

Section 4

Test Scripts

Summary

Various configurations and call flows are contained in Appendix A. The tests are arranged numerically to allow each Service Provider report the tests that are required and chose optional the tests that can be conducted in their individual networks and produce the optimum results. The initial tests for each section are those that can be completed without interaction with other Service Providers. The interaction progresses as the test progresses. Matrixes for selected sections are furnished in Appendix E will also help define appropriate tests for each Service Provider.

SECTION 4.....
TEST SCRIPTS.....
 SUMMARY.....
 4.1 - PRE-TEST AND SETUP.....
 4.1.1 - PRELIMINARY NETWORK INTERCONNECTION.....

4.1 - Pre-test and Setup

The purpose of the first test series is to establish a basis for communication between the Service Providers in the testing. These tests should be conducted between all involved switches.

Station equipment and basic connectivity is required during each phase of the testing for the purposes of initiating and terminating calls during the testing. These stations will be assigned Directory Numbers (DNs) and be required to emulate a customers service for the purposes of this testing. These tests were developed to establish the initial connectivity, indicate the beginning of the testing.

4.1.1 - Preliminary Network Interconnection

4.1.1.1 Ability of switch to make Non-ported to non-ported calls between switches

Test Description:

This test will consist of a basic call through from each testing switch to every other testing switch using the testing switches and currently used interconnection.

Test Procedure:

- < A technical representative of each Service Provider company will select a working line that is being furnished dial tone from the represented switch.
- < The representative will furnish the other Service Providers the telephone number to be used.
- < The Service Provider representative will then proceed to call all other Service Provider numbers.
- < Representatives of the other Service Provider companies will respond by answering the call, identifying themselves and company affiliation.
- < The testers from the other companies will then return the call to originating company.
- < Report results of tests to Other providers using forms in Appendix D

Expected Results:

- < Each Service Provider must be able to
- < initiate a call from their switch.
- < call all other Service Providers from their switch.
- < respond to calls from all other Service Provider switches.

4.1.1.2 Directory number Assigned as a working number**Test Description:**

Perform tests designated by switch manufacturer to show that NPA-NXX-XXXX is assigned an working on switch from internal test facilities.

Test Procedure:

- < Install appropriate switch translations to activate numbers assigned in Section 2, as "Recipient" and "Donor" numbers.
- < Install station equipment capable of automatically answering incoming call and responding with a recording identifying the LSP, LSP location and directory number. ANI identifying equipment is suggested but optional.
- < Perform all functions and tests as prescribed by appropriate switch vendor and local procedures to establish directory numbers as working numbers within switch.
- < Report results of tests to Other providers using forms in Appendix D

Expected Results:

- < Assigned directory numbers are working telephone numbers assigned to the designated switch with all required translations.
- < All requirements of the switch manufacturer and local procedures are satisfactorily completed.

4.1.1.3 Ability of station to initiate and terminate calls

Test Description:

Perform tests designated by switch manufacturer to show that NPA-NXX-XXXXs as an assigned directory numbers on the switch has the capabilities of initiating and terminating calls.

Test Procedure:

- < On instruments installed during Test 4.1.1.2 (These tests may require a non-reported configuration for portions of this test, queries should not be initiated at this time.)
- < Check for dial tone
- < Check for ability to initiate call
- < Check for ability to receive a call
- < Check that proper recording identifies stations
- < Perform all functions and tests as prescribed by appropriate switch vendor and local procedures to establish directory numbers as working numbers within switch.
- < Report results of tests to Other providers using forms in Appendix D

Expected Results:

- < Assigned directory numbers are working telephone numbers assigned to the designated switch with all required translations. The station equipment has the ability to:
 - < Originate calls from assigned directory numbers
 - < Terminate Calls on assigned directory numbers, by an individual and recording
 - < All requirements of the switch manufacturer and local procedures are satisfactorily completed.

4.2 - LRN SETUP.....

4.2.1 - SSP TRANSLATIONS.....

4.2.3 - STP FUNCTIONALITY.....

4.2.3.1 - STP TRANSLATIONS.....

4.2.4 - NPAC, SMS & SCP.....

4.2.4.1 - NPAC.....

4.2.4.2 - SMS.....

4.2.4.3 - SCP.....

4.2.4.2 - LNP DATABASE (SCP).....

4.2.5 - NETWORK INTERCONNECTIONS.....

4.2.5.1 - NPAC.....

4.2 - LRN Setup

These are the functions as described by accepted industry standards and technical requirements for the SSP application, such as TR-NWT-000082 and TR-NWT-001285. These must be compliant with all standards presently applied to the existing signaling networks. The ability to receive the call and process the information through the SS7 network is necessary for LNP success. Tandems and some EOs will be required to accept MF signaling for other EOs and transport via the SS7 protocol to interconnected networks. All SSPs will be required to respond to all management and announcement codes through the SS7 networks.

4.2.1 - SSP Translations

4.2.1.1.1 SSP Translations

Test Description:

Check ported SSP translations to STP

Test Procedure:

- ⟨Add the necessary translations to all three nodes to port LNP directory number 1: 312-NXX-0001 from -SSP to ported station
- ⟨Ported station: add subscriber/AIN 0.1 PODP trigger TCAP 800 trigger - SSP
- ⟨AIN 0.1 PODP trigger/delete subscriber SCP
- ⟨LRN = XXX
- ⟨Document Test Results
- ⟨Report results of tests to Other providers using forms in Appendix D

Expected Results:

- ⟨Translations are correct in SSP and STP
- ⟨Query is routed to appropriate LNP SCP

4.2.1.1.2 ISUP message through networks**Test Description:**

Check ISUP messaging from ported station to SCP

Test Procedure:

- < Place a call from 312-NXX-XXXX in - SSP
- < To LNP directory number 1 312-NXX-0001
- < upon, receipt of the TCAP Response message the LRN of XXX returned
- < SCP will instruct the SSP to direct the call to ported station
- < Capture and decode all associated ISUP messages for this inter-office LNP call.
- < Document Test Results
 - < Report results of tests to Other providers using forms in Appendix D

Expected Results:

- < Verify proper population of LRN-NXX-XXXX in the ISUP messages.

4.2.1.1.1.3 Pre-move number check**Test Description:**

- < From a LSP switch subscriber in the portable NXX
- < Call Subscriber number to be ported
- < Intra-switch
- < Intra-LATA
- < LSP switch is the Donor Switch
- < No numbers have been ported

Test Procedure:

- < Call from 312-NXX-103X
- < Call to 312-NXX-101X
- < Document Test Results
- < Report results of tests to Other providers using forms in Appendix D

Expected Results:

- < Call Completion
- < One dip performed on each call to 312-NXX
- < No trouble reports generated in switch
- < Proper billing records generated

4.2.1.1.4 Call Subscriber number to be ported**Test Description:**

- < From a non-capable switch where LSP switch performs the LRN database dips for the non-capable switch
- < Call Subscriber number to be ported
- < Intra-switch
- < Intra-LATA
- < LSP switch is the Donor Switch
 - < No numbers have been ported

Test Procedure:

- < Call from 312-XXX-XXXX
- < Call to 312-NXX-101X
- < Document Test Results
 - < Report results of tests to Other providers using forms in Appendix D

Expected Results:

- < Call Completion
- < One dip performed on each call to 312-NXX
- < No trouble reports generated in switch
 - < Proper billing records generated

4.2.1.1.5 Call a vacant number**Test Description:**

- < From the same NXX as the number to be ported
- < Call a vacant number
- < Intra-switch
- < Intra-LATA
- < LSP switch is the Donor Switch
- < No numbers have been ported

Test Procedure:

- < Call from 312-NXX-101X
- < Call to 312-NXX-000X (Vacant)
- < Document Test Results
- < Report results of tests to Other providers using forms in Appendix D

Expected Results:

- < Correct Treatment
- < One dip performed on each call to 312-NXX number
- < No trouble reports generated in switch
- < Proper billing records generated

4.2.1.1.6 Call a subscriber's number adjacent to the number to be ported**Test Description:**

- < From a LSP switch subscriber
- < Call a subscriber's number adjacent to the number to be ported
- < Inter-switch
- < Intra-LATA
- < LSP switch is the Recipient Switch
- < Another LSP is the Donor Switch
 - < No numbers have been ported, but the 312-NXX NPA/NXX comb. has been datafilled for a PODP trigger

Test Procedure:

- < Call from 312-XXX-2000
- < Call to 312-NXX-103X
- < Document Test Results
 - < Report results of tests to Other providers using forms in Appendix D

Expected Results:

- < Call Completion
- < One dip performed on each call to 312-NXX number
- < No trouble reports generated in switch
 - < Proper billing records generated

4.2.3 - STP Functionality

The SSPs, both EO and tandems that support the customers must have their connectivity tested with the serving STPs. The connectivity will be the same as now exists in the SS7 environment. Initially this should be accomplished within existing standards to ensure that SS7 messaging is properly handled between the nodes. Standardized tests are available through the NOF.

STP to STP routing of messages to the LNP database must be done to ensure the proper messaging and setup between the network elements. The configuration of these interconnections will be in compliance with exiting SS7 specifications. This is required when interconnecting between all Service Providers and then with all IXC possibilities using SS7.

The assumption is made that all Network Elements (NE) involved in the testing are working NEs which have been tested and have attained satisfactory compliance to established industry standards.

4.2.3.1 - STP Translations

4.2.3.1.1 STP Translations

Test Description:

Check STP translations to LNP SCP

Test Procedure:

- < 312-NXX-0001. i.e./ change from 6 digit NPA-NXX CLASS Global Title Translation to 10 digit CLASS Global Title Translations.
- < Document Test Results
 - < Report results of tests to Other providers using forms in Appendix D

Expected Results:

- < Translations are correct in SSP and STP
- < Query is routed to appropriate LNP SCP

4.2.4 - NPAC, SMS & SCP

The LNP NPAC, SMS and SCP must provide a platform compatible to industry standards and the interconnected STPs. The queries into and out of the database must meet all conformance criteria for recognition within all standard signaling nodes. (Note: IN/1 - TR-NWT-000533 and AIN 0.1 - TR-NWT-001284 & 1285)

Access to proper database, if multi applications SCP - SCPs may have multiple and similar applications, which will require the assurance that LNP information is obtained from the proper source within the SCP.

4.2.4.1 - NPAC

4.2.4.1.1 Introduction

Subsequent to the actual initiation of Number Portability (NP) services, Service Providers must deploy certain systems and databases (SOA/LSMS) in order for the critical transaction flows to be exchanged between the respective participating Service Providers and the Number Portability Administration Center's SOA and master SMS database (NPAC/SMS). To insure that the Service Providers SOA/LSMS conform to certain industry standards and are technically and operationally configured correctly a significant effort has been devoted to the development of a well-defined NPAC Internal Verification Test Plan, Interoperability Test Plan, and a NPAC/SMS Turn Up Test Plan that clearly outlines the Service Providers responsibilities and test actions. The purpose of these test plans, therefore, is to document the testing requirements, methodology and time lines for NPAC SMS/SOA testing, individual Service Provider SOA/LSMS level tests and the interactive Service Provider testing with the NPAC/SMS which are all necessary for the successful and timely implementation of number portability in Illinois.

4.2.4.1.1.1 Testing Scope

As transactions go both ways between the NPAC/SMS and the LSMS/SOA, it is an explicit requirement that the LSMS/SOA respond correctly to the NPAC/SMS initiated tests, and that the SOA or LSMS initiated tests be implemented according to the FCC Field Test Plan and in accordance with industry accepted data exchange protocols. Therefore the scope of the NPAC/SMS Internal Verification Test Plan and Turn Up FCC Field Test Plan as well as the NPAC SMS Interoperability Test Plan is to provide service support documents which will enable participating Service Providers and their respective SOA and LSMS vendor(s) to readily identify their specific interoperability testing responsibilities, understand the tests that are necessary to be performed, and how to interpret the results of these tests for follow-on regression testing, if necessary.

The immediate goal of these initial test efforts is to meet the July 1, 1997, FCC test date for "live" customer testing. This is to be accomplished by initiating Turn Up Testing with Service Providers that are test ready beginning as early as March 1997. It should also be noted that Service Providers may also wish to complete certain Service Provider to Service Provider tests, if applicable.

In view of the dynamic nature of Number Portability, it is envisioned that the testing processes will continue as a continuing on-going activity and mission critical function of the NPAC. It is currently accepted that as each new Service Provider enter the local market their LSMS/SOA will need to enter into Interoperability Certification with the Lockheed Martin NPAC/SMS Test Lab, and NPAC Turn Up Testing, as a pre-requisite to actual service initiation. Also to be considered is the need for internal NPAC

regression testing and Interoperability Testing with the Service Providers for each new software release of the NPAC's SOA, or SMS.

4.2.4.1.1.2 Service Provider: SOA/LSMS Preparation for Interoperability Testing and Certification

Each participating Service Provider will be required to design, code and internally test their LSMS/SOA systems prior to initiating interconnected testing with the NPAC/SMS. Since the LSMS has a peer-to-peer relationship with the NPAC SMS, the LSMS will perform the role of both Manager and Agent from a CMIP perspective and requires that the scripted LSMS/SOA initiated test cases and drivers (defined in the Lockheed Martin NPAC/SMS Interoperability Test Plan) must be implemented and executable by the Service Provider before actual testing with the Lockheed Test Center can be completed. It is also a requirement that the Service Provider's OSI/RFC1006 stack is CTS-3 certified before actual interactive testing process with the Test Center can begin. Once CTS-3 certification is obtained, the Service Provider will be able to schedule test times with the Lockheed-Martin IMS Test Lab.

4.2.4.1.1.3 Service Provider: SOA/LSMS Interoperability Testing and Certification with the LMIMS Test Lab

Interoperability testing between the Service Provider's LSMS/SOA and the NPAC/SMS test lab is designed as a series of test phases which have been developed to ensure that each Service Provider meets the technical and operational processing requirements necessary for the transactional exchange of ported customer information. Each Service Provider will be provided test access in an isolated environment that is intended to allow for careful and methodical execution of each test phase with evaluation times incorporated in the testing schedule in case system or software modifications are required. These test phases are: (1) Connectivity, (2) Managed Objects, Security, and Recovery, (3) Application to Application Testing. Total elapsed time to complete all test phases is estimated to take approximately six weeks for an LSMS interface and three weeks for a SOA interface.

The Service Provider will be responsible for scheduling test times with Lockheed-Martin. It should be noted that the Service Provider (or through its designated agent) may test the SOA and LSMS separately, however, the Service Provider is required to have completely implemented all SOA/LSMS initiated test cases and drivers before actual testing can be completed. As noted previously, the Service Provider must also be able to furnish documentation to the Test Center that their OSI/RFC1006 stack has been CTS-3 certified.

Interoperability Test scenarios contain representative samples of mandatory and optional tests that are designed to address general areas of LSMS/SOA conformance to the ISO/ITU standards for OSI Conformance Testing Methodology and Framework.

Briefly, LSMS/SOA conformance is to be validated through Basic Interconnection Tests (S2S and limited Security tests), Capability Tests (MOC), and Behavior Tests (Security, MOC, and Recovery). As noted previously, there are five specific test components contained in the conformance tests which must be completed between the Service Provider and the NPAC/SMS Test Lab in order to obtain Certification. The mandatory tests are further described below.

⟨ **Stack-to-Stack (S2S).** Stack-to-Stack, or as it is referred to in the Interoperability Test Plan as "S2S," tests the *ACSE/ROSE* connectivity between the LSMS/SOA of the Service Provider with the NPAC SMS.

⟨ **Managed Object Conformance (MOC).** Each Managed Object (MO) in the system, as described in the *GDMO* file, will be subjected to tests that address their basic operations, with the exception for the application-to-application level of behavior of the MOs.

⟨ **Security.** The purpose of this test sequence is to ascertain the functionality of each item in the *InpAccessControl* field and is designed to cover *systemId*, *cmipDeparture Time*, *sequenceNumber*, *listId*, *keyId*, and signature sub-fields. Testing of the signature test case may be postponed until the end of the test process, however, the other Security test cases must be completed successfully prior to MOC testing.

⟨ **Recovery.** The focus of this test group is to ensure recovery in the event of a "crash" of either the Service Providers LSMS/SOA or the NPAC/SMS. In addition, this test group will also be used to determine if the SOA or LSMS can switch to the "backup" NPAC/SMS, when instructed to do so by the serving NPAC/SMS.

After completion of NPAC/SMS interoperability testing, a Test Report will be created by the Test Center, in the standardized format outlined in the Interoperability Test Plan, and a copy forwarded to Lockheed Martin IMS and a copy to the Service Provider. The Test Lab will maintain copies of the test results along with a matrix of which Service Providers have completed which phases of the Interoperability Test. Upon successful execution of all mandatory test cases, a certification shall be issued to the Service Provider authorizing connection to the production NPAC/SMS.

4.2.4.1.1.4 Service Provider/NPAC SMS Turn-up Testing

Once a Service Provider has obtained LSMS and/or SOA certification, then connection to the production NPAC/SMS will be permitted so that Turn-up Testing can be conducted.

Although the Turn-up Test Plan is based upon elements similar to the Interoperability Test Plan, and the NPAC Internal Verification Test Plan, it addresses issues specific to

activation and testing of the Service Provider systems within the real production environment.

The scope of this testing is limited to conducting a subset of test cases identified in the Interoperability FCC Field Test Plan and the NPAC internal Verification Test Plan, and the addition of certain test cases pertinent to the environments such as back up and recovery. These test cases will be conducted in the production environment with each Service Provider, allowing the Service Provider to test and repair any problems with LSMS or SOA functionality. Through configurable NPAC NPA-NXX screening by each individual Service Provider, the testing environment can provide isolation for simultaneous Service Provider Testing.

4.2.4.1.1.5 NPAC Internal Verification Testing Process

Key to the critical path leading to Interoperability Testing between the Service Providers LSMS/SOA and the NPAC/SMS/SOA is the need for completing internal testing of the NPAC and associated service components, i.e.; the master SMS and SOA interfaces. This testing process is referred to as the NPAC Internal Verification Test Plan.

Rigorous internal testing of the NPAC will validate the existence and system functionality of its specific service and performance capabilities. The NPAC Internal Verification Test will begin with comprehensive unit tests and will continue through individual testing of the software module, integration testing of all system elements, simulated user testing and conclude with LMIMS internal acceptance tests. Of specific interest during the test phases is the systems behavior and compliance, as defined by the NPAC SMS Inter-operable Interface Specifications, to correctly handle various Agent/Manager protocol transactions associated with notifications and replies necessary for LSMS/SOA communications.

