

Release 3.2 Change Order Package

Updated On: [7/10/23/02](#) (based on feedback during ~~July~~-[September](#) 2002 LNPAWG meeting)

[This document has been updated based on feedback gathered during the September LNPA WG meeting. The FRS/IIS capture all changes associated with Release 3.2.](#)

Change Order List

#	Change Order #	Description	NPAC Effort	SOA/LSMS
1	NANC 169	Delta Download File Creation by Time Range for SVs	Med	N/A / Med-Low
2	NANC 187	Linked Action Replies	Med	Med / Med
3	NANC 191	DPC/SSN Value Edits	Low	N/A / N/A
4	NANC 192	NPA Split NPAC SMS Load File	Med	N/A / N/A
5	NANC 218	Conflict Timestamp Broadcast to SOA	Low	Low / N/A
6	NANC 230	Donor SOA Port-To-Original of an Intra-Service Provider Port	Med	Med / N/A
7	NANC 249	Modification of Dates for a Disconnect Pending SV	Low	Med / N/A
8	NANC 287	ASN.1 Change for Required Field in VersionNewNPA-NXX and VersionNewNPA-NXX Recovery Notification	Low	Low / Low
9	NANC 291	SSN Edits in the NPAC SMS	Low	N/A / N/A
10	NANC 297	Sending SV Problem During Recovery	Med-Low	N/A / N/A
10	NANC 316	Change the NSAP Field Size Declaration in ASN.1 – ASN.1 Recompile		
12	NANC 319	NPAC Edit to Ensure NPA-NXX of LRN is in Same LATA as NPA-NXX of Ported TN	Med	N/A / N/A
13	NANC 322	Clean Up of Failed SP List based on Service Provider BDD Response File	Med	N/A / ???
14	NANC 323	Partial Migration of a SPID via Mass Update	Med	Med-High / Med-High
15	NANC 354	Delta Download File Creation by Time Range for Network Data	Med-Low	Med-Low / Med-Low

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Backwards Compatibility Definition

There are three areas of Backwards Compatibility. These are defined below:

- Pure Backwards Compatibility – implies that interface specification has NOT been modified and therefore, no recompile is necessary. Also, no behavior on the NPAC SMS has been modified to provide any change to the previously existing functionality accessible over the interface.
- Interface and Functional Backwards Compatibility – implies that the interface may have been modified, however the changes are such that no action is required for the Service Provider to remain backward compatible. However, any new functionality is optionally implemented, and would require a recompile and functional software changes by the Service Provider to access the newly defined features over the interface. Also, no changes may be made to any existing interface functionality that will require modifications to SOA and/or LSMS platforms.
- Re-Compile Only Backwards Compatibility – implies that the interface has been modified, however the changes are such that only a recompile is necessary to remain backward compatible. Any new functionality is optionally implemented by accessing the newly defined features over the interface. Also, no NPAC software changes may be made to any existing interface functionality that will require source code modifications to SOA and/or LSMS platforms.

The general guideline is that subsequent releases of a major release (e.g., 2.0, 2.1, 2.1.1, etc.) must support Pure Backward Compatibility. Also, major releases should support at least one version of Interface and Functional Backward Compatibility (i.e., R3.0 should be Interface and Functional Backward Compatible to R2.0). The objective is that all releases remain Interface and Functional Backward Compatible, if possible.

Origination Date: 5/23/97

Originator: Bellcore

Change Order Number: NANC 169

Description: Delta Download File Creation by Time Range for SVs

Pure Backwards Compatible: YES-NO. New bulk data download file naming convention may require changes on the Local systems to process the files. There is no impact to the interface. (May have operational impacts since this is optional functionality and not over the NPAC to LSMS interface. Also, may have an LSMS impact if the LSMS is currently designed to only accept a download reason of “new1”.)

IMPACT/CHANGE ASSESSMENT

FRS	IIS	GDMO	ASN.1	NPAC	SOA	LSMS
Y				Med	N/A	Med-Low

Business Need:

Currently the NPAC does not have the ability to create a delta bulk data download file by date and time range. This change order is expected to help with an SP’s capability to ‘catch-up’ faster after an extended outage, as porting volume increases. The ability to create a delta bulk data download file by date and time range (downloading only the actual data required) reduces the work effort of the SP while getting the SP back in-sync with the NPAC in a more timely manner which in turn facilitates proper call routing.

