NPAC SMS Service Provider Group Test Plan

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**Publication History**

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| **NANC FRS/IIS Version** | **Test Plan Release Date** | **Description** |
| R4.1 | 1-8-19 | This is the initial version of the post transition SP Group Test Plan. This document contains all Test Cases developed by the Inter Carrier Testing sub committee for optional execution in a ‘multiple Service Provider’ or ‘Group’ environment. This document may also be utilized by individual Service Providers during “Ad Hoc” Testing.  |

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# Preface

## Purpose of this Document

This document contains all Test Cases developed by the Inter Carrier Testing sub committee for optional execution in a ‘multiple Service Provider’ or ‘group’ environment. The focus of the Test Plan is to ensure Local System capabilities function as expected across Wireline to Wireline, Wireless to Wireless and Intermodal (Wireline to Wireless & Wireless to Wireline) Service Providers[[1]](#footnote-1). This document may also be utilized by individual Service Providers during “Ad Hoc” Testing.

The Test Plan contains a series of test cases used to ensure that the porting of telephone numbers between service providers using the LNPA will be successful. This is accomplished by establishing test numbers and using existing porting processes[[2]](#footnote-2) in the LNPA’s test environment. Service Providers will be responsible to identify peers and/or group together to have the opportunity to test their LNP local systems with the LNPA. This plan includes testing of ports between Service Provider Type as follow:

* Wireline to wireline ports
* Wireless to wireless ports
* Intermodal ports defined as;
	+ wireline-to-wireless ports
	+ wireless-to-wireline ports
	1. Testing Service Provider

The focus of this test plan is on having facility-based service providers involved using LNP Local Systems aka SOAs & LSMS’s connected to a LNP NPAC Administrator test environment.

Resellers:

Resellers are welcome to work with their carrier network service provider if they wish to be involved in this testing and work through their network service provider contacts for testing.

Service Bureaus:

Service bureaus are welcome to work with their carrier network service provider if they wish to be involved in testing and work through, or on behalf of, their network service provider contacts for testing.

LNPA GUI Service Provider Users:

Participation from service providers using the new LNPA GUI will be included but will require these service providers to request testing support from the new LNPA directly to engage in this testing.

Other LNPA Users:

Testing of functionality between the NPAC and companies who get LNP data directly from the NPAC is facilitated by the NPAC and managed in a separate forum. The functioning of network elements is considered an internal issue for each company.

## Group Testing

Group testing consists of 4 components that require the participation of multiple service providers in the execution of the test. The four components which are described further in subsequent sections are:

* Round Robin
* SPID Migration
* Partner (pair wise)
* Timer

### Round Robin

Round Robin testing involves porting a TN from Service Provider 1 (SP1), to one or more other Service Providers (SP1 to SP2, SP2 to SP3, …, SPn to SP1) and back to SP1. It is considered to be one test case however the set of test steps are iteratively executed multiple times and requires coordination across the set of multiple Service Providers in addition to NPAC Industry Test Engineering (ITE) Personnel support.

**Note:** Round Robin test cases can be repeated to account for success, partial failure, and failure broadcast conditions.

### SPID Migration

Service Providers can optionally participate in SPID Migration Testing. This test requires the involvement of NPAC ITE personnel to submit the SPID Migration Request and to build the appropriate Selection Input Criteria SPID Migration Update Request Files (SIC-SMURF) files. Upon completion of the test, verify that the NPA-NXX, LRN, Subscription Version, NPA-NXX-X and Block information have been correctly migrated.

### Partner

Partner testing encompasses tests between two Service Providers (as partners). Involvement of NPAC personnel is not required, but Service Providers are encouraged to provide communication prior to test execution as well as throughout the testing.

### Timer

This testing encompasses testing the timer suspension and expiration behaviors of the Service Providers local systems (SOA) when the maintenance window is extended. This test requires the involvement of NPAC ITE personnel to manipulate the the maintenance window to provide the expected behaviors. Execution scheduling of these tests may involve multiple partner pairs simultaneously for efficiency.

# Test Case List Template

This section contains a matrix of all test cases written and defined by the Inter Carrier Testing Sub committee for Group testing for Service Provider and/or Vendors in a multi participant testing environment. The scope of the following test cases addresses LNP 'Port Provisioning' activity.[[3]](#footnote-3) The interactions between NPAC and LNP Local Systems (SOAs & LSMSs) should be the focus and/or scope of execution for testing, with ‘NON LNP’ internal Service provider system processes limited or out of scope when interacting with their peer testing Service Providers. Service providers with integrated and/or automated LNP solutions may have to take steps to 'control/limit' actions in order to properly execute these test cases.

Test Case types are identified by the following:

* RR = Round Robin
* SM = SPID Migration
* PT = Partner Testing
* TT = Timer Testing

The Test Case List Template is broken into 3 columns:

1.
2. **Test Case #** - Identifies the Test Case Type, Number and Version

For example: ***TC# PT9b***

* PT – Partner Test Case
* 9 – Partner Test Case #9
* b - This is the additional/complimentary instance of the Test Case
1. **Test Case Name** – Name and high level description of each Test Case
2. **Req’d** – Identifies if this Test Case is required (Y/N) as agreed to by the individual participants

| **Test Case List Template** *(for each instance of the plan to be executed)* |
| --- |
| **TC #** | **Test Case Name** | **Req’d** |
| RR1 | Round Robin Testing: New SP Create (Non PTO), Old SP Create, Activate, Audit (Repeat N-1 times), New SP Create (PTO), Old SP Create |  |
| SM1 | SPID Migration: NPAC OP GUI – NPAC Personnel submit a request for a SPID migration, where NPA-NXX, LRN, Subscription Version, NPA-NXX-X and Block Information exist for the migrating away from SPID. Verification steps are performed to ensure the Service Provider system is now in synch with the NPAC SMS. – Success |  |
| PT1a | Port single TN: New & Old SP Create, New / Old Modify Pending, Activate, Audit, Modify Active |  |
| PT1b | PTO of 1a: New & Old SP Create, New / Old SP Modify Pending, Activate, Audit,  |  |
| PT2a | Port TN range, similar to 1a but reverse SP roles, and do Mass Update instead of Modify Active |  |
| PT2b | PTO of 2a, similar to 1b but reverse SP roles |  |
| PT3a | Intra SP Port - single TN: New SP Create, Modify Pending, Activate, Modify Active, Audit (can be a non-ported number, previously intra-ported number, or a ported-in number) |  |
| PT3b | Inter Port (of TN in 3a) - New SP Create (not PTO), Old SP Create, Activate, Disconnect, Audit  |  |
| PT4 | Intra SP Port - TN range: New SP Create, Modify Pending, Activate, Mass Update, Disconnect, Audit (can be a non-ported number, previously intra-ported number, or a ported-in number) |  |
| PT5 | Intra SP Port - single TN: New SP Create, Modify Pending, Activate, Modify Active, Audit, Disconnect (can be a non-ported number, previously intra-ported number, or a ported-in number) |  |
| PT6a | Intra SP Port - TN range: New SP Create, Modify Pending, Activate, Modify Active/Mass Update, Audit (can be a non-ported number, previously intra-ported number, or a ported-in number) |  |
| PT6b | Inter Port (of TN Range in 6a) - New SP Create (not PTO, port back to different switch), Old SP create, Activate, Disconnect, Audit |  |
| PT7 | Inter Port of TN (T1 expires): New SP Create, T1 expiration notification, Old SP create, activate, audit, disconnect |  |
| PT8 | Inter Port of TN (T1 & T2 expire): New SP Create, T1 expiration notification, T2 expiration notification, activate, audit, disconnect |  |
| PT9a | Port TN w/ conflict: New SP Create, Old SP Create w/conflict, New SP Modify, Old SP Remove from Conflict, Activate, Audit |  |
| PT9b | Port TN back (not PTO) w/ conflict: New SP Create, Old SP Create (conflict), Old SP Modify (authorize), , Activate, Audit |  |
| PT10 | Cancel Pending Port: New SP Create, Cancel |  |
| PT11a | Cancel Pending Port: Old SP Create, Cancel |  |
| PT11b | New SP Create, T1/T2 expiration notification, Activate, Audit |  |
| PT12 | Cancel Pending Port: New SP Create, Old SP Create, New SP Cancel, Old SP Cancel Ack. |  |
| PT13 | Cancel Ack Notification: New SP Create, Old SP Create, New SP Cancel, Cancel T1 expires, Old SP Cancel Ack |  |
| PT14 | Cancel Pending Port: New SP Create, Old SP Create, Old SP Cancel, New SP Cancel Ack. |  |
| PT15 | No New SP Cancel Concurrence: New SP Create, Old SP Create, Old SP Cancel, Cancel T1 expires, Cancel T2 expires (conflict) |  |
| PT16 | No Old SP Cancel Concurrence: New SP Create, Old SP Create, New SP Cancel, Cancel T1 expires, Cancel T2 expires (canceled) |  |
| PT17 | Delete NPA-NXX via SOA and via LSMS |  |
| PT18 | Delete LRN via SOA and via LSMS |  |
| PT19a | Port Activation w/ Medium Timers: New SP Create with 'Yes' for Medium Timers, Old SP Create with 'Yes' for Medium Timers, Activate |  |
| PT19b | Port Activation w/ Medium Timers: New SP Create with 'No' for Medium Timers, Old SP Create with 'No' for Medium Timers, Activate |  |
| PT19c | Port Activation w/ Medium Timers: New SP Create with 'Yes' for Medium Timers, Old SP Create with 'No' for Medium Timers, Activate |  |
| PT19d | Port Activation w/Medium Timers: New SP Create with 'No' for Medium Timers, Old SP Create with 'Yes' for Medium Timers, Activate |  |
| PT20 | Undo Cancel Pending & Modify: New SP Create one day in advance, Old SP Create one day in advance, New SP Cancel, New SP Undo Cancel & Modify, New SP Modify DDT |  |
| PT21 | Modify Active on LRN: New SP Create With Incorrect LRN, Old SP Create, Activate, New SP Modify Active to Correct LRN |  |
| PT22 | Port TN w/ Auto Activate Timers: New SP Create with DDT in Attempt Auto-Activate Time field, Old SP Create, Activate on auto activate DDT |  |
| PT23a | Future Disconnect Port: New SP Create, Old SP Create, Activate, Set disconnect date 1 hour ahead, Disconnect |  |
| PT23b | Future Disconnect Port: New SP Create, Old SP Create, Activate, Set disconnect date 1 day ahead, Disconnect |  |
| PT24 | Port TN Before T1 Expires: New SP Create, T1 hasn't expired, Activate, Receive Error |  |
| PT25 | Port TN Before DDT: New SP Create 1 day in advance, Old SP Create 1 day in advance, Activate, Receive Error |  |
| TT1 | Maintenance Window Timer Behavior - Inter Port of TN (T1 & T2 expire): New SP Create, T1 expiration notification, T2 expiration notification, activate, audit, disconnect (This is executing Partner Test - PT8) |  |
| TT2 | Maintenance Window Timer Behavior - No New SP Cancel Concurrence: New SP Create, Old SP Create, Old SP Cancel, Cancel T1 expires, Cancel T2 expires (conflict) (This is executing Partner Test – PT15) |  |