Internal NPAC testing will be comprehensive and thorough and will cover a full range of dynamic system and service requirements, however, since the number of combinations of possible events (existing and future) is astronomical, such testing will, by necessity, be focused on currently identified service requirements and performance criteria. Tests cases will cover all functional components of the NPAC and will include areas such as Network Communications, Internal System Audits, Service Provider interaction, Subscription Version, System Recovery, Security and Access Control. Upon completion of the NPAC Internal Verification Test, a test report will be created which will evaluate the system's behavior experienced during the testing phases and certify that all system components function according to original design specification documents and functionally comply, as negotiated, with Service Provider interoperability requirements.

4.2.4.2 - SMS

4.2.4.3 - SCP

4.2.4.3.1 Database Access

Test Description:

Trace queries entering LNP to determine that it is routed to correct location accessing the proper database. If multi applications SCP it will require the assurance that LNP information is obtained from the proper source within the SCP.

Test Procedure:

- < Trace queries entering LNP using information contained in Section 2 to determine that it is routed to correct location accessing the proper database.
- < If multi applications SCP it will require the assurance that LNP information is obtained from the proper source within the SCP.

Expected Results:

- < Queries entering LNP database are routed to correct location accessing the proper database.

4.2.4.2 - LNP Database (SCP)

The LNP database must contain all the current information for the routing of all ported numbers that maybe contained within the assigned NPA. Non ported numbers within a ported NPA should have prescribed response to the SSP.

4.2.4.2.1 Translations, Ability of SCP to properly translate and provide LRN

Test Description:

Place call to database to test the ability to properly translate to LRN for proper EO (10 digit translation to support CLASS services)

Test Procedure:

- < Place call to database LNP using information contained in Section 2 to test the ability to properly translate to LRN for proper EO (10 digit translation to support CLASS services)

Expected Results:

- < The database properly translates to LRN for proper EO (10 digit translation to support CLASS services)

4.2.4.2.2 Record or range is not identified within database**Test Description:**

Place call to database requesting response on records that are not identified in the database, but are identified as a ported number range.

Test Procedure:

- < Place call to database requesting response on records that are not identified in the database LNP using information contained in Section 2, but are identified as a ported number range.

Expected Results:

- < If a record or range is not identified within database, response must address customer requirement and have an adequate response.

4.2.4.2.3 Vacant record, Response of SCP if the space exists for the record, but the datafill doesn't exist.**Test Description:**

Place call to valid number that contains a vacant record in the database.

Test Procedure:

- < Place call to valid number LNP using information contained in Section 2 which contains a vacant record in the database.

Expected Results:

- < Response of SCP if the space exists for the record, but the datafill doesn't exist should initiate an announcement response to customer.

4.2.4.2 LRN LNP Test 4.2.4-4 - Record missing responses, record or range is not identified within database**Test Description:**

Place call to database requesting response on records that are not identified in the database, and are identified as a ported number range.

Test Procedure:

- < Place call to database using information contained in Section 2 requesting response on records that are not identified in the database, and are identified as a ported number range.
- < Response must address customer requirement and have an adequate response. This is for a number range that is not identified as ported

Expected Results:

- < If a record or range is not identified within database, response must address customer requirement and have an adequate response.

4.2.5 - Network Interconnections

Various SSPs and STPs potentially routing messages to LNP customers. Tests are required from all identifiable sources of calls to ported numbers. This would require testing through various elements that contain the SSP and STP functionality.

The assumption is made that all Network Elements (NE) involved in the testing beyond this point in the FCC Field Test Plan are working NEs which have been tested and have attained satisfactory compliance to established industry standards.

4.2.5.1 - NPAC

There will be three phases of testing to support the implementation of the NPAC SMS in Illinois. These are:

- Interoperability Testing
- NPAC SMS Functional Testing
- Turn-Up Testing

Phase 1 - Interoperability Testing

Interoperability testing is comprised of three components:

- Stack to Stack
- Object to Object
- Association Recovery

The Interoperability Test Plan will be developed by Lockheed-Martin (LMIMS). Interoperability testing is primarily required for hardware providers (LSMS & SOA). This testing phase is a prerequisite for Turn-Up Testing.

Phase 2 - NPAC SMS Functional Testing

This phase of testing will be done internally by LMIMS to validate functionality of the NPAC SMS as designed in the Functional Requirements Specifications (FRS) and External Design (ED) document. This test plan will be developed by LMIMS. Testing will be accomplished on the NPAC SMS platform with SOA and LSMS simulators. LMIMS will provide a test plan to the NPAC SMS Subcommittee for review and weekly status reports will be generated throughout this testing period.

Phase 3 - Turn-Up Testing

This phase of testing will be conducted with LMIMS on the NPAC SMS and each of the Service Providers (SPs) through the SOA and LSMS interfaces. The Turn-Up testing will be conducted in scheduled time slots for each of the participating SPs. Each SP will test for 3 weeks on, 2 weeks off, and 2 weeks on. Staged starts will be at one week intervals. The test plan will be developed jointly with LMIMS and NPAC SMS Subcommittee.

4.3 - Provider to Provider Interfaces

The administrative interaction between the Service Providers must allow for the transfer of all information via agreed upon communication channels, passing the information required for the carriers and EOs to gain the information to provide service to the end subscribers. Section 4.3 tests the participant interactions at a company to company level. Interaction with the NPAC is described in the testing contained in Appendix F.

Downloading of LNP/LRN's to the individual companies is done effectively between the NPAC interacting with the SMS, which update the appropriate SCPs. Ensuring the SCPs being used are obtaining the proper information in from the SMS in a timely manner.

Show the functionality of the interaction between the participants for each interconnection being used to provide the LRN conversion.

4.3.1 - Electronic Interface

This section tests automated electronic interfaces between service providers. This interface can range from fax and PC interconnection to an EDI or OSI interface.

4.3.2 - Provisioning Process

The providing process and shown in the Flow Diagram (Appendix A, Figure XZ) is being tested to ensure the correct exchange of information on the media chosen between the participants.

4.3.3 - Repair Process

Similar to process being used on 800/888 database trouble reporting.

Subscriber with ported number encounters trouble on line

Subscriber makes decision to report problem to service provider

- < Reports to assigned LSP
- < Reports to other LSP
- < Reports to OSP

Assigned LSP responds directly to report

- < Responds to subscriber, takes report
- < Identifies that subscriber is valid customer
 - < If not refers to proper LSP
- < Tests subscriber service
- < Explains any repair costs to subscriber
- < Arranges repair schedule

Other LSP, receives call from subscriber

- < Responds to subscriber, takes report
- < Identifies which LSP has assigned subscriber
 - < Uses access to LNP SMS
 - < Refers to proper LSP for repair
- < Assigned LSP repairs customer service and responds to customer as shown above for "Assigned LSP"

Operator Service Provide, receives call from subscriber

- < Responds to subscriber, takes report
- < Identifies which LSP has assigned subscriber
 - < Uses access to LNP SMS
 - < Refers to proper LSP for repair
- < Assigned LSP repairs customer service and responds to customer as shown above for "Assigned LSP"

LSP test subscribers services

- < Determines cause of problems
- < Refers problem to appropriate organization for repair
- < Follows up with customer, giving status and arranging access if needed

LNP SMS

- ⟨ Repairs all data base problems referred by authorized LSP

Subscriber returned to service

- ⟨ LSP informs customer of repairs

4.3.3.1.1 Trouble Report initiated by a Ported number, reporting to LSP providing service

Test Description:

- < From a Ported subscriber line (see Appendix A, Figures 28 through 31)
- < Subscriber notifies Service provider of problem encountered with service
- < Service provider Tests subscribers service
- < Service provider determines if database or other problem is the cause
- < If problem resides in database Service provider refers trouble to LNP SMS provider
- < If problem is within network, normal network trouble reporting procedures are implemented
- < Subscriber notified when problem repaired

Test Procedure:

- < From 312-NXX-507X (terminating on a default switch) (see Appendix A, Figures 28 through 31)
- < Subscriber notifies service provider of problem encountered on line, "Getting wrong numbers"
- < Service provider tests line
- < Service provider identifies problem residing in LNP SMS and refers problem out
- < SMS checks translations in SCP and identifies problem
- < SMS corrects information in SCP and reports back to service provider
- < Service provider retests line to ensure correct operation
- < Service provider then closes trouble report with subscriber
- < Document Test Results, including time required for all transitional steps
- < Report results of tests to Appropriate reporting organization using forms in Appendix D

Expected Results:

- < Subscribers report is taken and properly tested
- < Trouble report is not lost moving to and from SMS
- < 312-NXX-507X is fully functional and test ported number after repairs are completed
- < Dips were made on all tests to 312-NXX-507X after porting was completed
- < Verify that response time of process is not excessive
- < No trouble reports generated in switch
- < Proper billing records generated

4.3.3.1.2 Trouble Report initiated by a Ported number, reporting to an LSP not providing service

Test Description:

- < From a Ported subscriber line (see Appendix A, Figures 28 through 31)
- < Subscriber notifies another LSP of problem encountered with service (call is initiated from another line, or subscriber is just not aware of who is providing service)
- < Other LSP takes reports from subscriber
- < Other LSP identifies carrier through SMS
- < Other LSP refers trouble to service provider
- < Service provider Tests subscribers service
- < Service provider determines if database or other problem is the cause
- < If problem resides in database Service provider refers trouble to LNP SMS provider
- < If problem is within network, normal network trouble reporting procedures are implemented
- < Subscriber notified when problem repaired

Test Procedure:

- < From 312-NXX-507X (terminating on a default switch) (see Appendix A, Figures 28 through 31)
- < Subscriber notifies another LSP of problem encountered with service (call is initiated from another line, or subscriber is just not aware of who is providing service)
- < Subscriber notifies service provider of problem encountered on line, "Getting wrong numbers"
- < Other LSP takes reports from subscriber
- < Other LSP identifies carrier through SMS
- < Other LSP refers trouble to service provider
- < Service provider tests line
- < Service provider identifies problem residing in LNP SMS and refers problem out
- < SMS checks translations in SCP and identifies problem
- < SMS corrects information in SCP and reports back to service provider
- < Service provider retests line to ensure correct operation
- < Service provider then closes trouble report with subscriber
- < Document Test Results, including time required for all transitional steps
- < Report results of tests to Appropriate reporting organization using forms in Appendix D

Expected Results:

- < Subscribers report is taken by other LSP
- < Trouble report is passed to proper service provider
- < Service provider properly tests service
- < Trouble report is not lost moving to and from SMS
- < 312-NXX-507X is fully functional and test ported number after repairs are completed

- < Dips were made on all tests to 312-NXX-507X after porting was completed
- < Verify that response time of process is not excessive
- < No trouble reports generated in switch
- < Proper billing records generated

4.3.3.1.3 Trouble Report initiated by a Ported number, reporting to an Operator Service Provider

Test Description:

- < From a Ported subscriber line (see Appendix A, Figures 28 through 31)
- < Subscriber notifies OSP of problem encountered with service (call is initiated from another line, or subscriber is just not aware of who is providing service)
- < OSP identifies carrier through SMS
- < OSP refers subscriber to appropriate service provider
- < Service provider tests subscribers service
- < Service provider determines if database or other problem is the cause
- < If problem resides in database Service provider refers trouble to LNP SMS provider
- < If problem is within network, normal network trouble reporting procedures are implemented
- < Subscriber notified when problem repaired

Test Procedure:

- < From 312-NXX-507X (terminating on a default switch) (see Appendix A, Figure 28 through 31)
- < Subscriber notifies OSP of problem encountered with service (call is initiated from another line, or subscriber is just not aware of who is providing service)
- < Subscriber notifies service provider of problem encountered on line, "Getting wrong numbers"
- < OSP identifies carrier through SMS
- < OSP refers subscriber to service provider
- < Service provider tests line
- < Service provider identifies problem residing in LNP SMS and refers problem out
- < SMS checks translations in SCP and identifies problem
- < SMS corrects information in SCP and reports back to service provider
- < Service provider retests line to ensure correct operation
- < Service provider then closes trouble report with subscriber
- < Document Test Results, including time required for all transitional steps
- < Report results of tests to Appropriate reporting organization using forms in Appendix D

Expected Results:

- < Subscribers report is taken by other OSP
- < Trouble report is passed to proper service provider
- < Service provider properly tests service
- < Trouble report is not lost moving to and from SMS
- < 312-NXX-507X is fully functional and test ported number after repairs are completed
- < Dips were made on all tests to 312-NXX-507X after porting was completed
- < Verify that response time of process is not excessive

- < No trouble reports generated in switch
- < Proper billing records generated

4.3.4 - Conflict Resolution

Conflict exists when there is a disagreement between the NSP and ECO concerning the subscriber.

NSP initiates and coordinate resolution process

- ⟨ NSP calls old service provider at management level to begins escalation

Individual Default switch service providers

- ⟨ Resolve problem between management of both organizations in accord with local bilateral agreements

Arbitration between providers if situation can not be resolved

4.4 - Porting Process

Porting Process testing is designed to determine the ability of the various networks to manage the subscriber's service during inter-network activities that are required between LSPs. The primary thrust of these tests is to develop and evaluate the processes that are necessary between the networks involving these transitions. Many of these tests will assume that the services are unbundled and are available to be contracted partially by other carriers. The interconnection configurations are shown in Figures 27 through 31 in Appendix A.

The transition of subscribers for this aggregation of tests will involve the initial test of subscriber services, which will be limited in an actual working environment. The primary direction of this portion of certification activity is the movement of the line ensuring the least amount of disruption to the customer. The process flow has been developed by the Illinois Local Number Portability Operation Committee (ICC Flowcharts contained in Appendix A). 800 / 888 database trouble reporting was is used as the pattern for the Trouble Reporting test sequence.

The interaction between networks is the primary concern of the test scripts, with limited description of what should transpire within each individual network. Communication between participants should be used as the testing progresses streamline the process within the individual Service Provider's organization. Other tests can be done or repeated to ensure that the services are functional in the ported environment. Basic Interconnection Tests (from the FCC Field Test Plan Section 4.1 and 4.2) are identified for applications before and after the progression from one carrier to another. Tests contained in other sections of the FCC Field Test Plan can also be selectively used to further ensure the functionality of the ported subscriber's number.

The tests are grouped into categories established by the action that is impacting the subscriber line. The individual tests scripts are then separated by where the transition of the line occurs. The unbundling of the loop and possible configurations (Appendix A -- Figures 27 through 31) will be the primary considerations for the transitions. These tests will encompass the spectrum from an LSP providing the entire service including the local loop, to where the transition occurs with collocated switches.

Participants are expected to have departments within their organizations to perform the functions identified in the test scripts, therefore the tests will require the operations environment identified by the Operations Committee. New Service Provider (NSP) and Incumbent Service Provider (ISP) designations are provided in the test scripts to identify the role assigned to each participant for a series of tests. The information obtained from the process should be shared between participants as testing progresses.

4.4.1 - Basic Porting Sequence

1. End-User Contact
 - ⟨ The process begins with an end-user requesting service from the New Service Provider (SP).
2. End-User agrees to change to New Service Provider
 - ⟨ End-User agrees to change to New SP and wants to retain current telephone number (TN).
3. New Service Provider obtains End-User Authorization
 - ⟨ New SP obtains actual authority from end-user to act as the official agent on behalf of the end-user. The New SP is responsible for demonstrating necessary authority.
4. Is End-User porting all telephone numbers?
 - ⟨ The New SP determines if there is service with continued maintenance by the Old SP.
 - ⟨ If yes, go to Step (6).
 - ⟨ If no, go to Step (5).
5. New Service Provider notes “not all TNs being ported” in remarks field on LSR.
 - ⟨ The New SP makes a note in the remarks section of the LSR to identify if the end-user’s not porting all telephone numbers (TNs).
6. New Service Provider notifies Old Service Provider of change using Local Service Request (LSR).
 - ⟨ The New SP notifies the Old SP of the porting using the LSR and sends the information via an electronic gateway, FAX, or other manual means. The LSR process is defined by the Ordering and Billing Forum (OBF) and the electronic interface by the Telecommunications Industry Forum (TCIF).
7. Old Service Provider provides Firm Order Confirmation (FOC) to New Service Provider within 24 hours (see Note 5).
 - ⟨ The minimum expectation is that the FOC is returned within 24 hours excluding weekends. Exception is where superceded by inter-company agreements. It is the responsibility of the Old SP to contact the New SP if the Old SP is unable to meet the 24 hour expectation for transmitting the

- FOC. If the FOC is not received by the New SP within 24 hours, then the New SP contacts the Old SP.
- ⟨ The FOC process is defined by the OBF and the electronic interface by the TCIF.
 - ⟨ The FOC due date is no earlier than three (3) business days after the FOC receipt date. The first TN ported in an NPA-NXX is no earlier than five (5) business days after FOC receipt date. It is assumed that the porting interval is not in addition to intervals for other requested services related to the porting (e.g., unbundled loops). The interval becomes the longest single interval required for the services requested.
8. Old and New Service Providers create and process Service Orders.
- ⟨ The SPs create and process their service orders through their internal service order systems, from the information provided on the FOC and LSR.
9. Old (optionally) and New Service Providers notify NPAC.
- ⟨ SPs enter subscription data into NPAC SMS via SOA interface for porting of end-user in accordance with the NANC Functional Requirements Specification (FRS) and the NANC Interoperability Interface Specifications (IIS).
 - ⟨ Due date on create message is the due date on the FOC. Any change of due date to NPAC must be the result of a change in the FOC due date.
10. NPAC performs data validation on each individual message.
- ⟨ NPAC SMS validates data to ensure value formats and consistency as defined in the FRS. This is not a comparison between Old and New SP messages.
11. Is data valid?
- ⟨ If yes, go to Step (14). If this is the first valid create message, the T₁ timer is started.
 - ⟨ If no, go to Step (12).
12. Return data to Service Provider.
- ⟨ If the data is not valid, the NPAC returns notification to the SP for correction.
13. Data corrected and forwarded.
- ⟨ The SP, upon notification from the NPAC SMS, corrects the data and forwards back to NPAC SMS.

14. Did NPAC receive both and matching create messages within nine (9) hours (T_1) (see Note 2).

<

15. NPAC notifies appropriate Service Provider that information is mismatched.

< The NPAC informs the SP that sent the second create that the messages are mismatched and returns to Step (12). If necessary, the SP notified will coordinate the correction.