Description of Change:

It has been requested that requirements be added to the FRS to allow for creation of a delta download file by date and time range, for SVs.

Need to change functionality when requesting SV BDD with a time range. Currently, the NPAC provides all “active” SVs based on Activation Broadcast Timestamp. This creates an issue for modification, or mass updates that are within the specified time range window, but the Activation was prior to the specified time range. There is also an issue for Activation Failures.

Additional proposed changes to handle two issues, include:

1. Incorporate the start and end time ranges into the file name.
2. Need to capture all SV activity (activation, modification, disconnect) into the file, when doing time range.

The start and end timestamps are NOT embedded in the filename. Update documentation to state Activation Broadcast Timestamp is used for comparison. The proposal is to use the Broadcast Timestamp attribute in the SV, to determine whether or not an SV fits in the specified time range.

Requirements:

Req 1 Subscription Version Information Bulk Download File Creation – Subscription Versions

NPAC SMS shall allow NPAC personnel to request a bulk data download file for Subscription Version data via the NPAC Administrative Interface. (existing NPAC SMS functionality)

Req 2 Subscription Version Information Bulk Download File Creation – Selection Criteria

NPAC SMS shall include the Requesting Service Provider, *Active/Disconnect Pending/Partial Failure Subscription Versions Only* or *Latest View of Subscription Version Activity* Choice, Time Range and TN Range as Selection Criteria fields for the Subscription Version bulk data download file via the NPAC Administrative Interface.

Req 3 Subscription Version Information Bulk Download File Creation – Active/Disconnect Pending/Partial Failure Subscription Versions Only or Latest View of Subscription Version Activity Choice

NPAC SMS shall allow NPAC Personnel to select either *Active/Disconnect Pending/Partial Failure Subscription Versions Only* or *Latest View of Subscription Version Activity*, and shall use the selected choice, for Subscription Version data.

Req 4 Subscription Version Information Bulk Download File Creation – Data in Active/Disconnect Pending/Partial Failure Subscription Versions Only Choice

NPAC SMS shall use the *Active/Disconnect Pending/Partial Failure Subscription Versions Only* selection to only include Subscription Versions with a status of either Active, Disconnect Pending, Partial Failure, or Sending that is being downloaded for either an activate or modify but not a disconnect, in the Subscription Version Bulk Data Download file.

Req 5 Subscription Version Information Bulk Download File Creation – Data in Latest View of Subscription Version Activity Choice

NPAC SMS shall use the *Latest View of Subscription Version Activity* selection to include all Subscription Versions, regardless of status, in order to capture activation, modification, and deletion transactions for Subscription Version data, but only include the latest instance of the TN in the Subscription Version Bulk Data Download file, for a given NPA-NXX, when a Subscription Version has more than one activity (e.g., addition, then modification) within the specified time range.

Note: to Service Providers— The format of the BDD file doesn't change based on the status of the SV but some of the fields may be blank. Example: Creates and modifies would have all the attributes specified but disconnect and deletes would have many fields null.

Req 6 Subscription Version Information Bulk Download File Creation – Time Range Fields

NPAC SMS shall use the Start Time Range entry field as an inclusive start range, and the End Time Range entry field as an inclusive end range, for Subscription Version data that were broadcast during the specified Time Range.

Note: ~~to Service Providers~~—The NPAC Administrative Interface is settable for the GUI user’s local time (e.g., a USA in Sterling will have the local time set to Eastern Time). M&Ps will be established to determine the correct time range on the request of the BDD file.

Req 7 Subscription Version Information Bulk Download File Creation – Time Range Fields and SV Data Model

NPAC SMS shall use the Start and End Time Range entry fields to include Subscription Version data, based on the appropriate Broadcast Time Stamp, in order to capture the start of broadcast activity for Activation/Modification/Disconnect, when generating the file for the *Latest View of Subscription Version Activity* selection.

