3999 block is a pooled block on Switch Z, this block (and therefore 630-224-3002) is marked as "reserved". When Switch Z determines that 630-224-3002 is marked as "reserved" and is not served on the switch, Switch Z provides unallocated number treatment for the call. **End of Call Flow**.

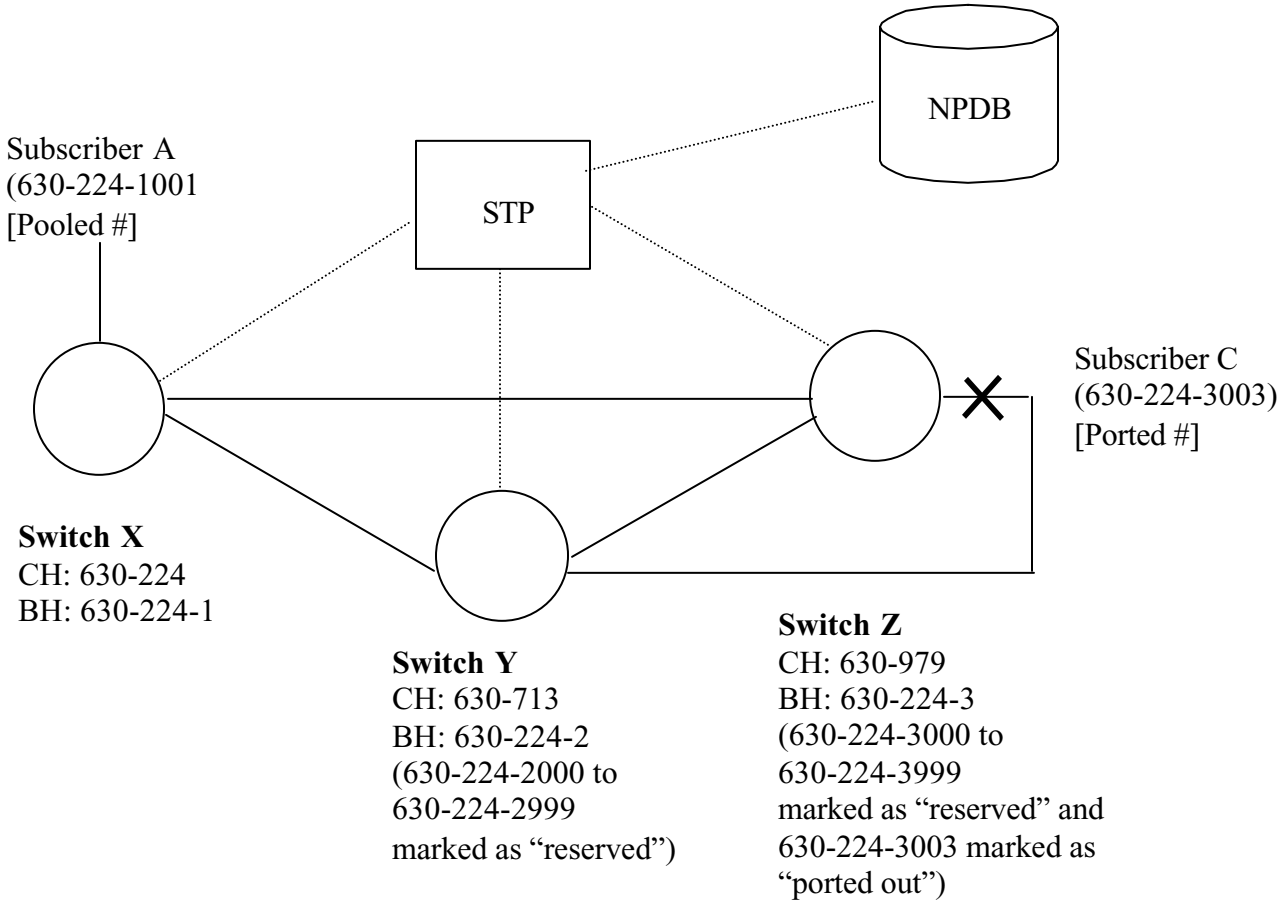
   Important! If 630-224-3002 were not marked as "reserved", Switch Z would release the call with ANSI Cause Code 26 per existing LNP capabilities to indicate a misrouted LRN call. However, this is not a misrouted LRN call in a number pooling environment.

Call to a Ported Pooled Number

If a pooled number is ported to another service provider, the NPAC SMS and therefore service providers' NPDBs will be updated per the existing LNP processes. A call to the ported pooled number is routed per existing LNP capabilities.

For the following four call flows (illustrated in Figure 2-2), Subscriber C ports from service provider (switch) Z to service provider (switch) Y.

Figure 2-2 - Example of a Ported Pooled Number



Legend:
NPDB Number Portability Database
STP Signal Transfer Point

Correctly Routed Call

If service provider X's NPDB has been updated correctly, the LRN of Switch Y is associated with Subscriber C's telephone number.

In the following call flow, Subscriber A calls subscriber C.

1. Subscriber A dials the telephone number of Subscriber C (630-224-3003). Switch X determines that this is a local call and applies LNP processing. Because 630-224 is opened for portability and 630-224-3003 is not being served by the switch, Switch X launches an LNP query to the NPDB.

2. The NPDB determines that 630-224-3003 is associated with the LRN of Switch Y (630-713-XXXX) and returns this LRN to Switch X.

3. Switch X routes the call to Switch Y based on the received LRN. The ISUP IAM contains the LRN (630-713-XXXX) in the CdPN parameter, the dialed number (630-224-3003) in the ported number GAP, and Bit M of the FCI set to 1.

4. Switch Y receives the call, recognizes its own LRN, and uses the number in the GAP (630-224-3003) to complete the call to subscriber C. **End of Call Flow**.

Misrouted LRN Call

If service provider X has a problem either with getting the NPAC SMS update or with updating its NPDB, then service provider X's NPDB will still have the LRN of Switch Z associated with subscriber C's telephone number.

1. Subscriber A dials the telephone number of Subscriber C)630-224-3003). Switch X determines that this is a local call and applies LNP processing. Because 630-224 is opened for portability and 630-224-3003 is not being served by the switch, Switch X launches an LNP query to the NPDB.

2. The NPDB determines that 630-224-3003 is associated with the LRN of Switch Z (630-979-XXXX) and returns this LRN to Switch X.

3. Switch X routes the call to Switch Z based on the received LRN. The ISUP IAM contains the LRN (630-979-XXXX) in the CdPN parameter, the dialed number (630-224-3003) in the ported number GAP, and Bit M of the FCI set to 1.

4. Switch Z receives the call and recognizes its own LRN. Switch Z also determines that the number in the GAP (630-224-3003) is marked as "reserved". However, because the number has been ported away from Switch Z, the number is also marked as "ported out". Therefore, Switch Z releases the call with ANSI Cause Code 26 to indicate a misrouted LRN call. **End of Call Flow**.

   Important! If 630-224-3003 were not marked as "ported out", Switch Z would provide unallocated number treatment for the call because 630-224-3003 is marked as "reserved" and is not served on the switch.

Call to a Disconnected Pooled Number

When a pooled number is ported away from the block holder and is then disconnected, the number is first aged by the disconnecting service provider. Then, upon snapback, the number is returned to the block holder, who must provide unallocated number treatment until the number is reassigned. In Figure 2-2, assume that Subscriber C disconnects service from service provider Y and that the aging period is complete. 630-224-3003 is snapped back to block holder Z. Therefore, 630-224-3003 is updated to be associated with the LRN of Switch Z in the NPAC SMS and service providers' NPDBs. In addition, block holder Z removes the "ported out" marking for 630-224-3003.

1. Subscriber A dials 630-224-3003. Switch X determines that this is a local call and applies LNP processing. Because 630-224 is opened for portability and 630-224-3003 is not being served by the switch, Switch X launches an LNP query to the NPDB.

2. The NPDB determines that 630-224-3003 is associated with the LRN of Switch Z (630-979-XXXX) and returns this LRN to Switch X.

3. Switch X routes the call to Switch Z based on the received LRN. The ISUP IAM contains the LRN (630-979-XXXX) in the CdPN parameter, the dialed number (630-224-3003) in the ported number GAP, and Bit M of the FCI set to 1.

4. Switch Z receives the call, recognizes its own LRN, and uses the number in the GAP (630-224-3003). Because the 3000-3999 block is a pooled block on Switch Z, this block (and therefore 630-224-3003) is marked as "reserved". When Switch Z determines that 630-224-3003 is marked as "reserved" and is not served on the switch, Switch Z provides unallocated number treatment for the call. **End of Call Flow**.

Previously, Switch Z had 630-224-3003 marked as "ported out" (see **Call to a Ported Pool Number**). When 630-224-3003 is snapped back to block holder Z, the "ported out" marking is removed from Switch Z. Otherwise, if the marking had been left, Switch Z would have released the call with ANSI Cause Code 26 indicating a misrouted LRN call as described in **Misrouted LRN Call**.

When a block holder disconnects a pooled number, the block holder does not have to update the NPAC SMS because the number is already associated with the block holder's LRN. Calls to this number will continue to be routed to the block holder. After aging the number, the block holder provisions the number for unallocated number treatment. This is accomplished by de-provisioning the number as being served on the switch. Because the pooled block is already marked as "reserved", this number is marked as "reserved". Because the number was not ported away from the block holder, there is no "ported out" marking to remove. See **Call to an Unallocated Pooled Number** with the assumption that 630-224-3002 was previously assigned to a subscriber and then disconnected.

4ESS™ Switch Call Processing Rules

There is no change to how a *4ESS* switch handles a call prior to when the *4ESS* switch determines that an LRN (received in an ISUP IAM or in a response from the LNP NCP) is its own LRN. The *4ESS* switch continues to determine if an LRN is its own LRN via a check in its LRN table. After the *4ESS* switch determines that the LRN is its own LRN, it translates on the destination number (still no change in current *4ESS* switch call processing). It is after this translation, depending on the result of the translation, that this feature defines new call processing rules for the *4ESS* switch.

If at the 6-digit NPA-NXX level there is no Positive Look-Up (PLU) call type and if the *4ESS* switch terminates the call with Final Handling Treatment (FHT), the *4ESS* switch checks the 7-digit translator to determine if the number is marked as "reserved".

If the number is…	**And if the *4ESS* switch…**	**Then the *4ESS* switch…**
Marked as "reserved"	—	Clears the call using unallocated number treatment .
Not marked as "reserved"	—	Releases the call with ANSI Cause Code 26. This is because the call is a misrouted LRN call (that is, the call was routed to AT&T with an AT&T LRN), but the destination number is not served by AT&T.
	Performed the LNP query to obtain the LRN	Processes the call as if it received a release message with ANSI Cause Code 26 (that is, the *4ESS* switch terminates the call with FHT and pegs a count). The FHT plays reorder tone. (This is because the *4ESS* switch performed the LNP query, it is the originating switch, and it will not send back ANSI Cause Code 26.)

If at the 6-digit NPA-NXX level there is a PLU call type, the following rules apply.

If an entry is…	**And the *4ESS* switch…**	**Then the *4ESS* switch…**
Found in the PLU with a valid route	—	Routes the call per existing capabilities.
Found in the PLU with the destination number marked as "reserved", not "ported out"	Terminates the call with FHT	Clears the call using unallocated number treatment and does not return ANSI Cause Code 26.
Found in the PLU with the destination number marked as "ported out"	Terminates the call with FHT, but did not perform the LNP query to obtain the LRN	Releases the call with ANSI Cause Code 26. (When a number is encountered marked as "ported out", the *4ESS* switch does not perform a check to see whether the number is marked as "reserved" or not. Since the number is marked as "ported out" [regardless of the number being marked as "reserved" or not], the call is a misrouted LRN call and the correct treatment is to release the call with ANSI Cause Code 26. Real time resources are not used to perform the check in the 7-digit translator.)
Found in the PLU with the destination number marked as "ported out"	Terminates the call with FHT and performs the LNP query to obtain the LRN	Processes the call as if it received a release message with ANSI Cause Code 26 (that is, the *4ESS* switch terminates the call with FHT and pegs a count). The FHT plays reorder tone. (This is because the *4ESS* switch performed the LNP query, it is the originating switch, and it does not send back ANSI Cause Code 26.)
Not found in the PLU and default routing at the NPA-NXX level leads to FHT	—	Determines from the 7-digit translator if the number is marked as "reserved" or not. If the *4ESS* switch determines that the number is marked as "reserved", the *4ESS* switch clears the call using unallocated number treatment and does not return ANSI Cause Code 26.

If an entry is…	And the *4ESS* switch…	Then the *4ESS* switch…
Not found in the PLU and default routing at the NPA-NXX level leads to FHT	—	Determines from the 7-digit translator if the number is marked as "reserved" or not. If the *4ESS* switch determines that the number is marked as "reserved", the *4ESS* switch clears the call using unallocated number treatment and does not return ANSI Cause Code 26.
	—	Determines from the 7-digit translator if the number is marked as "reserved" or not. If the *4ESS* switch determines that the number is not marked as "reserved" and does not perform the LNP query to obtain the LRN, the *4ESS* switch releases the call with ANSI Cause Code 26.
	—	Determines from the 7-digit translator if the number is marked as "reserved" or not. If the *4ESS* switch determines that the number is not marked as "reserved" and performs the LNP query to obtain the LRN, the *4ESS* switch processes the call as if it received a Release Message with ANSI Cause Code 26 (that is, terminates the call with FHT and pegs a count. The FHT plays a reorder tone).
Not found in the PLU and default routing at the NPA-NXX level leads to a valid route	—	Routes the call per existing capabilities.

Provisioning

Structures Affected

HT43DPLUS

The HT43DPLUS structure (NO4MEM Library) is defined as a new 1000-word single level translator defined in Protected, Simplex, Disk-backed, API accessible and ODA (PBAO) populated memory.

A 5-bit item (TRANTRT Library) is reserved on the translator for Number Pooling Target Architecture use. The 5-bit item is used to return an ABCID, which uniquely identifies the ABC digits of a destination number. Up to 31 ABC digits can be mapped into unique 5-bit identifiers. An ABCID of zero is not allowed. This identifier is used to index into the head table of HT47DIGTYP.

HT4SA

The TRANTRT library is updated to assign a new Space Administration use state for allocating subtranslators for the new 7-Digit Type Translation function. A new assigned state to XL4SAUSE is defined as follows:

4XLSA_7DT_1024,141, 7 DIGIT TYPE (ABC-DEF-G) 1024 WORD SUBTRANSLATOR

HT47DIGTYP

The HT47DIGTYP structure (NO4MEM Library) is defined as a new 32-word head table structure defined in PBAO populated memory.

The TRANTRT library is updated to define the memory layouts for the new 7-Digit Type Translation structures. These structures are designed to use 7 digits (ABC-DEF-G) to access a single unique 7-digit type indicator.

HT4PLUCT

Two new items (RSVD and POUT) are defined for the Vacant Code (FHT) calltype layout (4XLVACANT) within the HT4PLUCT structure. These items are populated via the AD1 field on Recent Change (RC) Form 346 when the CALLTYP entry is FHT.

The state assignments are listed in Table 2-B and RC Form 346 inputs are listed in Table 2-C.

Table 2-B - POUT and RSVD Indicators in Vacant Code Calltype

Item/State	Word	Disp.	Size	Description
XL4CTFHTPOUT 4XLCTFHTPON (=0) 4XLCTFHTPON (=1)	0	1	8	Ported out indicator Not ported out (default) Number is ported out
XL4CTFHTRSVD 4XLCTFHTRSVN = (0) 4XLCTFHTRSVN = (1)	0	1	7	Reserved indicator Not reserved (default) Number is reserved

Table 2-C – RC Form 346 (Add AD1) Inputs for Vacant Code Calltype

CALLTYP	AD1	XL4CTFHTRSVD Populated With	XL4CTFHTPOUT Populated With	Description
FHT	Blank	0	0	Reserved and ported out; not populated (default)
FHT	RSVD	1	0	Reserved, not ported out
FHT	PORT	0	1	Ported out and not reserved
FHT	BOTH	1	1	Reserved and ported out

Growth and Retrofit

The Office Data Management System (ODMS) must copy and preserve the HT47DIGTYP and HT43DPLUS structures into succeeding generics.

Recent Change Forms Affected

RC Form 351

This new form (Figure 2-3) is used to populate the new 7-Digit Type translator structure.

Figure 2-3 - Recent Change Form 351

```
# FORM 351      ADD/DELETE RESERVED 7 DIGIT TYPE

  RC:CODEGRP;NEW;OPT (RSVD) , ____:                ABC ____,

  ORNU _________,  ACTION __,

  DEFG   DEFG    DEFG   DEFG   DEFG   DEFG

  _____, _____, _____, _____, _____, _____,

  _____, _____, _____, _____, _____, _____,

  _____, _____, _____, _____, _____, _____,

  _____, _____, _____, _____, _____, _____,

  REMARKS _____________________________________________,

                    ASSOCIATED VERIFY MESSAGES

                    INPUT-13bc-VER:MISC NPRSVD

                    OUTPUT-3bh-VER:MISC NPRSVD
```

To translate the 7 digits (ABC-DEF-G) to obtain or access a unique 7-digit type indicator (XL47DT_BX0…F), the following procedure is used:

- The ABC digits (converted to binary) are used to index the HT43DPLUS translator to obtain the NPTABCID (represents an NPA). Up to 31 different NPAs are allowed in this table.
- The NPTABCID is stored as XL47DDTB_ABCID.
- The DEFG digits are converted from Telco BCD to binary and are stored in XL47DTB_DEFG.

The head table index item XL46DT_HTX is used to index the HT47DIGTYP head table. The address from this head table points to a 1024 word subtranslator structure where each word contains 16 single 7-digit type indicators (XL47DT_BX0…F). A word within this 1024 structure is selected by using the subtranslator index XL46DT_STX. The unique 1 bit 7-digit type indicator is obtained by right-shifting the contents of this word by the value of the bit index XL47DT_BTX and using the bit mask XL47DT_ITEM.

The new TRANTRT items are defined in Table 2-D and the state assignments are listed in Table 2-E.

Table 2-D - Layout of Items for the HT47DIGTYP Translator

Item/State	Word	Size	Disp.	Description
XL47DT_BX0	0	1	0	7 DIGTYP subtranslator entry – individual bit 0 indicator
XL47DT_BX1	0	1	1	7 DIGTYP subtranslator entry – individual bit 1 indicator
XL47DT_BX2	0	1	2	7 DIGTYP subtranslator entry – individual bit 2 indicator
XL47DT_BX3	0	1	3	7 DIGTYP subtranslator entry – individual bit 3 indicator
XL47DT_BX4	0	1	4	7 DIGTYP subtranslator entry – individual bit 4 indicator
XL47DT_BX5	0	1	5	7 DIGTYP subtranslator entry – individual bit 5 indicator
XL47DT_BX6	0	1	6	7 DIGTYP subtranslator entry – individual bit 6 indicator
XL47DT_BX7	0	1	7	7 DIGTYP subtranslator entry – individual bit 7 indicator
XL47DT_BX8	0	1	8	7 DIGTYP subtranslator entry – individual bit 8 indicator
XL47DT_BX9	0	1	9	7 DIGTYP subtranslator entry – individual bit 9 indicator
XL47DT_BXA	0	1	10	7 DIGTYP subtranslator entry – individual bit 10 indicator
XL47DT_BXB	0	1	11	7 DIGTYP subtranslator entry – individual bit 11 indicator
XL47DT_BXC	0	1	12	7 DIGTYP subtranslator entry – individual bit 12 indicator
XL47DT_BXD	0	1	13	7 DIGTYP subtranslator entry – individual bit 13 indicator
XL47DT_BXE	0	1	14	7 DIGTYP subtranslator entry – individual bit 14 indicator

Table 2-E - Item/State Assignments for 7 DIGTYP Subtranslator

Item/State	Word	Size	Disp.	Description
XL47DT_BXF	0	1	15	7 DIGTYP subtranslator entry – individual bit 15 indicator
XLT7DT_ITEM XL7DT_OFF (=0) XL7DT_ON (=1)	0	1	0	7 DIGTYP rightmost position mask 7 DIGTYP item is OFF (default – not reserved) 7 DIGTYP item is ON (7-digit number is reserved)
XL47DT_HTX XL47DT_STX XL47DT_BTX	0 0 0	5 10 4	14 4 0	7 DIGTYP head table (HT47DIGTYP) index 7 DIGTYP subtranslator (XL47DT_STADR) index 7 DIGTYP subtranslator entry – bit index
XL47DTB_DEFG XL47DTB_ABCID	0 0	14 5	0 14	7 DIGTYP binary value of DEFG digits 7 DIGTYP ABCID derived from ABC digits

This 7 DIGTYP translator is updated and populated using RC Form 351 and verified using Verify Input Message 13bc and Output Form 3bh.

RC Form 346

This form is being modified to allow AD1 entries for Reserved and ported-out when the FHT calltype is entered. Valid entries are as follows:

- **Blank**
- **RSVD**
- **PORT**
- **BOTH.**

Verify Forms and Messages Affected

Verify Message 13bc

This new input message is used to verify the new HT47DIGTYP translator structure. The message is in the following format:

VER:MISC NPRSVD:NPANXXX a!(EOT)

The message requests the verification of the AT&T 7-digit, Number Pooling Reserved assignments. Valid entries are **0000000** to **9999999**.

> **Important!** The only valid NPA and NXX codes that are allowed by RC for an AT&T Reserved assignment are those in the range of **200** to **999**.

Sample messages are illustrated in Figure 2-4.

Figure 2-4 - Sample Verify 3bc Input Messages

INPUT: VERIFY 13bc

ex. 1 Verify a single NPA-NXXX:

VER:MISC NPRSVD:NPANXXX (6309795-6309795) ! (EOT)

ex. 2 Verify a range—this will identify all the NPRSVD assignments for an NPA.