16. NPAC notifies appropriate Service Provider that create message is missing.

< If SPs do not notify the NPAC SMS and/or provide matching data, the NPAC SMS sends a notification to the SP who did not respond to the port. This is an NPAC SMS tunable parameter. Current default is nine (9) hours (see Note 2).

< The NPAC SMS provides an Initial Concurrence Window tunable parameter that is defined as the number of hours after the subscription version was initially created by which both SPs can authorize transfer of subscription service.

17. Did Old Service Provider place order in Conflict (see Note 3).

< If yes, go to Step (25).

< If no, go to Step (18).

< Check Concurrence Flag Yes or No. If no, a conflict cause code as defined in the FRS, is designated. Old SP makes a concerted effort to contact New SP prior to placing subscription in conflict. Old SP may initiate conflict with proper conflict cause code at anytime prior to noon of the business day before the due date.

18. New Service Provider coordinates physical changes with Old Service Provider.

< The New SP has the option of requesting a coordinated order. This is the re-entry point from the Inter-Service Provider LNP Operations Flows - Conflict Flow for the Service Creation Provisioning Process Tie Point BB. If coordination is requested on the LSR an indication of yes or no for the application of an unconditional 10-digit trigger is applied. If the New SP requested a coordinated order and specified no on the application of the unconditional 10-digit trigger, the Old SP uses the unconditional 10-digit trigger at its discretion.

19. Does NPAC receive information within nine (9) hours (T_2) (see Note 2)?

- ⟨ The NPAC SMS provides a Final Concurrence Window tunable parameter that is defined as the number of hours after the concurrence request is sent by the NPAC SMS. The current default is nine (9) hours.
 - ⟨ If create messages match, go to Step (17).
 - ⟨ If T₂ timer expires, go to Step (20).
 - ⟨ If create messages are mismatched handle the same as Step (15).
20. Is create message missing from New or Old Service Provider?
- ⟨ If New SP, go to Step (21).
 - ⟨ If Old SP, go to Step (23).
21. NPAC logs no response.
- ⟨ The NPAC records that it received no matching create message from the New SP.
22. NPAC notifies both Service Providers that transaction is cancelled.
- ⟨ The subscription version is immediately cancelled by NPAC SMS. Both SPs take appropriate action related to internal work orders.
23. NPAC notifies Old SP that porting proceeds under control of New Service Provider.
- ⟨ A notification message is sent to the Old SP noting that the porting is proceeding in the absence of any message from the Old SP.
24. Unconditional 10-Digit Trigger?
- ⟨ If yes, go to Inter-Service Provider LNP Operations Flows - Provisioning with Unconditional 10-Digit Trigger - Tie Point AA.
 - ⟨ If no, go to Inter-Service Provider LNP Operations Flows - Provisioning without Unconditional 10-digit Trigger - Tie Point A.
 - ⟨ The unconditional 10-digit trigger is an option assigned to a line on a donor switch during the transition period when the line is physically moved from donor switch to recipient switch. During this period it is possible for the TN to reside in both donor and recipient switches at the same time.
 - ⟨ The unconditional 10-digit trigger may be applied by the New SP.
25. NPAC logs request to place order into conflict including conflict cause code.
- ⟨ Go to Inter-Service Provider LNP Operations Flows - Conflict Flow for the Service Creation Provisioning Process - Tie Point B.
26. End

4.4.1.1.1 Convert Non-ported number to Ported, changing loop and CO (see Appendix A, Figure 29)

Test Description:

- < From a Non-Ported subscriber line (see Appendix A, Figure 27)
- < Subscriber notifies NSP of desire to change carrier
- < Subscriber requests to keep same directory number
- < NSP processes request to convert number, using the process in Section 4.4.1
- < ISP disconnects termination
- < NSP terminates and tests subscriber to new switch using the process in Section 4.4.1 of the FCC Field Test Plan
 - < Transition made using bundled configuration, cutting the loop from the ISP CO to the NSP CO (see Appendix A, Figure 29)

Test Procedure:

- < From 312-NXX-107X (terminating on a incumbent switch) (see Appendix A, Figure 27)
- < Subscriber notifies NSP (recipient switch provider) of desire to change carrier
- < NSP notifies NPAC and ISP (donor switch provider) of impending change
- < Test 312-NXX-107X, using selection of tests identified as pre-move in Appendix F
- < NPAC, ISP and NSP transition station and facilities to NSP termination. All original translations, facilities and equipment are left in tact and placed in made busy state allowing the new service to function properly. The original configuration is kept to restore service should a problem be encountered re-terminating the service.
- < NSP coordinates transition
- < NPAC activates database modifications to port 312-NXX-107X from incumbent LSP, maintaining old database information for cut back should it be required
- < NSP releases translations to switch that add 312-NXX-107X as a ported number, and places old equipment and translation in a busy state
- < ISP activates translations in switch that identify 312-NXX-107X as a ported number to another switch, and places old translations in a busy state
- < NSP and ISP physically cut CO and loop facilities to accept 312-NXX-107X, old facilities are disconnected, not removed
- < Test 312-NXX-107X, using selection of tests identified for post-move in Appendix F
- < Test all features and services associated with 312-NXX-107X
- < When testing has determined that 312-NXX-107X is fully functional remove all translations that were made busy to the original termination
- < Document Test Results, including time required for all transitional steps

- < Report results of tests to the Implementation Project Manager using forms in Appendix D

Expected Results:

- < 312-NXX-107X is fully functional and test ported number
- < Dips were made on all tests to 312-NXX-107X after porting was completed
- < Verify that response time of process is not excessive
- < Subscriber is not without service, except during transition being coordinated by NSP
- < No trouble reports generated in switch
- < Proper billing records generated

4.4.1.1.2 Convert Non-ported number to Ported, same loop and separate COs (see Appendix A, Figure 29)

Test Description:

- < From a Non-Ported subscriber line (see Appendix A, Figure 27)
- < Subscriber notifies NSP of desire to change carrier
- < Subscriber requests to keep same directory number
- < NSP processes request to convert number, using the process in Section 4.4.1
- < ISP disconnects termination
- < NSP terminates and tests subscriber to new switch using the process in Section 4.4.1 of the FCC Field Test Plan
 - < Transition made using unbundled configuration, the loop remaining terminated at the ISP CO mdf and multiplexed with other subscribers to the NSP CO (see Appendix A, Figure 29)

Test Procedure:

- < From 312-NXX-107X (terminating on a incumbent switch) (see Appendix A, Figure 27)
- < Subscriber notifies NSP (recipient switch provider) of desire to change carrier
- < NSP notifies NPAC and ISP (donor switch provider) of impending change
- < Test 312-NXX-107X, using selection of tests identified as pre-move in Appendix F
- < NPAC, ISP and NSP transition station and facilities to NSP termination. All original translations and equipment are left in tact and placed in made busy state allowing the new service to function properly. The original configuration is kept to restore service should a problem be encountered reterminating the service.
- < NSP coordinates transition
- < NPAC activates database modifications to port 312-NXX-107X from incumbent LSP, maintaining old database information for cut back should it be required
- < NSP releases translations to switch that add 312-NXX-107X as a ported number, and places old equipment and translation in a busy state
- < ISP activates translations in switch that identify 312-NXX-107X as a ported number to another switch, and places old translations in a busy state
- < NSP and ISP physically cut loop facilities to terminate 312-NXX-107X on multiplex routed to NSP
- < Test 312-NXX-107X, using selection of tests identified for post-move in Appendix F
- < Test all features and services associated with 312-NXX-107X
- < When testing has determined that 312-NXX-107X is fully functional remove all translations that were made busy to the original termination

- < Document Test Results, including time required for all transitional steps
 - < Report results of tests to the Implementation Project Manager using forms in Appendix D

Expected Results:

- < 312-NXX-107X is fully functional and test ported number
- < Dips were made on all tests to 312-NXX-107X after porting was completed
- < Verify that response time of process is not excessive
- < Subscriber is not without service, except during transition being coordinated by NSP
- < No trouble reports generated in switch
- < Proper billing records generated

Porting Without Unconditional 10 Digit Trigger

NOTE: Boxes 1 and 2 should be worked concurrently.

1. New Service Provider activates (their) Central Office translations.
 - ⟨ The New Service Provider activates their own Central Office translations.
2. Old and New Service Providers make physical changes (where necessary).
 - ⟨ Physical changes may be coordinated or not coordinated. Coordinated physical changes are based on inter-connection agreements.
3. New Service Provider notifies NPAC to activate subscriptions.
 - ⟨ The New SP sends an activate message via the SOA interface to the NPAC SMS.
 - ⟨ No NPAC subscription version may activate before the FOC due date.

NOTE: Boxes 4, 5, 6, and 7 may be concurrent, but at a minimum should be completed ASAP.

4. NPAC SMS Downloads (real time) to all Service Providers.
 - ⟨ The NPAC SMS broadcasts new subscription data to all SPs in the serving area in accordance with the NANC FRS and NANC IIS. The Generic Requirements for Service Control Point (SCP) Applications and GTT Function for Number Portability document contains a reference to a target interval for SCP updates.
5. NPAC SMS records date and time in history file.
 - ⟨ The NPAC SMS records the current date and time as the Activation Date and Time stamp, after all Local SMSs have successfully acknowledged receipt of new subscription version.
6. Old Service Provider removes translations in Central Office.
 - ⟨ The SP initiates the removal of translation either at designated Frame Due Date and Time or, if the order was designated as coordinated, upon receipt of a call from the New SP.
7. NPAC SMS logs failures and non-responses and notifies the Old and New Service Providers of failures.

- 〈 The NPAC SMS resends the activation to a Local SMS that did not acknowledge receipt of the request. The number of NPAC SMS attempts to resend is a tunable parameter for which the current default is three (3) attempts. Once this cycle is completed NPAC personnel investigate possible problems. In addition, the NPAC sends a notice to both the Old and New SPs with a list of Local SMSs that failed activation.
- 8. All Service Providers update routing databases (real time download).
 - 〈 This is an internal process and is performed in accordance with the Generic Requirements for SCP Applications and GTT Functions for Number Portability document.
- 9. New Service Provider may verify completion.
 - 〈 The New SP may make test calls to verify that calls to ported numbers complete as expected.
- 10. End

Porting with Unconditional 10 Digit Trigger

1. Old Service Provider activates unconditional 10-digit trigger in Central Office.
 - ⟨ The actual time when the trigger is to be activated is defined on a regional basis.
 - ⟨ The unconditional 10-digit trigger may optionally be applied by the New SP.
2. New Service Provider activates Central Office translations.
 - ⟨ The New SP activates their own Central Office translations.

NOTE: Boxes 3 and 4 may be worked concurrently.

3. Old and New Service Providers make physical changes (where necessary).
 - ⟨ Any physical work or changes are made by either Old or New SPs as necessary.
 - ⟨ Physical changes may be coordinated or not coordinated. Coordinated physical changes are based on inter-connection agreements.
4. New Service Provider notifies NPAC to activate subscription.
 - ⟨ The New SP sends an activate message via the SOA interface to the NPAC SMS.
 - ⟨ No NPAC subscription version may activate before the FOC due date.

NOTE: Boxes 5, 6, and 7 may be concurrent, but at a minimum should be completed ASAP.

5. NPAC SMS Downloads (real time) to all Service Providers.
 - ⟨ The NPAC SMS broadcasts new subscription data to all SPs in the serving area in accordance with the NANC FRS and NANC IIS. The Generic Requirements for Service Control Point (SCP) Applications and GTT Function for Number Portability document contains a reference to a target interval for SCP updates.
6. NPAC SMS records date and time in history file.
 - ⟨ The NPAC SMS records the current date and time as the Activation Date and Time stamp, after all Local SMSs successfully acknowledged receipt of new subscription version.
7. NPAC SMS logs failures and non-responses and notifies the Old and New Service Providers of failures.

- ⟨ The NPAC SMS resends the activation to a Local SMS that did not acknowledge receipt of the request. The number of NPAC SMS attempts to resend is a tunable parameter for which the current default is three (3) attempts. Once this cycle is completed NPAC personnel investigate possible problems. In addition, the NPAC sends a notice to both the Old and New SPs with a list of Local SMSs that failed activation.
- 8. All Service Providers update routing databases (real time download).
 - ⟨ This is an internal process and is performed in accordance with the Generic Requirements for SCP Applications and GTT Functions for Number Portability document.
 - ⟨ Old SP removes appropriate translations. After update of its databases the Old SP will remove translations associated with the ported TN. The specific time for removal may be specified on a regional basis.
- 9. New Service Provider may verify completion.

The New SP may make test calls to verify that calls to ported numbers complete as expected.

4.4.2 - Cancellation of Service Order

Subscriber has had requested number

Subscriber reverses decision and not to change local service provider

- < wants to keep current ISP as service provider
- < calls NSP or ISP to cancel change

NSP or ISP receives call from subscriber requesting service not be ported

- < explains any costs that may be incurred to subscriber
- < identifies date for change and schedule established

NSP or ISP issues order to cancel change

- < Other carrier notified (NSP or ISP) notified
- < NPAC notified
- < IC notified

LNP LSMS

- < notified of cancellation by NSP or ISP
- < notified of scheduled date for number transfer
- < change of assigned number location removed from database

NSP cancels and remove all prearranged activity

- < Removes translations in switch
- < Removes necessary jumpers in CO

ISP prepares subscribers number for normal operation

- < replaces translations required for porting, with original translation

Test made to complete transition

- < validate all services being provided
- < validate subscribers understanding of how services operate

4.4.2.1.1 Cancel Order in Progress Converting Non-ported number to Ported

Test Description:

- < From a Non-Ported subscriber line (see Appendix A, Figure 27)
- < Subscriber notifies NSP of desire to change carrier
- < Subscriber requests to keep same directory number
- < NSP processes request to convert number, using the process in Section 4.4.1
- < Subscriber changes mind and cancels change order
- < NSP terminates change sequence for using the process in Section 4.4.2 of the FCC Field Test Plan
 - < Transition made using bundled configuration, cutting the loop from the ISP CO to the NSP CO (see Appendix A, Figure 28)

Test Procedure:

- < From 312-NXX-207X (terminating on a incumbent switch) (see Appendix A, Figure 27)
- < Subscriber notifies NSP (recipient switch provider) of desire to change carrier
- < NSP notifies NPAC and ISP (donor switch provider) of impending change
- < Test 312-NXX-207X, using selection of tests identified as pre-move in Appendix F
- < Subscriber notifies NSP to cancel transfer request
- < NSP notifies NPAC of cancellation
- < NSP notifies ISP (donor switch provider) of cancellation
- < NSP confirms that NPAC and ISP have canceled required preparations
- < NPAC, ISP and NSP return all translations and equipment to status prior to transaction request
- < Test 312-NXX-207X, using selection of tests identified for pre-move in Appendix F
- < Test all features and services associated with 312-NXX-207X
- < Test to determine that 312-NXX-207X is fully functional as when test originated
- < Document Test Results, including time required for all transitional steps
 - < Report results of tests to the Implementation Project Manager using forms in Appendix D

Expected Results:

- < 312-NXX-207X is fully functional and tested non-ported number
- < No dips were made on all tests to 312-NXX-207X after stopping transition was completed
- < Verify that response time of process is not excessive

- < Subscriber is not without service, except during transition being coordinated by NSP
- < No trouble reports generated in switch
 - < Proper billing records generated

4.4.3 - Disconnect for Ported Number

Ported subscriber makes decision to disconnect service

- < calls service provider to disconnect

Service Provider issues disconnect order

- < Date for disconnect and schedule established
- < NPAC notified
- < IC notified
- < dates confirmed with subscriber

LNP LSMS

- < removes assigned number database

Test made to complete removal

- < Validate all number referrals and announcement being properly provided
- < Validate default routing

4.4.3.1.1 Disconnect Ported Subscribers Service

Test Description:

- < From a Non-Ported subscriber line (see Appendix A, Figure 27 - 31)
- < Subscriber notifies service provider of desire to disconnect service
- < Service Provider processes request to disconnect number, using the process in Section 4.4.3
- < Service provider disconnects service
- < LNP LSMS changes database to terminate number at incumbent switch or provide a referral termination
- < LSP with incumbent switch changes translations for disconnected number
- < Service disconnected

Test Procedure:

- < From 312-NXX-307X subscriber notifies service provider) of desire to disconnect service
- < Service provider notifies NPAC
- < Service provider notifies incumbent switch provider of impending disconnect
- < NPAC, NSP and ISP make preliminary modifications
- < NPAC enters database modifications to disconnect 312-NXX-307X from incumbent (donor) LSP, modifications are held in busy state until the time of the disconnect
- < Service provider adds translations to switch for adding 312-NXX-307X as a disconnected number, and places equipment and translations in a busy state
- < Incumbent switch provider prepares translations in switch to identify 312-NXX-307X as a disconnected number, and places all translations in a busy state
- < Service provider physically prepares CO and loop facilities to disconnect 312-NXX-307X
- < Service provider confirms that NPAC and incumbent switch have made required preparations
- < NPAC, incumbent switch and service provider disconnect station and facilities to service provider. All original translations, facilities and equipment are left in tact and placed in made busy state allowing the new service to function properly. The original configuration is keep to restore service should a problem be encountered terminating the service.
- < Service provider coordinates disconnect
- < NPAC disconnects subscriber number in database
- < Service provider removes translations to switch for 312-NXX-307X as a ported number

- < Incumbent switch provider activates translations in switch that identify 312-NXX-307X as a disconnected number
- < Service provider physically disconnects CO and loop facilities to 312-NXX-307X
- < Test 312-NXX-307X, using selection of tests identified for pre-move and testing vacant numbers in Appendix F
- < When completed testing has determined that 312-NXX-307X is fully disconnected all translations, removal is finalized
- < Document Test Results, including time required for all transitional steps
 - < Report results of tests to the Implementation Project Manager using forms in Appendix D

Expected Results:

- < 312-NXX-307X is a disconnect number
- < Dips were made on all tests to 312-NXX-307X after disconnect was completed are properly routed
- < Verify that response time of process is not excessive
- < Subscriber is not without service, except during transition being coordinated by NSP
- < No trouble reports generated in switch
- < Proper billing records generated

4.4.4 - Basic Un-Porting Sequence

Subscriber has assigned ported number

Subscriber makes decision to change from ported service provider, returning to incumbent provider

- < wants to keep currently assigned number
- < authorizes New Service Provider (NSP) to make move

NSP (incumbent service provider for NXX) receives call from subscriber wanting service

- < explains service to subscriber
- < explains costs to subscriber
- < arranges tentative cutover schedule