Req 8 Subscription Version Information Bulk Download File Creation – TN Range Fields

NPAC SMS shall use the first TN Range entry field as an inclusive start range, and the second TN Range entry field as an inclusive end range, for Subscription Version data.

Req 9 Subscription Version Information Bulk Download File Creation – Selection Criteria Combinations

NPAC SMS shall edit the selection criteria combination as shown in the table below:

	Time Range	TN Range
Active/Disconnect Pending/Partial Failure SVs Only	Rejected	Optional
Latest View of SV Activity	Required	Optional

Such that a combination of:

- Active with a Time Range shall be rejected.
- Latest View shall require a Time Range.
- TN Range shall be optional for both Active and Latest View.

Req 10 Subscription Version Information Bulk Data Download – Subscription Version Results

NPAC SMS shall provide a bulk data download file, based on the selection criteria, that contains all Subscription Versions in the NPAC SMS.

Req 11 Subscription Version Information Bulk Data Download – Subscription Version

Results Sort Order

NPAC SMS shall sort the Subscription Version Bulk Data Download file, in ascending order based on the value in the TN attribute.

Req 12 Subscription Version Information Bulk Data Download – Filters for Subscription Versions

NPAC SMS shall apply NPA-NXX Filters to Subscription Versions in the creation of bulk data download files.

Req 13 Subscription Version Information Bulk Data Download – EDR LSMSs

NPAC SMS shall use the Service Provider’s profile (EDR Flag True or False) to determine if it should include Pooled SVs in the bulk data download file.

Req 14 Subscription Version Information Bulk Data Download – FTP Sub-Directory

NPAC SMS shall automatically put the bulk data download file into the FTP sub-directory of the Service Provider, based on SPID, that requested the creation of the bulk data download file.

Example file and file naming will be added to Appendix E in the FRS.

IIS

No Change Required

GDMO

No Change Required

ASN.1

No Change Required

M&P

Yes – Need to add a section for Subscription Version Bulk Data Downloads.

Creating a Bulk Data Download File for Subscription Versions

To create a Bulk Data Download File for Subscription Version Information the following actions will be taken:

1. Service Provider personnel will contact NPAC personnel with a request for a Bulk Data Download file for Subscription Version Information. Service Provider personnel are responsible for specifying the following information for the file:
 - Requesting Service Provider

- Active, Disconnect Pending and Partial Failure Subscription Versions Only or Latest View of Subscription Version Activity
 - Time Range
 - TN Range
2. NPAC personnel will enter the requested information for the Bulk Data Download File for Subscription Version Information via the NPAC OP GUI. This file will be generated based on SPID. When this file is created it will automatically be placed in the correct directory for the respective Service Provider on the NPAC SMS server. NPAC personnel do not have to take further action to FTP the file to the SP's directory.
 3. NPAC personnel will notify the requesting service provider when the file is ready to be FTP'd.

[Appendix E of FRS Additions:](#)

[The file name for the Subscriptions download file will be in the format:](#)

[NPANXX-NPANXX.DD-MM-YYYYHH24MISS.DD-MM-YYYYHH24MISS.DD-MM-YYYYHH24MISS](#)

[The file name for the NPA-NXX download file will be in the format:](#)

[NPAANXX.DD-MM-YYYYHHMMSS.DD-MM-YYYYHHMMSS.DD-MM-YYYYHH24MISS](#)

[The file name for the LRN download file will be in the format:](#)

[LRN.DD-MM-YYYYHHMMSS.DD-MM-YYYYHHMMSS.DD-MM-YYYYHH24MISS](#)

[The file name for the NPA-NXX-X download file will be in the format:](#)

[NPAANXXX.DD-MM-YYYYHHMMSS.DD-MM-YYYYHHMMSS.DD-MM-YYYYHH24MISS](#)

Origination Date: 1/7/1998

Originator: AT&T

Change Order Number: NANC 187

Description: Linked Action Replies

Pure Backwards Compatible: NO

Interface and Functional Backwards Compatible: YES with sunset

IMPACT/CHANGE ASSESSMENT

FRS	IIS	GDMO	ASN.1	NPAC	SOA	LSMS
Y	Y	Y		Med	Med	Med

Business Need:

Current recovery functionality provides recovery data to be sent in a single message for subscription, network, and notification data. Due to large porting volumes, the size of these messages has increased and will soon exceed maximum message size for the SOA/LSMS interfaces causing recovery of missed or lost data to become impossible for these interfaces. This change order will provide recovery data to the SP in smaller multiple linked messages.