VER:MISC NPRSVD:NPANXXX (3122000-3129999) ! (EOT)

ex. 3 Verify a range—this will verify all the NPRSVD assignments for an NPA-NXX.

VER:MISC NPRSVD:NPANXXX (3125000-3125009) ! (EOT)

ex. 4 Verify a range—this will identify all possible NPA-NXXX NPRSVD assignments.

VER:MISC NPRSVD:NPANXXX (2002000-9999999) ! (EOT)

ex. 5 Verify a range and a list.

VER:MISC NPRSVD:NPANXXX (6309790-6309795,6308792,3128972) ! (EOT)

OUTPUT: VERIFY 3bh

VER:MISC NPRSVD

RECENT CHANGE INPUT SOURCE - #351

Verify Input Message 13bd

This new verify CODEGRP input message is used to verify the 10-digit translator structure PLU for the RSVD or PORT indicator. It will verify a single 10-digit line number, a 6-digit NPA-NXX, or all of the PLU table. The message is in the following format:

VER:CODEGRP;OPT RSVD or PORT

Sample messages are illustrated in Figure 2-5.

Figure 2-5 - Sample Verify 13bd Input Messages

INPUT		VERIFY 13bd
	ex. 1	To verify a single 10-digit line number in the PLU translator for a reserved setting. VER:CODEGRP;OPT RSVD:DOM POTS,ABC 708,DEF 979,LINENO 1234! (EOT)
	ex. 2	To verify single 10-digit line number in the PLU translator for a Ported out setting. VER:CODEGRP;OPT PORT:DOM POTS,ABC 708,DEF 979,LINENO 1234! (EOT)
	ex. 3	To verify all of the line numbers for an NPA-NXX in the PLU translator which have a Reserved setting. VER:CODEGRP;OPT RSVD:DOM POTS,ABC 708,DEF 979! (EOT)
	ex. 4	To verify all of the line numbers for an NPA-NXX in the PLU translator which have a Ported out setting. VER:CODEGRP;OPT PORT:DOM POTS,ABC 708,DEF 979! (EOT)
	ex. 5	To verify all of the line numbers in the PLU translator which have a Reserved setting. VER:CODEGRP;OPT RSVD,ALL! (EOT)
	ex. 6	To verify all of the line numbers in the PLU translator which have a Ported out setting. VER:CODEGRP;OPT PORT,ALL! (EOT)
OUTPUT:		VERIFY 3bi and 3bj VER:CODEGRP;OPT (RSVD.PORT) RECENT CHANGE INPUT SOURCE – FORM #346

Input Message 13f

This existing message must allow an AD1 input of RSVD, PORT, or BOTH when the CALLTYP input is FHT. The message format is as follows:

VER:CODELIST,OPT PLU:CALLTYPE FHT[,CALLDATA c],AD1 RSVD/PORT/BOTH!

Output Message 3bh

The new verify MISC output message is used to verify the new 7-Digit Type translator structure. Only the NPA-NXXX codes that are reserved for Number Pooling are specified. See Figure 2-6.

Figure 2-6 - Verify Form 3bh

INPUT: VERIFY #13BC

VER:MISC NPRSVD:NPANXXX A! (EOT)

OUTPUT VERIFY 3BH

VER:MISC,OPT(NPRSVD) :

NPANXXX	NPANXXX	NPANXXX	NPANXXX	NPANXXX
_____,	_____,	_____,	_____,	_____,
_____,	_____,	_____,	_____,	_____,
_____,	_____,	_____,	_____,	_____,
_____,	_____,	_____,	_____,	_____,
_____,	_____,	_____,	_____,	_____,
_____,	_____,	_____,	_____,	_____,
_____,	_____,	_____,	_____,	_____,
_____,	_____,	_____,	_____,	_____,
_____,	_____,	_____,	_____,	_____,
_____,	_____,	_____,	_____,	_____,
_____,	_____,	_____,	_____,	_____,

RECENT CHANGE INPUT SOURCE - #351

Output Messages 3bi and 3bj

These two new verify CODEGRP output messages are used to verify the new Number Pooling indicators (at the 10-digit level) in the PLU translator structure. These messages are illustrated in Figure 2-7 and Figure 2-8.

Figure 2-7 - Verify Message 3bi

```
INPUT:                                  VERIFY #13bd

VER:CODEGRP;OPT RSVD [,ALL]! (EOT)



OUTPUT:                                 VERIFY 3bi

VER:CODEGRP;OPT(RSVD[-ALL]):            DOM----,



                    MIN     MAX
ABC     DEF         GHIJ    GHIJ

___,    ___,    _____,  _____,
___,    ___,    _____,  _____,
___,    ___,    _____,  _____,
___,    ___,    _____,  _____,
___,    ___,    _____,  _____,
___,    ___,    _____,  _____,
___,    ___,    _____,  _____,
___,    ___,    _____,  _____,
___,    ___,    _____,  _____,
___,    ___,    _____,  _____,
___,    ___,    _____,  _____,
___,    ___,    _____,  _____,
___,    ___,    _____,  _____,
___,    ___,    _____,  _____,
___,    ___,    _____,  _____,
___,    ___,    _____,  _____,


                RECENT CHANGE INPUT SOURCE - #346
```

Figure 2-8 – Verify Message 3bj

.

INPUT: VERIFY #13bd

VER:CODEGRP;OPT PORT[,ALL]! (EOT)

OUTPUT: VERIFY 3bj

VER:CODEGRP;OPT(PORT[-ALL]): DOM----,

ABC	DEF	MIN GHIJ	MAX GHIJ
___,	___,	_____,	_____,
___,	___,	_____,	_____,
___,	___,	_____,	_____,
___,	___,	_____,	_____,
___,	___,	_____,	_____,
___,	___,	_____,	_____,
___,	___,	_____,	_____,
___,	___,	_____,	_____,
___,	___,	_____,	_____,
___,	___,	_____,	_____,
___,	___,	_____,	_____,
___,	___,	_____,	_____,
___,	___,	_____,	_____,
___,	___,	_____,	_____,
___,	___,	_____,	_____,
___,	___,	_____,	_____,

RECENT CHANGE INPUT SOURCE - #346

Output Message 3al

This existing message allows outputs of RSVD, PORT, and BOTH for the AD1 field when the calltype output is FHT. The output is returned in response to the following verify input message (13b):

VER:CODEGRP[;ALL]:[DOM a,][AC b,]ABC c,DEF d,LINENO i!(EOT)

Output Message 3al

This existing message allows outputs of RSVD, PORT, and BOTH for the AD1 field when the calltype output is FHT. The output is returned in response to the following verify input message (13f):

VER:CODELIST[;a],OPT PLU:CALLTYP b[CALLDATA c][,AD1 d]!(EOT)

In order for an AD1 of RSVD, PORT, or BOTH to be output, the input message must specify the following:

- A CALLTYP of FHT
- An AD1 of RSVD, PORT, or BOTH.

□

Recording (Not Affected)

Network Management (Not Affected)

Maintenance/Troubleshooting

The following Final Handling Codes (FHCs) were developed to support this feature.

Table 2-F - New Final Handling Codes

FHC	Description
1513	**Last Normal Condition:** The switch translated the Destination Number (DN) and found no reserved marking at the 7-digit level. **Irregular Condition:** No routing data is provisioned for the DN. **Final Handling:** The switch sends a Release Message with ANSI Cause Code 26.
1514	**Last Normal Condition**: The switch translated the DN and found no reserved marking at the 7-digit level. **Irregular Condition:** No routing data is provisioned for the DN. **Final Handling:** The call is treated with vacant code handling.
1515	**Last Normal Condition**: The switch translated the DN and found a 10-digit PLU and number reserved, but not ported out. **Irregular Condition:** No routing data is provisioned for the DN. **Final Handling:** The call is treated with vacant code handling.
1516	**Last Normal Condition**: The switch translated the DN and found a 10-digit PLU and number ported out. **Irregular Condition:** No routing data is provisioned for the DN. **Final Handling:** The switch sends a Release Message with ANSI Cause Code 26.
1517	**Last Normal Condition**: The switch translated the DN and found a 10-digit PLU and number not reserved, and not ported out. The DN is marked reserved at the 7-digit level. **Irregular Condition:** No routing data is provisioned for the DN. **Final Handling:** The call is treated with vacant code handling.
1518	**Last Normal Condition**: The switch translated the DN and did not find a 10-digit PLU and number not reserved and not ported out. The DN is not marked reserved at the 7-digit level. **Irregular Condition:** No routing data is provisioned for the DN. **Final Handling:** The switch sends a Release Message with ANSI Cause Code 26.
1519	**Last Normal Condition**: The switch translated the DN and did not find a 10-digit PLU entry. The DN is marked reserved at the 7-digit level. **Irregular Condition:** No routing data is provisioned for the DN. **Final Handling:** The call is treated with vacant code handling.
1520	**Last Normal Condition**: The switch translated the DN and did not find a 10-digit PLU entry or a reserved marking at the 7-digit level. **Irregular Condition:** No routing data is provisioned for the DN. **Final Handling:** The switch sends a Release Message with ANSI Cause Code 26.
1521	**Last Normal Condition:** The switch translated the DN and found a reserved marking at the 7-digit level. **Irregular Condition:** No routing data is provisioned for the DN. **Final Handling:** The call is treated with vacant code handling.

Table 2-F - New Final Handling Codes (Cont'd)

FHC	Description
1522	**Last Normal Condition**: The switch translated the DN and did not find a reserved marking at the 7-digit level. **Irregular Condition:** No routing data is provisioned for the DN. **Final Handling:** The switch plays a reorder tone with ANSI Cause Code 26.
1523	**Last Normal Condition**: The switch translated the DN and found a 10-digit PLU and number reserved, but not ported out. **Irregular Condition:** No routing data is provisioned for the DN. **Final Handling:** The call is treated with vacant code handling.
1524	**Last Normal Condition**: The switch translated the DN and found a 10-digit PLU and number ported out. **Irregular Condition:** No routing data is provisioned for the DN. **Final Handling:** The switch plays a reorder tone with ANSI Cause Code 26.
1525	**Last Normal Condition**: The switch translated the DN and found a 10-digit PLU and number were neither reserved nor ported out. The DN is found reserved at the 7-digit level. **Irregular Condition:** No routing data is provisioned for the DN. **Final Handling:** The call is treated with vacant code handling.
1526	**Last Normal Condition**: The switch translated the DN and did not find a 10-digit PLU entry and number not reserved or not ported out. The DN is not marked reserved at the 7-digit level. **Irregular Condition:** No routing data is provisioned for the DN. **Final Handling:** The switch plays a reorder tone with ANSI Cause Code 26.
1527	**Last Normal Condition**: The switch translated the DN and did not find a 10-digit PLU entry, but did find a reserved marking at the 7-digit level. **Irregular Condition:** No routing data is provisioned for the DN. **Final Handling:** The call is treated with vacant code handling.
1528	**Last Normal Condition**: The switch translated the DN and did not find a 10-digit PLU entry or a reserved marking at the 7-digit level. **Irregular Condition:** No routing data is provisioned for the DN. **Final Handling:** The switch plays a reorder tone with ANSI Cause Code 26.
1529	**Last Normal Condition**: The switch checked to see if the called party number was in the DN table to determine if the DN belonged to the switch. **Irregular Condition:** The DN does not belong to this switch. **Final Handling:** The switch sends a Release Message with Cause Code 41, Temporary Failure.
1902	**Last Normal Condition:** The call was received on an LSP-Local ITOLL and OSPS Incoming Trunk (ICT) with the M-bit set (ISUP only). Translation of the called party number is unsuccessful. **Irregular Condition:** The translation of the called party number revealed a Vacant Code. The number is not found in the Local Exchange Routing Guide (LERG) table. **Final Handling:** The switch kills the call and sends a Release Message with standard Cause Code 31 back to the ISUP ICT

Transition Considerations

Interaction with Other Features

This feature enhances the existing LNP NCP to support the number pooling capability. It provides the incremental and modified requirements for the following:

- Feature 4216: Local Number Portability with Location Routing Number
- Feature 5839: AWS Access to the Local Number Portability Network Control Point
- Feature 5916: Signaling Connection Control Part Routing Verification Test for Local Number Portability Network Control Point
- Feature 6980: Tri-Modal (Local, AWS, and Toll) Access to the Local Number Portability/No. 2 Network Control Point
- Feature 7003: Maximization of Local Number Portability No. 2 Network Control Point Performance.

Feature Deployment

It is not necessary for the 4E25 release 3 Generic to be deployed in all *4ESS* switches in the network for this feature to be fully operational.

Feature Activation

This feature is activated by software deployment. However, following certain preconditions must exist. This feature must be provisioned using RC Forms 346 and 351.

- RC Form 346 contains the new field **AD1** that allows a different condition to be provisioned.
- RC Form 351 is used to mark the NPA-NXXX as reserved or unreserved.

This feature is always active because of the software changes (no RC form changes needed to activate).

□

Input/Output Manual Pages

Input Messages The following Input Messages are related to this feature:

- APP:CALLTYPE (modified)
- VER:CODEGRP-PORT (modified)
- VER:CODEGRP-RSVD (modified)
- VER:MISC-NPRSVD (new)

Output Messages The following Output Messages are related to this feature:

- VER:CODEGRP-PORT (modified)
- VER:CODEGRP-RSVD (modified)
- VER:MISC-NPRSVD (new)

3 Elimination of Dual Provisioning - Phase 1 Feature (7217)

Overview

Description The Elimination of Dual Provisioning (EDP) Feature provides the capabilities needed to gracefully stop dual provisioning of AT&T services once those services have transitioned to the Segmentation Directory (SD) environment, and are no longer allowed to revert to the pre-SD environment.

Purpose The purpose of this chapter is to provide information to the user on feature description, provisioning, network management, transition considerations, and I/O manual page updates.

Contents This chapter contains the following topics:

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Purpose	3-1
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Feature Description	**3-3**
Feature Description	3-3
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Call Flow (Not Affected)	**3-4**
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Transition Considerations	**3-7**
Feature Deployment	3-7
Feature Activation	3-7
Input/Output Manual Pages	**3-8**
Input Message	3-8
Output Message	3-8

Feature Description

Feature Description

This feature provides a recent changeable Target Status Indicators table in the *4ESS* switch. When a service has completed its migration to the SD architecture, the SD Transition Type (TT) associated with that service is populated in the Target Mode Table in the *4ESS* switch. Once an SD TT is in the Target Mode Table, the *4ESS* switch will disallow any requests to set the Transition Status for that Transition Type to Present Mode of Operation (PMO).

Feature 7217 builds the Target Status Indicator table in a general fashion; so that no additional *4ESS* switch development will be needed as services stop SD dual provisioning in the future. The first service that will be placed in the target table is Positive Call Processing (PCP), due to the fact that transition to this service has been completed.

Table 3-1 lists SD features and their deployment release.

Table 3-1 - Segmentation Directory Features

Feature	Feature No.	Release
SD Phase 1	4564	22R2
SD Black Hole Detection	5241	22R4
SD Phase 2 – Release 1	4880	23R1
SD Phase 2 – Release 2	4880a	23R2
SD Phase 2 – Release 3	4880b	23R3
SD Performance Enhanced	6272	23R3
SD CIC Based	6426	23R3
SD Phase 2 – Release 4	4880c	23R4
SD Phase 3 – Release 1	5641	24R2
SD Phase 3 – Release 2	5641a	24R3
SD Phase 3 – Release 3	5641b	24R3
SD Disaster Recovery	5876	24R3
SD Phase 4 - AT&T Digital Link Phase V	6938	25R1

Benefits This feature prohibits PMO processing from accidentally becoming invoked once AT&T stops provisioning data in the ANI Trigger Tables for a specific service, and that service has completed transition to the SD environment.

□

Call Flow (Not Affected)

Provisioning

RC Form 810 Population rules for Recent Change (RC) Form 810 have been modified to include the additional entries of PSMO (Permanent SD Mode of Operation) and DPSMO (Delete Permanent SD Mode of Operation) for all SD Transition items: SDTRS00, SDTRS01 … SDTRS63. The transition items must be set to SMO in the Transition Status table before they can be set to PSMO. The entry PSMO adds the specified SD transition item to the target table. The entry DPSMO deletes the specified SD transition item from the target table.

The field SDQUERY is removed from RC Form 810 with generic 4E25R4.

RC Form 810, **RC:FTR;CHG;OPT(MSC)**, is shown in Division 7 of the TG-4 document.

Verify Output Form 6bk

Verify Output Form 6bk (VER:SD) is modified to remove the field SDQUERY from generics 4E25R4 and later, and to add the fields TARGET STATUS INDICATORS. These fields identify the SD transition states that are set to PSMO (Permanent SD Mode of Operation) and cannot be reverted to PMO (Present Mode of Operation). Valid entries in these fields are:

00 - BLDS_PCP status indicator
01 - POTS Transition Type Indication (4E23R1>)
02 - SDN Transition Type Indication (4E23R2>)
03 - SDS Transition Type Indication (4E23R2>)
04 - USDS Transition Type Indication (4E23R3>)
05 - PCP Cellular Transition Type Indication (4E23R4>)
06 - QuietHear Transition Type Indication (4E23R4-4E25R4)
07 - GETS Transition Type Status Indication (4E24R2>)
08 - SDI-I Transition Type Status Indication (4E24R3>)
09 - GSDN-I Transition Type Status Indication (4E24R3>)
10 - Carrier Solutions Transition Type Status Indication (4E24R3>)
11 - SDN Dial Around Transition Type Status Indication (4E24R3>)
12 - PCP Dial Around Transition Type Status Indication (4E24R3>)
13-63 - Spare status indicators reserved for future use.

Output form 6bk, **VER:SD**, is shown in Division 8 of the TG-4 document.

Figure 3-1 shows Verify Output Form 6bk.

Figure 3-1 - Verify Output Form 6bk

INPUT: VERIFY #16az
VER:MISC SD! (EOT)

OUTPUT: VERIFY 6bk
(4E25R4>)

```
VER:SD:

    SDIAMINT    SDREQUERY      SDGUARD   SDCONG_ALG
         ---          ---          ---          ---

    GDINTERV   SDQGDTHRES   SPRGDTHRES      QRYTIMR    REQRYTIMR
      ------         ----         ----          ---          ---

   ASTNQTIMR    SPRSPTIMR    SPQRYTIMR    QRYGDTIMR    RESGDTIMR
         ---          ---          ---          ---          ---

    TRANSITION STATUS INDICATORS

    --, --, --, --, --, --, --, --, --, --, --, --, --, --, --, --,

    --, --, --, --, --, --, --, --, --, --, --, --, --, --, --, --,

    --, --, --, --, --, --, --, --, --, --, --, --, --, --, --, --,

    --, --, --, --, --, --, --, --, --, --, --, --, --, --, --, --,

    TARGET STATUS INDICATORS

    --, --, --, --, --, --, --, --, --, --, --, --, --, --, --, --,

    --, --, --, --, --, --, --, --, --, --, --, --, --, --, --, --,

    --, --, --, --, --, --, --, --, --, --, --, --, --, --, --, --,

    --, --, --, --, --, --, --, --, --, --, --, --, --, --, --, --,
```

RECENT CHANGE INPUT SOURCE – FORM #810 RC:FTR;CHG;OPT(MSC),---:

Recording (Not Affected)

Network Management

NEMOS Network Management Operations System (NEMOS) Messages 1, 176, and 100 are impacted by this feature.

The SD_Querying office parameter setting will no longer be sent to NEMOS.

If a Transition Type is already in the Target Table, the Network Management control message to change the status to PMO will be rejected.

□

Maintenance/Troubleshooting (Not Affected)

Transition Considerations

Feature Deployment It is not necessary for the 4E25 Release 4 Generic to be deployed in all switches for this feature to be fully operational.

Feature Activation This feature is activated in the *4ESS* switch by provisioning RC Form 810 with the PSMO entry (See **Provisioning** Section). For each transition item, the Transition Status must be set to SMO before being set to PSMO.

□

Input/Output Manual Pages

Input Message

The following input message is new with this feature:

- **VER:MISC-SD**

Output Message

The following output message is modified to remove the field SDQUERY and to add the fields TARGET STATUS INDICATORS:

- **VER:SD**

□

4 Segmented Memory Base Capability Feature (7573a)

Overview

Description This feature allows faster access to 12 Megawords (MW) of Call Store in blocks of three MW for transient data uses in the 1B Processor.

Purpose This purpose of this chapter is to provide information for the user on Feature 7573i (Hardware), and 7573a (Software for 4E25R4).

Contents This chapter contains the following topics:

Overview	**4-1**
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Feature Description	**4-3**
Background	4-3
Segmented Memory Architecture	4-3
Hardware	4-3
Call Flow (Not Affected)	**4-4**
Provisioning (Not Affected)	**4-4**
Recording (Not Affected)	**4-4**
Network Management (Not Affected)	**4-4**
Maintenance/Troubleshooting (Not Affected)	**4-4**
Transition Considerations	**4-5**
Feature Deployment	4-5
Feature Activation	4-5
Input/Output Manual Pages (Not Affected)	**4-5**

Feature Description

Background

Demands from new features and normal generic consumption have been nearly exhausting the 1B Processor memory on International Switching Center (ISC) offices and other large offices. Memory mining efforts have provided some level of capacity relief, but memory mining is becoming more costly and difficult. The Segmented Memory feature provides the following:

- Provides memory relief for Generic 4E26 and beyond,
- Supports continuous growth of memory demand,
- Makes available quick access to up to 12 MW of memory.

Segmented Memory Architecture

Segmented Memory architecture takes advantage of the existing Windowed Call Store (WCS) infrastructure, utilizing the Mcodes beyond the 8MW (23-bit) spectrum by manipulating the memory-addressing scheme. To achieve the manipulation of the addressing scheme, three circuit packs and the corresponding software in the *4ESS* switch require modification.