NSP (incumbent service provider for NXX) issues order for change

- < date for change and schedule established
- < Local Exchange Carrier notified Original or Ported Provider (ISP) notified, (Firm Order Confirmation (FOC))
- < NPAC notified
- < IC notified
- < dates confirmed with subscriber

NSP (incumbent service provider for NXX) prepares for move

- < validate existing configurations applicable
- < call to subscriber
- < test services in place

LNP LSMS

- < notified of scheduled change by NSP
- < notified of effective date by NSP
- < change of assigned number location entered in database
- < CPC number removed for proper routing

ISP (ported service provider) is officially notified by NSP (incumbent service provider for NXX) of move, with subscribers authority

NSP (incumbent service provider for NXX)

- < enters translations into class 5 switch prior to date
- < runs necessary jumpers in CO
- < performs pretest to ensure proper CO connections
- < programs services and features ordered
- < pretest all features and services being installed
- < instructs customer on services being installed

ISP (ported service provider) prepares subscribers number for transfer

- < places translations required for removing subscribers number from porting, holds in made busy state

NSP (incumbent service provider for NXX) installer visits premise

- < Tests facilities to NSP CO (incumbent service provider for NXX)
- < Calls ISP (ported service provider) and notifies them move is in process, disconnect subscriber
- < ISP disconnects service to subscriber
- < Call NSP to activate service
- < NSP activates service to subscriber
- < Cuts customer to NSP facilities
- < Calls LNP LSMS to redirect database information
- < LNP LSMS activates new database information and disables old
- < Test made to complete transition
- < validate all services being provided
- < validate subscribers understanding of how services operate

Subscriber transfer is complete to NSP (incumbent service provider for NXX)

4.4.4.1.1 Convert Ported number to Non-porting, changing loop and CO (see Appendix A, Figure 29)

Test Description:

- < From a Ported subscriber line (see Appendix A, Figure 29)
- < Subscriber notifies Service Provider or Incumbent switch service provider of desire to change to incumbent
- < Subscriber requests to keep same directory number, but revert to the service provider with the incumbent switch
- < Incumbent switch service provider processes request to convert number, using the process described in Section 4.5.1, but moving from the ported to the incumbent switch
- < Original ported service provider disconnects termination
- < Incumbent switch service provider terminates and tests subscriber to new switch using the process described in Section 4.5.1, but moving from the ported to the incumbent switch of the FCC Field Test Plan
- < Transition made using bundled configuration, cutting the loop from the Original ported service provider CO to the Default switch service provider CO (see Appendix A, Figure 27)

Test Procedure:

- < From 312-NXX-407X (terminating on a Original ported service provider) (see Appendix A, Figure 27)
- < Subscriber notifies Default switch service provider (default or donor switch provider) of desire to change to default
- < Default switch service provider notifies NPAC and Original ported service provider (original recipient switch provider) of impending change
- < Test 312-NXX-407X, using selection of tests identified as pre-move in Appendix F
- < NPAC, Original ported service provider and Default switch provider make preliminary modifications
- < NPAC enters database modifications to un-port 312-NXX-407X to default (donor) LSP, modifications are held in busy state until the time of the transition
- < Default switch service provider adds translations to switch for adding 312-NXX-407X as a non-porting number, and places equipment and translations in a busy state
- < Original ported service provider prepares translations in switch to identify 312-NXX-407X as a non-porting number terminating on another switch, and places all translations in a busy state
- < Default switch service provider physically prepares CO and loop facilities to accept 312-NXX-407X

- < Default switch service provider confirms that NPAC and Original ported service provider have made required preparations
- < NPAC, Original ported service provider and Default switch service provider transition station and facilities to Default switch service provider termination. All original translations, facilities and equipment are left in tact and placed in made busy state allowing the new service to function properly. The original configuration is keep to restore service should a problem be encountered re-terminating the service.
- < Default switch service provider coordinates transition
- < NPAC activates database modifications to un-port 312-NXX-407X to default LSP, maintaining old database information for cut back should it be required
- < Default switch service provider releases translations to switch that add 312-NXX-407X as a non-ported number, and places old equipment and translation in a busy state
- < Original ported service provider activates translations in switch that identify 312-NXX-407X as a non-ported number to another switch, and places old translations in a busy state
- < Default switch service provider physically cuts CO and loop facilities to accept 312-NXX-407X, old facilities are disconnected, not removed
- < Test 312-NXX-407X, using selection of tests identified for post-move in Appendix F
- < Test all features and services associated with 312-NXX-407X
- < When testing has determined that 312-NXX-407X is fully functional remove all translations that were made busy to the original termination
- < Document Test Results, including time required for all transitional steps
 - < Report results of tests to the Implementation Project Manager using forms in Appendix D

Expected Results:

- < 312-NXX-407X is fully functional and tested non-ported number
- < Dips were properly routed on all test calls to 312-NXX-407X after un-porting was completed
- < Verify that response time of process is not excessive
- < Subscriber is not without service, except during transition being coordinated by Default switch service provider
- < No trouble reports generated in switch
 - < Proper billing records generated

4.5.1 - Basic Message Interactions

4.5.1.1 - Basic Calls

4.5.1.1.1 Intra-LATA (SS7) Ported Number to Ported Number

Test Description:

This will test that an intra-LATA call can be completed from a ported number to a ported number using direct trunks. See Appendix A, Figure 45.

Test Procedure:

- < From a ported number
- < Call a ported number
- < LEC delivers intra-LATA call
- < Document Test Results, including time required for all transitional steps
 - < Report results of tests to the Implementation Project Manager using forms in Appendix D

Test Results:

- < Originating LSP performs LRN database dip
- < Originating LSP routes call to Destination LSP serving ported number
- < LEC ISUP IAM contains LRN in CdPN parameter, ported destination number in GAP, bit M of FCI set, JIP
- < Terminating LSP completes call to ported number
 - < Originating and terminating LRN modules create appropriate AMA record

4.5.1.1.2 Intra-LATA Local (SS7) Ported Number to Non-ported Number in an NPA-NXX Opened to Portability

Test Description:

This will test that an intra-LATA call can be completed from a ported number to a non-ported number in an NPA-NXX opened to portability using direct trunks. See Appendix A, Figure 46.

Test Procedure:

- < From a ported number
- < Call a non-ported number in an NPA-NXX opened to portability Document Test Results, including time required for all transitional steps
 - < Report results of tests to the Implementation Project Manager using forms in Appendix D

Test Results:

- < Originating LSP routes call to Destination LSP serving non-ported number
- < Originating LSP to Destination LSP ISUP IAM contains non-ported destination number in CdPN parameter, no GAP, bit M of FCI set, JIP
- < Terminating LSP completes call to non-ported number
 - < Originating and terminating LSPs create appropriate AMA record

4.5.1.1.4 Intra-LATA (SS7) Non-ported Number in an NPA-NXX Opened to Portability to Ported Number

Test Description:

This will test that an intra-LATA call can be completed from a non-ported number in an NPA-NXX opened to portability to a ported number using direct trunks. See Appendix A, Figure 48.

Test Procedure:

- < From a non-ported number in an NPA-NXX opened to portability
 - < Call a ported number

Test Results

- < Originating LSP performs LRN database dip
- < Originating LSP routes call to Destination LSP serving ported number
- < LEC ISUP IAM contains LRN in CdPN parameter, ported destination number in GAP, bit M of FCI set, JIP
- < Terminating LSP completes call to ported number
 - < Originating and terminating LSPs create appropriate AMA record

4.5.1.1.10 Intra-LATA (SS7) Ported Number to Ported Number

Test Description:

This will test that an intra-LATA call can be completed from a ported number to a ported number using access Tandem. See Appendix A, Figure 53.

Test Procedure:

- < From a ported number
- < Call a ported number
- < Document Test Results, including time required for all transitional steps
 - < Report results of tests to the Implementation Project Manager using forms in Appendix D

Test Results:

- < Originating LSP performs LRN database dip
- < Originating LSP routes call to Access Tandem
- < LSP to AT ISUP IAM contains LRN in CdPN parameter, ported destination number in GAP, bit M of FCI set, JIP
- < ISUP message is not the LRN of AT, AT forwards call to destination LSP based on the LRN and forwards the IAM it received.
- < Terminating LSP completes call to ported number
 - < Originating and terminating LRN modules create appropriate AMA record

4.5.1.1.13 Intra-LATA (SS7) Non-ported Number in an NPA-NXX Opened to Portability to Ported Number

Test Description:

This will test that an intra-LATA call can be completed from a non-ported number in an NPA-NXX opened to portability to a ported number using access tandem. See Appendix A, Figure 56.

Test Procedure:

- < From a non-ported number in an NPA-NXX opened to portability
- < Call a ported number
- < Document Test Results, including time required for all transitional steps
 - < Report results of tests to the Implementation Project Manager using forms in Appendix D

Test Results:

- < Originating LSP performs LRN database dip
- < Originating LSP routes call to Access Tandem
- < Originating LSP to AT ISUP IAM contains LRN in CdPN parameter, ported destination number in GAP, bit M of FCI set, JIP
- < ISUP message is not the LRN of AT, AT forwards call to destination LSP based on the LRN and forwards the IAM it received.
 - < Originating and terminating LSPs create appropriate AMA record

4.5.1.1.18 Intra-LATA Toll (SS7) Ported Number to Ported Number**Test Description:**

This will test that an intra-LATA toll call can be completed from a ported number to a ported number using 7 or 10 digit dialing. See Appendix A, Figure 61.

Test Procedure:

- < From a ported number
- < Call a ported number
- < Default Toll carrier delivers intra-LATA toll call
- < Document Test Results, including time required for all transitional steps
 - < Report results of tests to the Implementation Project Manager using forms in Appendix D

Test Results:

- < Originating LSP routes call to default Toll carrier
- < Originating LSP does not perform LRN database dip
- < Originating LSP sends JIP
- < Default Toll carrier performs LRN database dip
- < Default Toll carrier routes call to LSP serving ported number
- < Default Toll carrier to destination LSP ISUP IAM contains LRN in CdPN parameter, ported destination number in GAP, bit M of FCI set, JIP
- < Terminating LSP completes call to ported number
 - < Originating, terminating and Toll carrier create appropriate AMA records

4.5.1.1.19 Intra-LATA Toll (SS7) Ported Number to Non-ported Number in an NPA-NXX Opened to Portability

Test Description:

This will test that an intra-LATA call can be completed from a ported number to a non-ported number in an NPA-NXX opened to portability using 7 or 10 digit dialing. See Appendix A, Figure 62.

Test Procedure:

- < From a ported number
- < Call a non-ported number in an NPA-NXX opened to portability
- < Default Toll carrier delivers intra-LATA toll call
- < Document Test Results, including time required for all transitional steps
 - < Report results of tests to the Implementation Project Manager using forms in Appendix D

Test Results:

- < Originating LSP routes call to default Toll carrier
- < Originating LSP does not perform LRN database dip
- < Originating LSP sends JIP
- < Default Toll Carrier performs LRN database dip
- < Default Toll Carrier routes call to LSP serving non-ported number
- < Default Toll carrier to LSP ISUP IAM contains non-ported destination number in CdPN parameter, no GAP, bit M of FCI set, JIP
- < Terminating LSP completes call to non-ported number
 - < Originating, terminating and Toll carrier LRN create appropriate AMA records

4.5.1.1.21 Intra-LATA Toll (SS7) Non-ported Number in an NPA-NXX Opened to Portability to Ported Number

Test Description:

This will test that an intra-LATA Toll call can be completed from a non-ported number in an NPA-NXX opened to portability to a ported number using the default Toll Carrier using 7 or 10 digit dialing. See Appendix A, Figure 64.

Test Procedure:

- < From a non-ported number in an NPA-NXX opened to portability
- < Call a ported number
- < Default Toll carrier delivers intra-LATA toll call
- < Document Test Results, including time required for all transitional steps
 - < Report results of tests to the Implementation Project Manager using forms in Appendix D

Test Results:

- < Originating LSP routes call to default Toll carrier
- < Originating LSP does not perform LRN database dip
- < Originating LSP sends JIP
- < Default Toll carrier performs LRN database dip
- < Default Toll carrier routes call to LSP serving ported number
- < Default Toll carrier to LSP ISUP IAM contains LRN in CdPN parameter, ported destination number in GAP, bit M of FCI set, JIP
- < Terminating LSP completes call to ported number
 - < Originating, terminating and Toll carrier create appropriate AMA records

4.5.1.1.26 Intra-LATA Toll Dial-Around (SS7) Ported Number to Ported Number**Test Description:**

This will test that an intra-LATA toll call can be completed from a ported number to a ported number using dial-around (Dial-around + 7 or 10 digit dialing). See Appendix A, Figure 61.

Test Procedure:

- < From a ported number
- < Call a ported number using (Dial-around)
- < Dial-around LSP delivers intra-LATA toll call
- < Document Test Results, including time required for all transitional steps
 - < Report results of tests to the Implementation Project Manager using forms in Appendix D

Test Results:

- < Originating LSP routes call to dial-around Toll carrier
- < Originating LSP does not perform LRN database dip
- < Originating LSP sends JIP
- < Dial-around Toll carrier performs LRN database dip
- < Dial-around Toll carrier routes call to LSP serving ported number
- < Toll carrier to destination LSP ISUP IAM contains LRN in CdPN parameter, ported destination number in GAP, bit M of FCI set, JIP
- < Terminating LSP completes call to ported number
 - < Originating, terminating and Toll carrier LRN create appropriate AMA records

4.5.1.1.27 Intra-LATA Toll Dial-Around (SS7) Non-ported Number in an NPA-NXX Opened to Portability to Ported Number

Test Description:

This will test that an intra-LATA Toll call can be completed from a non-ported number in an NPA-NXX opened to portability to a ported number using the dial-around Toll Carrier using dial-around. See Appendix A, Figure 62.

Test Procedure:

- < From a non-ported number in an NPA-NXX opened to portability
- < Call a ported number
- < Dial-around Toll carrier delivers intra-LATA toll call
- < Document Test Results, including time required for all transitional steps
 - < Report results of tests to the Implementation Project Manager using forms in Appendix D

Test Results:

- < Originating LSP routes call to dial-around Toll carrier
- < Originating LSP does not perform LRN database dip
- < Originating LSP sends JIP
- < Dial-around Toll carrier performs LRN database dip
- < Dial-around Toll carrier routes call to LSP serving ported number
- < Dial-around Toll carrier to LSP ISUP IAM contains LRN in CdPN parameter, ported destination number in GAP, bit M of FCI set, JIP
- < Terminating LSP completes call to ported number
 - < Originating, terminating and Toll carrier create appropriate AMA records

4.5.1.1.28 Intra-LATA Toll (SS7) Ported Number to Ported Number

Test Description:

This will test that an intra-LATA toll call can be completed from a ported number to a ported number using 7 or 10 digit dialing. See Appendix A, Figure 69.

Test Procedure:

- < From a ported number
- < Call a ported number
- < Default toll carrier delivers intra-LATA toll call
- < Document Test Results, including time required for all transitional steps
 - < Report results of tests to the Implementation Project Manager using forms in Appendix D

Test Results:

- < Originating LSP routes call to access tandem
- < Access tandem uses existing procedure to route call to default Toll carrier using the dialed number in the CdPN
- < Originating LSP does not perform LRN database dip
- < Originating LSP sends JIP
- < Default Toll carrier performs LRN database dip
- < Default Toll carrier routes call to LSP serving ported number
- < Default Toll carrier to destination LSP ISUP IAM contains LRN in CdPN parameter, ported destination number in GAP, bit M of FCI set, JIP
- < Terminating LSP completes call to ported number
 - < Originating, terminating and Toll carrier create appropriate AMA records

4.5.1.1.29 Intra-LATA Toll (SS7) Non-ported Number in an NPA-NXX Opened to Portability to Ported Number

Test Description:

This will test that an intra-LATA Toll call can be completed from a non-ported number in an NPA-NXX opened to portability to a ported number using the default Toll Carrier using 7 or 10 digit dialing. See Appendix A, Figure 70.

Test Procedure:

- < From a non-ported number in an NPA-NXX opened to portability
- < Call a ported number
- < Default Toll carrier delivers intra-LATA toll call
- < Document Test Results, including time required for all transitional steps
 - < Report results of tests to the Implementation Project Manager using forms in Appendix D

Test Results:

- < Originating LSP routes call to access tandem
- < Access tandem uses existing procedure to route call to default Toll carrier using the dialed number in the CdPN
- < Originating LSP does not perform LRN database dip
- < Originating LSP sends JIP
- < Default Toll carrier performs LRN database dip
- < Default Toll carrier routes call to LSP serving ported number
- < Default Toll carrier to LSP ISUP IAM contains LRN in CdPN parameter, ported destination number in GAP, bit M of FCI set, JIP
- < Terminating LSP completes call to ported number
 - < Originating, terminating and Toll carrier create appropriate AMA records

4.5.1.1.31 Intra-LATA Toll Dial-Around (SS7) Non-ported Number in an NPA-NXX Opened to Portability to Ported Number

Test Description:

This will test that an intra-LATA Toll call can be completed from a non-ported number in an NPA-NXX opened to portability to a ported number using the dial-around Toll Carrier using dial around (10XXX = 7 or 10 digit dialing). See Appendix A, Figure 70.

Test Procedure:

- < From a non-ported number in an NPA-NXX opened to portability
- < Call a ported number
- < Dial-around Toll carrier delivers intra-LATA toll call
- < Document Test Results, including time required for all transitional steps
 - < Report results of tests to the Implementation Project Manager using forms in Appendix D

Test Results:

- < Originating LSP routes call to Access Tandem
- < Access tandem uses existing procedure to route call to dial-around Toll carrier using the dialed number in the CdPN
- < Originating LSP does not perform LRN database dip
- < Originating LSP sends JIP
- < Dial-around Toll carrier performs LRN database dip
- < Dial-around Toll carrier routes call to LSP serving ported number
- < Dial-around Toll carrier to LSP ISUP IAM contains LRN in CdPN parameter, ported destination number in GAP, bit M of FCI set, JIP
- < Terminating LSP completes call to ported number
 - < Originating, terminating and Toll carrier create appropriate AMA records

4.5.1.3 - MF Signaling Direct trunks

4.5.1.3.1 Intra-LATA MF Signaling Ported Number to Ported Number

Test Description:

This will test that an intra-LATA call can be completed from a ported number to a ported number served by an LSP with direct MF connection. See Appendix A, Figures 73 and 74.