# Test Cases

The following section includes the actual Test Cases that can be executed by the Service Providers that are participating in the SP to SP phase of testing. The Test Case Scenarios table is broken into 5 columns:

* **Test Case #** - Identifies the Test Case Type, Number and Version
* **Description** – High level summary of the purpose of each Test Case
* **Test** **Steps** – The functions to be performed in sequential order. This section also identifies who is to perform each step of the test.
* **Expected** **Results** – This section defines the success criteria for each step of the test.
* **Actual** **Results** - This section is provided for each SP performing the tests to capture the results of their testing

| **TEST CASE #** | **DESCRIPTION** | **TEST STEPS** | **EXPECTED RESULTS** | **ACTUAL RESULTS** |
| --- | --- | --- | --- | --- |
| RR1 | Port from SPID A to B, then port from SPID B to C, …, then port from SPID (N-1) to N, then port (PTO) from SPID N to SPID A. | 1. New SP submits New SP Create for the TN with X Due Date (and NOT PTO).

1. Old SP submits Old SP Create (aka Release) to concur with the port (Authorization = True).
2. New SP submits Activate for the ported TN on Due Date.
3. New SP submits an Audit for the ported TN.

Repeat steps above for porting the same TN from SPID B to SPID C, SPID C to D, etc., and from SPID N-1 to N, where N is the number of SPs in the group.Lastly perform PTO port of TN from SPID N back to SPID A:1. Old SP submits Old SP Create (Release) for the TN from TC 4.1a, with X Due Date and Auth = Yes.
2. New SP submits News SP Create with PTO indicator set to True to concur with the port.
3. New SP submits Activate for the ported TN on Due Date.
4. New SP submits an Audit for the ported TN.
 | 1. NPAC creates an SV and sends object create notification to New and Old SP SOAs. NPAC sends 1st Port notification to SOAs/LSMSs. SPs verify they received notifications in their SOA and LSMS, if LSMS is available to testers.
2. NPAC updates the SV and sends SV Attribute Value Change (AVC) notification to Old/New SP SOAs with Old SP Due Date and Auth. SPs verify they received the notification in their SOA.
3. NPAC broadcasts SV create to LSMSs and then sends Status AVC notification to Old/New SP SOAs (Active, Partially Failed or Failed). SPs verify they received the notification in their SOA. If LSMSs are connected and available to testers, verify LSMS received the SV create broadcast.
4. NPAC creates and performs the audit and sends notifications to SOA (audit create, discrepancy notification, audit results, audit delete). If discrepancy was discovered, NPAC broadcasts a correction to the discrepant LSMS. New SP verifies they received the notifications in their SOA. If discrepant LSMS is available to testers, verify LSMS received broadcast to fix discrepancy (SV create most likely).