Hardware

Existing circuit packs KLW117, KLW10, and KLW122 are renumbered and reissued as **KLW217**, **KLW210**, and **KLW222** respectively. Circuit packs KLW217 and KLW210 are factory modified from the existing circuit packs, and KLW222 is issued as a new circuit pack. A new **Y cable** is also required, which connects between the three new circuit packs. Additional memory boards (**KLW1** in duplex) must be equipped on the switch in conjunction with the Segmented Memory capability in order to provide the extended memory. Memory packs for the extended store via Segmented Memory can be added at 1MW increments as needed up to an additional 12 MW for call store.

To order hardware for Feature 7573a, use Standard Service Unit (SSU) **E4E1B12**. To order two KLW1 packs, use SSU **E4E1B09**.

□

Call Flow (Not Affected)

Provisioning (Not Affected)

Recording (Not Affected)

Network Management (Not Affected)

Maintenance/Troubleshooting (Not Affected)

Transition Considerations

Feature Deployment

It is not necessary for the 4E25 Release 4 Generic to be deployed in all switches for this feature to be fully operational.

Feature Activation

This feature is activated by software and hardware deployment.

Feature 7573a is included in Generic 4E25 Release 4, and is activated by software deployment.

Feature 7573i is non-release-specific, but the hardware is to be installed after 4E25 Release 4 and before Generic 4E26 Release 1.

Full deployment of Segmented Memory will be accomplished with Feature 7573, to be described in the Product Release Document for 4E26 Release 1.

The hardware of this feature may be also be deployed either in conjunction with or after the 1B Pre-Fetch Feature (7255i). These options will be described in the Product Release Document for 4E26 Release 1.

Hardware growth is covered in Lucent Practice 234-353-010, 1B Processor Growth/Degrowth.

□

Input/Output Manual Pages (Not Affected)

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5 Routing Database Architecture for International Routes Feature (7592a)

Overview

Description This feature adds a Network Management Operations Support (NEMOS) capability to Feature 7592. NEMOS demand message 48 is created, so that NEMOS can request that the *4ESS* switch initiate a test query session to the Network Routing Number (NRN) database.

Purpose This chapter provides the user with a feature description, information on network management, and transition considerations. This feature is a continuation of Feature 7592. A full description is given in 234-090-253AC.

Contents

This chapter contains the following topics:

Overview **5-1**
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Purpose 5-1
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Feature Description **5-3**
Description 5-3
Call Flow (Not Affected) **5-3**
Provisioning (Not Affected) **5-3**
Recording (Not Affected) **5-3**
Network Management **5-3**
NEMOS 5-3
Maintenance/Troubleshooting (Not Affected) **5-4**
Transition Considerations **5-4**
Feature Deployment 5-4
Prerequisites for Feature Activation 5-4
Feature Activation 5-4
Input/Output Manual Pages (Not Affected) **5-4**

Feature Description

Description This feature is the second part of Feature 7592. Feature 7592 was deployed with Generic 4E25, Release 3, and is documented in 234-090-253AC.

This feature adds a NEMOS capability to Feature 7592. NEMOS demand message 48 is created, so that NEMOS can request that the *4ESS* switch initiate a test query session to the NRN database.

□

Call Flow (Not Affected)

Provisioning (Not Affected)

Recording (Not Affected)

Network Management

NEMOS NEMOS demand message 48 can request that the *4ESS* switch initiate a test query session to the NRN database.

□

Maintenance/Troubleshooting (Not Affected)

Transition Considerations

Feature Deployment

It is not necessary for the 4E25 Release 4 Generic to be deployed in all switches for this feature to be fully operational.

Prerequisites for Feature Activation

The new NCPs (that is, the NRN DB) be deployed and that the 2STPs should be provisioned with the new translation types (232 and 233) before activating this feature.

Feature Activation

This feature is activated by software deployment.

□

Input/Output Manual Pages (Not Affected)

6 Direct Services Automatic Number Identification-Based for Access Value Arrangements/Terminating Switched Access Arrangement--Phase 2 Feature (7862)

Overview

Description This feature enhances the capabilities introduced in Feature 6777, Direct Services Automatic Number Identification (DSA)-Based Architecture for Access Value Arrangement/Terminating Switched Access Arrangement (AVA/TSAA)—Phase 1. Phase 1 did not allow AVA/TSAA processing on calls that also had an ANI match on the Segmentation Directory (SD) database. In these cases, only the ANI-based processing occurred on the calls. Additionally, certain TSAA calls did not receive the correct Network Access Interrupt (NAI) processing.

Purpose This chapter describes the capability to route a call originated by a nodal or switched access customer (ANI-based processing) to an AVA/TSAA location where there is an AVA/TSAA DN match and an ANI match.

Contents This chapter contains the following topics:

Overview	**6-1**
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Purpose	6-2
Contents	6-2
Feature Description	**6-3**
Background	6-3
Network Architecture	6-3
Call Flows	**6-6**
SDN Call with ANI and DN Matches	6-6
PCP Call with ANI and DN Matches	6-8
ANC Call with ANI and DN Matches	6-9
Non-featured ANC Call with a CIC and DN Match	6-11
Basic Long Distance POTS Call with a DN Match	6-12
Provisioning	**6-14**
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Transition Considerations	**6-15**
Feature Dependencies	6-15
Feature Deployment	6-15
Feature Activation	6-15
Input/Output Manual Pages	**6-16**
Output Message	6-16

Feature Description

Background

The AVA/TSAA is a special arrangement that provides alternative support to switched egress calls. Any call terminating through switched egress may be completed directly through the Customer Premises Equipment (CPE) from the terminating switch. The access facility used to terminate the calls is owned by the called party and AT&T compensates the access providers for the use of the facility. AVA customers are compensated through discount on their products. TSAA customers receive a portion of the access savings each month.

DBA - Phase 1 (Feature 6777) provided the capability to complete Long Distance (LD) Plain Old Telephone Service (POTS) calls to AVA/TSAA locations over the customer's direct connect trunks when there is an AVA/TSAA Dialed Number (DN) match. It uses the Segmentation Directory (SD) – Phase 2 capabilities to handle the AVA/TSNN DN match in the Line Number Table. If it is the only match on the call in the SD, AVA/TSAA processing is provided.

This feature, DBA – Phase 2, provides the capability to route calls originated by a nodal or a switched access customer [Automatic Number Identification (ANI)-based processing] to an AVA/TSAA location when there is an AVA/TSAA match and an ANI match. DBA – Phase 2 uses SD – Phase 3 capabilities to handle multiple matches (ANI and a DN match) in the SD.

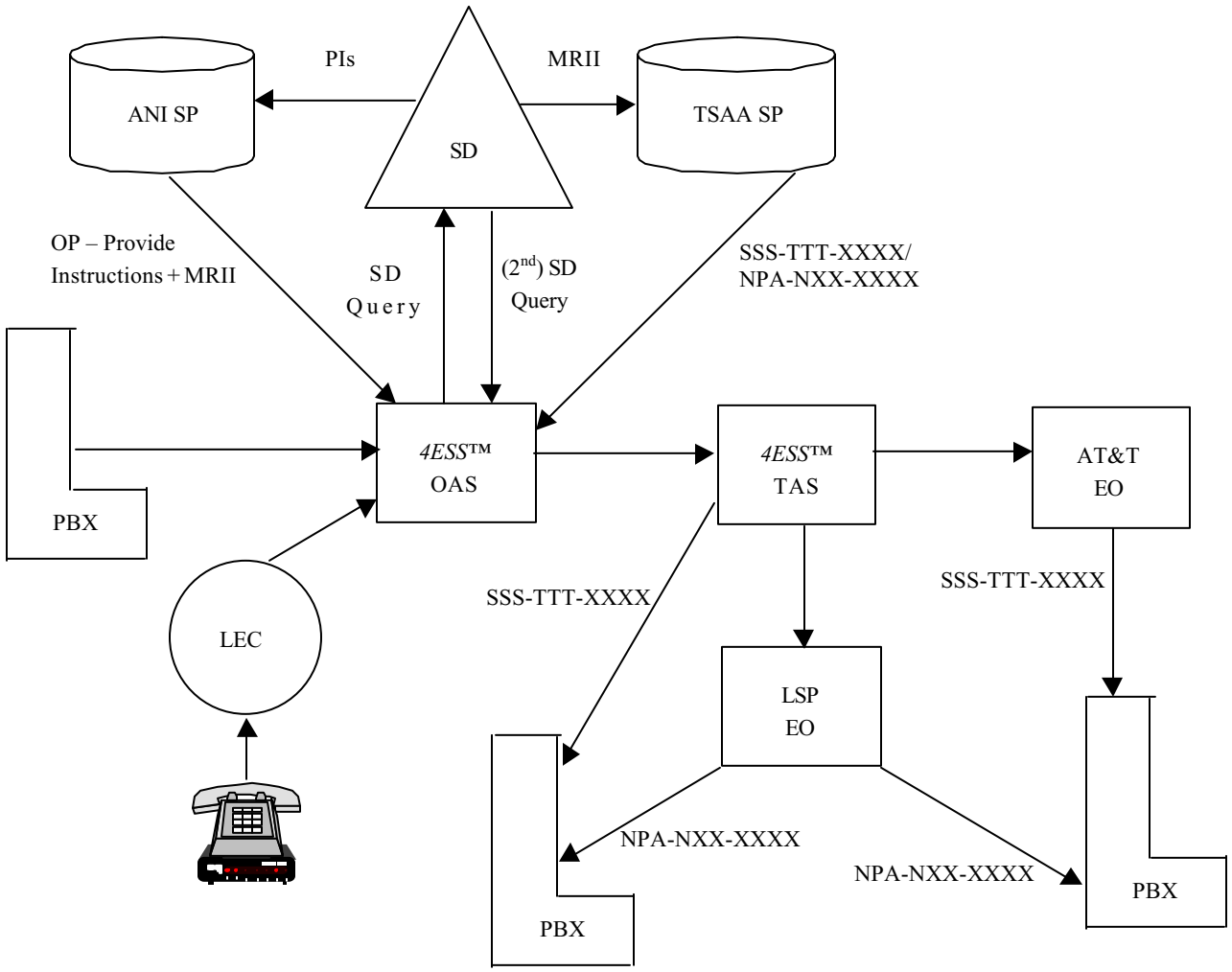
After the deployment of this feature, a customer with business features [Software Defined Network (SDN), Positive Call Processing (PCP), AT&T Network Call Redirection (ANC) making a voice call to an AVA/TSAA location can be routed regardless of how many different matches are found in the SD tables. This feature also provides the Network Access Interrupt (NAI) capability for outbound domestic *MEGACOM* ® telecommunication services calls to an AVA/TSAA location.

Network Architecture

The DBA-Phase 2 architecture illustrated in Figure 6-1 uses the Segmentation Directory-Phase 3 capabilities and routes a call with one of the following to an AVA/TSAA location:

- An ANI and a DN match
- A CIC and a DN match.

Figure 6-1 - DBA—Phase 2 Architecture



Legend:

ANI – Automatic Number Identification
EO – End Office
LEC – Local Exchange Carrier
LSP – Local Service Provider
MRII – Match restriction Indicator Information
OAS – Originating AT&T Switch
OP – Operation
PBX – Private Branch Exchange
SD – Segmentation Directory
SP – Service Processor
TAS – Terminating AT&T Switch
TSAA – Terminating Switched Access Arrangement

Calls obtain AVA/TSAA processing after the higher precedence match is processed at the Service Processor (SP).

The SD receives the SD Query from the *4ESS*™ switch and finds a multiple match (ANI and a DN) in the SD. The SD then sends the Precedence Index (PI) information to the SP. The SP completes the higher precedence match processing. The SP sends a new Transaction Capabilities Application Part (TCAP) Operation-Provide Instructions-Query SD with a new TCAP parameter [Match Restriction Indicator Information (MRII)] to instruct the *4ESS* switch to send an SD Query with a restriction to *Match on DN Only*. This operation is sent only if the SD received the TSAA PI and the Digits Parameter (routing number) is the same as the original DN.

When the *4ESS* switch receives the trigger (TCAP Operation-Provide Instructions-Query SD with MRII), it populates the SD Match Restriction Indicator of the SD Query Information Parameter and sends a second SD Query for the lower precedence DN match. The SD does the restricted match (DN match only) and sends the MRII Parameter to the lower precedence match SP. The SP (TSAA SP) provides the primary and secondary routing information to the *4ESS* switch. The switch then completes the call processing based on the messages provided by both the SPs and routes the call to an AVA/TSAA location.

This feature also makes use of the Switch Capability parameter to provide Network Access Interrupt (NAI) capabilities for non-featured ANI *MEGACOM* ® telecommunications services calls. the AVA/TSAA Customer Account Logic (CAL) sets the Switch Capability Parameter to *Query NAI Apply* if the MRII parameter is **not** received with the value of *Match On DN Only*. The 2DSA sends the information to the *4ESS* switch. The NAI query capability is provided only for ANI customers who do not require feature processing.

ANC calls without featured ANI match (calls that do not need information from the ANI SP) have a new PI value of 24. An ANC PI of 24 is lower than an AVA/TSAA PI of 23. In the SD Mode of Operation (SMO), the SD sends the SP Query to the DN Service Processor for ANC calls with a CIC and DN match (PI=24).

The following call types/features do not receive AVA/TSAA processing even if the SD finds a TSAA DN match:

- SDN – Flexible Routing
- SDN – Off-net Overflow
- Government Emergency Telecommunications Service (GETS)
- ANC – Enhanced CIC Routing (ECR)
- Software defined Data Network (SDDN)
- Global Switched Digital Services (GSDS)
- Switched Digital Services (SDS)
- Switched Digital International (SDI) – Inbound
- Customer calls with adjunct features (Leave a Message)
- Services that are in Present Mode of Operation (PMO).

The respective CAL will not send the TCAP operation-Provide Instructions-Query SD for the Match on DN Only to the *4ESS* switch.

□

Call Flows

SDN Call with ANI and DN Matches

This call flow occurs when an SDN customer makes a call by dialing a 10-digit Plain Old telephone Service (POTS) number. Routing is provided if the Original Called Party Number/DN is the same as the Routing Number and the DN is an AVA/TSAA location.

1. An SDN customer dials a 10-digit number.

2. The call arrives at the Originating AT&T Switch (OAS). An SD Query is sent.

3. The SD receives the SD Query.

4. The SD searches the DFS directory tables using the Service Type Key, Carrier Selection Key, ANI Key, and DN Key, and finds ANI and DN matches. Since the ANI service has a higher PI (SDN PI = 7) than TSAA (PI = 23), the SD sends an SD Query to the

appropriate 2DSA/2NCP that contains the ANI service logic. The PI parameter in the SD Query contains both PIs.

5. The 2DSA/2NCP executes the service logic that may have user interactions. The CAL examines the routing number before sending routing instructions to the OAS.

   a. If the routing number is the same as the original DN and the TSAA PI is received in the SP Query, the CAL sends a TCAP Operation-Provide Instructions-Query SD for the *Match on DN Only* to the OAS along with the routing and billing information. The receipt of the TSAA PI is the trigger to initiate the 2nd SD Query.

   b. If the routing number is not the same as the original DN and the TSAA PI is received in the SP Query, the CAL does not initiate a request for the 2nd SD Query and the call does not receive TSAA processing. The OAS routes the call according to existing SDN feature requirements. **End of Call Flow**.

6. When the OAS receives the SDN Service Processor Service Indicator (SPSI), it performs existing SDN requirements. Before routing the call, the OAS queries the SD for a match on DN only.

7. The SD receives the SD Query. This is the 2nd SD Query for the same call.

If a DN match is...	Then the SD...
Found	Sends an SP Query to the DN SP (AVA/TSAA SP). The SD sends the new Match restriction Indicator Information (MRII) parameter to the TSAA DN SP.
Not found	Sends an SD Response with Proceed Normal to the OAS. The OAS carries out the default handling according to existing requirements [route the call via a Local Service Provider (LSP)]. **End of Call Flow**.

8. The AVA/TSAA2DSA/2NCP finds an AVA/TSAA DN match, and returns the TSAA SPSI and the routing numbers [Primary Action Point Number (APN) and a secondary North American Numbering Plan (NANP)]. An NAI query does not apply for this call because the TSAA SP received an MRII with a value of "Match on DN Only."

9. The OAS routes the call according to existing procedures. The OAS then creates the appropriate Automatic Message Accounting (AMA) record. The TSAA SPSI invokes TSAA logic and the TAS makes a TSAA record if the call is completed with the primary routing number. **End of Call Flow**.

PCP Call with ANI and DN Matches

The following call flow applies to Positive Call Processing (PCP).

1. A PCP customer dials a 10-digit POTS number.

2. The call arrives at the Originating AT&T Switch (OAS). An SD Query is sent.

3. The SD receives the SD Query.

4. The SD searches the DFS directory tables using the Service Type Key, Carrier Selection Key, ANI Key, and DN Key, and finds ANI and DN matches. Since the ANI service has a higher PI (PCP PI = 1) than TSAA (PI = 23), the SD sends an SD Query to the appropriate 2DSA/2NCP that contains the ANI service logic. The PI parameter in the SD Query contains both PIs.

5. The 2DSA/2NCP executes the service logic that may have user interactions. The CAL examines the routing number before sending routing instructions to the OAS.

6. The routing number is the same as the original DN for PCP calls. Since the TSAA PI is received in the SP Query, the CAL sends a TCAP Operation-Provide Instructions-Query SD for Match on DN Only to the OAS along with the routing and billing information. The receipt of the TSAA PI triggers the 2nd SD Query.

7. When the OAS receives the PCP SPSI, it performs existing PCP requirements. Before routing the call, the OAS queries the SD for Match on DN Only.

8. The SD receives the SD Query. This is the 2nd SD Query for the same call.

If a DN match is...	Then the SD...
Found	Sends an SP Query to the DN SP (AVA/TSAA SP). The SD sends the new MRII parameter to the TSAA DN SP.
Not found	Sends an SD Response with Proceed Normal to the OAS. The OAS carries out the default handling according to existing requirements (route the call via an LSP). **End of Call Flow**.

9. The AVA/TSAA 2DSA/2NCP finds an AVA/TSAA DN match. It returns the TSAA SPSI and routing numbers (Primary APN and Secondary NANP). An NAI query does not apply for this call since the TSAA SP received an MRII with a value of "Match on DN Only."

10. The OAS routes the call according to existing procedures. The OAS then creates the appropriate AMA record. The TSAA SPSI invokes TSAA logic and the TAS makes a TSAA record if the call is completed with the primary routing number. **End of Call Flow**.

ANC Call with ANI and DN Matches

The following call flow applies to AT&T Network Connect (ANC). The ANC ANIs are provisioned in 2DSA/2NCP. These customers may also have Enhanced CIC Routing (ECR) features. The ECR calls will not have the TSAA DN match. The call flow below is for an ANC call that has the ANI provisioned in 2DSA and the TSAA DN match.

1. An ANC customer dials a 10-digit POTS number.

2. The call arrives at the Originating AT&T Switch (OAS). An SD Query is sent.

3. The SD receives the SD Query.

4. The SD searches the DFS directory tables using the Service Type Key, Carrier Selection Key, ANI Key, and DN Key, and finds ANI and DN matches. Since the ANI service has a higher PI (PCP PI = 21) than TSAA (PI = 23), the SD sends an SD Query to the appropriate 2DSA/2NCP that contains the ANI service logic. The PI parameter in the SD Query contains both PIs.

5. The 2DSA/2NCP executes the service logic that may have user interactions. The CAL examines the routing number before sending routing instructions to the OAS.

If the routing number is...	Then the CAL ...
Same as the original dialed number, and the TSAA PI is received in the SPQuery	Sends a TCAP operation, Provide Instructions – Query SD for the "Match on DN only" along with the routing and billing information to the OAS. The receipt of the TSAA PI is the trigger for initiating the 2nd SDQuery.
Not same as the original dialed number, and the TSAA PI is received in the SPQuery	Does not initiate a request for the 2nd SD query and the call will not get TSAA processing. The OAS routes the call. **End of call Flow**.

6. When the OAS receives the CS SPSI, it performs existing ANC requirements. Before routing the call, the OAS queries the SD for Match on DN Only.

7. The SD receives the SDQuery.

If a DN match is...	Then the SD...
Found	Sends an SPQuery to the DN SP (AVA/TSAA). The SD sends the new MRII parameter to the TSAA DN SP.
Not found	Sends an SDResponse with Proceed Normal to the OAS. The OAS carries out the Default Handling (routes the call via an LSP). **End of Call Flow**.

8. The AVA/TSAA 2DSA/2NCP finds an AVA/TSAA DN match. It returns the TSAA SPSI and routing numbers (Primary APN and Secondary NANP). An NAI query does not apply for this call since the TSAA SP received an MRII with a value of "Match on DN Only."

9. The OAS routes the call as in Feature 6777. The OAS then creates the appropriate AMA record. The TSAA SPSI invokes TSAA logic and the TAS makes a TSAA record if the call is completed with the primary routing number. **End of Call Flow**.

Non-featured ANC Call with a CIC and DN Match

For non-featured ANC calls, a new PI = 24 is assigned. The PI of the non-features ANC (24) Is lower than the AVA/TSAA PI (PI=23).

1. An ANC call arrives at the OAS.

2. An SD Query is sent.

3. The SD receives the SD Query.

4. The SD searches the DFS directory tables using the Service Type Key, Carrier Selection Key, ANI Key, and DN Key. the SD finds CIC and DN matches.

5. This is a non-featured ANC call to an AVA/TSAA customer. a new PI (=24) is assigned to the non-featured ANC. The PI of the non-featured ANC is lower than the AVA/TSAA (PI=23). The SD sends an SP Query to the AVA/TSAA SP based on both PIs.