Test Procedure:

- < From a ported number
- < Call a ported number served by LSP with direct MF trunk
- < Document Test Results, including time required for all transitional steps
 - < Report results of tests to the Implementation Project Manager using forms in Appendix D

Test Results:

- < Originating LSP performs LRN database dip
- < Originating LSP routes call to serving LSP
- < Terminating LSP completes call to ported number
- < Originating, terminating carrier create appropriate AMA records

4.5.1.3.2 Intra-LATA Terminating MF Signaling Ported Number to Non-ported Number in an NPA-NXX Opened to Portability

Test Description:

This will test that an intra-LATA call can be completed from a ported number to a non-ported number in an NPA-NXX opened to portability served by an LSP with direct MF connection. See Appendix A, Figures 73 and 74.

Test Procedure:

- < From a ported number
- < Call a non-ported number in an NPA-NXX opened to portability served by LSP with direct MF trunks
- < Document Test Results, including time required for all transitional steps
 - < Report results of tests to the Implementation Project Manager using forms in Appendix D

Test Results:

- < Originating LSP carrier performs LRN database dip
- < Originating LSP routes call to LSP serving non-ported number
- < Terminating LSP completes call to non-ported number
- < Originating and terminating LSP create appropriate AMA records

4.5.1.3.3 Intra-LATA (Access Tandem) Terminating MF Signaling Ported Number to Ported Number

Test Description:

This will test that an intra-LATA call can be completed from a ported number to a ported number served by an LSP with MF connection to an Access Tandem. See Appendix A, Figure 77.

Test Procedure:

- < From a ported number
- < Call a ported number served by LSP with MF connection to a Access Tandem
- < Document Test Results, including time required for all transitional steps
 - < Report results of tests to the Implementation Project Manager using forms in Appendix D

Test Results:

- < Originating LSP performs LRN database dip
- < Originating LSP routes call to AT
- < Originating LSP to AT ISUP IAM contains LRN number in CdPN parameter, Called party number in GAP, bit M of FCI set, JIP
- < LRN number is not the DN of the AT, the AT routes
- < call to Terminating LSP
- < Terminating LSP completes call to ported number
 - < Originating and terminating carrier create appropriate AMA records

4.5.1.3.5 Intra-LATA Toll Terminating MF Signaling Ported Number to Ported Number

Test Description:

This will test that an intra-LATA Toll call can be completed from a ported number to a ported number served by an LSP with MF connection. See Appendix A, Figure 78.

Test Procedure:

- < From a ported number
- < Call a ported number served by LSP with MF connection to Toll carrier
- < Document Test Results, including time required for all transitional steps
 - < Report results of tests to the Implementation Project Manager using forms in Appendix D

Test Results:

- < Originating LSP routes call to Toll Carrier (2 PICd or Dial-around)
- < Originating LSP does not perform LRN database dip
- < Originating LSP sends JIP
- < Toll carrier performs LRN database dip
- < Toll carrier routes call to LSP serving ported number
- < Terminating LSP completes call to ported number
 - < Originating, terminating and Toll carrier create appropriate AMA records

4.5.1.7 - Cause Code Value 26

4.5.1.7.1 Ported Number to Ported Number

Test Description:

This will test that Cause Code Value 26 will be sent back appropriately on a call from a ported number to a ported number.

Test Procedure:

- < From a ported number
- < Call a ported number
- < Terminating LSP identifies own LRN, but does not find ported number on switch
- < Document Test Results, including time required for all transitional steps
 - < Report results of tests to the Implementation Project Manager using forms in Appendix D

Test Results:

- < Originating LSP routes call to destinations LSP
- < Originating LSP performs LRN database dip
- < Originating LSP sends JIP
- < Originating LSP ISUP IAM contains LRN in CdPN parameter, ported destination number in GAP, bit M of FCI set, JIP
- < Terminating LSP recognizes LRN as its own, but does not find ported destination number on switch
 - < Terminating LSP releases call with Cause Code 26 and sends Release message back to originating LSP

4.5.1.7.2 Ported Number to Ported Number

Test Description:

This will test that Cause Code Value 26 will be sent back appropriately on a call from a ported number to a ported number.

Test Procedure:

- < From a ported number
- < Call a ported number
- < Terminating LSP identifies own LRN, but does not find ported number on switch
- < Document Test Results, including time required for all transitional steps
 - < Report results of tests to the Implementation Project Manager using forms in Appendix D

Test Results:

- < Originating LSP routes call to access tandem
- < Originating LSP performs LRN database dip
- < Originating LSP sends JIP
- < Originating LSP ISUP IAM contains LRN in CdPN parameter, ported destination number in GAP, bit M of FCI set, JIP
- < ISUP message is not the LRN of AT, AT forwards call to destination
- < Terminating LSP recognizes LRN as its own, but does not find ported destination number on switch
 - < Terminating LSP releases call with Cause Code 26 and sends Release message back to originating LSP

4.5.1.7.3 Ported to Ported Number

Test Description:

This will test that Cause Code Value 26 will be sent back appropriately on a call from a ported number to a ported number.

Test Procedure:

- < From a ported number
- < Call a ported number
- < Terminating LSP identifies own LRN, but does not find ported number on switch
- < Document Test Results, including time required for all transitional steps
 - < Report results of tests to the Implementation Project Manager using forms in Appendix D

Test Results:

- < Originating LSP routes call to toll carrier
- < Originating LSP does not perform LRN database dip
- < Originating LSP sends JIP
- < Originating LSP ISUP IAM contains ported number in CdPN parameter, no GAP, bit M of FCI not set, JIP
- < Toll carrier performs LRN dip
- < Toll carrier ISUP IAM contains LRN in CdPN parameter, ported number in GAP, bit M of FCI set, JIP
- < Terminating LSP releases call with Cause Code 26 and sends Release message back to originating LSP

4.5.3 - Intra-LATA CLASS Features

4.5.3.1 - Intra-LATA Call Return, Automatic Call Back (AC)

4.5.3.1.1 Intra-LATA Local Call Return, Automatic Call Back (AC) Ported Number (A) to Ported Number (B)

Test Description:

Invoke Call Return feature. Called party(B) uses Call Return (*69) to call back calling party (A) immediately after disconnecting.

Test Procedure:

- < A calls B
- < A hears audible ringing
- < B hears ringing
- < B goes off-hook
- < A and B talk
- < Both parties hang up.
- < B uses Level 1 Call Return (*69) to call A

Test Results:

- < B hears audible ringing
- < A hears ringing
- < A goes off-hook
- < A and B talk

4.5.3.2 - Intra-LATA Automatic Recall

4.5.3.2.1 Automatic Recall, Ported Number to Ported Number

Test Description:

Invoke Repeat Dialing feature to an idle phone.

Test Procedure:

- < A calls B
- < A hears audible ringing
- < B hears ringing
- < B goes off-hook
- < A and B talk
- < Both parties hang up.
- < A uses Repeat Dialing (*66) to call B

Test Results:

- < A hears audible ringing
- < B hears ringing
- < B goes off-hook
- < A and B talk
- < A & B Disconnect From Call

4.5.3.3 - Intra-LATA Caller ID & Per Call Privacy Feature

4.5.3.3.1 Caller ID, Ported Number to Ported Number

Test Description:

Invoke Call ID per-call privacy if caller subscribes to per-call privacy feature.

Test Procedure

- < (Call ID with per call privacy)
- < A calls B by dialing *67 before B's DN.
- < B does not receive A's DN due to privacy.
- < A and B disconnect from call.
- < A calls B
- < A hears audible ringing
- < B hears ringing
- < Pass Call ID

Results

1. For calls made with the prefix *67 no caller ID is delivered to the destination
2. For call made without the prefix *67 caller ID is delivered to the destination
3. The number delivered to the destination is the ported or non-porting number of the originator (not the LRN).

4.5.3.4 - Intra-LATA Customer Originated Trace (COT)**4.5.3.4.1 COT, Ported Number(A) to Ported Number(B)****Test Description:**

Invoke Call Trace.

Test Procedure:

- < A calls B
- < Both parties hang up.
- < B activates Call Trace by dialing *57 to send A's number to the COT printer.
- < B receives confirmation announcement including the instructions that should be followed.

Results

- < A's telephone number will be printed on the COT printer.
- < The DN will be the ported or non-ported number (not the LRN)

4.5.3.7 - Intra-LATA, Caller Name Delivery

4.5.3.7.1 Caller Name Delivery Ported Number to Ported Number

Test Description:

Invoke Call ID & Caller Name per-call privacy if caller subscribes to per-call privacy feature.

Test Procedure

- < A calls B by dialing *67 before B's DN.
- < B does not receive A's DN or Caller Name due to privacy.
- < A and B disconnect from call.
- < A calls B
- < A hears audible ringing
- < B hears ringing
- < Pass Call ID and Caller Name

Results

1. For calls made with the prefix *67 no caller ID or Caller Name is delivered to the destination
2. For call made without the prefix *67 caller ID and Name is delivered to the destination

4.5.6 - Enhanced Services

All tests being made are from numbers that have been verified exist in whichever 911 database the original donor company's NXX resides in.

All Service Providers do it's own 911 test calls

911 test calls should be made from Res or Bus, Coin, Centrex line classes

ANI = AUTOMATIC NUMBER IDENTIFICATION

ALI = AUTOMATIC LOCATION IDENTIFICATION

ESCO = EMERGENCY SERVICE CENTRAL OFFICE NUMBER(always numeric)

PSAP = PUBLIC SAFETY ANSWERING POINT

CPN = CALLING PARTY NUMBER (new acronym for ANI)

4.5.6.1 - 911 Call with Direct Trunks to Police(BASIC 911)

4.5.6.1.1 911 Call From a Ported number in an open NPA-NXX

Test Description

This will test that a ported number in an open NPA-NXX with basic 911 service can place a 911 call. See diagram D

Test Procedure

- < Call initiated by dialing 911 or 9-911(if Centrex)
- < Ask police department to ring back on that line after caller hangs up
- < What is the call back delay timing? If any

Test Results

- < Does correct police department receive the call?
- < Should be able to ring back originating caller
- Should see no noticable delay in calling party back. Successfully reach initiating telephone line

4.5.6.2 - 911 Calls Using A 911 Access Tandem to PSAP

4.5.6.2.2 911 Call From a Ported number in an open NPA-NXX

Test Description:

This will test that a ported number in an open NPA-NXX can place a 911 call to the correct PSAP.

Test Procedure:

- ← Call initiated by dialing 911 or 9-911 (if Centrex)
- ← PSAP transfers the call to another PSAP
- ← Measure call set-up timing (AMERITECH ONLY)
- ← Have the original PSAP make a call back to the number you called from
- ← Ask PSAP to verify in 911 database who the Company ID shows.
 - ← Ask PSAP to look on their list of Company Ids and call your contact number

Test Results:

- ← PSAP receives ANI/CPN and ALI for that number, this must be verified by PSAP that all information is correct. If the ALI is wrong due to another 911 issue, not because of portability, the PSAP follows the appropriate procedures existing today for that problem. (inquiry form)
- ← Transfer PSAP verifies same data
- ← Call set-up timing is the same as prior to porting (we have data on a non-ported number to substantiate)
- ← Call terminates to your originating TN that initiated 911 call
- ← Company ID in database shows your company abbreviation
 - ← Upon reaching your center, they verify that they have reached your company and the appropriate center to request trap and traces, etc.

4.5.6.2.3 911 Call from a Ported number with ANI failure

Test Description

This will test that a ported number will default correctly due to an ANI failure. No diagram, if necessary, refer to diagram C

Test Procedure

- ← Service Provider must check with 911 router/tandem ahead of making test call to find out what the default ESN (Emergency Service Number) is for their trunk group. Also, who that ESN routes to (which PSAP)
- ← Call initiated by dialing 911 or 9-911 (if Centrex) Service provider must decide how to exact an ANI/CPN failure (i.e. force call onto a particular trunk in the end office and short the equipment to cause a failure)
- ← PSAP should then transfer the call to another PSAP
- ← Have the PSAP make a call back to the number you called from
 - ← Transfer the call to another PSAP (will be voice only)

Test Results

- ← PSAP doesn't receive ANI/CPN, therefore no ALI, just error message with ESN of 997. ESN 997 displays the ANI/CPN format as (area code)911-0xxx the last three digits of the display is the ESCO for the originating end office. Re-verify that they are the same one that was given to service provider by 911 router/tandem
- ← Transfer PSAP verifies same data, it will be voice only call terminates to your originating TN that initiated 911 call

4.5.6.2.4 911 Call From a Ported number can be ported between several service providers verifying surcharge and 911 database integrity

Test Description

- < This will test that a ported number can be ported between multiple providers in a short timeframe, verifying that surcharging is correct and that a 911 call can be placed to the correct PSAP. See diagram C

Test Procedure

- ← Call initiated by dialing 911 or 9-911(if Centrex)
- ← Transfer call to another PSAP
- ← Check for surcharge at this point, how much and which PSAP should get it? Assume for testing purposes that the line was with your company for 2 weeks.
- ← Have original PSAP make a call back to number you called from
 - ← Port the same number to another service provider(issue order and use existing order flow)

Test Results

- ← Verify ALI information is correct with PSAP
- ← Transfer PSAP re-verifies information is correct
- ← Result should be according to a report that your company should have from the ICC for money charged on a pro-rated basis and know to what address to send the check. Surcharge is monthly.
- ← Call terminates to your originating TN that initiated 911 call
 - ← Each time the number is ported, check to see if 911 database is corrected/updated. By last porting is the current service provider shown in 911 database correctly? Is correct ALI information shown at PSAP? Correct ESN/ELT, address, TN?

4.5.6.3 911 Calls using Different 911 Databases

4.5.6.3.1 911 Call From a Ported number with a Different 911 Database

Test Description

This will test that a ported number, where the donor NXX is with a different 911 database can place a 911 call to the correct PSAP. See diagram A

Test Procedure

- ← New service provider must have an ALEC agreement with old service provider. End office trunks must be installed from new service provider's switch to E911 control office (if none exist already exist) Standard ordering timeframes must be kept in mind PRIOR to offering any end user dial tone (45 day window when opening an NXX in LERG is when initial order for trunks should be placed) Service provider must have a means to get extract file to the appropriate 911 database provider
- ← Call initiated by dialing 911 or 9-911 (if Centrex)
- ← Transfer call to another PSAP
 - ← Have the original PSAP make a call back to the number you called from

Test Results

- ← PSAP receives and verifies ANI/ALI is correct
- ← PSAP receives ANI/CPN and ALI for that number, this must be verified by PSAP that all information is correct. Did the call go to the default PSAP based on your trunk group's ESN? This will happen if the record is not in the 911 database. But, it will come up at that PSAP as a no record found. Check to see if new service provider (this should be you) sent orders through to the appropriate 911 database.
- ← If the ALI is correct but received at the wrong PSAP? Determine if the call routed to the overflow for the original PSAP (E911 router has what the overflow PSAP name & number is) This is a valid call. It routed correctly. The original PSAP could have been in a all trunk busy condition, causing your call to overflow to the back up or overflow PSAP. If routing is incorrect, work with the company that is handling the routing for 911. Could be mis-routing for multiple reasons.
- ← Transfer PSAP re-verifies correct information received
 - ← Call terminates to your originating TN that initiated 911 call

4.5.7 - Inter-LATA

4.5.7.1 - Pre-Subscription (SS7)

4.5.7.1.7 Inter-LATA Presubscription (SS7): Number in an NPA-NXX Not Opened to Portability to Ported Number

Test Description:

This will test that an inter-LATA call can be completed from a number in an NPA-NXX not opened to portability to a ported number via the presubscribed IXC. See Appendix A, Figure 67.

Test Procedure:

- < From a number in an NPA-NXX not opened to portability
- < Call a ported number
- < Pre-picked IXC delivers inter-LATA call
- < Document Test Results, including time required for all transitional steps
 - < Report results of tests to the Implementation Project Manager using forms in Appendix D

Test Results:

- < Originating LSP routes call to pre-picked IXC
- < Originating LSP does not perform LRN database dip
- < Originating LSP does not send JIP
- < IXC performs LRN database dip
- < IXC routes call to LSP serving ported number
- < IXC to LSP ISUP IAM contains LRN in CdPN parameter, ported destination number in GAP, bit M of FCI set
- < Terminating LSP completes call to ported number
- < Terminating LRN module appended to IXC AMA record

4.5.8 - LNP Interactions with AIN Services

4.5.8.1 - Public Office Dialing Plan (PODP) AIN Trigger

4.5.8.1.1 LNP Interactions with a PODP number E.O. Direct Connect

Test Description:

This test verifies that calls will complete to a ported number that encounters an end office AIN PODP trigger and is then routed to a ported number. Verifies AIN trigger precedence. See Appendix A, Figure 41.

NOTE: Two (2) test calls should be made. One with AIN response having a SLipID and one without.

TEST PROCEDURE:

- < From a non-ported number in an NPA-NXX opened to portability
 - < Call a ported number with a PODP AIN trigger in an NPA-NXX open to portability

Test Results:

- < Call will do a AIN query and then a LRN query
- < Originating LSP performs AIN database query
- < AIN SCP returns a ported destination number in portable NPA-NXX
- < Originating LSP performs LRN database query
- < Originating LSP routes call to Destination LSP serving ported number
- < LEC ISUP IAM contains LRN in CdPN parameter, ported destination number in GAP, bit M of FCI set, JIP
- < Terminating LSP completes call to ported number
 - < Originating and terminating LRN modules create appropriate AMA record

4.5.8.1.2 LNP Interactions with a PODP number with Play & Collect E.O. Direct Connect

Test Description:

This test verifies that calls will complete to a number that encounters a PODP AIN trigger and a Play and Collect scenario and then is routed to a ported number. See Appendix A, Figure 41.

NOTE: Two (2) test calls should be made. One with AIN response having a SLipID and one without.

Test Procedure:

- < From a non-ported number in an NPA-NXX opened to portability
 - < Call a ported number with a PODP AIN trigger in an NPA-NXX open to portability

Test Results:

- < Call will do a AIN query, play and collect and then a LRN query
- < Originating LSP performs AIN database query
- < AIN SCP returns play and collect
- < LSP returns AIN query with play and collect results
- < AIN SCP returns a ported destination number in portable NPA-NXX
- < Originating LSP performs LRN database query
- < Originating LSP routes call to Destination LSP serving ported number
- < LEC ISUP IAM contains LRN in CdPN parameter, ported destination number in GAP, bit M of FCI set, JIP
- < Terminating LSP completes call to ported number
 - < Originating and terminating LRN modules create appropriate AMA record

4.5.8.1.3 LNP Interactions with a PODP/LNP number at Tandem

Test Description:

This test verifies that calls will complete to a number that encounters a PODP trigger at the tandem and then a LNP trigger and then is routed to a ported number. See Appendix A, Figure 42.