The same expected results as above should be exhibited.1. NPAC creates an SV and sends object create notification to New and Old SP SOAs. SPs verify they received notification in their SOA.
2. NPAC updates the SV and sends SV AVC notification with New SP Due Date to Old/New SP SOAs. SPs verify they received notification in their SOA.
3. NPAC broadcasts a Delete of the currently active SV (SV 1, the active SV in TC 4.1a above) to LSMSs. NPAC sends status AVC notification for SV 1 to the Old SP (SP 2) SOA only (Old or Active). NPAC also updates the PTO SV (SV 2) and sends status AVC notification for SV2 to the Old/New SP SOAs (Old, Partially Failed, Failed). New SP verifies it received notification for SV2 in its SOA. Old SP verified it received notification for SV1 and SV2 in its SOA. If LSMSs are connected and available to testers, verify LSMS received the SV delete broadcast on SV1.
4. NPAC creates and performs the audit and sends notifications to SOA (audit create, discrepancy notification, audit results, audit delete). If discrepancy was discovered, NPAC broadcasts a correction to the discrepant LSMS. New SP verifies they received the notifications in their SOA. If discrepant LSMS is available to testers, verify LSMS received broadcast to fix discrepancy (SV delete on SV1 most likely).
 |  |
| SM1 | SPID Migration: NPAC OP GUI – NPAC Personnel submit a request for a SPID migration, where NPA-NXX, LRN, Subscription Version, NPA-NXX-X and Block Information exist for the migrating away from SPID. Pre-req: while all SOAs/LSMSs connected, do following for Migrating From SPID:1. Create 1 NPA-NXX
2. Create 1 LRN
3. Create 1 NPA-NXX-X and activate its block using LRN from (b).
4. Create/activate range of 10 ported TNs using LRN from (b)
5. Create deferred disconnect for 2 of SVs from (d)
6. Immediately disconnect 1 SV from (d)
7. Create/activate range of 10 pseudo-LRN SVs for NPA-NXX from (a)
 | 1. NPAC Personnel generate Selection Input Criteria SPID Mass Update (SIC-SMURF) Files based on SPID Migration prerequisite data.
2. Service Provider Personnel receive the SIC-SMURF files, take their systems ‘off-line’ from the NPAC SMS, and load the files into their LSMS system.
3. At the same time as row 2 above, NPAC Personnel update the NPAC SMS database using the SIC-SMURF files.
4. After both the NPAC and Service Provider Personnel have successfully loaded the SIC-SMURF files into their respective databases, Service Provider Personnel re-associate their local systems with the NPAC SMS.
5. Service Provider Personnel perform subscription version and number pool block queries for the migrated data.
 | 1. The SIC-SMURF files are generated and made available on the Service Provider FTP sites.
2. Using the SOA/LSMS system, verify as applicable:NPA-NXX (a) was updated to reflect the ‘Migrating To’ SPID; LRN (b) was updated to reflect the ‘Migrating To’ SPID; NPA-NXX-X (c) was updated to reflect the ‘Migrating To’ SPID; NPB (c) was updated to reflect the ‘Migrating To’ SPID; SVs from (d) that are active and (e) were updated to reflect the ‘Migrating To’ SPID. SV from (f) exists on the NPAC SMS with a status of ‘Old’ so is not migrated - verify on the local system as capable. SV (g) was updated to reflect the ‘Migrating To’ SPID – if the Service Provider supports PLRN records.
3. Verify the following on the NPAC SMS: NPA-NXX (a) was updated to reflect the ‘Migrating To’ SPID; LRN (b) was updated to reflect the ‘Migrating To’ SPID; NPA-NXX-X (c) was updated to reflect the ‘Migrating To’ SPID; NPB (c) was updated to reflect the ‘Migrating To’ SPID; SVs from (d) that are active and (e) were updated to reflect the ‘Migrating To’ SPID. SV from (f) exists on the NPAC SMS with a status of ‘Old’ so is not migrated. SVs from (g) were updated to reflect the ‘Migrating To’ SPID – if the Service Provider supports PLRN records.
4. The Service Provider local systems are associated with the NPAC SMS.
5. Verify that the records reflect the appropriate Old and New Service Providers based on the SPID Migration data.
 |  |
| PT1a | Port single TN from SP1 to SP2 (no existing SV, block or code held by Old SP, 1st port in NPA-NXX). After ported TN is activated, Audit the TN, then Modify the Active SV for the ported TN. | 1. New SP submits New SP Create for the TN with X Due Date.
2. Old SP submits Old SP Create (aka Release) to concur with the port (Authorization = True).
3. New SP submits Modify for the pending port to modify the LRN.
4. Old SP submits Modify for the pending port to modify the Old SP Due Date to current date.
5. New SP submits Modify for the pending port to modify the New SP Due Date to current date.
6. New SP submits Activate for the ported TN on Due Date.
7. New SP submits an Audit for the ported TN.
8. New SP submits Modify for the active ported TN to modify the LRN for the active ported TN.
 | 1. NPAC creates an SV and sends object create notification to New and Old SP SOAs. NPAC sends 1st Port notification to SOAs/LSMSs. SPs verify they received notifications in their SOA and LSMS, if LSMS is available to testers.
2. NPAC updates the SV and sends SV Attribute Value Change (AVC) notification to Old/New SP SOAs with Old SP Due Date and Auth. SPs verify they received the notification in their SOA.
3. NPAC updates the SV (and sends success response to originating SOA). No notifications are sent. New SP verifies the update was successful in their SOA.
4. NPAC updates the SV sends SV AVC notification for Old SP Due Date change to Old/New SP SOAs. SPs verify they received the notification in their SOA.
5. NPAC updates the SV sends SV AVC notification for New SP Due Date change to Old/New SP SOAs. SPs verify they received the notification in their SOA.
6. NPAC broadcasts SV create to LSMSs and then sends Status AVC notification to Old/New SP SOAs (Active, Partially Failed or Failed). SPs verify they received the notification in their SOA. If LSMSs are connected and available to testers, verify LSMS received the SV create broadcast.
7. NPAC creates and performs the audit and sends notifications to SOA (audit create, discrepancy notification, audit results, audit delete). If discrepancy was discovered, NPAC broadcasts a correction to the discrepant LSMS. New SP verifies they received the notifications in their SOA. If discrepant LSMS is available to testers, verify LSMS received broadcast to fix discrepancy (SV create most likely).
8. NPAC updates the SV and broadcasts SV Modify to LSMSs and then sends Status AVC notification to Old/New SP SOAs (Active). SPs verify they received the notification in their SOA. If LSMSs are connected, verify LSMS received the SV modify broadcast.
 |   |
| PT1b | Port to original SP single TN from SP 2 to SP 1 (PTO of TN ported in TC 4.1a; TN must be in active status with empty Failed SP List). Audit the TN after it is activated. Old SP initiates the Port. | 1. Old SP submits Old SP Create (Release) for the TN from TC 4.1a, with X Due Date and Auth = Yes.
2. New SP submits News SP Create with PTO indicator set to True to concur with the port.
3. Old SP submits Modify for the pending port to modify the Old SP Due Date to current date.
4. New SP submits Modify for the pending port to modify the New SP Due Date to current date.
5. New SP submits Activate for the ported TN on Due Date.
6. New SP submits an Audit for the ported TN.
 | 1. NPAC creates an SV and sends object create notification to New and Old SP SOAs. SPs verify they received notification in their SOA.
2. NPAC updates the SV and sends SV AVC notification with New SP Due Date to Old/New SP SOAs. SPs verify they received notification in their SOA.
3. NPAC updates the SV and sends SV AVC notification with Old SP Due Date to Old/New SP SOAs. SPs verify they received notification in their SOA.
4. NPAC updates the SV and sends SV AVC notification with New SP Due Date to Old/New SP SOAs. SPs verify they received notification in their SOA.
5. NPAC broadcasts a Delete of the currently active SV (SV 1, the active SV in TC 4.1a above) to LSMSs. NPAC sends status AVC notification for SV 1 to the Old SP (SP 2) SOA only (Old or Active). NPAC also updates the PTO SV (SV 2) and sends status AVC notification for SV2 to the Old/New SP SOAs (Old, Partially Failed, Failed). New SP verifies it received notification for SV2 in its SOA. Old SP verified it received notification for SV1 and SV2 in its SOA. If LSMSs are connected and available to testers, verify LSMS received the SV delete broadcast on SV1.
6. NPAC creates and performs the audit and sends notifications to SOA (audit create, discrepancy notification, audit results, audit delete). If discrepancy was discovered, NPAC broadcasts a correction to the discrepant LSMS. New SP verifies they received the notifications in their SOA. If discrepant LSMS is available to testers, verify LSMS received broadcast to fix discrepancy (SV delete on SV1 most likely).
 |   |
| PT2a | Port TN Range from SP2 to SP1 where SP2 (the Old SP) was the New SP in TC 1a (no existing SVs, block or code held by Old SP, 1st port in NPA-NXX). After ported TN is activated, do Mass Update, then Audit the ported TN. | 1. New SP submits New SP Create for the TN Range with X Due Date.
2. Old SP submits Old SP Create (aka Release) to concur with the port for the TN Range (Authorization = True).
3. New SP submits Modify for the pending TN Range port to modify the LRN.
4. Old SP submits Modify for the pending TN Range port to modify the Old SP Due Date to current date.
5. New SP submits Modify for the pending TN Range port to modify the New SP Due Date to current date.
6. New SP submits Activate for the ported TN Range on Due Date.
7. New SP contacts NPAC test engineer to perform a mass update on the LRN value of the TN range.
8. New SP submits an Audit for the ported TN Range.
 | 1. NPAC creates an SV for each TN in the range and sends object create notification to New and Old SP SOAs. NPAC sends 1st Port notification to SOAs/LSMSs. SPs verify they received notifications in their SOA and LSMS, if LSMS is available to testers.
2. NPAC updates each SV in the Range and sends SV Attribute Value Change (AVC) notification to Old/New SP SOAs with Old SP Due Date and Auth. SPs verify they received the notification in their SOA.
3. NPAC updates each SV in the Range (and sends success response to originating SOA). No notifications are sent. New SP verifies the update was successful in their SOA.
4. NPAC updates each SV in the Range and sends SV AVC notification for Old SP Due Date change to Old/New SP SOAs. SPs verify they received the notification in their SOA.
5. NPAC updates each SV in the Range and sends SV AVC notification for New SP Due Date change to Old/New SP SOAs. SPs verify they received the notification in their SOA.
6. NPAC broadcasts SV create for TN Range to LSMSs and then sends Status AVC notification to Old/New SP SOAs (Active, Partially Failed or Failed). SPs verify they received the notification in their SOA. If LSMSs are connected and available to testers, verify LSMS received the SV create broadcast.
7. NPAC updates the SV for the TN Range and broadcasts SV Modify to LSMSs and then sends Status AVC notification to Old/New SP SOAs (Active). SPs verify they received the notification in their SOA. If LSMSs are connected, verify LSMS received the SV modify broadcast.