Description of Change:

It has been requested that all action replies be reviewed to determine if they should be linked replies.

NANC 186 text -- It has been requested that the notification recovery action reply be a linked reply. This would be done to control the size of the response sent back to the Local SMS systems.

Actions that were identified as issues were the network and subscription version recovery actions.

Requirements:

The backwards compatibility sunset period for the SP Linked Replies Indicator is two major NPAC SMS Releases (i.e., if implemented in R4, it is only guaranteed to be available through R5, and may be unavailable starting with R6).

Req 1 – NPAC Customer SOA Linked Replies Indicator

NPAC SMS shall provide a mechanism to indicate whether a Service Provider supports receiving Network and Notification Recovery Responses as Linked Replies to their SOA, via the SOA to NPAC SMS Interface.

Req 2 – NPAC Customer SOA Linked Replies Indicator – Default

NPAC SMS shall default the SOA Linked Replies Indicator to **FALSE**.

Req 3 – NPAC Customer SOA Linked Replies Indicator – Modification

NPAC SMS shall allow NPAC Personnel, via the NPAC Administrative Interface, to modify the SOA Linked Replies Indicator on the NPAC Customer record.

Req 4 – Linked Replies Information – Service Provider SOA Linked Replies Indicator Sending of Linked Replies

NPAC SMS shall send Network and Notification Recovery Responses as Linked Replies, via the SOA to NPAC SMS Interface, if the Service Provider's SOA Linked Replies indicator is **TRUE**, and the amount of data is greater than the associated Blocking Factor tunable parameter.

Req 5 – Linked Replies Information – Service Provider SOA Linked Replies Indicator Sending of Non-Linked Replies

NPAC SMS shall send Network and Notification Recovery Responses as Non-Linked Replies, via the SOA to NPAC SMS Interface, if the Service Provider's SOA Linked Replies indicator is **FALSE**.

Req 6 – NPAC Customer Local SMS Linked Replies Indicator

NPAC SMS shall provide a mechanism to indicate whether a Service Provider supports receiving Network, Subscription, and Notification Recovery Responses as Linked Replies to their Local SMS, via the NPAC SMS to Local SMS Interface.

Req 7 – NPAC Customer Local SMS Linked Replies Indicator – Default

NPAC SMS shall default the Local SMS Linked Replies Indicator to **FALSE**.

Req 8 – NPAC Customer Local SMS Linked Replies Indicator – Modification

NPAC SMS shall allow NPAC Personnel, via the NPAC Administrative Interface, to modify the Local SMS Linked Replies Indicator on the NPAC Customer record.

Req 9 – Linked Replies Information – Service Provider Local SMS Linked Replies Indicator Sending of Linked Replies

NPAC SMS shall send Network, Subscription, [Number Pool Block](#) and Notification Recovery Responses as Linked Replies, via the NPAC SMS to Local SMS Interface, if the Service Provider's Local SMS Linked Replies indicator is **TRUE**, and the amount of data is greater than the associated Blocking Factor tunable parameter.

Req 10 – Linked Replies Information – Service Provider Local SMS Linked Replies Indicator Sending of Non-Linked Replies

NPAC SMS shall send Network, Subscription, [Number Pool Block](#) and Notification Recovery Responses as Non-Linked Replies, via the NPAC SMS to Local SMS Interface, if the Service Provider's Local SMS Linked Replies indicator is **FALSE**.

Req 11 – Linked Replies Information – Sending Linked Replies During Recovery

NPAC SMS shall be capable of sending linked action replies, via the SOA to NPAC SMS Interface, and NPAC SMS to Local SMS Interface in response to a recovery request.

Req 12 – Network Data Linked Replies Blocking Factor – Tunable Parameter

NPAC SMS shall provide a Network Data Linked Replies Blocking Factor tunable parameter which is defined as the number of objects in a single linked reply sent in response to a network data recovery request sent by a SOA/LSMS, when the SOA/LSMS supports Linked Replies.