NOTE: Two (2) test calls should be made. One with AIN response having a SLipID and one without.

Test Procedure:

- < From a non ported number in a Non-LNP capable office
- < Call a ported number with PODP AIN trigger at the tandem in an NPA-NXX open to portability

Test Results:

- < Call will route from EO to the Access Tandem, do an AIN query then a LRN query at the Access Tandem)
- < Originating LSP routes call to access tandem
- < Originating LSP ISUP IAM contains ported destination number in CdPN parameter, no GAP, bit M of FCI not set
- < Access tandem performs AIN database query
- < AIN SCP returns a ported destination number in portable NPA-NXX
- < Access Tandem performs LRN database dip
- < Access tandem routes call to LSP serving ported number
- < Access tandem to serving LSP ISUP IAM contains LRN in CdPN parameter, ported destination number in GAP, bit M of FCI set
- < Serving LSP completes call to ported number
 - < Originating and terminating switches create appropriate AMA records

4.5.8.1.4 LNP Interactions with a LNP trigger at EO and PODP number AIN trigger at Tandem.

Test Description:

This test verifies that calls that have performed a LRN query at the end office will encounter a PODP trigger at the tandem. See Appendix A, Figure 43.

NOTE: Two (2) test calls should be made. One with AIN response having a SLipID and one without.

Test Procedure:

- < From a non-ported number in an NPA-NXX opened to portability
 - < Call a ported number

Test Results:

- < Originating LSP performs LRN database dip
- < Originating LSP routes call to Access Tandem
- < LSP to AT ISUP IAM contains LRN in CdPN parameter, ported destination number in GAP, bit M of FCI set, JIP
- < Access tandem performs AIN database query
- < AT forwards call to destination LSP
- < Terminating LSP completes call
 - < Originating and terminating LRN modules create appropriate AMA record

4.5.8.1.5 LNP Interactions with a PODP number at EO using 10xxxdialing dial around

Test Description:

This test verifies that calls will be routed to the IC carrier. The IC may route the call back to the host switch to encounter a PODP trigger. The response will be to a ported number. This will encounter a LNP trigger and route to the ported number. See Appendix A, Figure 44.

NOTE: Two (2) test calls should be made. One with AIN response having a SLipID and one without.

Test Procedure:

- < From a non-ported number in an NPA-NXX opened to portability
 - < Call a ported number with a PODP AIN trigger in an NPA-NXX open to portability, using dial around

Test Results:

- < Call will do 2 AIN queries and 2 LNP queries
- < Originating LSP performs AIN database query
- < AIN SCP returns a continue
- < Originating LSP does not perform LRN database dip
- < Originating LSP routes call to dial-around Toll carrier
- < Originating LSP sends JIP
- < Dial-around Toll carrier performs LRN database dip
- < Dial-around Toll carrier routes call back to host LSP serving ported number
- < Toll carrier to destination LSP ISUP IAM contains LRN in CdPN parameter, ported destination number in GAP, bit M of FCI set, JIP
- < Terminating LSP , the originator, performs an AIN query
- < AIN SCP returns a ported destination number in portable NPA-NXX
- < Originating LSP performs LRN database query
- < Originating LSP routes call to Destination LSP serving ported number
- < LEC ISUP IAM contains LRN in CdPN parameter, ported destination number in GAP, bit M of FCI set, JIP
- < Terminating LSP completes call to ported number
 - < Originating, terminating and Toll carrier LRN create appropriate AMA records

4.5.8.1.6 LNP Interactions with a PODP number EO Direct Connect**Test Description:**

This test verifies the ability of a SSP to complete to a non-ported N11 that has a 3 digit PODP trigger and is routed to a NXX that is ported. Verify SSP will do a AIN trigger first and then the LNP trigger.

Test Procedure:

- < This test will be performed in the N11 test cases.

4.5.8.1.7 LNP Interactions with a PODP number EO Direct Connect

Test Description:

This test verifies that calls will complete to a number that encounters a PODP trigger and a continue is returned the call should route to a ported number. See Appendix A, Figure 41.

NOTE: Two (2) test calls should be made. One with AIN response having a SLipID and one without.

Test Procedure:

- < From a non-ported number in an NPA-NXX opened to portability
 - < Call a ported number with a PODP AIN trigger in an NPA-NXX open to portability

Test Results:

- < Call will do a AIN query and then a LRN query
- < Originating LSP performs AIN database query
- < AIN SCP returns a continue
- < Originating LSP performs LRN database query
- < Originating LSP routes call to Destination LSP serving ported number
- < LEC ISUP IAM contains LRN in CdPN parameter, ported destination number in GAP, bit M of FCI set, JIP
- < Terminating LSP completes call to ported number
- < Originating and terminating LRN modules create appropriate AMA record

4.5.8.2 - OFF-HOOK DELAY (OHD) AIN Trigger

4.5.8.2.1 LNP Interactions with a Off-Hook Delay number End office

Test Description:

This test verifies that calls to a ported number will be blocked due to the AIN service logic and will not do an LRN query. See Appendix A, Figure 41.

Test Procedure:

- < From a non-ported OHD number in an NPA-NXX opened to portability
 - < Call a ported number in an NPA-NXX open to portability

Test Results:

- < Call will do a AIN query and then get routed to an announcement
- < Originating LSP performs AIN database query
- < AIN SCP returns send to announcement

4.5.8.2.2 LNP Interactions with a Off-Hook Delay number End office

Test Description:

This test verifies that 7 or 10 digit calls to a ported number will complete to the ported number after an AIN OHD query. See Appendix A, Figure 41.

Test Procedure:

- < From a non-ported OHD number in an NPA-NXX opened to portability
 - < Call a ported number in an NPA-NXX open to portability

Test Results:

- < Call will do a AIN query and then get routed to a ported number
- < Originating LSP performs AIN database query
- < AIN SCP returns a ported destination number in portable NPA-NXX
- < Originating LSP performs LRN database query
- < Originating LSP routes call to Destination LSP serving ported number
- < LEC ISUP IAM contains LRN in CdPN parameter, ported destination number in GAP, bit M of FCI set, JIP
- < Terminating LSP completes call to ported number
 - < Originating and terminating LRN modules create appropriate AMA record

4.5.8.2.3 LNP Interactions with a Off-Hook Delay number End office

Test Description:

This test verifies that a call can encounter a OHD trigger and a PODP trigger then a LNP trigger and route to a ported number. See Appendix A, Figure 41.

Test Procedure:

- < From a non-ported OHD number in an NPA-NXX opened to portability
 - < Call a ported number in an NPA-NXX open to portability

Test Results:

- < Call will do 2 AIN queries and then a LRN query and then route to a ported number
- < Originating LSP performs AIN OHD database query
- < AIN SCP returns a ported destination number in portable NPA-NXX
- < Destination number has a PODP AIN trigger
- < Originating LSP performs PODP AIN database query
- < AIN SCP returns a ported destination number in portable NPA-NXX
- < Originating LSP performs LRN database query
- < Originating LSP routes call to Destination LSP serving ported number
- < LEC ISUP IAM contains LRN in CdPN parameter, ported destination number in GAP, bit M of FCI set, JIP
- < Terminating LSP completes call to ported number
 - < Originating and terminating LRN modules create appropriate AMA record

4.5.8.3 - Custom Dialing Plan (CDP) AIN Trigger

4.5.8.3.1 LNP Interactions with a CDP Trigger End office

Test Description:

This test verifies the interaction of a CDP trigger and a LNP trigger. The call will encounter a CDP trigger and the response will be a ten digit ported number. See Appendix A, Figure 41.

Test Procedure:

- < From a non-ported number in a CTX with a CDP trigger capability in an NPA-NXX opened to portability
 - < Dial the CDP access code

Test Results:

- < Call will do a AIN query and then a LRN query then terminate to the number that is ported
- < Originating LSP performs AIN CDP database query
- < AIN SCP returns a ported destination number in portable NPA-NXX
- < Originating LSP performs LRN database query
- < Originating LSP routes call to Destination LSP serving ported number
- < LEC ISUP IAM contains LRN in CdPN parameter, ported destination number in GAP, bit M of FCI set, JIP
- < Terminating LSP completes call to ported number
 - < Originating and terminating LRN modules create appropriate AMA record

4.5.8.3.2 LNP Interactions with a CDP Trigger End office

Test Description:

This test verifies the interaction of a ported in number with a CDP trigger and a LNP trigger. The call will encounter a CDP trigger and the response will be a ten digit ported number. See Appendix A, Figure 41.

Test Procedure:

- < From a ported-in number in a CTX with a CDP trigger capability in an NPA-NXX opened to portability
- < Dial the CDP access code

Test Results:

- < Call will do a AIN query and then a LRN query then terminate to the number that is ported
- < Originating LSP performs AIN CDP database query
- < AIN SCP returns a ported destination number in portable NPA-NXX
- < Originating LSP performs LRN database query
- < Originating LSP routes call to Destination LSP serving ported number
- < LEC ISUP IAM contains LRN in CdPN parameter, ported destination number in GAP, bit M of FCI set, JIP
- < Terminating LSP completes call to ported number
- < Originating and terminating LRN modules create appropriate AMA record

4.5.8.4 - Terminating Attempt Trigger (TAT)

4.5.8.4.1 LNP Interactions with a Terminating Attempt trigger number, End office

Test Description:

This test verifies that calls will complete to a number that encounters a TAT trigger and is forward_call to a number that is ported. See Appendix A, Figure 41.

Test Procedure:

- < From a non-ported number in an NPA-NXX opened to portability
 - < Call a ported number with a TAT AIN trigger in an NPA-NXX open to portability

Test Results:

- < Call will do a AIN query and then a LRN query then terminate to the ported number
- < Originating LSP performs AIN TAT database query
- < AIN SCP returns a forward_call to destination number in portable NPA-NXX
- < Originating LSP performs LRN database query
- < Originating LSP routes call to Destination LSP serving ported number
- < LEC ISUP IAM contains LRN in CdPN parameter, ported destination number in GAP, bit M of FCI set, JIP
- < Terminating LSP completes call to ported number
- < Originating and terminating LRN modules create appropriate AMA record

4.5.8.4.2 LNP Interactions with a Terminating Attempt Trigger number, End office.

Test Description:

This test verifies that a ported in number can interact with the TAT option. See Appendix A, Figure 43.

Test Procedure:

- < From a non-ported number in an NPA-NXX opened to portability
 - < Call a ported number in an NPA-NXX open to portability

Test Results:

- < Call will do a LRN query in office A and then a AIN query in office B then terminate to the ported number.
- < Originating LSP performs LRN database query
- < Originating LSP routes call to Destination LSP serving ported number
- < LEC ISUP IAM contains LRN in CdPN parameter, ported destination number in GAP, bit M of FCI set, JIP
- < Ported in number in terminating LSP has AIN TAT trigger assigned
- < Terminating LSP performs an AIN query
- < AIN SCP returns an Authorize_Termination
- < Terminating LSP completes call to ported number
- < Originating and terminating LRN modules create appropriate AMA record

4.6.3 - Other EO and Tandem

4.6.3.1 Intra-LATA Call Originating on CAMA trunks from a Non Conforming End Office (non equal access) to a Local Ported Number

Test Description:

This will test a intra-LATA call originating on a CAMA trunk from a non conforming end office (NCEO) to a ported number. The call is completed via the access tandem (AT) which also generates the AMA record.

Test Procedure:

- < Place test call from the NCEO to a locally ported number within the LATA.
- < Verify call completion.
- < Verify that proper AMA record was generated at the AT for the CAMA trunk.

Test Results:

- < Originating call is delivered to the AT via the CAMA trunks.
- < AT requests and receives ANI from the NCEO.
- < AT determines that the call is intra-LATA to a ported NXX code.
- < AT performs the LRN database query.
- < AT forwards call to the destination LSP based on the LRN received. The IAM message contains the LRN in the CdPN parameter, ported destination number in the GAP, FCI bit set as M.
- < Terminating LSP completes call to the ported number.
- < Originating CAMA AMA record includes the appropriate LNP AMA module.

4.7.1 Call Through Tests from WSP Network to LEC Network

All types of calls to be supported should be tested. Calls should be tested that complete directly to the EO(s) from the WSP (if Type 2B interconnection is supported) and through the LT (if Type 2A interconnection is supported). Some examples of the types of calls that may be attempted from the WSP are shown in the following table.

Wireless Calls	Condition in LEC Network
7D 1+10D (intraLATA if appropriate)	Idle Busy Permanent Signal Cancel Call Waiting Activated Voice Mail Activated Calling Number ID Forwarded to Wireless Number Forwarded to LEC number Forwarded to 800 number Vacant number Unassigned Number CLASS–Auto Callback (if supported by WSP switch) CLASS–Auto Recall CLASS–Blocked Coin Line ISDN Line
411 (or 555-1212 as appropriate)	Complete
911	Complete
976-XXXX	Complete
1+800+NXX-XXXX (IntraLATA and InterLATA)	Complete
Wireless call to Wireless station - call forwarded to POTS line in LEC	Idle Complete to LEC voice mail

For each of the calls shown in the Table above, the following generic steps should be followed:

1. Place the call.
2. Trace the call.
3. Verify the proper routing of the call.

4. Validate any billing record that may be applicable.
5. Document and report result.

4.8 - Operator Service Routed Calls

The following assumptions were taken from the Generic Operator Services Switches Requirements for Number Portability, Issue 1.1 D4 published by the Illinois Number Portability Workshop on June 3, 1996.

1. Solution must minimize impact on networks outside of zone of portability.
2. Initially, location portability is limited to within rate center boundaries.
3. An End Office has BLV trunks to only one OSS. Any OSS, with BLV trunks to an end office participating in LNP, must be LNP capable.
4. Fourteen digit line based calling cards will port if the subscriber ports their DN.
5. OSS7 signaling will not be available by Phase 1.
6. No change is required to intra/interLATA carrier determination.
7. Interstate portability will not occur by Phase 1.
8. There must be entities (known as Global Title Translation Server in this document - see section 3.5) that will perform actual ten digit global title translations based on six digits in the SCCP Called Party Address field sent by the OSS and the Billed Number Parameter in the TCAP message for routing LIDB queries for BNS or CCV. These entities will route the BNS or CCV queries to the appropriate LIDB.
9. It is assumed that Local Access Competition will still allow ubiquitous 0+ dialing for line based Calling Card Validation i.e. no matter what phone is used to make a 0+ call, the calling card validation will still be conducted.
10. Assumption for Issue 1 of the Illinois LNP specifications (i.e. Issue 1 "ICC SSPGR" and Issue 1 of this document): Facility based service providers must accept responsibility for billing to resellers. This document only specifies functionality for identifying facility based service providers.
11. The LRN is based on NPA-NXX that are assigned by LERG. Therefore all existing processes that apply to LERG assigned NPA-NXXs will also apply to the NPA-NXX of the LRN e.g. NPA-NXX to NPA-TTC mapping.
12. The Directory Number of a customer that opts not to have a line based calling card (14-digit) with their local service provider cannot be re-used as the first ten digits of another customer's (local service provider or IEC) 14-digit calling card.

13. A national list of portable NPA-NXXs will be available to those IECs that wish to deploy LNP compliant OSSs.

4.8.1 - CALL COMPLETION FOR 0-/00- CALLS (STATION PAID BILLING)

This is the capability of a customer requesting that the OSS complete a call and bill the call to the customers telephone number. All of these calls presume using a live operator.

4.8.1.1 - Intra LATA Calls

The test cases below can/should also be tested using a 00- dialed access.

4.8.1.1.1 0- Intra LATA Call from a Ported Number to a Ported Number with Originating LRN obtained from LNP Database**Test Description:**

This will test that an OSS is LNP capable for completing an intra LATA call to ported number billed to the calling party's ported number and correctly populating the AMA modules to the AMA record for recording the call. The calling party's LRN information to be populated in the AMA record is obtained from the LNP database.

Test Procedure:

- < The calling party is a ported number
- < The called party is a ported number on a different network
 - < The calling party dials 0 and informs the operator to complete the call to a ported intra LATA number and bill the call to the calling party number

Test Results:

- < Call is completed to the ported intra LATA number
- < Originating LRN obtained from LNP Database.
- < One LNP AMA **720** module with originating LRN is appended to AMA record.
 - < One LNP AMA **720** module with terminating LRN is appended to AMA record.

4.8.1.1.2 0-Intra LATA Call from a Ported Number to a Non-Ported Number in a Portable NPA-NXX with Originating LRN obtained from LNP Database

Test Description:

This will test that an OSS is LNP capable for completing an intra LATA call to a number in a non-portable NPA-NXX from the calling party's ported number and correctly populating the AMA module to the AMA record for recording the call. The calling party's LRN information to be populated in the AMA record is obtained from the LNP database.

Test Procedure:

- < The calling party is a ported number
- < The called party is a number in a non-portable NPA-NXX on a different network
 - < The calling party dials 0 and informs the operator to complete the call to an intra LATA number in a non-portable NPA-NXX and bill the call to the calling party number

Test Results:

- < Call is completed to the intra LATA number in a non-portable NPA-NXX
- < Originating LRN obtained from LNP Database.
- < One LNP AMA **720** module with originating LRN is appended to AMA record.
 - < One LNP AMA **720** module with terminating LRN is appended to AMA record..

4.8.1.2 - Inter LATA Calls

The test cases below can/should also be tested using a 0- dialed access.

4.8.1.2.1 00- Inter LATA Call from a Ported Number to a Ported Number with Originating LRN obtained from LNP Database

Test Description:

This will test that an OSS is LNP capable for completing an inter LATA call to ported number billed to the calling party's ported number and correctly populating the AMA modules to the AMA record for recording the call. The calling party's LRN information to be populated in the AMA record is obtained from the LNP database.

Test Procedure:

- < The calling party is a ported number
- < The called party is a ported number on a different network
 - < The calling party dials 00 and informs the operator to complete the call to a ported inter LATA number and bill the call to the calling party number

Test Results:

- < Call is completed to the ported inter LATA number
- < Originating LRN obtained from LNP Database.
- < One LNP AMA **IXC** module with originating LRN is appended to AMA record.
- < One LNP AMA **IXC** module with terminating LRN is appended to AMA record.