8. NPAC creates and performs the audit and sends notifications to SOA (audit create, discrepancy notification, audit results, audit delete). If discrepancy was discovered, NPAC broadcasts a correction to the discrepant LSMS. New SP verifies they received the notifications in their SOA. If discrepant LSMS is available to testers, verify LSMS received broadcast to fix discrepancy (SV create most likely).
 |  |
| PT2b | Port to original SP TN Range from SP 1 to SP 2 (PTO of TN Range ported in TC 2a; TN range must be in active status with empty Failed SP List). Audit the TN after it is activated. Old SP initiates the Port. | 1. Old SP submits Old SP Create (Release) for the TN Range from TC 2a, with X Due Date and Auth = Yes.
2. New SP submits News SP Create with PTO indicator set to True to concur with the port for the TN Range.
3. Old SP submits Modify for the pending TN Range port to modify the Old SP Due Date to current date.
4. New SP submits Modify for the pending TN Range port to modify the New SP Due Date to current date.
5. New SP submits Activate for the ported TN Range on Due Date
6. New SP submits an Audit for the ported TN Range.
 | 1. NPAC creates an SV for each TN in the Range and sends object create notification to New and Old SP SOAs. SPs verify they received notification in their SOA.
2. NPAC updates the SV for each TN in the Range and sends SV AVC notification with New SP Due Date to Old/New SP SOAs. SPs verify they received notification in their SOA.
3. NPAC updates the SV for each TN in the Range and sends SV AVC notification with Old SP Due Date to Old/New SP SOAs. SPs verify they received notification in their SOA.
4. NPAC updates the SV for each TN in the Range and sends SV AVC notification with New SP Due Date to Old/New SP SOAs. SPs verify they received notification in their SOA.
5. NPAC broadcasts a Delete of the currently active SV TN Range (SVs 1, the active SVs for the Range in 2a above) to LSMSs. NPAC sends status AVC notification for SVs 1 to the Old SP (SP1) SOA only (Old or Active). NPAC also updates each PTO SV in the Range (SVs 2) and sends status AVC notification for SVs 2 to the Old/New SP SOAs (Old, Partially Failed, Failed). New SP verifies it received notification for SVs 2 in its SOA. Old SP verifies it received notification for SV1 Range and SV2 Range in its SOA. If LSMSs are connected and available to testers, verify LSMS received the SV delete broadcast on SV1 TN Range.
6. NPAC creates and performs the audit and sends notifications to SOA (audit create, discrepancy notification, audit results, audit delete). If discrepancy was discovered, NPAC broadcasts a correction to the discrepant LSMS. New SP verifies they received the notifications in their SOA. If discrepant LSMS is available to testers, verify LSMS received broadcast to fix discrepancy (SV delete on SV1 most likely).
 |  |
| PT3a  | Create an IntraService port for a single TN, modify the pending Due Date, activate the TN, and then Audit.Multiple subtest cases possible.Start with native block/codeStart with previously Interported TNStart with previously Intraported TNNegative Test Alternative for LSMS that is disconnected during process but connected prior to audit | See preconditions (re: Start with… & LSMS1. New SP submits New SP Create for the TN with Initial Due Date.
2. New SP submits Modify for the pending port to modify the New SP Due Date to current date.
3. New SP submits Activate for the ported TN on Due Date.
4. New SP submits Modify of the active port to modify the LRN (any required attribute) Note: optional attributes may result in alternative test case.
5. If Old SP LSMS down during this TC and can be brought up, Reconnect partner SP LSMS
6. New SP submits an Audit for the ported TN.
 | 1. New SP verifies that NPAC notifications for Create SV are received by their SOA and successful
2. SP verifies the SV with the modified Due Date based on the SV Attribute Value Change (AVC) notification sent from NPAC.
3. SP verifies SV create received by LSMS(s). SP verifies SV Active received by SOA/LSMS. SP verifies receipt of SV Active in success, partial fail, or failed state. SV verifies SV Status AVC notification to New SP SOAs.
4. SP verifies the SV Modify to LSMSs. SP verifies SV Active (success/pf/fail). SP verifies SV Status AVC notification to New SP SOA.
5. SP verifies recovery of missed connections to LSMS.
6. If LSMS connected and available to testers, check to see if NPAC Activation Broadcast is received and successful after audit. (if LSMS recovered the broadcast in Step 5, then there should be no discrepancies for the LSMS in the audit).
 |  |
| PT3b | Inter Port (of TN in 3a) – New SP Create (not PTO), Old SP Create, Activate, Disconnect, Audit | 1. New SP performs New SP Create Subscription Version (SV) with X Due Date.
2. Old SP performs Old SP Create (Concur) SV with X Due Date.
3. New SP performs Activate SV on Due Date.
4. New SP disconnects TN.
5. New SP or Old SP performs an audit.
 | 1. NPAC creates an SV and sends object create notification to New and Old SP SOAs. SPs verify they received notification in their SOA and create is successful.
2. NPAC updates the SV with the Old SP data and logs/sends SV Attribute Value Change (AVC) notification to Old/New SOAs. SPs verify that NPAC notifications for Old SP Create (Concur) SV are received by their respective SOAs and successful.
3. NPAC updates SV to Active (all LSMSs successfully process the broadcast, Partially Failed (at least one LSMS did not process the broadcast), or Failed (all LSMSs did not process the broadcast). SPs verify that Activate SV notifications are received by their respective SOAs and successful.
4. NPAC sets the status for the SV to sending and broadcasts SV Delete to LSMSs. NPAC sends snapback notification to donor (code or block holder). NPAC updates SV to Old. NPAC logs/sends SV Status AVC notification to New SP SOA. SP verifies that TN is disconnected. If LSMS connected and available to testers, check to see if NPAC Deletion Broadcast is received and successful.
5. NPAC processes the audit and sends Audit object create notification to initiating SOA. NPAC queries LSMSs for the ported TN and performs the audit, logging/notifying the initiator SOA of any discrepancies found as well as the final results of the audit.
 |   |
| PT4 | Create Intra-Service port for a range of TNs, modify the pending Due Date, activate, send Mass Update, Disconnect, and then Audit. | 1. New SP submits New SP Create for TN range with a future Due Date.
2. New SP submits Modify Pending to set New Due Date to current date.
3. New SP submits Activate for TN range on current Due Date.
4. New SP contacts NPAC support to perform a mass update on the ISVM DPC value of the TN range.
5. New SP submits disconnect SV for the TN range.
6. New SP submits Audit request.
 | 1. NPAC creates SV and sends notification. New SP verifies notification is received, and SV created.
2. NPAC updates the SV for TN range and sends the SV Attribute Value Change notification to Old and New SP SOAs. New SP verifies they received the notification in their SOA.
3. New SP verifies that Activate SV notifications are received by their SOA/LSMS. SP verifies SV Status on AVC notification is successful.
4. NPAC updates the SV sends SV AVC notification for New SP ISVM DPC change to /New SP SOAs. SPs verify they received the notification in their SOA.
5. If TN range is originally from a native block or code NPAC sends snapback notification. SP verifies SV is marked as ‘OLD’ in SOA. NPAC logs/sends SV Status AVC notification to New SP SOA, SP verifies that TN range is disconnected.
6. NPAC processes the audit and sends notifications to initiating SOA. SP verifies any discrepancies found and logged, as well as the final audit results being successful.
 |  |
| PT5 | Create an IntraService port for a single TN, modify the pending Due Date, activate the TN, Audit, then DISCONNECTMultiple subtest cases possible.Start with native block/codeStart with previously Interported TNStart with previously Intraported TNNegative Test Alternative for LSMS that is disconnected during process but connected prior to audit | See preconditions (re: Start with… & LSMS1. New SP submits New SP Create for the TN with Initial Due Date.
2. New SP submits Modify for the pending port to modify the New SP Due Date to current date.
3. New SP submits Activate for the ported TN on Due Date.
4. New SP submits Modify of the active port to modify the LRN (any required attribute) Note: optional attributes may result in alternative test case.
5. If Old SP LSMS down during this TC and can be brought up, reconnect Old SP LSMS.
6. New SP submits an Audit for the ported TN.
7. New SP submits Disconnect SV for the TN.
 | 1. New SP verifies that NPAC notifications for Create SV are received by their SOA and successful.
2. SP verifies the SV with the modified Due Date based on the SV Attribute Value Change (AVC) notification sent from NPAC.
3. SP verifies SV create received by LSMS(s). SP verifies SV Active received by SOA/LSMS. SP verifies receipt of SV Active in success, partial fail, or failed state. SV verifies SV Status AVC notification to New SP SOAs.
4. SP verifies the SV Modify to LSMSs. SP verifies SV Active (success/pf/fail). SP verifies SV Status AVC notification to New SP SOA.
5. SP verifies recovery of missed connections to LSMS.
6. NPAC processes the audit and sends Audit object create notification to initiating SOA. NPAC queries LSMSs for the ported TN and performs the audit, logging/notifying the initiator SOA of any discrepancies found as well as the final results of the audit.
7. If TN is originally native block or code (incl. intraport), SP verifies SV is removed from LSMS and marked as ‘OLD’ in SOA. (SP also receives Snapback notification) If precondition is interport, SP verifies SV is ‘snapback’ to origin SP i.e. removed from LSMS, New SP marks SV as ‘Old’, and Old SP receives Snapback notification.
 |  |
| PT6a | Create Intra-Service port for a range of TNs with future dated port, modify the pending Due Date, activate the TNs, send a Mass Update, and then Audit. | 1. New SP submits New SP Create for TN range with future Due Date.
2. New SP performs Modify Pending on TN range to set the Due Date to current date.
3. New SP submits Activate for the range of TNs on current Due Date.
4. New SP contacts NPAC test engineer to perform a mass update on the ISVM DPC value of the TN range.
5. New SP submits Audit for TN range.
 | 1. NPAC creates SV for each TN in Range and sends SV notification to New SP. SP verifies notification is received and SV is created.
2. NPAC updates the SV for each TN in Range and sends the SV AVC notification for New SP Due Date change to Old/New SP SOAs. New SP verifies they received the notification in their SOA.
3. New SP verifies that Activate SV notifications are received by their SOA and are successful. If LSMS connected and available to testers, check to see if NPAC Activation Broadcast for TN Range is received and successful.
4. NPAC updates the SV sends SV AVC notification for New SP ISVM DPC change to /New SP SOAs. SPs verify they received the notification in their SOA (and LSMSs if connected).
5. NPAC creates and performs the audit and sends notifications to SOA. SP verifies if there are any discrepancies and that the broadcast was received and successful.
 |  |
| PT6b | Create Inter-Service port for a range of TNs (same range used in TC 6a) from SP1to SP2, Activate the range of TNs, send Disconnect once activate, then Audit. | 1. As the New SP, SP2 submits New SP Create for TN range from TC 6a.
2. As the Old SP, SP1 submits Old SP Create to concur with pending port.