6. Based on the ANC PI and TSAA PI, the AVA/TSAA 2DSA/2NCP sends an SD Response to the OAS with CS SPSI, TSAA SPSI, and routing information. It instructs the *4ESS* switch to send an NAI query. The AVA/TSAA 2DSA/2NCP also instructs the *4ESS* switch to perform an NAI query because an MRII parameter with a "Match on DN Only" was not received by the SP.

7. The OAS queries the NAI database and creates the appropriate service AMA record. The TSAA SPSI invokes TSAA logic and the TAS makes a TSAA record if the call is completed with the primary routing number. **End of Call Flow**.

8. If at any time during this processing a response is received form the NAI 2LAC (Local Access Carrier)/2NCP, the *4ESS* switch processes the call per existing NAI requirements. **End of Call Flow**.

Basic Long Distance POTS Call with a DN Match

This call flow is similar to the DSA-Phase 1 call flow. An enhancement has been added to query the NAI. The *4ESS* switch receives a Switch Capability Parameter with Query NAI. With this enhancement, non-featured *MEGACOM* service calls regain the NAI query capabilities.

1. A POTS call is made to an AVA/TSAA customer.

2. The call arrives at the OAS. The OAS sends an SD Query.

3. The SD receives the SD Query and finds a DN match pointing to an SP index associated with the AVA/TSAA 2DSA/2NCP.

4. The SD sends an SP Query to the AVA/TSAA 2DSA/2NCP.

5. A "Wait' SD Response is sent to the *4ESS* switch.

6. The AVA/TSAA SP provides service processing, and sends the TSAA SPSI and two routing numbers to the *4ESS* switch. The routing number consists of a primary routing number indicating the AVA/TSAA direct connect trunk of the customer in APN format and the POTS number for that customer as an overflow routing number to be used if the primary route is busy. The AVA/TSAA 2DSA/2NCP also instructs the *4ESS* switch to perform an NAI query since an MRII parameter with a "Match on DN Only" was not received by the SP.

7. The OAS accepts the service and routing information, performs the NAI query, and continues processing the call. It routes the call in the DEV domain using the APN. The OAS sends the TSAA SPSI value to the TAS in the Generic Operations Parameter (GOP).

8. If the AVA/TSAA trunk of the customer has an idle route available, the call is completed to the customer. The SPSI value triggers the terminating *4ESS* switch to make an AVA/TSAA-type AMA record with AVA/TSAA call and structure codes per existing procedures if the call is completed through the direct connect trunks of the customer. **End of Call Flow**.

9. If the AVA/TSAA trunk of the customer is busy, the call is released back to the OAS.

10. The OAS retrieves the overflow routing number for this call and routes the call based on the POTS number. The SPSI indicator is not sent on the LEC route.

11. If the LEC route has an idle path available, the call is completed to the called party through the LEC route. The TAS makes an Access Charge Verification (ACV) record for the call completion through the LEC. This AMA record is not an AVA/TSAA-type record. **End of Call Flow**.

12. If the LEC route is busy, the call is routed to a No Circuit Announcement (NCA).

13. If at any time during call processing a response is received from the NAI 2LAC/2NCP, the *4ESS* switch processes the call per existing NAI requirements. **End of Call Flow**.

□

Provisioning

Structure Affected *OD4OFCCOPY2*

Item **OD4PF76** is assigned as an office parameter to indicate whether or not the DSA-Based Architecture for AVA/TSAA—Phase 2 feature is enabled. Table 2-A describes the state of PF46 and Table 2-B lists the population rules. This item is populated using Recent Change (RC) Form 809, and verified using Verify Forms 16az and 8j.

Table 6-A - AVA/TSAA On/Off Indicator

Item / State	Word	Disp.	Size	Description
OD4PF76 4ODFB_OFF (=0) 4ODFB_ON (=1)	7	2	1	DSA Architecture for AVA/TSAA—Phase 2 Feature Off—feature is disabled (default) On—feature is enabled

Table 6-B - OD4PF76 Population Rules

RC Form 809 Entry				
Feature Item	**ON or OFF**	**Populates Item**	**With**	**Checks**
PF76	ON	OD4PF76	4ODFB_ON	None
	OFF		4ODFB_OFF	None

Recent Change Form 809 This form is used to enable and disable various feature bits. However, the layout of RC form 809 remains unchanged.

□

Recording (Not Affected)

Network Management (Not Affected)

Maintenance/Troubleshooting

A new field is added to the Call Irregularity Reports (CIRs) generated when SD Default Handling is invoked. This field indicates which SD Query triggered the error (the first or the second).

□

Transition Considerations

Feature Dependencies

The following features must be deployed in the network before this feature is activated:

- Feature 5641—*Segmentation Directory Phase 3* (4E24 Release 1 Generic)
- Feature 6777—*DSA-Based Architecture for AVA/TSAA—Phase 1*
- Feature 6938—*AT&T Digital Link –Phase 5 Architecture* (4E25 Release 1 Generic)
- Feature 7476—*No. 2 Direct Services ANI Handling Enhancements—Phase 1.*

Feature Deployment

It is not necessary for the 4E25 Release 4 Generic to be deployed in all *4ESS* switches in the network for this feature to be fully operational.

Feature Activation

To activate this feature, using RC Form 809, set the feature bit **PF76** to **ON**. To deactivate this feature, set **PF76** to **OFF**.

□

Input/Output Manual Pages

Output Message

The Output Message **TEST:SD** is modified to display the test data associated with the Segmentation Directory. The following measurements are pegged for SD test query:

- SD_QUERY _1B for 1B Processor-generated SD test queries
- SDR_SMO_GOOD_TID for the SD response received by the *4ESS* switch for the SMO call for *Wait* or *Proceed*.

□

A Release Summary - 4E25 Release 4 Generic

Overview

Purpose This appendix summarizes the growth and retrofit documents, input and output messages, the OS interfaces, new or changed alarms, measurements, and the feature activation summary for the 4E25 Release 4 Generic Product Release Document (PRD). This includes Software Change Packages (SCPs) documented in this PRD.

□

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Growth and Retrofit Documents

Growth and Retrofit Documents

The following growth and retrofit documents are impacted by the 4E25 Release 4 Generic:

The hardware for Segmented Memory (Feature 7573i) is to be installed in the 4E25R4 timeframe, although it is not directly associated with 4E25R4. Delivery of Feature 7573i follows it's own schedule. The following documents are associated with Segmented Memory hardware growth:

- 234-353-010 – 1B Processor Growth and Retrofit
- 234-351-003 – 1B Processor Output Message Analysis
- 234-351-004 – 1B Processor Trouble Clearing

□

Input/Output Messages

Input and Output Messages

The following lists include the input and output messages for the 4E25 Release 4 Generic that are feature-related. A notation is included indicating whether each message is new, revised, or deleted. The feature numbers are included in parentheses ( ).

At the end of this document are copies of input and output messages that were not included in the 4E25R1 I/O Manuals.

4ESS Input Messages

The following is a 4ESS input message for 4E25R4. It is included in input manual IM-4B-000-01.

APP:CALLTYPE Revised (7070)

4ESS Proprietary Input Messages

The following are 4ESS proprietary input messages for 4E25R4. These messages will be included in proprietary input/output manual 4B-000-01AC.

VER:CODEGRP-PORT	Revised (7070)
VER:CODEGRP-RSVD	Revised (7070)
VER:MISC-NPRSVD	New (7070)
VER:MISC-SD	New (7217)

4ESS Proprietary Output Messages

The following are 4ESS proprietary output messages for Generic 4E25R4. These messages are included in proprietary input/output manual 4B-000-01AC.

TEST:SD	Revised (7862)
VER:CODEGRP-PORT	Revised (7070)
VER:CODEGRP-RSVD	Revised (7070)
VER:MISC-NPRSVD	New (7070)
VER:SD	New (7217)

□

OS Interfaces

OS Interfaces

Several features in this release interact with various Operation Support Systems (OSSs). The following features interact with various Operation Support Systems, including AMA, CDRP, IRAS, NEMOS, and TOPAS.

Feature	OSS
7217	NEMOS
7592a	NEMOS

□

New or Changed Alarms

New or Changed Alarms

There are no new alarms related to the features documented in the Product Release Document for the 4E25 Release 4 Generic.

□

Measurements/OSOR

Feature 7217 Measurements

Network Management Operations System (NEMOS) Messages 1, 176, and 100 are impacted by this feature. The SD_Querying office parameter setting will no longer be sent to NEMOS. If a Transition Type is already in the Target Table, the Network Management control message to change the status to PMO will be rejected.

Feature 7592a Measurements

NEMOS demand message 48 can request that the *4ESS* switch initiate a test query session to the NRN database..

□

Feature Activation Summary

Feature 564

Improved ISUP Message Header Reduction for *4ESS*™ Switch API Capacity

This feature is activated by software deployment.

Feature 7070

Number Pooling Target Architecture

This feature is activated by software deployment. However, following certain preconditions must exist. This feature must be provisioned using RC Forms 346 and 351.

- RC Form 346 contains the new field **AD1** that allows a different condition to be provisioned.
- RC Form 351 is used to mark the NPA-NXXX as reserved or unreserved.

This feature is always active because of the software changes (no RC form changes needed to activate).

Feature 7217 **Elimination of Dual Provisioning - Phase 1**

This feature is activated in the *4ESS* switch by provisioning RC Form 810 with the PSMO entry (See **Provisioning** Section). For each transition item, the Transition Status must be set to SMO before being set to PSMO.

Feature 7573a **Segmented Memory Base Capability**

This feature is activated by software and hardware deployment.

Feature 7573a is included in Generic 4E25 Release 4, and is activated by software deployment.

Feature 7573i is non-release-specific, but the hardware is to be installed after 4E25 Release 4 and before Generic 4E26 Release 1. Full deployment of Segmented Memory will be accomplished with Feature 7573, to be described in the Product Release Document for 4E26 Release 1.

The hardware of this feature may be also be deployed either in conjunction with or after the 1B Pre-Fetch Feature (7255i). These options will be described in the Product Release Document for 4E26 Release 1. Hardware growth is covered in Lucent Practice 234-353-010, 1B Processor Growth/Degrowth.

Feature 7592a **Routing Database Architecture for International Routes**

This feature is activated by software deployment.

Feature 7862 **Direct Services ANI-Based for Access Value Arrangements/Terminating Switched Access Arrangement—Ph. 2**

To activate this feature, using RC Form 809, set the feature bit **PF76** to **ON**. To deactivate this feature, set **PF76** to **OFF**.

□

B Acronyms and Abbreviations

Purpose This appendix lists acronyms and abbreviations used throughout this document.

Acronym/Abbreviation	Definition
2DSA	No. 2 Direct Services – ANI Based
2NCP	No. 2 Network Control Point
2NCPAS	2 Network Control Point Administration System
AAP	Announcement Administrative Process
AATOS	Alternate Access to Operator Services Signaling
ACD	Automatic Call Distributor
ACG	Automatic Call Gapping
ACG	Automatic Code Gap
ACK	Acknowledge
ACM	Address Complete Message
ACP	Action Control Point
ACV	Access Charge Verification
AD3	Additional Data 3
ADA	ANC Dial-Around
ADL	AT&T Digital Link
ADL2	AT&T Digital Link 2
ADL4	AT&T Digital Link 4

ADL5	AT&T Digital Link 5
ADL-V	AT&T Digital Link-Phase V
ADR	Alternate Destination Routing
AILS	Automatic Inward Line Screening
AIN	Advanced Intelligent Network
AIWS	AT&T International Wholesale Service
ALA	Adjunct Logical Address
ALAMO	AT&T Local Access Management Option
ALI	Automatic Line Identification
ALN	AT&T Local Network
AMA	Automatic Message Accounting
ANC	AT&T Network Connections
ANI	Automatic Number Identification
ANICAR	Automatic Number Identification Call Attempt Record
ANI-TT	ANI Trigger Table
ANSI	American National Standards Institute
ANT	Alternate Number Transition
AP	Attached Processor
API	Attached Processor Interface
APN	Action Point Number
APS	Attached Processor System
AR	Automatic Routing
ARN	Advanced Remote Node
ARS	Automatic Route Selection
ASCIT	AT&T Service/Call ID Type
ASN	AT&T Switched Network
AT	Access Tandem
ATM	Asynchronous Transfer Mode
ATP	AT&T Trigger Platform
ATP	Alternate Transport Provider
ATV	AT&T Trigger Validation
AVA	Access Value Arrangement
BCD	Binary Coded Decimal
BCIC	Basic Carrier ID Code
BCN	Backbone Concentrator Node
BCSN	Billing Call Sequence Number
BHCA	Busy Hour Call Attempt
BILLDATS	Billing Data Acquisition and Transfer System
BLC	Base Level Cycle
BLDS	Business Long Distance Service
BMD	Business Markets Division
BN	Billing Number

BWM	Broadcast Warning Message
CAC	Carrier Access Code
CAC	Customized Announcement Capabilities
CADCR	Centralized Alternate Direct Call Routing
CADCS	Call Attempt Data Collection Service
CAL	Customer Account Logic
CAL	Customer Application Logic
CAL	Customer Application Language
CAMA	Centralized Automatic Message Accounting
CAS	Competitive Access Provider
CAUCS	Centralized Announcement Update Control System
CBIS	Cincinnati Billing Information System
CC	Country Code
CCIS	Common Channel Interoffice Signaling
CCS	Hundred-Call Seconds
CCT	Continuity Check Transceiver
CCT	Continuity Check Test
CDDS II	Call Detail Data System II
CDN	Calling Directory Number
CdPN	Called Party Number
CDRP	Call Detail Recording Platform
CIC	Carrier Identification Code
CID	Carrier Identification
CIM	Call Irregularity Message
CIP	Calls in Progress
CIP	Carrier Identification Parameter
CIR	Call Irregularity Report
CLD	Consumer Long Distance
CLEC	Certified Local Exchange Carrier
CLF	Clear Forward
CLLI	Common Language Location Identifier
CMC	Cellular Mobile Carrier
CMD	Consumer Market Division
CN	Calling Number
CN	Charge Number
CNI	Common Network Interface
CNRDB	Common Network Routing Database
COS	Class of Service
COT	Continuity Test Successful
CPA	Common Platform Adjunct
CPC	Calling Party Category
CPE	Customer Premises Equipment

CPED	Call Processing Execution District
CPN	Calling Party Number
CPPA	Calling Party Pays Airtime
CPPS	Call Processing Process Support
CPR	Call Processing Number
C-PRI	Commercial PRI
CPUP	Call Processing Upchained
CR	Call Register
CRB	Crankback
CRI	Carrier Routing Index
CS	Carrier Solutions
CSC	Circuit Selection Capability
CSCI	Circuit Selection Capability Indicator
CSCR	Circuit Selection Capabilities Routing
CSI	Carrier Selection Information
CSMC	Consumer Services Management Center
CSMS	CMD Service Management Center
CSN	Carrier Solutions Nodal
CSRO	Customer Specific Routing Option
DARICS	Data Acquisition Recording, Integrated Communications System
DAS	Digit Analysis Selector
DB	Data Base
DCI	Dual-serial Channel Interface
DCIC	Domestic Carrier ID Code
DCN	D-Channel Nodes
DDD	Direct Distance Dialing
DECOS	Domestic End-to-End Class of Service
DEMS	Dynamic Engineering Mechanized System
DFS	Directory Function Server
DHNR	Dynamic Non-Hierarchical Routing
DID	Direct Inward Dialing
DIF	Digital Interface Frame
DL	Digital Link
DLN	Direct Link Node
DMS	Database Management System
DN	Destination Number
DN	Dialed Number
DNHR	Dynamic Non-Hierarchical Routing
DNIS	Dialed Number Identification Service
DNST	Dialed Number Services Type
DNTT	Dialed Number Trigger Table
DOD	Direct Outward Dialing

DOW	Day of Week
DP	Dial Pulse
DPM	Dual Ported Memory
DPSMO	Delete Permanent SD Mode of Operation
DS1	Digital Signal 1
DSA	Direct Services ANI
DSA	Direct Services Application
DSAS	Direct Signaling Assignment System
DSCH	Dual Serial Channel
DSD	Direct Services Dialing
DSN	Destination Switch Number
DSTAT	Domestic Status
DTIM	Display TNM Integrator Module
DTMF	Dual Tone Multi-Frequency
DTO	Dedicated Trunk Sub-group Option
DWAN	Dedicated Wide Area Network
EA	Equal Access
EACC	Equal Access Circuit Code
EBAF	Extended Bellcore AMA Format
ECD	Equipment Configuration Database
ECOS	End-to-End Class of Service
ECR	Enhanced CIC Routing
EDP	Elimination of Dual Provisioning
EDR	Efficient Data Representation
EO	End Office
EOLN	End Office Local/Nodal
EON	End Office Nodal
EOT	End of Transmission
ERI	Egress Route Number
ERPI	Routing Pattern Identity
ESB	Emergency Services Board
ESCR	Enhancements for Special CIC Routing
ESI	Egress Switch Indicator
ESRF	Enhancements to Special Routing Features
ESS	Electric Switching System
EUSEC	Enhanced USEC
EV	Edge Vehicle
FAI	Foreign Administration Identity
FCC	Federal Communications Commission
FEALN	Far-End AT&T Local Network
FEAREA	Far End AREA
FEN	Far End Network
FENPA	Far End Numbering Plan Area

FEOFC	Far End Office Code
FG-C	Feature Group C
FG-D	Feature Group D
FHC	Final-Handling Code
FHT	Final Handling Treatment
FI	Feature ID
FO	Feature Options
FRF	Feature Request Form
FRS	Feature Requirement Specifications
FSD	Feature Specification Document
FVSR	Force Via Switch Routing
FVSRTT	FVSR Trigger Table
GAP	Generic Address Parameter
GETS	Government Emergency Telecommunications Service
GNFMC	Global Network Fraud Management Center
GOP	Generic Operations Parameter
GSDN	Global Software Defined Network
GSDS	Global Switched Digital Service
GSS	GTN Support System
GTT	Global Title Translation
HAS	Hand-off AT&T Switch
HICAP	High Capacity
HOT	HICAP Originating Treatment
HU	High Usage
I/O	Input/Output
I800	International 800
IAM	Initial Address Message
IBSS	In-Band Supervisory Signaling
IBU	In-Band Unit
ICDR	International Call Detail Recording
ICIC	International Carrier ID Code
ICLD	International Consumer Long Distance
ICTRC	International Call Trouble Receipt
IDB	INWATS Database
IDDD	International Direct Distance Dialing
IE	Information Element
II	Inter-exchange Identifier
ILD	International Long Distance
ILEC	Incumbent Local Exchange Company
INC	Industry Numbering Committee
INPA	Interchangeable NPA
INR	Intelligent Network Register

INRG	International Routing Group
INWATS	Inward Wide Area Telephone Service
IP	Internet Protocol
IPGW	IP Gateway
IRAS	Integrated Routing Assignment System
IRN	Integrated Ring Node
ISAIC	Improved Service Announcement & Information Collection
ISAIC SCS	Improved Service Announcement and Information Collection Service Circuit System
ISC	Incoming Signaling Characteristic
ISC	International Switching Center
ISDN	Integrated Services Digital Network
ISET	Inbound Services Emergency Translation
ISTAT	International Status
ISUP	ISDN User Part
IT	Internet Telephony
ITAMAC	International Transit, Accounting, Maintenance and Analysis of Calls
ITE	Installation Test Equipment
ITFDB	Industry Toll-Free Data Base
ITFS	International Toll Free Service (formerly I800)
ITN	Integrated Test Network
IT-T	International Telecommunications Union-Telecommunications
IVT	International Voice Transit
IWZ1	International World Zone 1
IXC	Interexchange Carrier
JIP	Jurisdiction Information Parameter
LACIDs	Logical Access Identifiers
LAN	Local Area Network
LANI	Local Automatic Number Identification
LATA	Local Access and Transport Area
LATT	Loop Around Transceiver Test
LCC	Local Carrier Connecting
LCC	Local Exchange Carrier Connecting
LCVT	Local Service Validation Test
LD	Long Distance
LDIT	Local Digit Interpreter Table
LDNC	Long Distance Nodal Concentration
LDS	Long Distance Service
LEC	Local Exchange Carrier
LERG	Local Exchange Routing Guide

LNP	Local Number Portability
LRN	Location Routing Number
LSP	Local Service Provider
LTD	Local/Toll Differentiation
LVL	Level
MAP	Mass Announcement Platform
MCC	Master Control Complex
MCS	Micro Control Store
MCT	Multiple Carrier Treatment
MDN	Miscellaneous Distribution Number
MDR	Multiple Destination Routing
MF	Multi-Frequency
MLSS	Machine Load and Service Summary
MML	huMan Machine Language
MMOC	Minicomputer Maintenance Operations Center
MOC	Maintenance Operations Center
MOSS	Modified Operator Services Signaling
MPS	Message Processing System
MR	Modification Request
MRII	Match Restriction Indicator Information
MRT	Multiple Routing Treatment
MSI	Market Segmentation Indicator
MSN	Miscellaneous Scanner Number
MTP	Message Transfer Part
MTP	Message Transfer Protocol
MUP	MCC Utility Processor
MW	Megaword
NAI	Network Access Interrupt
NAMACC	National AMA Control Center
NANP	North American Numbering Plan
NAP	Network Adjunct Platform
NCA	No Circuit Announcement
NCA	No Circuits Available
NCC	Network Control Center
NCP	Network Control Point
NCP&D	Network Capacity Planning & Delivery
NCS	Network Control Point
NDIG	Next Digit
NE	Non Emergency
NEMOS	Network Management Operations System
NESAC	National Electronic Systems Assistance Center
NESV	Network Edge Switch Vehicle
NFM	Network Fault Management (formerly TNM)