4.8.1.2.2 00- Inter LATA Call from a Ported Number to a Non-Ported Number in a Portable NPA-NXX with Originating LRN obtained from LNP Database

Test Description:

This will test that an OSS is LNP capable for completing an inter LATA call to a non-ported number in a portable NPA-NXX, billed to the calling party's ported number and correctly populating the AMA modules to the AMA record for recording the call. The calling party's LRN information to be populated in the AMA record is obtained from the LNP database.

Test Procedure:

- < The calling party is a ported number
- < The called party is a non-ported number in a portable NPA-NXX on a different network
 - < The calling party dials 00 and informs the operator to complete the call to a non-ported inter LATA number in a portable NPA-NXX and bill the call to the calling party number

Test Results:

- < Call is completed to the non-ported inter LATA number in a portable NPA-NXX
- < Originating LRN obtained from LNP Database.
- < One LNP AMA **IXC** module with originating LRN is appended to AMA record.
 - < One LNP AMA **IXC** module with terminating LRN is appended to AMA record.

4.8.2.1 - Intra LATA Calls

4.8.2.1.1 All Numbers (Calling Party, Called Party, Billed Number) are Ported on Different Networks and Originating LRN obtained from LNP Database

Test Description:

A customer calls an OSS from a ported number and requests that the live operator place a call to the dialed ported number and bill a different ported number. The three numbers involved in this call should be on three different networks.

Test Procedure:

- < The called party, calling party and billed number are all ported numbers on three different networks within the Portable NPA-NXX
- < Caller dials 0+Ported Destination Number and requests that the live operator complete the call using a ported billing number
 - < Originating LRN obtained from LNP Database

Test Results:

- < Originating LSP routes call to the OSS
- < Originating LSP does not perform LRN database dip
- < OSS launches billing number query for third number
- < Billing number query routed to appropriate validation database (LIDB)
- < After response from validation database (LIDB) OSS performs LRN database dip
- < Call is completed to the called ported number by intra LATA carrier
 - < Three instances of LNP AMA 720 module is appended to the AMA record. First module will contain LRN of Calling Party, second will have LRN of Bill to Third party and third will have LRN of Called Party.

4.8.2.1.2 Calling Party is a Ported Number, Called Party is a Ported Number, Billing Number is Not Ported but within Portable NPA-NXX and Originating LRN obtained from LNP Database

Test Description:

A customer calls an OSS from a ported number and requests that the live operator place a call to the dialed ported number and bill a different non-ported number within an portable NPA-NXX . The three numbers involved in this call should be on three different networks.

Test Procedure:

- < The called party and calling party are all ported numbers on three different networks
- < The billed number is a non-ported number within a Portable NPA-NXX
- < Caller dials 0+Ported Destination Number and requests that the live operator complete the call using a non-ported billing number
 - < Originating LRN obtained from LNP Database

Test Results:

- < Originating LSP routes call to the OSS
- < Originating LSP does not perform LRN database dip
- < OSS launches billing number query for third number
- < Billing number query routed to appropriate validation database (LIDB)
- < After response from validation database (LIDB) OSS performs LRN database dip
- < Call is completed to the called ported number by intra LATA carrier
 - < Three instances of LNP AMA 720 module is appended to the AMA record. First module will contain LRN of Calling Party, second will have LRN of Bill to Third party and third will have LRN of Called Party.

4.8.2.1.3 Calling Party is a Ported Number, Called Party is a Non-Ported Number within a Portable NPA-NXX, Billing Number is Ported and Originating LRN obtained from LNP Database

Test Description:

A customer calls an OSS from a ported number and requests that the live operator place a call to the dialed non-portable number within an portable NPA-NXX and bill a different ported number. The three numbers involved in this call should be on three different networks.

Test Procedure:

- < The calling party and billed number are ported numbers on different networks
- < The called party is anon-portable number within the portable NPA-NXX
- < Caller dials 0+Non-Ported Destination Number within portable NPA-NXX and requests that the live operator complete the call using a ported billing number
 - < Originating LRN obtained from LNP Database

Test Results:

- < Originating LSP routes call to the OSS
- < Originating LSP does not perform LRN database dip
- < OSS launches billing number query for third number
- < Billing number query routed to appropriate validation database (LIDB)
- < After response from validation database (LIDB) OSS performs LRN database dip
- < Call is completed to the called ported number by intra LATA carrier
 - < Three instances of LNP AMA 720 module is appended to the AMA record. First module will contain LRN of Calling Party, second will have LRN of Bill to Third party and third will have LRN of Called Party

- 4.8.2.1.4 Calling Party is a Ported Number, Called Party is a Non-Ported Number within a Portable NPA-NXX, Billing Number is a Non-Ported Number with a Portable NPA-NXX and Originating LRN obtained from LNP Database

Test Description:

A customer calls an OSS from a ported number and requests that the live operator place a call to the dialed non-ported number within an portable NPA-NXX and bill a different non-ported number within a portable NPA-NXX. The three numbers involved in this call should be on three different networks.

Test Procedure:

- < The calling party is a ported number on one network
- < The called party is a non-ported number within the portable NPA-NXX on another network
- < The billing number is a non-ported number within the portable NPA-NXX on a third network
- < Caller dials 0+Non-Ported Destination Number within portable NPA-NXX and requests that the live operator complete the call using a non-ported billing number within portable NPA-NXX
 - < Originating LRN obtained from LNP Database

Test Results:

- < Originating LSP routes call to the OSS
- < Originating LSP does not perform LRN database dip
- < OSS launches billing number query for third number
- < Billing number query routed to appropriate validation database (LIDB)
- < After response from validation database (LIDB) OSS performs LRN database dip
- < Call is completed to the called ported number by intra LATA carrier
 - < Three instances of LNP AMA **720** module is appended to the AMA record. First module will contain LRN of Calling Party, second will have LRN of Bill to Third party and third will have LRN of Called Party

4.8.2.1.5 Calling Party is a Ported Number, Called Party is a Number in a Non-Portable NPA-NXX, Billing Number is a Number with a Non-Portable NPA-NXX and Originating LRN obtained from JIP

Test Description:

A customer calls an OSS from a ported number and requests that the live operator place a call to the dialed number within a non-portable NPA-NXX and bill a different number within a non-portable NPA-NXX. The three numbers involved in this call should be on three different networks.

Test Procedure:

- < The calling party is a ported number on one network
- < The called party is a number within a non-portable NPA-NXX on another network
- < The billing number is a number within a non-portable NPA-NXX on a third network
- < Caller dials 0+Number within a non-portable NPA-NXX and requests that the live operator complete the call using a billing number within a non-portable NPA-NXX
 - < Originating LRN obtained from LNP Database

Test Results:

- < Originating LSP routes call to the OSS
- < Originating LSP does not perform LRN database dip
- < OSS launches billing number query for third number
- < Billing number query routed as done today ???
- < After response from validation database (LIDB) call is completed to the called number by intra LATA carrier ???
 - < One LNP AMA **720** module with originating LRN is appended to AMA record.

4.8.2.1.6 Calling Party is a Ported Number, Called Party is a Number in a Non-Portable NPA-NXX, Billing Number is a Number with a Non-Portable NPA-NXX and Originating LRN obtained from Trunk Sub-Group

Test Description:

A customer calls an OSS from a ported number and requests that the live operator place a call to the dialed number within a non-portable NPA-NXX and bill a different number within a non-portable NPA-NXX. The three numbers involved in this call should be on three different networks.

Test Procedure:

- < The calling party is a ported number on one network
- < The called party is a number within a non-portable NPA-NXX on another network
- < The billing number is a number within a non-portable NPA-NXX on a third network
- < Caller dials 0+Number within a non-portable NPA-NXX and requests that the live operator complete the call using a billing number within a non-portable NPA-NXX
- < No SS7 signaling from Originating LSP to OSS
 - < Originating LRN obtained from Trunk Sub-Group

Test Results:

- < Originating LSP routes call to the OSS
- < Originating LSP does not perform LRN database dip
- < OSS launches billing number query for third number
- < Billing number query routed as done today ???
- < After response from validation database (LIDB) call is completed to the called number by intra LATA carrier ???
 - < One LNP AMA **720** module with originating LRN is appended to AMA record.

4.8.3.1 - Inter LATA Calls

4.8.3.1.1 All Numbers (Calling Party, Called Party, Billed Number) are Ported on Different Networks and Originating LRN obtained from LNP Database

Test Description:

A customer calls an OSS from a ported number and requests that the live operator place a call to the dialed ported number and bill a different ported number. The three numbers involved in this call should be on three different networks.

Test Procedure:

- < The called party, calling party and billed number are all ported numbers on three different networks within the Portable NPA-NXX
- < Caller dials 0+Ported Destination Number and requests that the live operator complete the call using a ported billing number
 - < Originating LRN obtained from LNP Database

Test Results:

- < Originating LSP routes call to the OSS
- < Originating LSP does not perform LRN database dip
- < OSS launches billing number query for third number
- < Billing number query routed to appropriate validation database (LIDB)
- < After response from validation database (LIDB) OSS performs LRN database dip
- < Call is completed to the called ported number by intra LATA carrier
 - < Three instances of LNP AMA **IXC** module is appended to the AMA record. First module will contain LRN of Calling Party, second will have LRN of Bill to Third party and third will have LRN of Called Party

4.8.3.1.2 Calling Party is a Ported Number, Called Party is a Ported Number, Billing Number is Not Ported but within Portable NPA-NXX and Originating LRN obtained from LNP Database

Test Description:

A customer calls an OSS from a ported number and requests that the live operator place a call to the dialed ported number and bill a different non-ported number within an portable NPA-NXX. The three numbers involved in this call should be on three different networks.

Test Procedure:

- < The called party and calling party are all ported numbers on three different networks
- < The billed number is a non-ported number within a Portable NPA-NXX
- < Caller dials 0+Ported Destination Number and requests that the live operator complete the call using a non-ported billing number
 - < Originating LRN obtained from LNP Database

Test Results:

- < Originating LSP routes call to the OSS
- < Originating LSP does not perform LRN database dip
- < OSS launches billing number query for third number
- < Billing number query routed to appropriate validation database (LIDB)
- < After response from validation database (LIDB) OSS performs LRN database dip
- < Call is completed to the called ported number by intra LATA carrier
 - < Three instances of LNP AMA **IXC** module is appended to the AMA record. First module will contain LRN of Calling Party, second will have LRN of Bill to Third party and third will have LRN of Called Party

4.8.3.1.3 Calling Party is a Ported Number, Called Party is a Non-Ported Number within a Portable NPA-NXX, Billing Number is Ported and Originating LRN obtained from LNP Database

Test Description:

A customer calls an OSS from a ported number and requests that the live operator place a call to the dialed non-porting number within an portable NPA-NXX and bill a different ported number. The three numbers involved in this call should be on three different networks.

Test Procedure:

- < The calling party and billed number are ported numbers on different networks
- < The called party is anon-porting number within the portable NPA-NXX
- < Caller dials 0+Non-Porting Destination Number within portable NPA-NXX and requests that the live operator complete the call using a ported billing number
 - < Originating LRN obtained from LNP Database

Test Results:

- < Originating LSP routes call to the OSS
- < Originating LSP does not perform LRN database dip
- < OSS launches billing number query for third number
- < Billing number query routed to appropriate validation database (LIDB)
- < After response from validation database (LIDB) OSS performs LRN database dip
- < Call is completed to the called porting number by intra LATA carrier
 - < Three instances of LNP AMA **IXC** module is appended to the AMA record. First module will contain LRN of Calling Party, second will have LRN of Bill to Third party and third will have LRN of Called Party

4.8.3.1.4 Calling Party is a Ported Number, Called Party is a Non-Ported Number within a Portable NPA-NXX, Billing Number is a Non-Ported Number with a Portable NPA-NXX and Originating LRN obtained from LNP Database

Test Description:

A customer calls an OSS from a ported number and requests that the live operator place a call to the dialed non-ported number within an portable NPA-NXX and bill a different non-ported number within a portable NPA-NXX. The three numbers involved in this call should be on three different networks.

Test Procedure:

- < The calling party is a ported number on one network
- < The called party is a non-ported number within the portable NPA-NXX on another network
- < The billing number is a non-ported number within the portable NPA-NXX on a third network
- < Caller dials 0+Non-Ported Destination Number within portable NPA-NXX and requests that the live operator complete the call using a non-ported billing number within portable NPA-NXX
 - < Originating LRN obtained from LNP Database

Test Results:

- < Originating LSP routes call to the OSS
- < Originating LSP does not perform LRN database dip
- < OSS launches billing number query for third number
- < Billing number query routed to appropriate validation database (LIDB)
- < After response from validation database (LIDB) OSS performs LRN database dip
- < Call is completed to the called ported number by intra LATA carrier
 - < Three instances of LNP AMA **IXC** module is appended to the AMA record. First module will contain LRN of Calling Party, second will have LRN of Bill to Third party and third will have LRN of Called Party

4.8.4 - COLLECT

This is the ability of a customer requesting via an OSS that a call to be billed to the called party.

4.8.4.1 - Intra LATA Calls

4.8.4.1.1 Both Numbers (Calling Party, Called Party) are Ported on Different Networks and Originating LRN obtained from LNP Database

Test Description:

A customer calls an OSS from a ported number and requests that the live operator place a call to the dialed ported number and bill the dialed ported number. The two numbers involved in this call should be on different networks.

Test Procedure:

- < The called party and calling party numbers are all ported numbers on different networks within the Portable NPA-NXX
- < Caller dials 0+Ported Destination Number and requests that the live operator complete the call and bill the dialed ported number (collect call)
 - < Originating LRN obtained from LNP Database

Test Results:

- < Originating LSP routes call to the OSS
- < Originating LSP does not perform LRN database dip
- < OSS launches billing number query for dialed number
- < Billing number query routed to appropriate validation database (LIDB)
- < After response from validation database (LIDB) OSS performs LRN database dip
- < Call is completed to the called ported number by intra LATA carrier
 - < Two instances of LNP AMA **720** module is appended to the AMA record. First module will contain LRN of Calling Party and the second will have LRN of Called Party.

44.8.4.2 - Inter LATA Calls

4.8.4.2.1 Both Numbers (Calling Party, Called Party) are Ported on Different Networks and Originating LRN obtained from LNP Database

Test Description:

A customer calls an OSS from a ported number and requests that the live operator place a call to the dialed ported number and bill the dialed ported number. The two numbers involved in this call should be on different networks.

Test Procedure:

- < The called party and calling party numbers are all ported numbers on different networks within the Portable NPA-NXX
- < Caller dials 0+Ported Destination Number and requests that the live operator complete the call and bill the dialed ported number (collect call)
 - < Originating LRN obtained from LNP Database

Test Results:

- < Originating LSP routes call to the OSS
- < Originating LSP does not perform LRN database dip
- < OSS launches billing number query for dialed number
- < Billing number query routed to appropriate validation database (LIDB)
- < After response from validation database (LIDB) OSS performs LRN database dip
- < Call is completed to the called ported number by intra LATA carrier
 - < Two instances of **IXC** LNP AMA module is appended to the AMA record. First module will contain LRN of Calling Party and the second will have LRN of Called Party.

4.8.4.3 - Automated Operator Handled Calls

Repeat all or a subset of the above calls (Intra LATA and Inter LATA) accessing/using automated OSS capabilities.

See BRANDING section below.

4.8.5 - CALLING CARD

This is the ability of a customer requesting via an OSS that a call to be billed to a line based calling card.

4.8.5.1 - Intra LATA Calls

4.8.5.1.1 All Numbers (Calling Party, Called Party, Calling card number) are Ported on Different Networks and Originating LRN obtained from LNP Database

Test Description:

A customer calls an OSS from a ported number and requests that the live operator place a call to the dialed ported number and bill a ported calling card number. The three numbers involved in this call should be on three different networks.

Test Procedure:

- < The called party, calling party and calling card number are all ported numbers on three different networks within the Portable NPA-NXX
- < Caller dials 0+Ported Destination Number and requests that the live operator complete the call using a ported calling card number
 - < Originating LRN obtained from LNP Database

Test Results:

- < Originating LSP routes call to the OSS
- < Originating LSP does not perform LRN database dip
- < OSS launches calling card number query for third number
- < Calling card number query routed to LRN database to determine appropriate validation database (LIDB)
- < After response from validation database (LIDB) OSS performs LRN database dip
- < Call is completed to the called ported number by intra LATA carrier
 - < Three instances of LNP AMA 720 module is appended to the AMA record. First module will contain LRN of Calling Party, second will have LRN of Card Number, and third will have LRN of Called Party

4.8.5.2 - Inter LATA Calls

4.8.5.2.1 All Numbers (Calling Party, Called Party, Calling card number) are Ported on Different Networks and Originating LRN obtained from LNP Database

Test Description:

A customer calls an OSS from a ported number and requests that the live operator place a call to the dialed ported number and bill a different ported number. The three numbers involved in this call should be on three different networks.

Test Procedure:

- < The called party, calling party and calling card number are all ported numbers on three different networks within the Portable NPA-NXX
- < Caller dials 0+Ported Destination Number and requests that the live operator complete the call using a ported calling card number
 - < Originating LRN obtained from LNP Database

Test Results:

- < Originating LSP routes call to the OSS
- < Originating LSP does not perform LRN database dip
- < OSS launches billing number query for calling card number
- < Calling card number query routed to LRN database to determine appropriate validation database (LIDB)
- < After response from validation database (LIDB) OSS performs LRN database dip
- < Call is completed to the called ported number by intra LATA carrier
 - < Three instances of **IXC** AMA module is appended to the AMA record. First module will contain LRN of Calling Party, second will have LRN of Card Number, and third will have LRN of Called Party

4.8.6 - BUSY LINE VERIFY/EMERGENCY INTERRUPT

This is the capability of an OSS to verify that a line is busy (detect conversation versus off-hook condition with no conversation) and if requested by the calling party, interrupt the conversation in an emergency condition. The only OSS that can perform this service is the *inward* operator with special BLV/EI trunks for the number to be verified and/or interrupted. Today, the inward operator is determined by the NPA-NXX of the called party number. In an LNP environment, if the number to be BLV/EI'd is in an NPA-NXX open to portability and has been ported then the NPA-NXX of the LRN for that number will need to be used to determine and reach the correct inward operator to perform the service. For the following cases the calling party is requesting BLV/EI service for the called party's number.