1. New SP submits Activate for TN range on Due Date.

1. New SP submits immediate Disconnect for the TN range.

1. New SP submits Audit for TN range.
 | 1. NPAC creates SV for each TN in range and sends SV notification to New SP. SP verifies notification is received and SV is created.
2. NPAC updates the SV and sends SV AVC (Attribute Value Change) notification to New/Old SP SOAs with Old SP Due Date. SPs verify they received the notification in their SOA.
3. SPs verify that Activate SV notifications are received by their respective SOAs and are successful.
4. New SP verifies that Disconnect SV notification is received by their SOA and is successful. If Old SP is also donor, they will receive Snapback notification
5. NPAC creates and performs the audit and sends notifications to SOA. SP verifies if there are any discrepancies and that the broadcast was received and successful.
 |  |
|  PT7 | Inter Port of TN (T1 expires): New SP Create, T1 expiration notification, Old SP create, activate, audit, disconnect | 1. New SP performs Create Subscription Version (SV) with X Date.
2. T1 Timer Expires and notification generated.
3. Old SP performs Create (Concur) SV.
4. New SP performs Activate SV on Due Date.
5. New SP performs an audit.
6. New SP disconnects TN.
 | 1. NPAC creates an SV and sends object create notification to New and Old SP SOAs. SPs verify they received notification in their SOA and create is successful.
2. Once the T1 Timer expires, the NPAC automatically sends a notification to the Old SP. The Old SP verifies that T1 timer expiration notifications are received by their SOA.
3. NPAC updates the SV with the Old SP data and logs/sends SV Attribute Value Change (AVC) notification to Old/New SOAs. SPs verify that NPAC notifications for Old SP Create (Concur) SV are received by their respective SOAs and successful.
4. NPAC updates SV to Active. NPAC logs/sends SV Status AVC notification to Old and New SP SOAs. SPs verify that Activate SV notifications are received by their respective SOAs and successful. If LSMS connected and available to testers, check to see if NPAC Activation Broadcast is received and successful.
5. NPAC processes the audit and sends Audit object create notification to initiating SOA. NPAC queries LSMSs for the ported TN and performs the audit, logging/notifying the initiator SOA of any discrepancies found as well as the final results of the audit.
6. NPAC sets the status for the SV to sending and broadcasts SV Delete to LSMSs. Donor receives (code or block holder) receives snapback notification. NPAC updates SV to Old. NPAC logs/sends SV Status AVC notification to New SP SOA. SP verifies that TN is disconnected.
 |  |
| PT8 | Port TN from SP 2 to SP 1: New SP Create, T1/T2 expiration notification, Activate, Audit, Disconnect | 1. New SP submits New SP Create for the TN with X Due Date.
2. T1 Timer expires.
3. T2 Timer expires.
4. New SP submits Activate for the ported TN on Due Date.
5. New SP submits an Audit for the ported TN.
6. New SP submits immediate disconnect for the ported TN.
 | 1. NPAC creates an SV and sends object create notification to New and Old SP SOAs.
2. NPAC sends T1 timer expiration notification to Old SP SOA. Old SP verifies they received notifications in their SOA.
3. NPAC sends T2 timer expiration notification to New and Old SP SOAs. Both SPs verify they received notifications in their SOA.
4. NPAC broadcasts SV create to LSMSs and then sends Status AVC notification to Old/New SP SOAs (Active, Partially Failed or Failed). SPs verify they received the notification in their SOA. If LSMSs are connected and available to testers, verify LSMS received the SV create broadcast.
5. NPAC creates and performs the audit and sends notifications to SOA (audit create, discrepancy notification if discrepancy discovered, audit results, audit delete). If discrepancy was discovered, NPAC broadcasts a correction to the discrepant LSMS. New SP verifies they received the notifications in their SOA. If discrepant LSMS is available to testers, verify LSMS received broadcast to fix discrepancy (SV create most likely).
6. NPAC sets the status for the SV to sending and broadcasts SV Delete to LSMSs. NPAC sends snapback notification to donor (code or block holder). NPAC updates SV to Old. NPAC logs/sends SV Status AVC notification to New SP SOA. SP verifies that TN is disconnected. If LSMS connected and available to testers, check to see if NPAC Deletion Broadcast is received and successful.
 |  |
| PT9a | Port  TN w/ conflict: New SP Create, Old SP Create w/conflict, New SP Modify, Old SP Remove from Conflict, Activate, Audit | 1. New SP submits New SP Create for the TN with Due Date 3 days out.
2. Old SP submits Old SP Create (aka Release) to concur with the port (Authorization = Conflict Cause Code 52).
3. New SP submits Modify to set Due Date to current Date.
4. Old SP submits Remove From Conflict for the pending port to remove the conflict.
5. New SP submits Activate for the ported TN on Due Date.
6. New SP submits an Audit for the ported TN.
 | 1. NPAC creates SV and object create notification is sent the Old SP and New SP. Old/New SP verify successful NPAC NNSP create SV notifications are received in their SOA.
2. NPAC updates SV with Old SP data and sends SV AVC notification and SV Status AVC (Conflict) to Old SP and New SPs SOA. Old SP and New SP verify NPAC notifications for ONSP Create SV are received in their respective SOAs.
3. NPAC updates SV with New SP due date change and sends SV AVC notification with due date change to Old and New SPs’ SOA. Old and New SP verify NPAC AVC notification is received in their respective SOAs.
4. NPAC updates SV to Pending and sends SV AVC notification and SV Status AVC notification (Pending) to Old/New SP SOAs. Old and New SP verify AVC and Status AVC SV notifications are successfully received at their perspective SOAs.
5. NPAC broadcasts SV create to LSMSs and then sends Status AVC notification to Old/New SP SOAs (Active, Partially Failed or Failed). SPs verify they received the notification in their SOA. . If LSMS is available to testers, verify if NPAC Activation Broadcast is received and successfully processed.
6. NPAC processes audit and sends notification to initiating SOA. NPAC queries LSMSs for ported TN and performs the audit and notifies initiating SOA of any discrepancies and audit results.
 |   |
| PT9b | Port TN back (not PTO) w/conflict:  New SP Create, Old SP Create (conflict), Old SP Modify (authorize), Activate, Audit | 1. New SP submits New SP Create for the TN with X Due Date.
2. Old SP submits Old SP Create (aka Release) to concur with the port (Authorization = Conflict Cause Code 50).
3. OSP submits modify (or Remove From Conflict) request to remove conflict on pending port.
4. New SP submits Activate for the ported TN on Due Date.
5. New SP submits an Audit for the ported TN.
 | 1. NPAC creates SV and object create notification is sent to the Old SP and New SP. Old/New SP verify successful NPAC NNSP create SV notifications are received in their SOA.
2. NPAC updates SV with Old SP data and sends SV AVC notification and SV Status AVC (Conflict) to Old SP and New SPs SOA. Old SP and New SP verify NPAC notifications for ONSP Create SV are received in their respective SOAs.
3. NPAC updates SV to Pending and sends SV AVC and Status AVC notifications to Old/New SP SOAs. Old SP and New SP verify Activate SV notifications are successfully received at their perspective SOAs.
4. NPAC broadcasts SV create to LSMSs and then sends Status AVC notification to Old/New SP SOAs (Active, Partially Failed or Failed). SPs verify they received the notification in their SOA. If LSMS is available to testers, verify if NPAC Activation Broadcast is received and successfully.
5. NPAC processes audit and sends notification to initiating SOA. NPAC queries LSMSs for ported TN and performs the audit and notifies initiating SOA of any discrepancies and audit results.
 |  |
| PT10  | Cancel Pending Port by NSP: Create by old   | 1. Old SP submits Old SP Create for the TN with Future Due Date.
2. T1 Timer Expires for New SP.
3. T2 Timer Expires.
4. After the duration of the tunable has passed the status of the port is set to ‘cancelled’.

The SV will remain in a status of pending based on the Pending Subscription Retention tunable. Note: Default is 30 days. Recommend requesting 2 or 5 days. This step may be optional due to its impact on everyone testing. | 1. NPAC creates an SV and sends object create notification to New and Old SP SOAs. SPs verify they received notifications in their SOA.
2. New SPs verifies they received T1 timer notifications in their SOA.
3. Old & New SPs verify they received T2 timer notifications in their SOAs. Old SP may or may not receive the T2 timer notification depending on how the L-12.0 B notification is set in NPAC.
4. NPAC updates the SV and sends SV Attribute Value Change (AVC) notification to Old & New SP SOAs with Cancelled status. SPs verify they received the notification in their SOA.
 |  |
| PT11a | Cancel Pending Port by OSP: Create pending port by old, cancel by old, create by new, activate Note: Audit is optional for last step.Note: NPAC Test support may be needed for T1/T2 Timer expiration  | 1. Old SP submits Old SP Create for the TN with Future Due Date.