NI-2	National ISDN-2
NID	Network ID
NIS	Network Implementation Services
NN	Nation Number
NOC	Network Operations Center
NOC-INM	Network Operations Center-International Network Management
NOE	Network Operations Enterprise
NP	Node Processor
NPA	Numbering Plan Area
NPAC	Number Portability Administration Center
NPP	Network Provisioning Platform
NRA	Network Remote Access
NRAMS	Network Remote Access Monitoring System
NRM	Network Recording Management
NRN	Network Routing Number
NS	Network Services
NSA	Network Service Automator
NSAC	Non-Simultaneous Authorization Code
NSD&M	Network Service Delivery & Maintenance
NSF	Network-Specific Facilities
NSM	Network Services Maintenance
NSN	Network Switch Number
NSP	Network Services Provisioning
NTM	Non-Traditional Market
NVT	Network Verification Testing
NWM	Network Management
NWZ1	Non-World Zone 1
OAID	OSPS Access ID
OAR	Originating Access Record
OAS	Originating AT&T Switch
OCC	Other Common Carrier
OCC	Originating Country Code
OCDD/RT	On-line Call Detail Data/Real Time
OCTCPFAI	Originating Carrier/Terminating Carrier Pair Foreign Administration Identification
ODA	Office Data Assembler
ODAD	ODA Data
ODMS	Office Data Management System
ODP	Office Dialing Plan
OE	Operator Express
OGT	Outgoing Trunk
OHD	Off-Hook Delay

OLI	Originating Line Information
OLI	Originating Line Identifier
OLP	Off-Line Processor
OOB	Out of Band
OSC	Outgoing Signaling Characteristic
OSI	Operator Systems Indicator
OSPS	Operator Services Position System
OSPSID	Operator Service Position System Identification
OSSs	Operation Support Systems
OST	Originating Station Type
OTP	Operations Technical Plan
P.CarrierID	Primary Carrier ID
PABO	Protected, Disk-backed, API-Accessible, ODA-Generated
PAS	Public Announcement System
PASP	Public Safety Answering Point
PBAO	Protected, Simplex, Disk-backed, API accessible and ODA
PBX	Private Branch Exchange
PC	Point Code
PCP	Positive Call Processing
PDIT	Prefix/Feature Digit Interpreter Table
PDN	Pseudo-Destination Number
PDV	Pre-Defined Variable
PECC	Product Engineering Control Center
PI	Precedence Index
PIC	Presubscribed Inter-exchange Carrier
PLU	Positive Lookup Table
PMO	Present Mode of Operation
PNLCT	Prohibit No-Loopback Continuity Check Test
POP	Point of Presence
POTS	Plain Old Telephone Service
PRD	Product Release Document
PRI	Primary Rate Interface
PRIT	Primary Rate Interface Type
PRT	Proportional Routing Treatment
PS-ALI	Public Safety-Automatic Location Identification
PSE	Program Store Expansion
PSMO	Permanent SD Mode of Operation
PSTN	Public Switched Telephone Network
PTC	Primary Toll Carrier
PTT	Post Telephone and Telegraph
PUC	Public Utilities Commission

PV	Performance Verification
PVC	Permanent Virtual Circuits
QDRS	Quantum Data and Routing System
QH	Quiet Hear
RA	Route Advance
RAM	Random Access Memory
RAO	Revenue Accounting Office
RBC	Rate Based Control
RC	Recent Change
RC/V	Recent Change/Verify
RCAS	Recent Change Administration System
RCC	Radio Common Carrier
RDB	Routing Data Block
RICS	Recorded Information Collection System
RLC	Release Complete Message
RN	Routing Number
RP	Redirecting Party
RPC	Regional Processing Center
RPI	Route Pattern Index
RSI	Route Selection Index
RTNR	Real-Time Network Routing
RUAS	Remote Utility Access System
SAFER	Split Access Flexible Egress Routing
SAN	Service Circuit System Announcement
SC	Structure Code
SCCP	Signaling Connection Control Protocol
SCP	Software Change Package
SCS	Service Circuit System
SCSI	Small Computer Systems Interface
SCU	Service Circuit Unit
SD	Segmentation Directory
SDDN	Software Defined Data Network
SDE	Software Development Environment
SDI	Switched Digital International
SDDN	Software Defined Data Network
SDN	Software Defined Network
SDN	Switched Digital Network
SDN NRA	Software Defined Network-Network Remote Access
SDQ	SD Query
SDR	SD Response
SDS	Switched Digital Service
SDTT	Segmentation Directory Transition Type

SDX	Subsequent Digit Index
SG	Software Generation Data
SI	Service Identity
SI	Service Index
SIC	Service Indicator Code
SID	Station Identification (CPN)
SII	Service Identity Index
SMO	SD Mode of Operation
SMO	Segmentation Mode of Operation
SMS	Service Management System
SNAS	Signaling Network Administration System
SNET	Southern New England Telephone
SNOW-R	Service NOW-Routing
SNOW-T	Service NOW-Trunking
SOP-P	Signaling Operations Platform-Provisioning
SP	Service Processor
SPC	Switching and Permuting Circuit
SPSI	Service Processor Service Indicator
SPU	Signal Processing Unit
SS7	Signaling System 7
SSC	Special Service Code
SSN	Subsystem Number
SSO	Sub-System Overload
SSU	Standard Service Unit
STIM	Satellite TNM Integrator Module
STP	Signaling Transfer Point
STP	Trunk Sub-group
SUR	Standard Usage Record
TA	Telecommunications Administrator
TAN	Trunk Appearance Number
TAS	Terminating AT&T Switch
TBN	True Billing Number
TCAP	Transaction Capabilities Application Part
TCC	Technology Control Center
TCS	Transfer Connect Service
TEC	Terminal Equipment Center
TG	Trunk Group
TG-4	Translation Guide *4ESS*
TIM	Tandem NFM Integrator Module
TNM	Total Network Management
TNS	Transit Network Selection
TOD	Time of Day
TOP	Task Oriented Practice

TOT	Type of Trunk
TOW	Time of Week
TP	Target Party
TPC	Transport Capability
TS	Time Slot
TSAA	Terminating Switched Access Arrangement
TSG	Trunk Subgroup
TSI	Time Slot Interchange
TSM	Tandem NFM Surveillance Module
TSN	Trunk Scanner Number
TT	Transition Type
TT	Transport Tariff
TTA	Terminating Traffic Architecture
TTUSFI	Transport Tariff Usage Sensitive Feature Indicator
TV	True Voice
UGTT	Universal Global Title Translation
UIFN	Universal International Freephone Number (Format = 800+8-digits)
UMIU	Unidentified Message Investigation Unit
US	Utility System
USDS	Universal Subscriber Data Structure
USDS	Universal Subscriber Data Service
USEC	Universal Services Echo Canceler
USI	User Service Information
UTA	Universal T1.5 Access
UUI	User to User
VAS	Via AT&T Switch
VCA	Vacant Code Announcement
VCR	Voicepath Cancellation Rate
VoIP	Voice Over Internet Protocol
VPA	Voice Path Assurance
VRUs	Voice Response Units
VSSID	Voice Storage System Identity
VTNS	Virtual Telecommunications Network Service
VTOC	Volume Table of Contents
WATS	Wide Area Telephone Service
WATSBN	WATS Billing Number
WCS	Windowed Call Store
WEFOS	WATS Eight Hundred Family of Services
WS	Workstation
XTSI	Expanded Time Slot Interchange
Y2K	Year 2000

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C Master Index of Product Release Documents (PRDs)

Overview

Purpose This appendix contains a complete list of all features documented in Product Release Documents (PRDs). Features are listed by number, name, and PRD number. Revisions to a PRD are shown as, “Rev1, Rev2,” etc. New issues of a PRD are shown as, “Iss 2,” etc.

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3333	Program Store Expansion – 1B Processor	234-090-221AC
3333a	Program Store Expansion	234-090-211AC
3334	Flexible SDN Manual Control	234-090-174AC
3349	Dynamic Automatic Congestion Control, The Final Phase	234-090-172AC
3355	Extended Stores (XS) – 1B	234-090-211AC
3355a	Extended Stores (XS) – 1B	234-090-201AC
3356	1B File Expanded Program Store Disk/XS	234-090-201AC
3356a	1B File Restructuring	234-090-201AC
3410	Hard-To-Reach for SAFER Modification	234-090-174AC
3420	ISDN Extended D-Channel	234-090-201AC
3433	Increased Number of Links in Link Set	234-090-172AC
3446	Alternate Destination Routing-Ph 2	234-090-171AC
3448	Change Under Minimum Billable Call Duration Threshold	234-090-171AC
3460	PCP ANI Table Expansion	234-090-171AC
3472	Non-ISUP Public Switched Telephone Network Architecture	234-090-164AC
3472a	Non-ISUP PSTN GSDN Arch (RC)	234-090-181AC
3474	GSDN International Private Numbering Plan Option	234-090-164AC
3500	User-Entered Code Information Element Protocol Upgrade	234-090-164AC
3503	SDS Early Address Complete Message Elimination	234-090-164AC
3512	TOPAS Summary Trunk Turndown Improved Interface	234-090-163AC
3519	Transport Tariff/Usage Sensitive Feature Indicator Field Expansion	234-090-164AC
3520	Remote Adjunct Call Handling (REACH)	234-090-174AC
3520b	Remote Adjunct Call Handling (REACH)	234-090-181AC
3532	SDN-NPA Split Announcement	234-090-164AC
3534	Expand Class Of Service Parameters	234-090-171AC
3534a	Expand Class Of Service Parameters-RC	234-090-181AC
3541	RTNR Support for SSN/SRAS (Govt RTNR CAP)	234-090-181AC
3559	Carrier Routing Platform Network Management Enhancement	234-090-164AC
3564	Interchangeable NPA Additions	234-090-171AC
3566	Express Connect ANI Query	234-090-164AC
3567	Dynamic Load Control Trunk Assignment Expansion	234-090-164AC
3572	PBX High and Wet Wink Release	234-090-163AC
3587	SDN-Universal GTT Database	234-090-173AC
3590	GSDN CCS7 ISUP Network Interconnect Interface	234-090-172AC
3595	Positive Call Processing Release 3 List Transaction	234-090-172AC
3595a	Positive Call Processing Release 3 Provisioning	234-090-174AC
3597	I800 Carrier Specific Routing-Ph 2	234-090-173AC
3599	High Speed A/E Links	234-090-211AC
3604	International Calling for WATS over Network Interconnect	234-090-162AC

3606	Carrier Screening for 800 Number Portability	234-090-172AC
3607	Domestic Hard-To-Reach Data Modification for USADirect	234-090-172AC
3609	1+Directory Link	234-090-201AC
3618	Direct Connect Trunk Sub-Group Lockout	234-090-163AC
3630	Switch Based Network Call Denial	234-090-174AC
3636	Post Dialing Delay Reduction	234-090-201AC
3637	TCAP End Message Fix for NRA Improved Sequence	234-090-163AC
3640	FHC on the AMA Record	234-090-163AC
3649	Improved Recent Change for GTT	234-090-164AC
3650	Improved Recent Change for GTT	234-090-174AC
3662	Total Office Blocking Status Exchange	234-090-172AC
3664	Call Disposition Module on the Inbound AMA Record	234-090-164AC
3669	GSDN/SDN International Digits-Ph 2	234-090-173AC
3670	Remote Utility Access System (RUAS)	234-090-181AC
3671	GSDN/SDN International Digits-Ph 1	234-090-164AC
3680	ISDN 56 Kbps Routing	234-090-164AC
3741	SDN-NRA New Billing Structure Codes	234-090-164AC
3742	Far-End Network Service Category Treatment	234-090-173AC
3753	1B Processor Contingency (Undiagnosed 1A)	234-090-181AC
3776	CCITT5 Proceed To Send Signal	234-090-172AC
3777	Inbound I800 Call Prompter	234-090-173AC
3779	PROM Kit for Link Interface Encryption Removal	234-090-173AC
3795	iPCC-USEC Individual Per-Call Control	234-090-183AC
3800	GSDN Ph 2 International World Zone 1 Dedicated Access	234-090-172AC
3801	4E18 INPA Enhancements	234-090-181AC
3806	GTT Provisioning	234-090-173AC
3819	Carrier Specific Routing for ISTS	234-090-203AC
3840	SDN Digital Radio Avoidance Routing	234-090-173AC
3843	SDN NRA-Inclusion of ANI in AMA Record ANI	234-090-172AC
3844	PCP-ANI Table Limit Expansion	234-090-181AC
3847	Temporary Signaling Connection Controls	234-090-181AC
3852	AAP Maintenance Enhancements and AAP/SCANS	234-090-181AC
3857	SDN-10288 Access to SDN	234-090-202AC
3860	Alternate Signaling Transport Network NI Backup	234-090-173AC
3863	Telecommunications Relay Service Carrier of Choice	234-090-173AC
3867	Force Time-Critical Calls for AT&T NetProtect Service	234-090-172AC
3868	Prefix NPA Digits for Reroute Control	234-090-172AC
3876	ABC Architecture APN Dialing Requirements	234-090-173AC
3880	GETS-Government Emergency Telecommunications Service	234-090-184AC
3883	SDDN 700 Number Outward Dialing	234-090-172AC
3887	Integrated Access Terminating Switch Access Arrangement	234-090-184AC
3891	ANI/DN Per Call Control of Voice Enhancement	234-090-183AC
3892	RMS Interface to Network Validation Test AMA Collecting and	234-090-173AC

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3898	3B/DLN Recent Change Inhibit Enhancements	234-090-172AC
3899	10-Digit GTT Expansion-Inbound	234-090-173AC
3904	Call Complete With DTMF Congestion	234-090-172AC
3917a	10-Digit GTT Support – Ph 1	234-090-174AC
3917b	10-Digit GTT Support – Ph 2	234-090-182AC
3931	A-Law/U-Law Modification Requirement/CCITT7	234-090-172AC
3932	ABC ANI Trigger Table Field Redefinition	234-090-173AC
3935	PCP Using 2NCP/NSCX	234-090-173AC
3943	PCP R2.0 Enhanced PAV	234-090-173AC
3944	ANI Table Change for SB NCP MR	234-090-174AC
3949	10-Digit GTT Table Expansion-Long Term	234-090-182AC
3956	SCS Yes or No for EFH	234-090-181AC
3957	Inbound I800 Separation of Country Code	234-090-183AC
3963	Network Access Interruption	234-090-184AC
3964	Universal Subscriber Data Structure—USDS	234-090-211AC
3967	Balancing Load Sharing	234-090-211AC
3968	Easy Reach 700 Call Forwarding Service	234-090-173AC
3978	RETract Reach to Access Toll-RETREAT	234-090-184AC
3991	BLDS Services – Call Disposition Recording	234-090-182AC
4012	Inbound Automated GTT	234-090-174AC
4013	II Digit Information Delivery	234-090-174AC
4018	End-to-End Class Of Service/AP	234-090-201AC
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4019	5-Digit Dialing on SDN-Ph 1	234-090-174AC
4020	Authorization Code Digits Encoding	234-090-174AC
4026	Network Call Denial for International	234-090-174AC
4029	Multiple Trunk Group Assignment	234-090-174AC
4032	Self-Provisioning GTT	234-090-182AC
4032a	Self-Provisioning GTT Deferred Requirement	234-090-183AC
4033	Alternate Signaling Transport Network Gateway/NI Backup	234-090-183AC
4043	XTSI—Release 2	234-090-221AC
4050	ASTN Forced Intertoll Routing	234-090-174AC
4053	ODA Datalinking (ODAD)-Ph 1	234-090-201AC
4057	1A/1B Processor RC Throughput Improvement	234-090-182AC
4058	Collision of REL Messages	234-090-174AC
4099	Type Digital Interface Unit(TDIU) Redefinition	234-090-211AC
4107	Calling Party Number/Billing Number Delivery Enhancement	234-090-181AC
4117	Domestic PSTN Routing CAP-GSDN	234-090-181AC
4129	Alternate Signaling Transport Network Enhanced ISUP	234-090-184AC
4133	Direct Link Node Throughput Increase-Ph 1	234-090-201AC
4136	Never Miss a Call/ADR on Busy	234-090-182AC
4168	Alternate Signaling Transport Network 56 Kbps for UNITEL	234-090-183AC

4170	Inbound I800 Service Overseas Access	234-090-183AC
4180	INUP Echo Control-Ph 1	234-090-181AC
4180a	INUP Echo Control-Ph 2	234-090-182AC
4183	Automatic Speech Recognition-Ph1	234-090-203AC
4183a	Automatic Speech Recognition—AAP Software Update	234-090-203AC
4186	Universal Global Translator Fall-out Report	234-090-183AC
4189	Enhanced I800 Service Using USADirect	234-090-183AC
4201	1+Directory Link for BLDS PCP	234-090-201AC
4203	ANI Trigger Table Capacity Enhancement-Ph 1	234-090-201AC
4206	ANI Trigger Table Capacity Enhancement-Ph 2	234-090-211AC
4213	Increase International Point Codes	234-090-182AC
4215	UNITEL Network Identification Code	234-090-183AC
4216	Number Portability-AT&T	234-090-223AC
4218	ABC Terminating Switch	234-090-182AC
4219	SOP to 4ESS Interface Changes	234-090-223AC
4232	Multiple 4ESS Switch Network Announcements	234-090-183AC
4232a	Multiple 4ESS Switch Network Announcements-Ph 2	234-090-202AC
4243	Nonobtrusive D-Channel Node Pump	234-090-201AC
4268	ISAIC Usage for the GETS	234-090-184AC
4271	Network Queuing Courtesy Response	234-090-184AC
4273	Verify Messages for Routing Table	234-090-184AC
4275	SDDN-I for UNITEL	234-090-202AC
4290	Inbound Services 10-Digit GTT Recent Change Packing	234-090-184AC
4291	Inbound Services 10-Digit GTT Data Consistency Check	234-090-184AC
4292	Inbound Services 10-Digit GTT File Transfer	234-090-184AC
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4310	4E20 ODA Requirements for CDR	234-090-201AC
4312	SDN-NRA Sequential Dialing using ATP	234-090-201AC
4314	Generic Indicators in Tracer Records	234-090-202AC
4317	Service Count Tracer Records Unanswered/Mutilated	234-090-202AC
4322	Foreign-Billed 800 Service	234-090-183AC
4323	AT&T Circuit Switched Data	234-090-203AC
4324	Easy Reach 1+500 Dialing Plan	234-090-202AC
4344	Backward Release After ACM-INUP Trunks	234-090-184AC
4355	SDN ANI Trigger Table Indicator	234-090-201AC
4364	Switched Digital Screening	234-090-213AC
4366	Recent Change Administration System-Ph 2	234-090-202AC
4366a	Recent Change Administration System-MR to Add CLLI	234-090-184AC
4367	SRVT Compatibility With Feature 3957	234-090-184AC
4369	Cellular Mobil II Sets 62/63 ID	234-090-204AC
4372	ANI Trigger Data Proc Data Expn	234-090-203AC
4376	ISDN Operational Improvements	234-090-203AC
4388	IXC-Megacom 800 Service to an IXC With ANI	234-090-184AC

4401	IXC-Megacom 800 Service to an IXC with ANI Ph 2 Inband	234-090-184AC
4404	International Call Detail Record for SDN-Canada Cross-Border	234-090-184AC
4430	International Billing Number Screening-Ph 2	234-090-202AC
4438	Elimination of Via Routed Calls	234-090-221AC
4448	Clearback Suppression/Brazil	234-090-201AC
4449	Tones Announcement on TUP & ISUP	234-090-202AC
4464	CDRP & Multiple 4ESS Streams	234-090-221AC
4472	New Generation-ODA Provisioning Tools	234-090-201AC
4474	SDN 1+10D Dialing on Dedicated Access	234-090-202AC
4477	2NCP/CADCR Svc Assists/Handoff	234-090-212AC
4482	Foreign-Billed 800 Service-Ph 2	234-090-184AC
4506	IXC With ANI Billing Improvements	234-090-203AC
4507	Clearback Suppression Ph 2 Brazil	234-090-203AC
4508	SDN and GETS Service Mixing	234-090-184AC
4529	800 Services Account Codes	234-090-214AC
4530	I800 Billing for Mexico	234-090-202AC
4538	4ESS SPGTT Table Expansion	234-090-202AC
4539	SDI 1536 Kb/s Service	234-090-204AC
4540	SDN Access to SDN-MR to Feature 3857	234-090-202AC
4555	AT&T Trigger Platform Jr – Busy/Ring No Answer MR	234-090-202AC
4557	SDN NRA Using ASR	234-090-211AC
4559	Handling 4ESS SPI ASTN NI Backup	234-090-204AC
4564	Segmentation Directory	234-090-222AC
4569	PCP 10-Digit Delivery to PCP 2NCP	234-090-201AC
4570	Universal 1.5 Access	234-090-204AC
4575	Interim 1+500 Via the 4ESS	234-090-202AC
4579	PZM Triggered iPCC Gateway	234-090-202AC
4590	Call Forwarding for SDN/800	234-090-214AC
4591	SS7 Access to Nodal Services	234-090-203AC
4601	NAI ACG Type of Digit Coding	234-090-184AC
4603	Continuity Check on INUP Circuits 1877	234-090-203AC
4632	CDR Data Tracer Count MR	234-090-203AC
4642	GSDDN International On-Net Data Service	234-090-203AC
4650	10-Digit Trunk Group Rating Number	234-090-204AC
4655	SDN – ASTN/SGGTT Interworking	234-090-203AC
4656	800 Growth to Include 888	234-090-204AC
4658	PCP for Equal Access Cellular	234-090-204AC
4659	Calling Party Number Delivery	234-090-203AC
4673	SDN Customer Outage Protection	234-090-213AC
4677	iPCC Gateway Maintenance Enhancement	234-090-203AC
4677a	iPCC Gateway Maintenance Enhancement	234-090-203AC
4686	Carrier Identification Code Delivery	234-090-212AC
4692	Automatic Call Distributor in the Network-Ph 2	234-090-203AC