4.8.6.1 - Intra LATA Calls

4.8.6.1.1 Calling Party is ported, Called Party is Ported, Originating OSS is not the Inward Operator for Called Party but is LNP capable

Test Description:

This will test that an OSS is capable of completing a BLV/EI request for a ported number to the correct inward operator with the special BLV/EI trunks. In this case, OSS2 is the correct inward operator with the necessary trunks to perform the BLV/EI.

Test Procedure:

- < The calling party is a ported number that is served by OSS1.
- < The called (BLV/EI) party is a ported number that is served by OSS2
- < OSS1 is LNP capable
- < OSS2 is LNP capable
- < Called dials 0- and reaches OSS1
- < OSS1 determines that it does not serve that ported number but performs an LRN query to determine the correct OSS that serves that ported number.
 - < OSS1 uses this information to reach the correct OSS (OSS2).

Test Results:

- < OSS1 receives request from customer for BLV/EI
- < OSS1 forwards the request to the correct inward OSS (OSS2)
- < OSS2 performs the BLV/EI
- < OSS2 relays information to OSS1
 - < Two instances of LNP AMA **720** module is appended to the AMA record. First module will contain LRN of Calling Party and the second will have LRN of Called Party.

Operator Services has the capability and currently provides branding for multiple local service providers depending on how a call is originated and from which network. The Operator Service must provide the correct branding phrase for Carrier Specific Branding on Seizure for Automated Calling Card Service (ACCS) and Automated Coin Toll Service (ACTS) based on the Carrier Identification Code (CIC) for that type of call. If the CIC is "LEC", LEC-specific branding is provided by a table look-up with the calling party's (originating) NPA-NXX that returns the branding phrase ID. Since the originating NPA-NXX will no longer be a definitive indicator for which local service provider is

serving that call in an LNP environment, the LRN of the calling party must be used to provide the proper branding for that call.

4.8.7.1.1 ACCS Call from a Ported Calling Party without SS7, Originating LRN obtained from LNP Database**Test Description:**

ACCS call originated from a customer who ported their telephone number to another local service provider (e.g. ported from LSP1 to LSP2) to whom an Operator Service System is providing branding.

Test Procedures

- < ACCS call made to OSS
- < No SS7 signaling between calling party and OSS and no LRN on trunk subgroup data.
 - < Originating LRN obtained from LNP Database.

Test Results:

- < Proper branding ("BONG...LSP2") is provided to the calling party.
- < Call is completed.

4.8.7.2.1 ACCS Call from a Ported Calling Party with SS7, Originating LRN obtained from JIP**Test Description:**

ACCS call originated from a customer who ported their telephone number to another local service provider (e.g. ported from LSP1 to LSP2) to whom an Operator Service System is providing branding.

Test Procedures

- < ACCS call made to OSS
- < SS7 signaling between calling party and OSS
- < Originating LRN obtained from JIP

Test Results:

- < Proper branding ("BONG...LSP2") is provided to the calling party.
- < Call is completed

4.8.7.3.1 ACCS Call from a Ported Calling Party without SS7, Originating LRN obtained from Trunk Sub-Group**Test Description:**

ACCS call originated from a customer who ported their telephone number to another local service provider (e.g. ported from LSP1 to LSP2) to whom an Operator Service System is providing branding.

Test Procedures

- < ACCS call made to OSS
- < No SS7 signaling between calling party and OSS
- < Originating LRN obtained from trunk sub-group data

Test Results:

- < Proper branding ("BONG...LSP2") is provided to the calling party.
- < Call is completed.

4.8.7.4.1 ACTS Call from a Ported Calling Party without SS7, Originating LRN obtained from LNP Database**Test Description:**

ACTS call originated from a customer who ported their telephone number to another local service provider (e.g. ported from LSP1 to LSP2) to whom an Operator Service System is providing branding.

Test Procedures

- < ACTS call made to OSS
- < No SS7 signaling between calling party and OSS and no LRN on trunk subgroup data.
 - < Originating LRN obtained from LNP Database.

Test Results:

- < Proper branding ("BONG...LSP2") is provided to the calling party.
- < Call is completed.

4.8.7.5.1 ACTS Call from a Ported Calling Party with SS7, Originating LRN obtained from JIP**Test Description:**

ACTS call originated from a customer who ported their telephone number to another local service provider (e.g. ported from LSP1 to LSP2) to whom an Operator Service System is providing branding.

Test Procedures

- < ACTS call made to OSS
- < SS7 signaling between calling party and OSS
- < Originating LRN obtained from JIP

Test Results:

- < Proper branding ("BONG...LSP2") is provided to the calling party.
- < Call is completed

4.8.7.6.1 ACTS Call from a Ported Calling Party without SS7, Originating LRN obtained from Trunk Sub-Group**Test Description:**

ACTS call originated from a customer who ported their telephone number to another local service provider (e.g. ported from LSP1 to LSP2) to whom an Operator Service System is providing branding.

Test Procedures

- < ACTS call made to OSS
- < No SS7 signaling between calling party and OSS
- < Originating LRN obtained from trunk sub-group data

Test Results:

- < Proper branding ("BONG...LSP2") is provided to the calling party.
- < Call is completed.

4.11 - NPA Splits

The shortage of available numbers with NPAs has led to the splitting of NPA within densely populated areas around the country. This trend will probably continue as populations grow. LRN LNP must be able to respond to the split NPA configuration with these areas. LRN LNP services that have been successfully tested will not be directly affected by split NPAs. 2 LRNs required, for each switch, NPAC mass down load and Lab tested.

4.12 - Call and Code Gapping

These tests are included for completeness, but are not envisioned as being necessarily executed in a live environment. All Service Providers should ensure their networks appropriately handle these Network Management functions, when available on their switches.

4.12.1 - Automatic Call Gapping (ACG)

LRN ACG is a special case. Might not be in switches. Should include in test plan anyway. LRN ACG works on dialed DN, pre-query, for 10-digit queries. Can set up to do default routing after LRN call gap.

4.12.1.1 General Overload - LNP LRN Application Traffic

Test Description

This test examines the effect on the network when a sufficient level of LNP Application traffic is sent to the LNP SCP resulting in LNP SCP Overload. A low level of traffic is the initial traffic for this test and then the traffic level is increased causing the LNP SCP to go into overload and include ACGs in the responses. The SSPs should then reduce the traffic load and the LNP SCP should go out of overload.

TRAFFIC LOAD:

The traffic is a mix of AIN 0.1 LNP Messages and IN LNP Messages. The traffic load is 20% per LNP SCP A-link. Once the 20% per A-Link is established, the traffic load should be increased to cause LNP SCP Overload.

TEST PROCEDURES:

- < Execute Pre-Test Checklist.
- < Start traffic at the load boxes to provide an LNP AIN 0.1/IN LR N query traffic load of 20% per LNP SCP A-link. Start the traffic mix (LNP AIN 0.1 and IN Queries) at the live SSP offices (end offices and tandems)..
- < After the traffic has stabilized, observe all reports, and messages as they occur and justify any abnormal results for a period of 10 minutes.
- < Increase the load box traffic from the current load to LNP SCP Overload level.
- < Let the traffic run at this level for at least 2 minutes. The LNP SCP reaction to this query load should be observed. Any abnormal messages displayed at the LNP SCP should be reported. Also, observe if there is any decrease in responses from the LNP SCP.
- < Remove the LNP SCP from Overload.
 - < Perform Post-Test Checklist.

RESULTS:

- < The SSPs should cut back future queries for LNP dialed numbers (for duration specified in ACG component). Observe that Default Routing, if available and active, routes the calls as if the had not been queried (on the dialed digits) to the destination switch.
- < Observe if there are any unusual maintenance messages at the SSPs or if the SSPs time out waiting for responses.
 - < The analysis will verify that the LNP SCP sends the ACG message component in its responses while it is in overload and that each of the SSPs have sent the ACG encountered parameter in queries to the LNP SCP.

4.12.1.2 General Overload - LNP Application and LNP GTT Function Traffic

Test Description

This test examines the effect on the network when a sufficient level of LNP Application and LNP GTT Function traffic is sent to the LNP SCP resulting in LNP SCP Overload. A low level of traffic is the initial traffic for this test and then the traffic level is increased causing the LNP SCP to go into overload and include ACGs in the responses (ACGs will not be sent for the LNP GTT Function Messages). The SSPs should then reduce the traffic load and the LNP SCP should go out of overload. Since no ACGs components will be returned to the SSPs for the LNP GTT Function Messages during the LNP SCP overload these messages should be monitored closely to find if they are processed by the LNP SCP or if they are discarded.

TRAFFIC LOAD:

The traffic is a mix of AIN 0.1 LNP Messages, IN LNP Messages and intersystem messages using the LNP GTT Function (i.e., CLASS, LIDB, CNAM). The traffic load is 20% per LNP SCP A-link. Once the 20% per A-Link is established, the traffic load should be increased to cause LNP SCP Overload.

TEST PROCEDURES:

- < Execute Pre-Test Checklist.
- < Start traffic at the load boxes to provide an LNP AIN 0.1 query traffic load of 20% per LNP SCP A-link. Start the traffic mix (LNP AIN 0.1, IN Queries and Intersystem Messages (i.e., CLASS, LIDB, CNAM)) at the end office and tandem SSPs.
- < After the traffic has stabilized, observe all reports, and messages as they occur and justify any abnormal results for a period of 10 minutes.
- < Increase the load box traffic from the current load to LNP SCP Overload level.
- < Let the traffic run at this level for at least 2 minutes. The LNP SCP reaction to this query load should be observed. Any abnormal messages displayed at the LNP SCP should be reported. Also, observe if there is any decrease in responses from the LNP SCP.
- < Remove the LNP SCP from Overload.
 - < Perform Post-Test Checklist.

RESULTS:

- < The SSPs should cut back future queries for LNP dialed numbers (for duration specified in ACG component). Observe that Default Routing, if available and active, routes the calls as if they had not been queried (on the dialed digits) to the destination switch.

- < Observe if there are any unusual maintenance messages at the SSPs or if the SSPs time out waiting for responses.
- < Observe what is occurring with the Intersystem Messages.
- < The analyst will verify that the LNP SCP sends the ACG message component in its responses while it is in overload and that each of the SSPs have sent the ACG encountered parameter in queries to the LNP SCP.

4.12.2 - Switch-based (Netwk Mgmt) Code Controls

The requirements are taken from the October 2, 1996 submission by Joe Lichter, Lucent, to the SSP Requirements committee for inclusion in the issue 1.04 release of the ICC Switch GR.

<REQ-IL-GR-1060V1>

For LNP calls, Network Management controls shall be extended to the LRN. This includes controls for the LRN and the Called Number at the intermediate switch contained in the CdPN and the "ported number" GAP, respectively.

For calls to a non-ported subscriber, the existing procedures for provisioning and application of the code gapping controls shall apply at both the end office and the intermediate office.

For calls to ported subscribers, the following modifications to code gapping shall apply:

1. The existing procedures for provisioning the code gapping controls shall be used at both the originating switch and the intermediate switch.
2. Calls to a carrier shall follow the existing procedures at both the originating switch and the intermediate switch. For calls to a ported number using an interexchange carrier, no queries shall be made.
3. At the originating switch:
 - < a 10 digit code gapping shall be applied based on the dialed number and not the LRN.
 - < a 3 or 6 digit code gapping shall be applied based on the LRN. The LRN is returned in the LNP response for a ported number.
4. At the intermediate switch:
 - < a 10 digit code gapping shall be applied based on the dialed number and not the LRN. The dialed number will be signaled via the ISUP "ported number" GAP{ or in the CalledPartyNumber parameter (when call has not been queried at the previos switch).
 - < a 3 or 6 digit code gapping shall be applied based on the LRN. The LRN is signaled via the ISPU CalledPartyNumber parameter or is returned in the LNP response for a ported number.

<End of REQ-1060>

4.12.2.1 Manual Overload Controls - End Office 1

Test Description

This test examines the effect on the network when manual code controls are active at the LNP SSP. During the first part of this test, manual code gapping will be in effect for one 10 digit ported number and for one NPA-NXX (the NPA-NXX used for the 6 digit code gapping is the same as the LRN used for the 10 digit ported number). This is for the end-office SSP.

TRAFFIC LOAD:

The traffic will be a mixture calls for the ported number and for numbers in the LRN's NPA-NXX.

TEST PROCEDURES:

- < Enable a 10 digit code control against a ported number (NPA-NXX-XXXX).
Set the 10 digit timer for 5 minutes allowing 1 call every 15 seconds.
- < Start traffic at the SSP to provide an LNP query traffic load against the Ported Number below the threshold of the code control.
- < After the traffic has stabilized, observe all reports, and messages as they occur and justify any abnormal results for a period of 10 minutes.
- < Increase the traffic until it exceeds the threshold of the 10 digit code.
- < Let the traffic run at this level for 6 minutes.
 - < Stop the call volume.

RESULTS:

- < Observe that only the calls allowed by the gap level are routed out of the switch (gapping taking place on the 10 digit dialed number, even though LRN is coming back in the response).
- < Observe if there are any unusual maintenance messages at the SSP Console/Printer.
 - < At the expiration of the 5 minute GAP timer, observe that all calls are now being routed out of the switch.

4.12.2.2 Manual Overload Controls - End Office 2

Test Description

This test examines the effect on the network when manual code controls are active at the LNP SSP. During the first part of this test, manual code gapping will be in effect for one 10 digit ported number and for one NPA-NXX (the NPA-NXX used for the 6 digit code gapping is the same as the LRN used for the 10 digit ported number). This is for the end-office SSP.

TRAFFIC LOAD:

The traffic will be a mixture calls for the ported number and for numbers in the LRN's NPA-NXX.

TEST PROCEDURES:

Part I:

- < Enable a 6 digit code control against a ported number (NPA-NXX). Set the 6 digit timer for 5 minutes allowing 1 call every 10 seconds.
- < Start traffic at the SSP to provide an LNP query traffic load against the Ported Number below the threshold of the code control.
- < After the traffic has stabilized, observe all reports, and messages as they occur and justify any abnormal results for a period of 10 minutes.
- < Increase the traffic until it exceeds the threshold of the 6 digit code.
- < Let the traffic run at this level for 6 minutes
 - < Stop the call volume.

RESULTS:

- < Observe that only the calls allowed by the gap level are routed out of the switch (gapping taking place on the 6 digit dialed number, even though LRN is coming back in the response).
- < Observe if there are any unusual maintenance messages at the SSP Console/Printer.
 - < At the expiration of the 5 minute GAP timer, observe that all calls are now being routed out of the switch.

4.12.2.3 Manual Overload Controls - Tandem 1

Test Description

This test examines the effect on the network when manual code controls are active at the LNP Tandem SSP. During the first part of this test, manual code gapping will be in effect for one 10 digit ported number and the second part for one NPA-NXX (the NPA-NXX used for the 6 digit code gapping is the same as the LRN used for the 10 digit ported number). This is for the Tandem SSP.

TRAFFIC LOAD:

The traffic will be a mixture calls for the ported and for numbers in the LRN's NPA-NXX.

TEST PROCEDURES:

- < Enable a 10 digit code control against a ported number (NPA-NXX-XXXX).
Set the 10 digit timer for 5 minutes allowing 1 call every 15 seconds.
- < Note: The traffic for this test will be a mix of incoming SS7 calls from switches that have already queried the number (both subtending and IXC) and incoming SS& and MF traffic that has not queried. Start the traffic into the Tandem SSP to provide traffic load against the Ported Number below the threshold of the code control.
- < After the traffic has stabilized, observe all reports, and messages as they occur and justify any abnormal results for a period of 10 minutes.
- < Increase the traffic until it exceeds the threshold of the 10 digit code.
- < Let the traffic run at this level for 6 minutes.
 - < Stop the call volume.

RESULTS:

- < Observe that only the calls allowed by the gap level are routed out of the switch (gapping taking place on the 10 digit dialed number, even though LRN is coming back in the response or Ported number in the GAP of an incoming message).
- < Observe if there are any unusual maintenance messages at the Tandem SSP Console/Printer.
 - < At the expiration of the 5 minute GAP timer, observe that all calls are now being routed out of the switch.

4.12.2.4 Manual Overload Controls - Tandem 2

Test Description

This test examines the effect on the network when manual code controls are active at the LNP Tandem SSP. During the first part of this test, manual code gapping will be in effect for one 10 digit ported number and the second part for one NPA-NXX (the NPA-NXX used for the 6 digit code gapping is the same as the LRN used for the 10 digit ported number). This is for the Tandem SSP.

TRAFFIC LOAD:

The traffic will be a mixture calls for the ported and for numbers in the LRN's NPA-NXX.

TEST PROCEDURES:

- < Enable a 6 digit code control against a ported number (NPA-NXX). Set the 6 digit timer for 5 minutes allowing 1 call every 10 seconds.
- < Note: The traffic for this test will be a mix of incoming SS7 calls from switches that have already queried the number (both subtending and IXC) and incoming SS& and MF traffic that has not queried. Start the traffic into the Tandem SSP to provide traffic load against the Ported Number below the threshold of the code control. Include calls in the mix to numbers in the NPA-NXX of the LRN that are not Ported. (e.g. the SCP returns the dialed digits).
- < After the traffic has stabilized, observe all reports, and messages as they occur and justify any abnormal results for a period of 10 minutes.
- < Increase the traffic until it exceeds the threshold of the 10 digit code.
- < Let the traffic run at this level for 6 minutes.
 - < Stop the call volume.

RESULTS:

- < Observe that only the calls allowed by the gap level are routed out of the switch (gapping taking place on the 6 digit dialed number, even though LRN is coming back in the response or Ported number in the GAP of an incoming message).
- < Observe if there are any unusual maintenance messages at the Tandem SSP Console/Printer.
 - < At the expiration of the 5 minute GAP timer, observe that all calls are now being routed out of the switch.

4.13 - Choke Networks

Choke arrangements are presently incorporated in COs to provide a means of protecting the end offices and networks from traffic overloads, such as those encountered with mass calling events. Choke networks are put in place to limit the traffic flow to a specific number or prefixes.

Numbers in the ported configuration can all to numbers incorporated in a choke network. Ported numbers can be used as recipients of choked numbers and have the proper interconnection to the network to accommodate the call flows.

EO providing service into areas with choke networks in place will be tested to conform to the parameters of existing EOs. If the new EO is providing services terminating a number capable of receiving calls from a choke network the office will be configured and tested to receive the incoming calls.

It has been determined that for the Illinois deployment, choke network design that is being used within MSA 1 will not be impacted. The existing topology for the choke networks will not utilize ported numbers in Illinois. Choke network applications in other areas should be addressed on an individual case.