**Note:** No concurrence from New SP1. Old SP cancels the pending port.
2. New SP submits New SP Create for the TN with Future Due Date.
3. T1 Timer expires for Old SP asking for its concurrence.
4. Final (T2) concurrence window expires.

1. New SP submits activate.
 | 1. NPAC creates an SV and sends object create notification to New and Old SP SOAs. SPs verify they received notifications in their SOA.
2. NPAC updates the SV and sends SV Attribute Value Change (AVC) notification to Old/New SP SOAs with ‘Cancelled’ status. SPs verify they received the notification in their SOA.
3. NPAC creates an SV and sends object create notification to New and Old SP SOAs. SPs verify they received notifications in their SOA.
4. Old SP verifies they received T1 timer notification in their SOA
5. Both New and Old SPs verify they received T2 timer notifications in their SOAs.
6. NPAC updates SV to Active. NPAC logs/sends SV Status AVC notification to Old and New SP SOAs. SPs verify that Activate SV notifications are received by their respective SOAs & LSMSs
 |  |
| PT11b | New SP Create, T1/T2 expiration notification, Activate, Audit | 1. New SP submits New SP Create for the TN with X Due Date.
2. T1 Timer expires.
3. T2 Timer expires.
4. New SP submits Activate for the ported TN on Due Date.
5. New SP submits an Audit for the ported TN.
 | 1. NPAC creates an SV and sends object create notification to New and Old SP SOAs.
2. NPAC sends T1 timer expiration notification to Old SP SOA. Old SP verifies they received notifications in their SOA.
3. NPAC sends T2 timer expiration notification to New SP and Old SP SOAs. Both SPs verify they received notifications in their SOA.
4. NPAC broadcasts SV create to LSMSs and then sends Status AVC notification to Old/New SP SOAs (Active, Partially Failed or Failed). SPs verify they received the notification in their SOA. If LSMSs are connected and available to testers, verify LSMS received the SV create broadcast.
5. NPAC creates and performs the audit and sends notifications to SOA (audit create, discrepancy notification, audit results, audit delete). If discrepancy was discovered, NPAC broadcasts a correction to the discrepant LSMS. New SP verifies they received the notifications in their SOA. If discrepant LSMS is available to testers, verify LSMS received broadcast to fix discrepancy (SV create most likely).
 |  |
| PT12 | Cancel Pending Port: New SP Create, Old SP Create, New SP Cancel, Old SP Cancel Ack. | 1. New SP submits New SP Create for the TN with X Due Date.
2. Old SP submits OLD SP create to concur with NSP.

1. New SP submits a SV status change cancel for the TN.

1. Old SP submits Cancel Acknowledge as OLD request for the TN in cancel pending status.
 | 1. NPAC creates SV and sends SV notification to New SP and Old SP SOA’s. New SP and Old SP verifies that SV (Create Notification) is created successfully.
2. NPAC updates the SV and sends the SV Attribute Value change (AVC) notification to Old and New SP SOAs with Old SP Due Date. New SP and Old SP verifies that SV is created successfully along with Old SP Due Date.
3. NPAC updates the SV and sends the SV Status Attribute Value change (AVC) notification to Old and New SP SOAs. New SP and Old SP verifies that SV is in Cancel Pending status.
4. NPAC updates the SV to cancelled status and sends the SV Attribute Value change (AVC) notification to Old and New SP SOAs. New SP and Old SP verifies that SV is successfully cancelled and cancel notification is received from NPAC.
 |  |
|  PT13 | Cancel Ack Notification:  New SP Create, Old SP Create, New SP Cancel, Cancel T1 expires, Old SP Cancel Ack | 1. New SP submits New SP Create for the TN with X Due Date.
2. Old SP submits OLD SP create to concur with NSP.

1. New SP submits a SV status change cancel for the TN.
2. T1 Cancel timer expires for the TN.

1. Old SP submits Cancel Acknowledge as OLD request for the TN in cancel pending status.
 | 1. NPAC creates SV and sends SV notification to New SP and Old SP SOA’s. New SP and Old SP verifies that SV (Create Notification) is created successfully.
2. NPAC updates the SV and sends the SV Attribute Value change (AVC) notification to Old and New SP SOAs with Old SP Due Date. New SP and Old SP verifies that SV is created successfully along with Old SP Due Date.
3. NPAC updates the SV and sends the SV Status Attribute Value change (AVC) notification to Old and New SP SOAs. New SP and Old SP verifies that SV is in Cancel Pending status.
4. NPAC sends the T1 cancel notification to Old SP and Old SP verifies that T1 timer expiration notification is received by their SOA.
5. NPAC updates the SV to cancelled status and sends the SV Attribute Value change (AVC) notification to Old and New SP SOAs. New SP and Old SP verifies that SV is successfully cancelled and cancel notification is received from NPAC.
 |  |
| PT14 | Cancel Pending Port: New SP Create, Old SP Create, Old SP Cancel, New SP Cancel Ack. | 1. New SP submits New SP Create for the TN with X Due Date.
2. Old SP submits OLD SP create to concur with NSP.
3. OLD SP submits a SV status change cancel for the TN.
4. New SP submits Cancel Acknowledge as NEW request for the TN in cancel pending status.
 | 1. NPAC creates SV and sends SV notification to New SP and Old SP SOA’s. New SP and Old SP verifies that SV (Create Notification) is created successfully.
2. NPAC updates the SV and sends the SV Attribute Value change (AVC) notification to Old and New SP SOAs with Old SP Due Date. New SP and Old SP verifies that SV is created successfully along with Old SP Due Date.
3. NPAC updates the SV and sends the SV Attribute Value change (AVC) notification to Old and New SP SOAs. New SP and Old SP verifies that SV is in Cancel Pending status.
4. NPAC updates the SV to cancelled status. New SP and Old SP verifies that SV is successfully cancelled and cancel notification is received from NPAC.
 |  |
| PT15 | No New SP Cancel Concurrence – New SP Creates, Old SP Create, Old SP Cancel, Cancel T1 expires, Cancel T2 expires (conflict) | 1. New SP submits New SP Create.
2. Old SP performs Old SP Create (Concur) SV.
3. Old SP submits a Cancel.
4. T1 Cancel timer expires.
5. T2 Cancel timer expires. SV will be set to Conflict.
 | 1. NPAC creates an SV and sends object create notification to New and Old SP SOAs. SPs verify they received notification in their SOA and create is successful.
2. NPAC updates the SV and sends SV Attribute Value Change (AVC) notification to Old/New SP SOAs with Old SP Due Date and Auth. SPs verify they received the notification in their SOA.
3. NPAC updates the SV to cancel-pending and sends AVC notification to Old/New SP SOAs. SPs verify cancel-pending status.
4. NPAC sends notification to the New SP and New SP verifies they received notification that the initial cancellation concurrence timer expiration.
5. NPAC sets SV status to conflict and sends status change notification to New/Old SP SOAs. SPs verify that TN status is Conflict.
 |  |
| PT16 | No Old Cancel Concurrence – New SP Create, Old SP Create, New SP Cancel, Cancel T1 expires, Cancel T2 expires (Canceled) | 1. New SP submits New SP Create.
2. Old SP submits Old SP Create (Concur) SV.
3. New SP submits a Cancel.
4. T1 Cancel timer expires.
5. T2 Cancel timer expires. SV will be set to Cancelled.
 | 1. NPAC creates an SV and sends object create notification to New and Old SP SOAs. SPs verify they received notification in their SOA and create is successful.
2. NPAC updates the SV and sends SV Attribute Value Change (AVC) notification to Old/New SP SOAs with Old SP Due Date and Auth. SPs verify they received the notification in their SOA.
3. NPAC updates the SV to cancel-pending and sends Status AVC notification to Old/New SP SOAs. SPs verify they received the notification in their SOA.
4. NPAC sends notification to the Old SP and Old SP verifies they received notification that the initial cancellation concurrence timer expiration.
5. NPAC updates the SV to Canceled and sends notification to SPs. SPs verify that TN status is Canceled.
 |  |
| PT17 | Create NPA-NXX via SOA and via LSMS   Delete NPA-NXX via SOA and via LSMS | 1. SP submits NPANXX Create Request.
2. SP submits NPANXX Delete Request. (Please Verify that no SV’s are associated with the NPA-NXX before deleting the NPA-NXX from NPAC SOA.)
 | 1. NPAC creates NPANXX and NPANXX create to SPs SOAs and LSMSs accepting network data downloads. SP verifies that NPANXX Create Notification is received from NPAC.
2. NPAC deletes NPANXX and broadcasts NPANXX delete to SPs SOAs and LSMSs accepting network data downloads. SP verifies that NPANXX Delete Notification is received from NPAC.
 |  |
| PT18 | Create LRN via SOA and via LSMS    Delete LRN via SOA and via LSMS | 1. SP submits LRN Create Request.