4694	Direct Link Node Capacity Upgrade-Ph 2	234-090-221AC
4696	RMS/4ESS Switch Testing Enhancement	234-090-212AC
4706	DTMF Inband ANI Delivery	234-090-204AC
4719	PACR on AT&T Trigger Platform Jr. Rls 1.0	234-090-204AC
4721	PACR to POTS Billing Fix	234-090-211AC
4739	Project Zebra (National Directory Assistance)	234-090-211AC
4741	AT&T Advanced 800 Automatic Speech Recognition Using Call Store	234-090-212AC
4744	PCP for CMC Service Type	234-090-203AC
4751	Improve NEMOS to 4ESS Interface	234-090-212AC
4751a	Merging RNMS and 4ESS/NEMOS-Ph 2	234-090-214AC
4753	MEGACOM 800 IXC With ANI-MR 02	234-090-203AC
4754	XTSI (Was 4043)	234-090-213AC
4760	ISC Composite Circuit Enhancement	234-090-212AC
4760a	ISC Composite Circuit Enhancement	234-090-221AC
4768	4ESS Signaling Management Enhancement	234-090-223AC
4769	Announcement Set B on SCS	234-090-214AC
4769a	Announcement Set B on SCS	234-090-221AC
4776	End-to-End Class Of Service Areas Increase	234-090-221AC
4776a	End-to-End Class Of Service MR 94-02 and 95-01	234-090-212AC
4779	Check Application Status	234-090-211AC
4785	Inbound I800 CSR & Enhanced Call Origination	234-090-214AC
4789	XTSI Rls 3 In-band Supv Signaling	234-090-242AC
4789L	XTSI Rls 3 In-band Supv Signaling	234-090-242AC
4790	CDRP Tracer Count Consistency	234-090-214AC
4795	USDS Phase 1.1 Support for TNR Triggers	234-090-212AC
4800	CDRI Communications Web	234-090-221AC
4800i	CDRI Communications Web-Ph 2 Tracking Encryption	234-090-214AC
4801	SCS Automatic Speech Recognition-Ph 2	234-090-214AC
4815	Disaster Recovery Enhancement-Rls 1	234-090-223AC
4815a	Disaster Recovery Enhancement-Rls 1	234-090-222AC
4815i	SDRP 1B Code	234-090-222AC
4815j	SDRP 3B Code	234-090-222AC
4839	SNPA Expansion and Handling NPA Improvement	234-090-221AC
4839	SNPA Expansion/Handling NPA Improvement LEC	234-090-221AC
4850	Foreign-Billed 800-Ph 3	234-090-212AC
4866	Routing Data Block List Verify Tool	234-090-213AC
4867	Transfer Connect Service 3.0	234-090-213AC
4870	CDRP Software Release Synchronization	234-090-204AC
4875	PACR-ATP OutofBand Enhancements for VRU-BT	234-090-213AC
4880	Segmentation Directory-Ph 2 Pkg1	234-090-231AC, Ad1
4880a	Segmentation Directory-Ph 2 Pkg2	234-090-232AC
4880b	Segmentation Directory-Ph 2 Pkg3	234-090-233AC

4880c	Segmentation Directory-Ph 2 Pkg4	234-090-234AC
4893	Universal T1.5 Access-MR to Feature 4570	234-090-204AC
4898	Service Identity Traffic Data Collection	234-090-224AC
4898b	Service Identity Traffic Data Collection	234-090-223AC
4899	High Speed Links T1 Maintenance Enhancement	234-090-222AC
4903	CCS7 Signaling Transport Footprint	234-090-213AC
4903a	CCS7 Signaling Transport Footprint-Encryption Unit	234-090-213AC
4904	Domestic ECOS Class of Service	234-090-231AC
4920	Dual Sessions for Network Elements-NEMOS	234-090-223AC
4923	Calling Party Pays Airtime-CALIPER	234-090-213AC
4924	Foreign-Billed 800-Ph 4	234-090-213AC
4928	TCAP Parameter for Transmission Enhancement Control	234-090-222AC
4940	GETS Initial Operational Capacity	234-090-213AC
4941	ADR Recording Changes for Interaction with TCS-NAP	234-090-224AC
4957	Per Announcement Information Data (PAID)	234-090-212AC
4958	Global Carrier Selection	234-090-212AC
4965	Billing Fix-Cellular Access/SDN-Ph 2	234-090-212AC
4967	Automatic Routing	234-090-241AC
4967a	Automatic Routing Ph 1 (Pre-ACM)	234-090-233AC
4967b	Automatic Routing Ph 2 (Post-ACM)	234-090-233AC
4967i	Automatic Routing-Pre-AR Structure Work	234-090-231AC
4990	Associate Announcement Number with FHC 1592	234-090-212AC
4991	Removal of Routing Prefix Codes Network Security	234-090-212AC
4995	Recent Change Administration System-MR to Feature 4366	234-090-211AC
4997	Enhanced DIF-E1 Internal Bus Mismatch Diagnostics	234-090-222AC
5000	Single Entry MRTT Counts for SAFER	234-090-211AC
5003	API Capacity Improvements	234-090-221AC
5004	ANI Data Service Vu	234-090-214AC
5005	Assignment I/O for 4ESS Switch	234-090-233AC
5013	1B Processor Tape Unit Elimination	234-090-221AC
5013i	Cable Design for TUC Elimination	234-090-222AC
5020	Short Term D-Channel Expansion	234-090-214AC
5020a	Short Term D-Channel Expansion	234-090-231AC
5024	SUME for 800/900 Number Translations	234-090-224AC
5041	XTSI TM Gen DS3 Alarms Maintenance Channel	234-090-214AC
5051	LYNX Software Upgrade	234-090-213AC
5060	Positive Lookup Table in WCS	234-090-231AC
5064	Idle Link Bandwidth Adjustment NM Controls	234-090-212AC
5072	MR to Univ T1.5 Access	234-090-212AC
5111	XTSI in I/O Msg—5111a,b,c for LEC	234-090-221AC
5111a	XTSI I/O Message Specification	234-090-214AC
5111b	XTSI in I/O Messages	234-090-221AC
5111c	XTSI in I/O Messages	234-090-222AC

5113a	XTSI Software Update Tool – Ph 1	234-090-221AC
5113b	XTSI Software Update Tool – Ph 2	234-090-223AC
5123	Network Support for 8YY	234-090-231AC
5129	Inspection II Digits/Dialed Number	234-090-231AC
5131	Service Control After 2 D3Sus Fail	234-090-221AC
5153	Consolidated 0+/- & 1+ Hotel Traffic	234-090-222AC
5158	Carrier Completion Rate Feature	234-090-241AC
5161	Switch Disaster Recovery Enhancements	234-090-234AC
5163	Positive Lookup Tools (PLUTO)	234-090-231AC
5198	CIC Based Resale	234-090-221AC
5198a	CIC Based Resale	234-090-231AC
5222	3B21D APS Upgrade—Hardware	234-090-231AC
5222i	3B21D APS Upgrade—Software	234-090-231AC
5241	Segmentation Directory Black Hole Detection & Recovery	234-090-224AC
5247	Call Turn Around	234-090-214AC
5252	800 Service DSD Fix	234-090-221AC
5308	Consolidated Access Traffic-Ph 1	234-090-224AC
5341	QuietHear MR for 109 Test Lines	234-090-221AC
5349	Correction of Collusion INUP Release Messages	234-090-222AC
5352	Modify Connected Number Screening	234-090-222AC
5353	Universal International Free Phone	234-090-223AC
5361	Interim D-Channel Expansion—HW	234-090-231AC
5370	Local Service for Nodals on 4ESS-Ph 1	234-090-222AC
5370i	Local Svc for Nodals on 4ESS-Ph 1	234-090-251AC
5371	Local Service for Nodals on 4ESS-Ph 2	234-090-223AC
5371a	Local Service for Nodals on 4ESS-Ph 2	234-090-224AC
5376	SS7 Node Buffer Size Modification	234-090-214AC
5399	Foreign-Billed 800 Service Enhancement-Ph 5	234-090-223AC
5399r	Foreign-Billed 800 Service Enhancement-Ph 5	234-090-223AC
5460	NAI-Ph 3A 4ESS & CDRP	234-090-222AC
5460a	NAI-Ph 3A MR to 5460	234-090-233AC
5505	XTSI Rapid Restore	234-090-223AC
5506	Selective Blocking of Codesets	234-090-224AC
5528	Early Answer for GETS Inbound International Calling Opt 2	234-090-223AC
5529	Interim Speech Recognition ISIAC Call Prompt	234-090-214AC
5531	MR to SI Data Collection-5-minute NEMOS Data	234-090-223AC
5531i	MR to SI Data Collection-TDAS Data	234-090-224AC
5532	Project Radar – Ph 2	234-090-231AC
5538	End Office Local Nodal (AT&T)	234-090-232AC
5563	SCS Software Update Tool	234-090-224AC
5568	9 Gigabyte Disk Units for SCS	234-090-224AC
5578	Transfer Connect Service-MR to Feature 4867	234-090-221AC
5579	SDN Access Via Network Access Platform	234-090-221AC

5589	Modification to 4557	234-090-221AC
5591	Set S DTMF to ASR Switching	234-090-221AC
5594	CPN Anomaly Report	234-090-221AC
5600	XTSI Rls 3—Digital Svc Circuits	234-090-242AC
5600L	XTSI Rls 3—Digital Svc Circuits	234-090-242AC
5613	ISDN Called Party Number Protocol Upgrade	234-090-221AC
5636	SNPA Expansion-MRs to Feature 4839	234-090-221AC
5641	Segmentation Directory Ph 3, Rel 1	234-090-242AC
5641a	Segmentation Directory Ph 3, Rel 2	234-090-243AC, Iss 2
5641b	Segmentation Directory Ph 3, Rel 3	234-090-243AC, Iss 2
5645	Local Service for Nodals Ph 2.1	234-090-224AC
5668	HSL Status Indication Busy Enhancement	234-090-223AC
5670	NAI for Direct Connect Calls	234-090-222AC
5681	Number Portability Open Portability Verify	234-090-223AC
5700	CAT FSD MRs (to Feature 5308)	234-090-224AC
5701	AAP ISDN Loopback Capability	234-090-222AC
5704	ODA Datalinking Software Tool Enhancement	234-090-221AC
5711	API Message Header Reduction-Ph 2	234-090-231AC
5724	Extend ACM Timer for CCS7	234-090-221AC
5742	Improved Codelist Verify	234-090-224AC
5754	Network Access Interruption and Directory Assistance Resell	234-090-221AC
5766	Advantis Default OLI	234-090-222AC
5773	SDN NRA Tollfree Dialed Number for CSCR	234-090-222AC
5791	Long-Term “CIC-Based NAI”	234-090-223AC
5794	SCS Announcement Seconds Expansion	234-090-224AC
5794j	SCS Announcement Seconds Expansion	234-090-224AC
5802	CIC Code Exp for 5198 & 5754	234-090-221AC
5805	Inbound Services 10-Digit GTT Table Expansion	234-090-224AC
5816	CSCI Recording	234-090-231AC
5817	International Originating Satellite Rules Modification	234-090-222AC
5822	Enhanced CIC Routing for Operator Services	234-090-233AC
5835	AAP Disk Copy Enhancement	234-090-224AC
5840	1+CIC Wholesale Features-Ph 1	234-090-224AC
5843	ISDN Operational Enhancements	234-090-242AC
5844	Announcement Set D on ISAIC	234-090-224AC
5844a	Announcement Set D on ISAIC	234-090-231AC
5874	B/RNA Cellular Monitor	234-090-224AC
5876	Segmentation Directory Recovery	234-090-243AC, Iss 2
5887	GCS Capability Near-Term Modification	234-090-222AC
5892	Transfer Connect Capacity 97	234-090-234AC
5898	Code Group Restructure	234-090-231AC
5899	MR on Feature 4323	234-090-224AC
5906	Improved Calling Party # Anomaly Report	234-090-241AC

5907	Cellular B/RNA for TC/ER Service	234-090-224AC
5915	Nodal Egress Sequential Trunk Hunt	234-090-231AC
5917	Expansion of 4ESS OSPS Table	234-090-231AC
5918	Inband Q.931 Signaling for Carrier Solutions Nodal Customers	234-090-232AC
5922	Foreign Admin Identifier Expansion	234-090-241AC
6072	OCTCP & CIC Table Expansion	234-090-231AC
6130	2000 A.D. (AT&T)	234-090-233AC
6137	Domestic ECOS: New RLI & Route Control-MR to Feature 4904	234-090-232AC
6142	Additional Support for 4ESS Local for Nodal	234-090-233AC
6142i	Additional Support for Local Nodal—OSOR	234-090-231AC
6143	Enhanced CIC Routing for Directory Assistance	234-090-233AC
6156	4ESS CMS/ESS Audit Enhancement	234-090-231AC
6164	Payphone Compensation—Ph 2	234-090-224AC
6190	AMA Recording Fix for GETS	234-090-231AC
6231	No-Loopback Continuity Check	234-090-234AC
6266	Enhanced CIC Routing for International Calls	234-090-233AC
6272	Performance Enhancements for Segmentation Directory	234-090-233AC
6273	Tones & Announcements on Unsuccessful Calls After Call Prompting	234-090-242AC
6296	Open Segment 2 of 1B File Store-3BPAS	234-090-241AC
6328	Carrier Completion Rate (5158) MR	234-090-241AC
6330	4E AT&T Digital Link LRN Capabilities	234-090-232AC
6363	Increase Number of MCT Tables	234-090-231AC
6375	Number Portability Ph 1 Architecture Extension	234-090-234AC
6413	OAS Call Processing on Inter-Toll Trunks	234-090-242AC
6426	SD CIC Based Proc & SDN Default Handling	234-090-233AC
6428	Automatic Routing (4967) MR	234-090-241AC
6468	Early Disconnect Project Radar	234-090-231AC
6483	ECOS Support of GNS Call Type (MR-3142)	234-090-231AC
6487	Int'l Toll Free Service TEST:TCAPDSD Support FSID Routing	234-090-233AC
6492	TCAP Parameter for Trans Enhancement Control	234-090-242AC
6494	Digital Link Local Service Measurement Capabilities	234-090-234AC
6500	Carrier Solutions Enhanced CIC-Based Maintenance	234-090-234AC
6512	Domestic End-to-End Class of Service	234-090-234AC
6516	4ESS Switch Routing RC/V Improvements	234-090-241AC
6516a	4ESS Routing RC/V Improvements	234-090-234AC
6516b	4ESS Routing RC/V Improvements	234-090-234AC
6516c	4ESS Routing RC/V Improvements	234-090-234AC
6516i	4ESS Routing RC/V Improvements	234-090-234AC
6563	Universal Int'l Free Phone Numb Enhancement	234-090-234AC
6605	TSAA/AVA with DL Phase 4	234-090-234AC
6617	SDN and 1+DL Feature Interaction MR	234-090-231AC
6620	MR to 5840—1+CIC Wholesale	234-090-234AC

6624	ANI Replacement on Cellular Roamer 8YY Calls	234-090-234AC
6625	Digital Link "0ZZ" on Backhauled 8YY Calls	234-090-234AC
6629	EOLN-PMO Processing of EOLN PCP Calls	234-090-234AC
6638	Ignore Calling Party # on ITFS Calls	234-090-231AC
6643	4E—NEMOS Link Upgrade	234-090-242AC
6657	MR to ADR Recording Change (4941)	234-090-234AC
6665	MR to Payphone Compensation, Phase 2	234-090-231AC
6685	Digital Link Phase 3 Equal Access Capability	234-090-242AC
6745	Terminating Traffic Architecture	234-090-233AC
6750	Dial 1 Service Integration	234-090-242AC
6757	NAI Call Redirection & ATP	234-090-233AC
6759	MR to SI Traffic Data FSD (4898, 5531)	234-090-234AC
6762	MR to 5371 FSD	234-090-242AC
6763	Impaired Via Avoidance	234-090-243AC, Iss 2
6777	DSA Based Architecture for TSAA/AVA	234-090-234AC
6881	4ESS SCS Cache Change to 256 Milliseconds	234-090-242AC, Rev1
6888	Capacity Relief on 1B Processor Memory	234-090-251AC
6896	700 PIC Verification Announcement for CSP	234-090-242AC
6915i	4ESS Switch Signaling Capacity Improvements	234-090-253AC
6938	AT&T Digital Link Phase V Architecture	234-090-251AC
6947	Segmentation Directory ND/CDN Digits Length	234-090-234AC
6955	MR to Digital Link Phase 2.1	234-090-234AC
6982	Expand ANI Trigger Table Structure Size	234-090-241AC
6989	Enhanced Scheduling and Executive Control	234-090-253AC
6990	AT&T Digital Link Ph 3 Equal Access Dial Around Capability	234-090-243AC, Iss 2
7028	Voice Over IP (VoiP) Mexico)	234-090-242AC
7038	AT&T Digital Link Ph 3 911 Capabilities	234-090-243AC, Iss 2
7063	MR to SDN Overflow Routing on Busy with ADL4	234-090-242AC, Rev 1
7064	Further Expansion of OSPS Access ID Table	234-090-251AC
7067	RTNR-Type of Origination for WZ1	234-090-243AC, Iss 2
7070	Number Pooling Target Architecture	234-090-254AC
7102	Removal of Forced Overflow on User Busy for Trunks with Access IDs	234-090-241AC
7106	Non Emergency (NE) Initial Address Message (IAM) Priority Level at the Egress of the Network	234-090-253AC
7148	AT&T Digital Link Announcements – Part 1	234-090-243AC, Iss 2
7157	International Point Code Expansion	234-090-241AC
7181	Removal of NSN for ADL LNP Processing	234-090-241AC
7217	Elimination of Dual Provisioning - Phase 1	234-090-254AC
7221	Expanding Route Skip/Cancel-(To,From) Controls	234-090-243AC, Iss 2
7222	4ESS Domain Value Output Enhancement	234-090-242AC
7236	DECOS Incoming Circuit Immediate Release	234-090-243AC, Iss 2
7240	Modified FG-D Support for ANC	234-090-242AC

7240a	Modified FG-D Support for ANC	234-090-243AC, Iss 2
7254	Restructure and Grow the Call Register	234-090-251AC
7285	ANC II/OLI Screening – Phase 1	234-090-243AC, Iss 2
7294	DCI at OLP	234-090-242AC
7312	Killing Fraudulent SDN NRA Calls	234-090-251AC
7323	ANC NANP CIC Routing	234-090-251AC
7335	Transfer Connect on ATP-Out of Band Enhancement	234-090-251AC
7344	1-Digit Translation Table Expansion	234-090-251AC
7429	Mandatory 10-Digits on LSP_LOCAL Trunks – Part 1	234-090-243AC, Iss 2
7429a	Mandatory 10-Digits on LSP_LOCAL Trunks – Part 2	234-090-251AC
7477	ALAMO (AT&T Local Access Management Option)	234-090-243AC, Iss 2
7497	AT&T Network Connection (ANC) Enhancements to Special Routing Features	234-090-253AC
7501	Expand LACIDs to Support 856 D-channels	234-090-251AC
7506	NAI Call Redirection and LNP Interaction	234-090-243AC, Iss 2
7520	ANC Dial-Around (ADA) Blocking	234-090-243AC, Iss 2
7573a	Segmented Memory Base Capability	234-090-254AC
7592	Network Routing and Numbering Database for Intl. Routing	234-090-253AC
7592a	Routing Database Architecture for International Routes	234-090-254AC
7619	MR to 5645 – Digital Link Ph 2.1 – 8YY Screen	234-090-243AC, Iss 2
7633	MR to 7038 – Support for Deletion of CPN over AATOS Trunks	234-090-243AC, Iss 2
7673	ANC ECR for Operator Services UTA Update	234-090-243AC, Iss 2
7701	Procedure for Growing ATP TSGs	234-090-251AC
7815	Modified No-Loopback Continuity Check (7815)	234-090-251AC, Rev 1
7862	Direct Services ANI-Based for Access Value Arrangements/ Terminating Switched Access Arrangement--Phase 2	234-090-254AC
7880	Location Routing Number (LRN) Recipient Switch Coding of Forward Call Indicator (FCI) for Interswitch Routing of DN	234-090-253AC
7883	Billing Number for Switched Data Video Gateway (SDVG)	234-090-253AC

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ID . . . . . APP:CALLTYPE
WORK CENTER . . MOC
GENERIC . . . . . 4E25 Rel. 4 and later
APPLICATION . . 4E
TYPE . . . . . Input

VALID CALLTYPES

TABLE 1: 3-DIGIT TRANSLATOR (HT43DIG): POTS SUBDOMAINS
TABLE 2: CALLTYPE VERSUS DOMCLASS/DOMAIN
TABLE 3: TRANSLATOR
TABLE 4: CALLTYPE POPULATION

TABLE 1

3-DIGIT TRANSLATOR (HT43DIG): POTS SUBDOMAINS

	SNPA 10-Digit Routing				Traditional Routing						
Calltype	AC	IT	SNPA1-31	SNNAPCA1-31a	AC	IT	ITNAC	SNPA1b	SNNAPCA1b	SNPAA2-8	SNNAPCA2-8a
AIN	N	N	N	N	Y	Y	Y	Y	Y	Y	N
CRB	S	S	S	S	S	S	S	S	S	S	S
CTWI	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
DELETE	N	N	N	N	Y	Y	N	Y	N	Y	N
DSD	S	S	S	S	S	S	S	S	S	S	S
DSN	S	S	S	S	S	S	S	S	S	S	S
EAR	S	S	S	S	S	S	S	S	S	S	S
FHT	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
GNS	S	S	S	S	S	S	S	S	S	S	S
IND	N	N	Y	N	N	Y	N	Y	N	Y	N
INWATS	S	S	S	S	S	S	S	S	S	S	S
IRA	Sc	S	S	S	Sc	S	S	S	S	S	S

Y=Valid calltype, N=Invalid calltype, S=Valid via the DIGSUP Calltype (CTWI)
a: Calltypes besides PFX and FHT are only populated in these translators if the code is a Universal Treatment Code
b: SNPA1=POTSHNPA, SNPA1NAC=HNPANAC
c: Only IRA CALLDATA=RTRDOM is valid in AC subdomain.