1. SP submits LRN Delete Request. (Please Verify that no SV’s are associated with the LRN before deleting the LRN from NPAC SOA. *Also, please note that only if a ported TN exists in a canceled or old (with an empty failed SP list) status, then the LRN delete will be allowed.)*
 | 1. NPAC creates LRN and broadcasts LRN create to SPs SOAs and LSMSs accepting network data downloads. SP verifies that LRN Create Notification is received from NPAC.
2. NPAC deletes LRN and LRN delete to SPs SOAs and LSMSs accepting network data downloads. SP verifies that LRN Delete Notification is received from NPAC.

  |  |
| PT19a | Port Activation w/ Medium Timers: New SP Create with 'Yes' for Medium Timers, Old SP Create with 'Yes' for Medium Timers, ActivateAssumption for all Medium Timer TCs in 19: TCs assume your SOAs support Medium Timers; if not, SP will not be able to determine timer types being used.  | 1. New SP submits New SP Create with ‘Yes” for Medium Timers.

1. Old SP performs Old SP Create (Concur) SV with ‘Yes’ for Medium Timers.

1. New SP activates the TN.
 | 1. NPAC creates an SV and sends object create notification to New and Old SP SOAs. SPs verify they received notification in their SOA and create is successful. Note: Medium Timers are used.
2. NPAC updates the SV with the Old SP data and logs/sends SV Attribute Value Change (AVC) notification to Old/New SOAs. SPs verify that NPAC notifications for Old SP Create (Concur) SV are received by their respective SOAs and successful. Note: Medium timers continue to be used.
3. SPs verify that Activate SV notifications are received by their respective SOAs and are successful.
 |  |
| P19b | Port Activation w/ Medium Timers: New SP Create with 'No' for Medium Timers, Old SP Create with 'No' for Medium Timers, Activate | 1. New SP submits New SP Create with ‘No’ for Medium Timers.2. Old SP performs Old SP Create with ‘No’ for Medium Timers.3. New SP activates the TN. | 1. NPAC creates an SV and sends object create notification to New and Old SP SOAs. SPs verify they received notification in their SOA and create is successful. Note: Default Timers are used.
2. NPAC updates the SV with the Old SP data and logs/sends SV Attribute Value Change (AVC) notification to Old/New SOAs. SPs verify that NPAC notifications for Old SP Create (Concur) SV are received by their respective SOAs and successful. Note: Default timers continue to be used.
3. SPs verify that Activate SV notifications are received by their respective SOAs and are successful.
 |  |
| PT19c | Port Activation w/ Medium Timers: New SP Create with 'Yes' for Medium Timers, Old SP Create with 'No' for Medium Timers, Activate | 1. New SP submits New SP Create with ‘Yes’ for Medium Timers.2. Old SP performs Old SP Create with ‘No’ for Medium Timers.3. New SP activates the TN. | 1. NPAC creates an SV and sends object create notification to New and Old SP SOAs. SPs verify they received notification in their SOA and create is successful. Note: Medium timers are used.
2. Initial and Final Concurrence timers are deleted and reset. NPAC updates the SV with the Old SP data and logs/sends SV Attribute Value Change (AVC) notification to Old/New SOAs. SPs verify that NPAC notifications for Old SP Create (Concur) SV are received by their respective SOAs and successful. Note: timers are reset to Default Timers.
3. SPs verify that Activate SV notifications are received by their respective SOAs and are successful.
 |  |
| PT19d | Port Activation w/Medium Timers: New SP Create with 'No' for Medium Timers, Old SP Create with 'Yes' for Medium Timers, Activate | 1. New SP submits New SP Create with ‘No’ for Medium Timers.2. Old SP performs Old SP Create with ‘Yes’ for Medium Timers.3. New SP activates the TN. | 1. NPAC creates an SV and sends object create notification to New and Old SP SOAs. SPs verify they received notification in their SOA and create is successful. Note: Default Timers are used.
2. Initial and Final Concurrence timers are deleted and reset. NPAC updates the SV with the Old SP data and logs/sends SV Attribute Value Change (AVC) notification to Old/New SOAs. SPs verify that NPAC notifications for Old SP Create (Concur) SV are received by their respective SOAs and successful. Note: timers are reset to Medium Timers.
3. SPs verify that Activate SV notifications are received by their respective SOAs and are successful.
 |  |
| PT20 | Undo Cancel Pending & Modify: New SP Create one day in advance, Old SP Create one day in advance, New SP Cancel, New SP Undo Cancel & Modify, New SP Modify DDT | 1. New SP submits New SP Create one day prior to confirmed due date.

1. Old SP performs Old SP Create one day prior to due date.
2. New SP submits a Cancel.

1. New SP performs an “Undo Cancel”.

1. New SP modifies the due date.
 | 1. NPAC creates an SV and sends object create notification to New and Old SP SOAs. SPs verify they received notification in their SOA and create is successful.
2. NPAC updates the SV with the Old SP data and logs/sends SV Attribute Value Change (AVC) notification to Old/New SOAs. SPs verify that NPAC notifications for Old SP Create (Concur) SV are received by their respective SOAs and successful.
3. NPAC updates the SV and sends SV Status Attribute Value Change (AVC) notification to Old/New SP SOAs with ‘Cancel-Pending’ status. SPs verify they received the notification in their SOA.
4. NPAC updates the SV and sends SV Status AVC to Old/New SP SOAs with ‘Pending’ status. SPs verify they received the notification in their SOA.
5. NPAC updates the SV and sends SV AVC notification for New SP Due Date change to Old/New SP SOAs. SPs verify they received the notification in their SOA.
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| PT21 | Modify Active on LRN: New SP Create With Incorrect LRN, Old SP Create, Activate, New SP Modify Active to Correct LRN | 1. New SP performs Create Subscription Version with X FOC Date.
2. Old SP performs Create (Concur) SV.

1. New SP performs Activate SV on Due Date.

1. New SP submits Modify Active SV to modify the LRN.
 | 1. NPAC creates an SV and sends object create notification to New and Old SP SOAs. SPs verify they received notification in their SOA and create is successful.
2. NPAC updates the SV with the Old SP data and sends SV Attribute Value Change (AVC) notification to Old/New SOAs. SPs verify that NPAC notifications for Old SP Create (Concur) SV are received by their respective SOAs, and successful
3. NPAC updates SV to Active. NPAC sends Status Attribute Value Change Notification <Status Change> to Old and New SP SOAs. SPs verify that Activate SV notifications are received by their respective SOAs and successful.
4. NPAC updates the SV and sends Status Attribute Value Change Notification <Status Change> to originating SOA (New SP). New SP verifies the update was successful in their SOA
 |  |
| PT22 | Port TN w/ Auto Activate Timers: New SP Create with DDT in Attempt Auto-Activate Time field, Old SP Create, Activate on auto activate DDT (for SOAs that support Auto Activation). | 1. New SP submits New SP Create for the TN with X Due Date..

1. Old SP submits OLD SP create to concur with NSP.
2. New SP submits Modify for the pending port to modify the Old SP Due Date to current date once release notification is received.

4. New SP submits Activate for the ported TN on Due Date. | 1. NPAC creates SV and sends SV notification to New SP and Old SP SOA’s. New SP and Old SP verifies that SV (Create Notification) is created successfully.
2. NPAC updates the SV and sends the SV Attribute Value change (AVC) notification to Old and New SP SOAs with Old SP Due Date. New SP and Old SP verifies that SV is created successfully along with Old SP Due Date.
3. NPAC updates the SV and sends SV AVC notification with New SP Due Date to Old/New SP SOAs. SPs verify they received notification in their SOA.
4. NPAC updates the SV to Active status. New SP and Old SP verifies that SV is successfully activated and Activate notification is received from NPAC. If LSMS are connected and available to testers, Verify LSMS received the SV Activate broadcast.
 |  |
| PT23a | Future Disconnect Port: New SP Create, Old SP Create, Activate, Set disconnect date 1 hour ahead, Disconnect | 1. New SP submits New SP Create for the TN with X Due Date.

1. Old SP submits Old SP Create (aka Release) to concur with the port (Authorization = True).
2. New SP submits Activate for the ported TN on Due Date.
3. New SP submits Disconnect specifying a Customer Disconnect Date of today and Effective Release Date of 1 hour in the future from the current date/time.
4. Wait for 1 hour.
 | 1. NPAC creates an SV and sends object create notification to New and Old SP SOAs. SPs verify they received notifications in their SOA.
2. NPAC updates the SV and sends SV Attribute Value Change (AVC) notification to Old/New SP SOAs with Old SP Due Date and Auth. SPs verify they received the notification in their SOA.
3. NPAC broadcasts SV create to LSMSs and then sends Status AVC notification to Old/New SP SOAs (Active, Partially Failed or Failed). SPs verify they received the notification in their SOA. If LSMSs are connected and available to testers, verify LSMS received the SV create broadcast.
4. NPAC updates the SV setting its status to Disconnect-Pending and sends Status AVC notification to the New/Current SP SOA. New/Current SP verifies it received the notification in their SOA.
5. On the Effective Release Date, NPAC broadcasts the SV delete to LSMSs and then sends Status AVC notification to New/Current SP SOA (Active if all LSMSs fail, otherwise Old). New/Current SP verifies it received the notification in their SOA. If LSMSs are connected and available to testers, verify LSMS received the SV create broadcast. **NOTE:** Old SP SOA does not receive notification once SV goes to Active and may still show SV as Active.
 |  |
| PT23b | Future Disconnect Port: New SP Create, Old SP Create, Activate, Set disconnect date 1 day ahead, Disconnect | 1. New SP submits New SP Create for the TN with Due Date.
2. Old SP submits Old SP Create (aka Release) to concur with the port (Authorization = True).
3. New SP submits Activate for the ported TN on Due Date.
4. New SP submits Disconnect specifying a Customer Disconnect Date of today and Effective Release Date of 1 day in the future from the current date/time.
5. Wait for at least one full day.
 | 1. NPAC creates an SV and sends object create notification to New and Old SP SOAs. SPs verify they received notifications in their SOA.
2. NPAC updates the SV and sends SV Attribute Value Change (AVC) notification to Old/New SP SOAs with Old SP Due Date and Auth. SPs verify they received the notification in their SOA.
3. NPAC broadcasts SV create to LSMSs and then sends Status AVC notification to Old/New SP SOAs (Active, Partially Failed or Failed). SPs verify they received the notification in their SOA. If LSMSs are connected and available to testers, verify LSMS received the SV create broadcast.
4. NPAC updates the SV setting its status to Disconnect-Pending and sends Status AVC notification to the New/Current SP SOA. New/Current SP verifies it received the notification in their SOA.
5. On the Effective Release Date, NPAC broadcasts the SV delete to LSMSs and then sends Status AVC notification to New/Current SP SOA (Active if all LSMSs fail, otherwise Old). New/Current SP verifies it received the notification in their SOA. If LSMSs are connected and available to testers, verify LSMS received the SV create broadcast. **NOTE:** Old SP SOA does not receive notification once SV goes to Active and may still show SV as Active.
 |  |
| PT24 | Port TN Before T1 Expires: New SP Create, T1 hasn't expired, Activate, Receive Error | 1. New SP submits New SP Create for the TN with X Due Date.
2. Prior to T1 Timer expires.
3. New SP submits Activate for the ported TN.
 | 1. NPAC creates an SV and sends object create notification to New and Old SP SOAs.
2. NPAC continues T1 timer
3. NPAC returns failure response for activation request. SPs verify they received the error response.
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| PT25 | Port TN Before DDT:  New SP Create 1 day in advance, Old SP Create 1 day in advance, Activate, Receive Error | 1. New SP submits New SP Create for the TN with X Due Date.

1. Old SP submits Old SP Create (aka Release) response to concur with the port.

1. New SP submits Activate for the ported TN 1 day prior to X Due Date. NPAC sends back error.

1. New SP submits Activate for the ported TN on Due Date.
2. New SP submits an Audit for the ported TN.

1. New SP disconnects TN.
 | 1. NPAC creates an SV and sends object create notification to New and Old SP SOAs. SPs verify they received notifications in their SOA.
2. NPAC updates SV with NSP data and sends SV AVC notification to Old SP and New SPs SOA. Old SP and New SP verify NPAC notifications for ONSP Create SV are received in their respective SOAs.
3. NPAC sends error notification to New SP as the record cannot be activated on this date. If New SP SOA provides this validation, SOA provides error message and request is not sent to NPAC.
4. NPAC updates SV to Active status.  NPAC updates and sends SV status AVC notification to New SP and Old SP SOAs.  Old/New SPs verify Activate SV notifications are successfully received by their respective SOAs. If LSMS is available to testers, verify if NPAC Activation Broadcast is received and successfully
5. NPAC processes audit and sends notification to initiating SOA. NPAC queries LSMSs for ported TN and performs the audit and notifies initiating SOA of any discrepancies and audit results.
6. NPAC sets SV status to disconnect pending (if Effective Release Date supplied) and broadcasts SV Delete to LSMSs.  NPAC updates SV to Old.  NPAC sends SV Status AVC notification to New SP SOA. SP verifies that TN is disconnected.
 |  |
|  TT1 | Maintenance Window Timer Behavior - Inter Port of TN (T1 & T2 expire): New SP Create, T1 expiration notification, T2 expiration notification, activate, audit, disconnectPrerequisite:Agreement between testing paris should be reached on whether T1 and/or T2 is the subject of the test for the maintenance window extension. | 1. New SP submits New SP Create for the TN with X Due Date prior to the maintenance window.
2. NPAC starts maintenance.
3. NPAC extends and exits maintenance window for an agreed upon period of time.
4. T1 Timer expires.

1. T2 Timer expires.

1. New SP submits Activate for the ported TN on Due Date.
2. New SP submits an Audit for the ported TN.
3. New SP submits immediate disconnect for the ported TN.
 | 1. NPAC creates an SV and sends object create notification to New and Old SP SOAs.
2. NPAC goes into maintenance and suspends timers.
3. NPAC recalculates timer expiration adding additional agreed upon extension time.
4. NPAC sends T1 timer expiration notification to Old SP SOA. Old SP verifies they received notifications in their SOA with the appropriate expiration duration.
5. NPAC sends T2 timer expiration notification to New and Old SP SOAs. Both SPs verify they received notifications in their SOA with the appropriate expiration duration.

 1. NPAC broadcasts SV create to LSMSs and then sends Status AVC notification to Old/New SP SOAs (Active, Partially Failed or Failed). SPs verify they received the notification in their SOA 10 minutes after the expected/original timer expiration. If LSMSs are connected and available to testers, verify LSMS received the SV create broadcast.
2. NPAC creates and performs the audit and sends notifications to SOA (audit create, discrepancy notification if discrepancy discovered, audit results, audit delete). If discrepancy was discovered, NPAC broadcasts a correction to the discrepant LSMS. New SP verifies they received the notifications in their SOA. If discrepant LSMS is available to testers, verify LSMS received broadcast to fix discrepancy (SV create most likely).
3. NPAC sets the status for the SV to sending and broadcasts SV Delete to LSMSs. NPAC sends snapback notification to donor (code or block holder). NPAC updates SV to Old. NPAC logs/sends SV Status AVC notification to New SP SOA. SP verifies that TN is disconnected. If LSMS connected and available to testers, check to see if NPAC Deletion Broadcast is received and successful.
 |  |
| TT2 | Maintenance Window Timer Behavior - No New SP Cancel Concurrence: New SP Create, Old SP Create, Old SP Cancel, Cancel T1 expires, Cancel T2 expires (conflict)Prerequisite:Agreement between testing paris should be reached on whether Cancel T1 and/or Cancel T2 is the subject of the test for the maintenance window extension. | 1. New SP submits New SP Create.
2. Old SP performs Old SP Create (Concur) SV.
3. Old SP submits a Cancel.
4. NPAC starts maintenance.
5. NPAC extends and exits maintenance window for an agreed upon period of time.
6. T1 Cancel timer expires.
7. T2 Cancel timer expires. SV will be set to Conflict.
 | 1. NPAC creates an SV and sends object create notification to New and Old SP SOAs. SPs verify they received notification in their SOA and create is successful.
2. NPAC updates the SV and sends SV Attribute Value Change (AVC) notification to Old/New SP SOAs with Old SP Due Date and Auth. SPs verify they received the notification in their SOA.
3. NPAC updates the SV to cancel-pending and sends AVC notification to Old/New SP SOAs. SPs verify cancel-pending status.
4. NPAC goes into maintenance and suspends timers.
5. NPAC recalculates timer expiration adding additional agreed upon extension time.
6. NPAC sends notification to the New SP and New SP verifies they received notification with the appropriate expiration duration that the initial cancellation concurrence timer expired.
7. NPAC sets SV status to conflict and sends status change notification to New/Old SP SOAs with the appropriate expiration duration. SPs verify that TN status is Conflict.
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1. Unless differentiated specifically, Wireline and VoIP are considered synonymous. [↑](#footnote-ref-1)
2. The LNP test specification is based on the requirements and associated test plans described in the [current NPAC Software Release](https://numberportability.com/industry-info/software-releases/) [↑](#footnote-ref-2)
3. ***Individual Service Providers will need to provide technical testing specifications to their Service Provider testing peers for their systems and processes, if applicable (e.g. if LSR/FOC process and system considerations are required for prerequisite test executions with the LNPA)***. [↑](#footnote-ref-3)