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TABLE 1 (continued)

3-DIGIT TRANSLATOR (HT43DIG): POTS SUBDOMAINS (continued)

	SNPA 10-Digit Routing				Traditional Routing						
Calltype	AC	IT	SNPA1-31	SNNAPCA1-31a	AC	IT	ITNAC	SNPA1b	SNNAPCA1b	SNPA2-8	SNNAPCA2-8a
MCT	S	S	S	S	S	S	S	S	S	S	S
MMT	S	S	S	S	S	S	S	S	S	S	S
MRT	S	S	S	S	S	S	S	S	S	S	S
MTA	S	S	S	S	S	S	S	S	S	S	S
NDIG	N	N	N	N	N	N	N	N	N	N	N
NVD	N	N	N	N	N	N	N	N	N	N	N
PAS	S	S	S	S	S	S	S	S	S	S	S
PHNPA	N	N	N	N	N	N	N	N	N	Y	Y
PLU	N	N	N	N	N	N	N	N	N	N	N
PREFIX	N	N	Y	Y	N	N	N	Y	Y	Y	Y
PRT	S	S	S	S	S	S	S	S	S	S	S
RDB (DET)	S	S	S	S	S	S	S	S	S	S	S
RNHR	S	S	S	S	S	S	S	S	S	S	S
SD1	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SD2	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SD3	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SDX (SDIGM)	S	S	S	S	S	S	S	S	S	S	S
SSP	S	S	S	S	S	S	S	S	S	S	S
TEL	S	S	S	S	S	S	S	S	S	S	S
TST	S	S	S	S	S	S	S	S	S	S	S
TTS	S	S	S	S	S	S	S	S	S	S	S
TTSGNS	S	S	S	S	S	S	S	S	S	S	S

Y=Valid calltype, N=Invalid calltype, S=Valid via the DIGSUP Calltype (CTWI)
a: Calltypes besides PFX and FHT are only populated in these translators if the code is a Universal Treatment Code
b: SNPA1=POTSHNPA, SNPA1NAC=HNPANAC
c: Only IRA CALLDATA=RTRDOM is valid in AC subdomain.

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TABLE 2

CALLTYPE VERSUS DOMCLASS/DOMAIN

Domclass==>	DOM											ATNS	GSDN	ITRP		APN	NSR	INTL	No Domclass	
Domain==>	POTSAC N	POTSAC Y	NON POTS*	SF00..SF39	SDNA	DEV & DED	DEC64 & DER64	BBC DEC0 DER0 DEC1 DER1	NHOC & NH1C	INCD	N64C & N64R	ATNS & STCD	GSDN	IVT	I56D I64C I384 IH1C	APN	NSR	INTO INTT	VRFY	DAVT
Calltype																				
AIN	Y	Y	Ya	Y	N	N	N	N	N	N	Yb	N	N	N	N	N	N	N	N	N
CRB	S	S	S	S	S	S	S	N	N	N	S	N	N	N	N	S	S	N	N	N
CTWI	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N
DSD	S	S	S	N	S	S	S	S	S	S	S	N	S	N	N	S	N	N	N	N
DSN	S	S	S	N	S	S	S	S	S	S	S	N	S	S	S	S	N	Sd	N	N
EAR	S	S	S	S	S	S	S	S	S	S	S	N	N	N	N	N	N	N	N	N
FHT	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
GNS	S	S	S	S	S	S	S	S	S	S	S	N	S	S	S	S	N	S	S	N
INWATS	S	S	S	N	S	S	N	N	N	N	S	N	N	S	N	S	S	N	N	N
IRA	S	S	S	N	S	S	S	N	N	S	S	S	N	S	S	S	N	N	N	N
MCT	S	S	S	N	S	S	S	S	S	S	S	N	S	S	S	S	N	S	N	N
MMT	S	S	S	S	S	S	S	N	N	N	S	N	N	S	N	S	N	N	N	N
MRT	S	S	S	N	S	S	S	S	S	S	S	N	S	S	S	S	N	S	N	N
MTA	S	S	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
NDIG	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	Y	N	N
NVD	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	Y
PAS	S	S	S	N	S	S	N	N	N	N	S	N	N	N	N	S	S	N	N	N
PLUc	N	Y	Y	N	N	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	N	N	N	N
PRT	S	S	S	N	S	S	S	S	S	S	S	N	N	S	S	S	S	S	N	N
RDB(DET)	S	S	S	S	S	S	S	S	S	S	S	N	S	S	S	S	S	S	N	N
RNHR	S	S	S	N	S	S	S	S	S	S	S	N	N	S	S	S	N	N	N	N
SD1	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y
SD2	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y
SD3	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y
SDX(SDIGM)	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	N	N
SSP	S	S	S	N	S	S	S	S	S	N	S	S	N	S	S	S	S	N	N	N
TEL	S	S	S	N	S	S	N	N	N	N	S	N	N	N	N	S	S	N	N	N
TST	S	S	S	N	S	S	S	S	S	N	S	N	S	S	S	S	N	N	S	N
TTS	S	S	S	S	S	S	S	S	S	S	S	N	N	S	S	S	N	N	N	N
TTSGNS	S	S	S	S	S	S	S	S	S	S	S	N	N	S	S	S	N	N	N	N

Y=Valid calltype, N=Invalid calltype, S=Valid via the DIGSUP Calltype (CTWI)
*: 20-83 (excluding IVT=81)
a: AIN Restricted to Domains 20-69 and 82.
b: AIN only valid in N64C domain
c: PLU calltype is only valid at NTD=6
d: DSN is only valid via MRT Calltype

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TABLE 3

TRANSLATOR

Calltype	S-Digit Translator Number of S-Digits			1-Digit Trans	DIGSSUP	PRT Trans	MRT Trans	MCT Trans	AIN Trans	PLU Trans	Manual SDX HT4CODEGRP
	Auto One S-Digit	Auto Two S-Digit	Auto Three S-Digit								
AIN	Y	Y	Y	N	N	N	N	N	N	N	N
CRB	S	S	S	N	Y	S	N	N	N	S	S
CTWI	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y
DELETE	N	N	N	N	N	N	N	N	N	N	N
DSD	S	S	S	N	Y	N	N	N	N	N	S
DSN	S	S	S	Sb	Y	S	S	S	N	S	S
EAR	S	S	S	N	Y	S	N	N	N	S	S
FHT	Y	Y	Y	Y	N	N	N	N	N	Y	Y
GNS	S	S	S	S	Y	S	N	N	S	S	S
IND	N	N	N	N	N	N	N	N	N	N	N
INWATS	S	S	S	N	Y	N	N	N	N	N	S
IRA	S	S	S	N	Y	N	N	N	N	N	S
MCT	S	S	S	S	Y	N	N	N	N	S	S
MMT	S	S	S	N	Y	N	N	N	N	S	S
MRT	S	S	S	S	Y	N	N	S	N	S	S
MTA	S	S	S	N	Y	N	N	N	N	S	S
NDIG	N	N	N	Y	N	N	N	N	N	N	N
NVD	Y	Y	Y	N	N	N	N	N	N	N	N
PAS	S	S	S	N	Y	S	N	N	N	Y	S
PHNPA	N	N	N	N	N	N	N	N	N	N	N
PLU	N	N	Y	N	N	N	N	N	N	N	N
PREFIX	N	N	N	N	N	N	N	N	N	N	N
PRT	S	S	S	S	Y	N	S	S	N	S	S
RDB (DET)	S	S	S	S	Y	S	S	S	S	S	S
RNHR	S	S	S	N	Y	N	N	N	N	S	S
SD1	N	N	Y	N	N	N	N	N	Y	Ya	N
SD2	N	N	Y	N	N	N	N	N	Y	Ya	N
SD3	N	N	Y	N	N	N	N	N	Y	Ya	N
SDX (SDIGM)	S	S	S	S	Y	N	N	N	S	S	S
SSP	S	S	S	N	Y	N	S	N	N	N	S
TEL	S	S	S	N	Y	S	N	N	N	N	S
TST	S	S	S	N	Y	N	N	N	N	Y	S
TTS	S	S	S	N	Y	S	N	N	N	N	S
TTSGNS	S	S	S	N	Y	S	N	N	N	N	S

Y=Valid calltype, N=Invalid calltype, S=Valid via the DIGSUP Calltype (CTWI)
a: SD1/2/3 Calltypes are only valid as the default routing treatment.
b: Valid only within an MCT block.

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TABLE 4

CALLTYPE POPULATION

CALL TYPE	CALL DATA	AD1	AD2	AD3	ADC	SC	CHI	DESEP	DNST
CRB	CRBI			optional	req'd	optional	optional	1-255	optional
DSD	IQ10			optional	req'd (10)	opt (DSD)	optional		optional
	SQ7			optional	req'd (7)	opt (DSD)	optional		optional
	SQ10			optional	req'd (10)	opt (DSD)	optional		optional
	IN10			optional	req'd (10)	opt (DSD)	optional		optional
	IN12			optional	req'd	opt (DSD)	optional		optional
	ITS			optional	req'd	opt (DSD)	optional		optional
	GSDN			optional	req'd(8-15)	opt (DSD)	optional		optional
	SDN7			optional	req'd (7)	opt (SDN)	optional		optional
	SD10			optional	req'd (10)	opt (SDN)	optional		optional
	ARA			optional	req'd (10)	opt (DSD)	optional		optional
	IQAR			optional	req'd (10)	opt (DSD)	optional		optional
	RDOM	DOM1		optional	req'd (10)	opt (DSD)	optional		optional
	NRAS			optional	req'd (10)	opt (DSD)	optional		optional
	D1ST			optional	req'd (10)	opt (DSD)	optional		optional
	S710			optional	req'd (7,10)	opt (DSD)	optional		optional
	SO12			optional	req'd	opt (DSD)	optional		optional
	DSD1			optional	req'd	opt (DSD)	optional		optional
	DSD1-DSD12			optional	req'd	opt (DSD)	optional		optional
DSN	NSN			optional	req'd	optional	optional	1-255	optional
EAR	RDBI			optional	req'd	optional	optional	1-255	optional
FHT	FHTI	FHT							
GNS	RDBI	GN	GNSC entry	optional	req'd	optional	optional	1-255	
INW	blank	TFNPA		optional	req'd (10)	opt (INW)	optional		optional
	blank,0-999			optional	req'd (10)	opt (INW)	optional		optional
IRA	EAORI				req'd	optional	optional		optional
	EAORI				req'd	optional	optional		optional
	EASXP				req'd	optional	optional		optional
	EASIN				req'd	optional	optional		optional
	TRD81				req'd	optional	optional		optional
	TRDIN				req'd	optional	optional		optional
	RTRIN	DOM2			req'd	optional	optional		optional
	D2RIN	DOM2			req'd	optional	optional		optional
	RTRDOM	DOM3			req'd (10)	optional	optional		optional
	EASDN	DOM4			req'd	optional	optional		optional
	D3RDOM	DOM3			req'd (13)	optional	optional		optional
LSI	APN	LATA	STATE						
	NANP	LATA	STATE						

( ) - indicates standard entries < > - comments

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TABLE 4 (continued)

CALLTYPE POPULATION (continued)

CALL TYPE	CALL DATA	AD1	AD2	AD3	ADC	SC	CHI	DESEP	DNST
MCT	MCTI			optional	req'd	optional	optional	1-255	optional
MMT	RDBI			optional	req'd	optional	optional	1-255	optional
MRT	MRTI	blank,INH		optional	req'd	optional	optional	1-255	optional
NVD	NVDI								
PAS	12 digit #			optional	req'd (7,10)	optional	optional	1-255	optional
PRT	PRTI			optional	req'd	optional	optional	1-255	optional
RDB	RDBI		blank,OP0-OP7	optional	req'd	optional	optional	1-255	optional
RNR	RDBI			optional	req'd	optional	optional	1-255	optional
SDX	SDINDEX	SDTYPE	blank,CTR						
SD1 SD2 SD3	SDINDEX SDINDEX SDINDEX	SDTYPE SDTYPE SDTYPE							
SSP	RT	TOS	CID		req'd	optional	optional		
	RTOOY	TOS	CID		req'd	optional	optional		
	RTCOIN	TOS	CID		req'd	optional	optional		
	NCP12	TOS	CID		req'd (9,12)	optional	optional		
	DB	TOS			req'd (10)	optional	optional		
	DB7	TOS			req'd (7)	optional	optional		
	DBOOY	TOS			req'd (10)	optional	optional		
	DBCOIN	TOS			req'd (10)	optional	optional		
	EASDNA				req'd	optional	optional		
	EASEQ				req'd	optional	optional		
	NDB	NDBI	RIO		req'd	optional	ND,NDB, NDBB	1-255	
	TNSND	NDBI	RIO		req'd	optional	ND,NDB, NDBB	1-255	
	RTP				req'd	optional	optional	1-255	
	SIAQ	TOS			req'd	optional	optional		
	SICQ	TOS			req'd	optional	optional		
	AIIO				req'd	optional	optional		
	ACPN				req'd	optional	optional		
	SFA	SFAI			req'd	optional	optional		
TEL	12 digit #	SAPN		optional	req'd (7,10)	opt (DLT)	optional	1-255	optional
TST	100-105				req'd	opt (TST)	optional		
	108, 109				req'd	opt (TST)	optional		
	SYN				req'd	opt (TST)	optional		
TTS	TTSI	GN entry optional	GNSC entry req'd if AD1	optional	req'd	optional	optional	1-255	optional

( ) - indicates standard entries < > - comments

SEE PROPRIETARY NOTICE ON COVER PAGE

ADDITIONAL CALLTYPE POPULATION INFORMATION FOR TABLE 4

Values for the AD1, AD2, ADC, SC, CHI, and DNST columns in TABLE 4:

AD1	AD2	ADC	SC	CHI	DNST
blank	blank	blank	blank	blank	blank
Go/Nogo entry	GN Screening Class	2-15 International	ALAP	AAT2	D900
SAPN entry	Carrier ID (CID)	3-15 Domestic	ATAP	ABBB	DNST1-DNST23
Type of Service (TOS)	State entry		CANP	ABLK	DSD800
LATA entry	RIO entry		CARP	ACD	HC800
NDBI entry	entry		CUSP	ATOS	I800
DELETE entry	CTR		CUTP	CP00-CP19	INWATS
SD index TYPE	OP0-OP7		DA	EAAR	MQ
DOM1 entry			DLT	EGRH	NETS
DOM2 entry			DSD	ESD2	TC
DOM3 entry			EASC	ESSD	UNAS
DOM4			HAWP	FGB	
TFNPA entry			ICIN	IBBB	
SFAI entry			INCN	IBLK	
FHT entry			INCO	ICDR	
			INET	IEA	
			INW	MSC1	
			IOP	MSC2	
			LDA	ND	
			MCPP	NDB	
			MSC1-4	NDBB	
			MULT	PR00-PR19	
			NWZ1	WAC2	
			QTM	WACK	
			RSYS	WSNO	
			SC1-36		
			SDN		
			SDND		
			SPDI		
			SSP		
			TC		
			TST		

SEE PROPRIETARY NOTICE ON COVER PAGE

Values for the AD3 and CALLTYPE columns in TABLE 4. CALLTYPE values are dependent on the AD3 values. AD3 and CALLTYPE combinations are for applications listed in the last column:

AD3	Calltypes	Application
A	MRT,RDB,MCT,PRT	EGRESS indicator
B	CRB,DSD,DSN,GNS,INW,PAS,PRT,RDB,TEL,TTS,MRT	Hicap indicator
C	CRB,DSN,EAR,GNS,MCT,MMT,MRT,PRT,RDB,RNR	TSAA Provider Present
D	CRB,DSN,GNS,MCT,MRT,PRT,RDB,RNR	1+DL indicator
E	none	No meaning - unassigned
F	CRB,DSN,EAR,GNS,MCT,MMT,MRT,PRT,RDB,RNR	ECOS Operator Code
G	CRB,DSN,EAR,GNS,MCT,MMT,MRT,PRT,RDB,RNR	International Advanced Fax
H	CRB,DSN,EAR,GNS,MCT,MMT,MRT,PRT,RDB,RNR	Project R Phase 2 feature
I	none	No meaning - unassigned
J	none	No meaning - unassigned
K	none	No meaning - unassigned
L	none	No meaning - unassigned

Valid listings for some items listed in TABLE 4:

CID — 0000-9999

CRBI — 1-32767

DELETE — blank or 0-15

DOM1 — HNPA, IT, 20-83, DED, DEV, DEC0, DEC1, DEC6, DER0, DER1, DER6, INCD, IVT, APN, NH0C, NH1C

DOM2 — INTO, IO56, IO64, IOH0, IOH1

DOM3 — HNPA, IT, 20-83, DED, DEV, DEC6, DER6, INCD, I56D, I64C, I384, N64C, N64R, IVT, APN, NH0C, NH1C, IH1C

DOM4 — HNPA, IT, 20-83, SDNA, DED, DEV, DEC6, DER6, I56D, I64C, N64C, N64R, IVT, APN

FHTI — AR, BT, EA1-EA7, HW, IFF, INC, IVC, MCA, NCA, NCC, NCD, NWC, OOB, ROA, SP1, SP2, T, VCA, DNN, DOO, INF, E01-E20, I01-I30, ISB, LDV, LOB, LSA, NCB, NWN, OOA, OTS, R01-R10, S01-S19, SNA, STO, TDN, UNN, VMA, WAT

FHT — blank, BOTH, PORT, RSVD. (Valid only for FHT calltypes in PLU.)

Go/Nogo — (G, N)

GNSC — 0-3

LATA — 000-999

MCTI — 1-255

MRTI — 1-8191

SEE PROPRIETARY NOTICE ON COVER PAGE

NDBI – 1-1023

NSN – 1-167

NVDI – 0-127

PRTI – 1-127

RDBI – 1-8191

RIO – blank or N,Y

SAPN – 0-63

SDINDEX – 1-16383

SDTYPE – MTS,RSI,DC,DRTC,GSDN,TPC,SDN,IPR,CSRT,FPR,V31K,LRN

SFAI – 0-6,39

STATE – Two alphabetic characters.

TFNPA – blank or 8YY (Y=0,2-8)

TOS – 0-31

TTSI – 1-31

SEE PROPRIETARY NOTICE ON COVER PAGE

ID . . . . . VER:CODEGRP-PORT
WORK CENTER . . MAC, MOC
GENERIC . . . . . 4E25 Rel. 4 and later
CLASS . . . . . VER
APPLICATION . . 4E - Proprietary
TYPE . . . . . Input

1. PURPOSE

Request the verification of the number pooling target architecture ported out assignments at the 10-digit level in the Positive Look Up (PLU) translator.

Format [1] is used to verify a single 10-digit number or a range of 10-digit numbers at a 6-digit level for a specified domain.

Format [2] is used to verify all 10-digit ported out assignments in all domains.

2. FORMAT

[1] **VER:CODEGRP;OPT PORT:ABC** a,**DEF** b[,**LINENO** c][,**DOM** d]**!**

[2] **VER:CODEGRP;OPT PORT,ALL!**

3. EXPLANATION OF MESSAGE

a	First three digits of the code (000-999).
b	Next three digits of the code (000-999).
c	Last four digits of the line number (0000-9999).
d	Domain (**DOM**) to which the search should be restricted. If the **ALL** option and domain are not selected, searches are restricted to the Plain Old Telephone Service (POTS) domain. (See Translation Guide for valid **DOM**.)
ALL	Used to request all 10-digit ported out assignments in all domains.

4. SYSTEM RESPONSE

NA	Not Accepted.
PF	Printout Follows.

5. REFERENCES

PIDENTs
IOCPIMC4
VRFYCNTL
VRFYINPT

Translation Guide, 4ESS™, TG-4, Division 8, Section 13bd

LUCENT TECHNOLOGIES – PROPRIETARY
Use pursuant to Company Instructions.

Output Message
VER:CODEGRP-PORT

LUCENT TECHNOLOGIES – PROPRIETARY
Use pursuant to Company Instructions.

ID . . . . . VER:CODEGRP-RSVD
WORK CENTER . . MAC, MOC
GENERIC . . . . . 4E25 Rel. 4 and later
CLASS . . . . . VER
APPLICATION . . 4E - Proprietary
TYPE . . . . . Input

1. PURPOSE

Request the verification of the number pooling target architecture reserved assignments at the 10-digit level in the Positive Look Up (PLU) translator.

Format [1] is used to verify a single 10-digit number or a range of 10-digit numbers at a 6-digit level for a specified domain.

Format [2] is used to verify all 10-digit reserved assignments in all domains.

2. FORMAT

[1] **VER:CODEGRP;OPT RSVD:ABC** a,**DEF** b[,**LINENO** c][,**DOM** d]**!**

[2] **VER:CODEGRP;OPT RSVD,ALL!**

3. EXPLANATION OF MESSAGE

a	First three digits of the code (000-999).
b	Next three digits of the code (000-999).
c	Last four digits of the line number (0000-9999).
d	Domain (**DOM**) to which the search should be restricted. If the **ALL** option and domain are not selected, searches are restricted to the Plain Old Telephone Service (POTS) domain. (See Translation Guide for valid **DOM**.)
ALL	Used to request all 10-digit reserved assignments in all domains.

4. SYSTEM RESPONSE

NA	Not Accepted.
PF	Printout Follows.

5. REFERENCES

PIDENTs
IOCPIMC4
VRFYCNTL
VRFYINPT

Translation Guide, 4ESS™, TG-4, Division 8, Section 13bd

LUCENT TECHNOLOGIES – PROPRIETARY
Use pursuant to Company Instructions.

Output Message
VER:CODEGRP-RSVD

LUCENT TECHNOLOGIES – PROPRIETARY
Use pursuant to Company Instructions.

ID . . . . . VER:MISC-NPRSVD
WORK CENTER . . MAC, MOC
GENERIC . . . . . 4E25 Rel. 4 and later
CLASS . . . . . VER
APPLICATION . . 4E - Proprietary
TYPE . . . . . Input

1. PURPOSE

Requests the verification of the AT&T 7-digit, number pooling reserved assignments. This 7-digit translator is used to indicate if an **NPANXXX** code is reserved for this office. Note, the output for this message will only specify the **NPANXXX** codes that are reserved for this office. For 7-digit that are not reserved, no output information will be printed.

2. FORMAT

VER:MISC NPRSVD:NPANXXX {a-a|a,a...}!

3. EXPLANATION OF MESSAGE

a — A 7 Digit (**NPA-NXX-X**) Code (2002000-9999999).

NOTE: The only valid NPA and NXX codes that are allowed via Recent Change for an AT&T Reserved assignment are those in the range of 200-999).

For the **NPANXXX** field a range or list must be specified. A range is specified by inserting a dash between the lowest and highest numbered code in the range, e.g., **NPANXXX 0000000-9999999**.

The low and high values may be the same; thereby verifying a single 7-digit code.

A list is specified by inserting a comma between the **NPANXXX**s.

4. SYSTEM RESPONSE

NA — Not Accepted.

PF — Printout Follows.

5. REFERENCES

PIDENTs
IOCPIMC4
VRFYCNTL
VRFYINPT

Translation Guide, 4ESS™, TG-4, Division 8, Section 13bc

LUCENT TECHNOLOGIES – PROPRIETARY
Use pursuant to Company Instructions.

Output Message
VER:MISC-NPRSVD

LUCENT TECHNOLOGIES – PROPRIETARY
Use pursuant to Company Instructions.

ID . . . . . VER:MISC-SD
WORK CENTER . . MAC, MOC
GENERIC . . . . . 4E25 Rel. 4 and later
CLASS . . . . . VER
APPLICATION . . 4E - Proprietary
TYPE . . . . . Input

1. PURPOSE

Requests miscellaneous data associated with the Segmentation Directory (SD).

2. FORMAT

```
VER:MISC SD!
```

3. EXPLANATION OF MESSAGE

See Purpose.

4. SYSTEM RESPONSE

PF Printout Follows.

5. REFERENCES

PIDENTs
VRFYMISC

Output Message
VER:SD

LUCENT TECHNOLOGIES – PROPRIETARY
Use pursuant to Company Instructions.

ID . . . . . TEST:SD
WORK CENTER . . MAC, MOC
GENERIC . . . . . 4E25 Rel. 3 and later
APPLICATION . . 4E - Proprietary
TYPE . . . . . Output

1. FORMAT

[1]
```
TEST:SD:DIG a
[b][EXCEPTION CODE c]
[FINAL HANDLING CODE d]
[e]
[SERVICE IND: f]
[REASON CODE: g]
[ANI FEAT INDS: h]
[PC INDEX: i]
[SD POINT CODE: j]
[SD SSN: k]
[SP POINT CODE: l]
[SP SSN: m]
[ALT SP POINT CODE: n
ALT SP SSN : o]
[SD PROVISIONED TIMER: p X 100 MSECS
SD QUERY TEST TIMER: p X 100 MSECS
ELAPSED TIME: q SECONDS]
[BACKUP ROUTING TABLE IS EMPTY]
[NM SKIP CONTROL IS ACTIVE ON SINGLE ROUTING TABLE ENTRY]
[PRIMARY ROUTING TABLE IS EMPTY]
```

[2]
```
TEST:SD:DIG a         , SP RESPONSE
[SP POINT CODE: l]
[SP SSN: m]
[SP PROVISIONED TIMER: p X 100 MSECS
SP QUERY TEST TIMER: p X 100 MSECS]

[ROUTING DIGITS r]
[OVERFLOW ROUTING DIGITS s]
[DOMAIN      t]
[NCP QUERY AND 1+DL BLOCKING INDICATIONS RECEIVED]
[NCP QUERY INDICATION RECEIVED]
[1+DL BLOCKING INDICATION RECEIVED]
[SUPPLEMENTAL ROUTING INFO u v w x y z]
[FAI DIGIT a1]
[CARRIER SPECIFIC ROUTING {MANDATORY|PREFERRED}]
[PRIMARY LTD-ROUTE {TOLL|LOCAL} RECORD {TOLL|LOCAL}]
[ALTERNATE LTD-ROUTE {TOLL|LOCAL} RECORD {TOLL|LOCAL}]
[CUSTOMIZED ANNOUNCEMENT RECEIVED]
```

LUCENT TECHNOLOGIES – PROPRIETARY
Use pursuant to Company Instructions.

```
[USDS DENY RESPONSE:
          DENY REASON: {2CCP DENY CALL - SDF | INVALID}]
[USDS PROCEED RESPONSE:]
[USDS INSTRUCTIONS:
         SWITCH CAPABILITY:
                {PROCEED|
                 [ROUTE TO ALA]
                 [QUERY NAI]
                 [APPLY 1 +DL]
                 [INVOKE ATP]
                 [APPLY TRUEVOICE PCC]
                 [APPLY TNR]
                 [APPLY TRUEVOICE AVOIDANCE ROUTING]
                 [APPLY QUIETHEAR BLOCKING}]
         [BILLABLE ESP:{[9][8][7][6][5][4][3][2][1][0] |
                       NO BILLABLE ESP}]
         [REDIRECTION FEATURE ID: b1]
         [TIMEOUT SECONDS: c1]
         [NRN DIGITS: d1]
         [CUSTOMIZED ANNOUNCEMENT ID: e1]
         [ALA: f1]
[SPSI: g1]
[SWCAP: h1]
[CIC i1]
[LATA j1]
[SELECTED CIC PRESUBSCRIBED AND NO INPUT BY CALLING PARTY]
[SELECTED CIC PRESUBSCRIBED AND INPUT BY CALLING PARTY]
[SELECTED CIC PRESUBSCRIBED AND NO INDICATION OF INPUT BY ...
... CALLING PARTY]
[SELECTED CIC NOT PRESUBSCRIBED AND INPUT BY CALLING PARTY]
[PRIMARY PREFERRED CARRIER OF CHARGED PARTY]
[ALTERNATE PREFERRED CARRIER OF CHARGED PARTY]
[VERBAL INSTRUCTIONS FROM THE CALLING PARTY]
[VERBAL INSTRUCTIONS FROM THE CHARGED PARTY]
[EMERGENCY CALL HANDLING]
[CARRIER SELECTION INDICATOR RESERVED]
[SECONDARY SUPPLEMENTAL ROUTING INFO]
[SECONDARY CS ROUTING MANDATORY]
[SECONDARY CS ROUTING PREFERRED]
[SECONDARY FAI DIGITS]
[SECONDARY DOMAIN]
[SECONDARY SPSI: g1]
[MRII: NO MATCH]
[MRII: DN MATCH ONLY]
[MRII: ANI MATCH ONLY]
```

LUCENT TECHNOLOGIES – PROPRIETARY
Use pursuant to Company Instructions.

```
[3]    SD TEST QUERY OUTGOING MESSAGE

       k1  k1  k1  k1  k1  k1  k1  k1
       .
       .
       .

[4]    SD RESPONSE INCOMING MESSAGE

       l1  l1  l1  l1  l1  l1  l1  l1
       .
       .
       .
```

2. REASON FOR OUTPUT

The output is in response to the TEST:SD input message. This message displays the test data associated with the Segmentation Directory (SD).

The following measurements are pegged for SD test query: SD_QUERY_1B for 1B generated SD test queries and SDR_SMO_GOOD_TID for SD response received by 4E for Segmentation Directory Mode Of Operation (SMO) call for "WAIT" or "PROCEED".

3. VARIABLE FIELD DEFINITIONS

a	Called party number. A North American Numbering Plan (NANP) 1-15 digit number or 011 + International 5-15 digit number.
b	Failure status: TIMEOUT CONNECTION CONTROL - DISCONNECT
c	A number from 0-255 that defines the error.
d	Final handling code number.
e	Additional information: CUSTOMIZED ANNOUNCEMENT RECEIVED PROVIDE INSTRUCTIONS - PROCEED PROVIDE INSTRUCTIONS - QUERY SP PROVIDE INSTRUCTIONS - WAIT FOR INSTRUCTIONS RECEIVED CHECK APPLICATION STATUS RECEIVED REFRESH RECEIVED REQUEST TO PERFORM AN ASSIST

LUCENT TECHNOLOGIES – PROPRIETARY
Use pursuant to Company Instructions.

f — Service indicator received from the SD:

1 — Positive Call Processing (PCP)

2 — Software Defined Network (SDN)

3 — Switched Digital Services (SDS)

4 — Network Implementation Services (NIS) general

5 — Consumer Services Business Service Management System (CSMS) general

6 — Spare 1

7 — Spare 2

8 — Spare 3

9 — Spare 4

10 — Spare 5

11 — Spare 6

12 — Spare 7

13 — Spare 8

14 — Spare 9

15 — Spare 10

g — Reason code received from the SD:

1 — SP query blocked: SP Automatic Call Gap (ACG) - application overload control.

2 — SP query blocked: SP ACG - manual control.

3 — SP query blocked: SP subsystem prohibited.

4 — Spare

5 — Spare

6 — SP query blocked: SD application processing problem.

7 — SP query blocked: SP out of range.

8 — SP query blocked: SP skip control in the SD.

9 — SP query blocked: SP not provisioned.

h — Automatic Number Identification (ANI) feature indicator. A set of indicators was received from the SD indicating the type of processing to be provided on the call:

1+DLB:0 — 1 + Directory Link (1+DL) blocking not applied

1+DLB:1 — 1+DL blocking applied

LUCENT TECHNOLOGIES – PROPRIETARY
Use pursuant to Company Instructions.

CPPAB:0 — Calling Party Pays Airtime (CPPA) blocking not applied

CPPAB:1 — CPPA blocking applied

QHB:0 — QuietHear blocking not applied

QHB:1 — QuietHear blocking applied

TVAR:0 — TrueVoice® avoidance routing not applied

TVAR:1 — TrueVoice® avoidance routing applied

TVPCC:0 — ANI TrueVoice® Individual Per Call Control (iPCC) not applied

TVPCC:1 — ANI TrueVoice® iPCC applied

i Point Code (PC) index of the SD used for the query.

j SD point code number.

k SD Subsystem Number (SSN) number.

l Service Processor (SP) point code number.

m Service Processor (SP) Subsystem Number (SSN) number.

n Alternate SP point code received from the SD.

o Alternate SP subsystem number received from the SD.

p Time in milliseconds.

q Time in seconds.

r Digits returned from the Network Control Point (NCP) to route this call.

s Alternate routing digits (e.g. SDN Off-Net overflow).

t The routing domain associated with the digits.

u Supplemental Routing Information (SRI) service ID:

0 — Unassigned.

1 — Switched Digital International (SDI) Carrier Specific Routing (CSR).

2 — SDI outbound.

3 — FTS 2000.

4 — SDN Digital Radio Avoidance Routing (DRAR).

5 — SDS.

6 — CDS.

7 — GVNS.

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Use pursuant to Company Instructions.

v	Private network call: 0 — No 1 — Yes
w	On-Net call: 0 — No 1 — Yes
x	Global Software Defined Network (GSDN): 0 — No 1 — Yes
y	Off-Net privilege: 0 — No 1 — Yes
z	Satellite avoidance: 0 — No 1 — Yes
a1	Foreign administration Identification (ID) digit.
b1	Redirection feature ID in decimal.
c1	Ring no answer timer value in seconds.
d1	Network Routing Number (NRN) digits.
e1	Customized announcement ID in decimal.
f1	Adjunct Logical Address (ALA) in decimal.
g1	Service Processor Service Identity (SPSI) received from the SP: 1 — Software Defined Network (SDN) 2 — Positive Call Processing (PCP) 3 — Universal Subscriber Data Structure (USDS) 4 — Switched Digital Services (SDS) 5 — Carrier Solutions (CARSON) 6 — Government Emergency Telecommunications Service (GETS) 7 — Terminating Switch Access Arrangement (TSAA)

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Use pursuant to Company Instructions.

h1	A set of switch capabilities was requested by the SP in the SP response message values: 1+DLB:0 — 1+DL blocking not applied 1+DLB:1 — 1+DL blocking applied QHB:0 — QuietHear blocking not applied QHB:1 — QuietHear blocking applied QNAI:0 — Network Access Interruption (NAI) query blocking not applied QNAI:1 — NAI query blocking applied TVAR:0 — TrueVoice® avoidance routing not applied TVAR:1 — TrueVoice® avoidance routing applied TVPCC:0 — ANI TrueVoice® iPCC not applied TVPCC:1 — ANI TrueVoice® iPCC applied
i1	Carrier ID code.
j1	Local area transport digits.
k1	Raw dump of Transaction Capability Application Part (TCAP) message sent to SD/SP.
l1	Raw dump of incoming message from SD/SP.

4. ACTION TO BE TAKEN

None.

5. REFERENCES

PIDENTs
SDIRRMIT
TCAPLIB
TCAPTEST
TESTSEGD

Input Message
TEST:SD

LUCENT TECHNOLOGIES – PROPRIETARY
Use pursuant to Company Instructions.

ID . . . . . VER:CODEGRP-PORT
WORK CENTER . . MOC
GENERIC . . . . . 4E25 Rel. 4 and later
APPLICATION . . 4E - Proprietary
TYPE . . . . . Output

1. FORMAT

```
VER:CODEGRP;OPT(PORT[-ALL]):                    DOM aaaa,


                MIN     MAX
ABC     DEF     GHIJ    GHIJ

bbb,    ccc,    dddd,   eeee,
      •
      •
      •
```

2. REASON FOR OUTPUT

To verify the number pooling target architecture ported out assignments at the 10-digit level in the Positive Look Up (PLU) translator.

3. VARIABLE FIELD DEFINITIONS

a	Domain of the 10-digit code group. (See Translation Guide for valid DOM.)
b	First three digits of the code (000-999).
c	Next three digits of the code (000-999).
d	Line number minimum (0000-9999).
e	Line number maximum (0000-9999).

4. ACTION TO BE TAKEN

None.

5. REFERENCES

PIDENTs
IOCPIMC4
IOCPPVR4
VRFYORTG
VRFYOUT
VRFYRTNG

Translation Guide, 4ESS™, Division 8, Section 3bj

LUCENT TECHNOLOGIES – PROPRIETARY
Use pursuant to Company Instructions.

Input Message

```
VER:CODEGRP-PORT
```

LUCENT TECHNOLOGIES – PROPRIETARY
Use pursuant to Company Instructions.

ID . . . . . VER:CODEGRP-RSVD
WORK CENTER . . MOC
GENERIC . . . . . 4E25 Rel. 4 and later
APPLICATION . . 4E - Proprietary
TYPE . . . . . Output

1. FORMAT

```
VER:CODEGRP;OPT(RSVD[-ALL]):                    DOM aaaa,


                MIN     MAX
ABC     DEF     GHIJ    GHIJ

bbb,    ccc,    dddd,   eeee,
      •
      •
      •
```

2. REASON FOR OUTPUT

To verify the number pooling target architecture reserved assignments at the 10-digit level in the Positive Look Up (PLU) translator.

3. VARIABLE FIELD DEFINITIONS

a	Domain of the 10-digit code group. (See Translation Guide for valid DOM.)
b	First three digits of the code (000-999).
c	Next three digits of the code (000-999).
d	Line number minimum (0000-9999).
e	Line number maximum (0000-9999).

4. ACTION TO BE TAKEN

None.

5. REFERENCES

PIDENTs
IOCPIMC4
IOCPPVR4
VRFYORTG
VRFYOUT
VRFYRTNG

Translation Guide, 4ESS™, Division 8, Section 3bi

LUCENT TECHNOLOGIES – PROPRIETARY
Use pursuant to Company Instructions.

Input Message

```
VER:CODEGRP-RSVD
```

LUCENT TECHNOLOGIES – PROPRIETARY
Use pursuant to Company Instructions.

ID . . . . . VER:MISC-NPRSVD
WORK CENTER . . MOC
GENERIC . . . . . 4E25 Rel. 4 and later
APPLICATION . . 4E - Proprietary
TYPE . . . . . Output

1. FORMAT

```
VER:MISC,OPT(NPRSVD):


NPANXXX     NPANXXX     NPANXXX     NPANXXX     NPANXXX

      a,  [      a,] [      a,] [      a,] [      a,]
     •
     •
     •
```

2. REASON FOR OUTPUT

Provides the ability to verify the Number Pooling Target Architecture (NPTA) Reserved 7-digit type translator.

This message will only specify the NPA-NXX-X codes that are reserved for number pooling. For 7-digit codes that are not reserved, no output information will be printed.

3. VARIABLE FIELD DEFINITIONS

a	7 Digit (NPA-NXX-X) codes (`2002000-9999999`).

4. ACTION TO BE TAKEN

None.

5. REFERENCES

PIDENTs
IOCPIMC4
IOCPPVR4
VRFYORTG
VRFYOUT
VRFYRTNG

Translation Guide, 4ESS™, Division 8, Section 3bh

Input Message
`VER:MISC-NPRSVD`

LUCENT TECHNOLOGIES – PROPRIETARY
Use pursuant to Company Instructions.

ID . . . . . VER:SD
WORK CENTER . . MAC, MOC
GENERIC . . . . . 4E25 Rel. 4 and later
APPLICATION . . 4E - Proprietary
TYPE . . . . . Output

1. FORMAT

```
VER:SD:


SDIAMINT   SDREQUERY     SDGUARD    SDCONG_ALG
       a           b           c             d

 GDINTERV   SDQGDTHRES  SPRGDTHRES     QRYTIMR     REQRYTIMR
        e            f           g           h            i

ASTNQTIMR   SPRESPTIMR   SPQRYTIMR   QRYGDTIMR     RESGDTIMR
        j            k           l           m            n


TRANSITION STATUS INDICATORS

 o,  o,  o,  o,  o,  o,  o,  o,  o,  o,  o,  o,  o,  o,  o,  o,
•
•
•

TARGET STATUS INDICATORS

 p,  p,  p,  p,  p,  p,  p,  p,  p,  p,  p,  p,  p,  p,  p,  p,
•
•
•
```

2. REASON FOR OUTPUT

The output is in response to the VER:MISC-SD input message. This message displays the miscellaneous data associated with the Segmentation Directory (SD).

3. VARIABLE FIELD DEFINITIONS

a — Indicates whether the incoming Direct Link Node (DLN) will intercept incoming Initial Address Messages (IAMs) and generate SD queries.

ON

OFF

LUCENT TECHNOLOGIES – PROPRIETARY
Use pursuant to Company Instructions.

b — Indicates whether the switch attempts to requery the SD if the SD query timer expires prior to the switch receiving an SD response message.

ON

OFF

c — Indicates if guard timing is to be used to alert network operations to excessive post dial delay incurred under the SD mode of operation.

ON

OFF

d — Indicates the type of congestion algorithm to be used:

EXP — Expansive

PRO — Protective

e — Guard timing expiration interval (6000-180000, in 6000 centiseconds increments).

f — Alerting threshold for comparing SD query guard timer expires (0-1000, in increments of 10).

g — Alerting threshold for comparing Service Processor (SP) response guard timer expires (0-1000, in increments of 10).

h — SD query timer (50-400, in 10 centiseconds increments).

i — SD requery timer (50-400, in 10 centiseconds increments).

j — SD query timer in Alternate Signaling Transport Network (ASTN) condition (50-600, in 10 centiseconds increments).

k — SP response timer (50-500, in 10 centiseconds increments).

l — SP query timer (50-500, in 10 centiseconds increments).

m — SD query guard timer (5-400, in 1 centiseconds increments).

n — SP response guard timer (25-500, in 1 centiseconds increments).

o — Identifies the SD transition status indicators that are set to SD Mode Of Operation (SMO):

00 — BLDS_PCP status indicator.

01 — Plain Old Telephone Service (POTS) transition type indication.

02 — Software Defined Network (SDN) transition type indication.

03 — Switch Digital Service (SDS) transition type indication.

04 — Universal Subscriber Data Structure (USDS) transition type indication.

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05 — Positive Call Processing (PCP) cellular transition type indication.

06 — QuietHear transition type indication (4E23R4-4E25R4).

07 — Government Emergency Telecommunications Service (GETS) transition type status indication.

08 — Switched Digital International Inbound (SDI-I) transition type status indication.

09 — Global Software Defined Network Inbound (GSDN-I) transition type status indication.

10 — Carrier solutions transition type status indication.

11 — SDN dial around transition type status indication.

12 — PCP dial around transition type status indication.

13-63 — Spare status indicators reserved for future use.

p Identifies the SD transition states that are set to Permanent SD Mode of Operation (PSMO):

00 — BLDS_PCP status indicator.

01 — Plain Old Telephone Service (POTS) transition type indication.

02 — Software Defined Network (SDN) transition type indication.

03 — Switch Digital Service (SDS) transition type indication.

04 — Universal Subscriber Data Structure (USDS) transition type indication.

05 — Positive Call Processing (PCP) cellular transition type indication.

06 — QuietHear transition type indication (4E23R4-4E25R4).

07 — Government Emergency Telecommunications Service (GETS) transition type status indication.

08 — Switched Digital International Inbound (SDI-I) transition type status indication.

09 — Global Software Defined Network Inbound (GSDN-I) transition type status indication.

10 — Carrier solutions transition type status indication.

11 — SDN dial around transition type status indication.

12 — PCP dial around transition type status indication.

13-63 — Spare status indicators reserved for future use.

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4. ACTION TO BE TAKEN

None.

5. REFERENCES

PIDENTs
VRFYMISC
VRFYOMSC

Input Message
`VER:MISC-SD`

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