Req 13 – Network Data Linked Replies Blocking Factor – Tunable Parameter Default

NPAC SMS shall default the Network Data Linked Replies Blocking Factor tunable parameter to fifty (50) objects.

Req 14 – Network Data Linked Replies Blocking Factor – Tunable Parameter Modification

NPAC SMS shall allow NPAC Personnel, via the NPAC Administrative Interface, to modify the Network Data Linked Replies Blocking Factor tunable parameter.

Req 15 – Linked Replies Information – Sending Linked Replies During Network Data Recovery to SOA

NPAC SMS shall send network data in response to a recovery request, via the SOA to NPAC SMS Interface, to a SOA that support Linked Replies, in groups of objects based on the Network Data Linked Replies Blocking Factor tunable parameter value.

Req 16 – Linked Replies Information – Sending Linked Replies During Network Data Recovery to Local SMS

NPAC SMS shall send network data in response to a recovery request, via the NPAC SMS to Local SMS Interface, to a Local SMS that support Linked Replies, in groups of objects based on the Network Data Linked Replies Blocking Factor tunable parameter value.

Req 17 – Subscription Data Linked Replies Blocking Factor – Tunable Parameter

NPAC SMS shall provide a Subscription Data Linked Replies Blocking Factor tunable parameter which is defined as the number of objects in a single linked reply sent in response to a subscription data recovery request sent by a LSMS, when the LSMS supports Linked Replies.

Req 18 – Subscription Data Linked Replies Blocking Factor – Tunable Parameter Default

NPAC SMS shall default the Subscription Data Linked Replies Blocking Factor tunable parameter to fifty (50) objects.

Req 19 – Subscription Data Linked Replies Blocking Factor – Tunable Parameter Modification

NPAC SMS shall allow NPAC Personnel, via the NPAC Administrative Interface, to modify the Subscription Data Linked Replies Blocking Factor tunable parameter.

Req 20 – Linked Replies Information – Sending Linked Replies During Subscription Data Recovery to Local SMS

NPAC SMS shall send subscription data in response to a recovery request, via the NPAC SMS to Local SMS Interface, to a Local SMS that support Linked Replies, in groups of objects based on the Subscription Data Linked Replies Blocking Factor tunable parameter value.

Req 21 – Notification Data Linked Replies Blocking Factor – Tunable Parameter

NPAC SMS shall provide a Notification Data Linked Replies Blocking Factor tunable parameter which is defined as the number of notifications in a single linked reply sent in response to a notification data recovery request sent by a SOA/LSMS, when the SOA/LSMS supports Linked Replies.

Req 22 – Notification Data Linked Replies Blocking Factor – Tunable Parameter Default

NPAC SMS shall default the Notification Data Linked Replies Blocking Factor tunable parameter to fifty (50) notifications.

Req 23 – Notification Data Linked Replies Blocking Factor – Tunable Parameter Modification

NPAC SMS shall allow NPAC Personnel, via the NPAC Administrative Interface, to modify the Notification Data Linked Replies Blocking Factor tunable parameter.

Req 24 – Linked Replies Information – Sending Linked Replies During Notification Data Recovery to SOA

NPAC SMS shall send notification data in response to a recovery request, via the SOA to NPAC SMS Interface, to a SOA that support Linked Replies, in groups of notifications based on the Notification Data Linked Replies Blocking Factor tunable parameter value.

Req 25 – Linked Replies Information – Sending Linked Replies During Notification Data Recovery to Local SMS

NPAC SMS shall send notification data in response to a recovery request, via the NPAC SMS to Local SMS Interface, to a Local SMS that support Linked Replies, in groups of notifications based on the Notification Data Linked Replies Blocking Factor tunable parameter value.

Req 26 – Network Data Maximum Linked Recovered Objects – Tunable Parameter

NPAC SMS shall provide a Network Data Maximum Linked Recovered Objects tunable parameter which is defined as the maximum number of objects sent in response to network data recovery request sent by a SOA/LSMS, when the SOA/LSMS supports Linked Replies.

Req 27 – Network Data Maximum Linked Recovered Objects – Tunable Parameter Default

NPAC SMS shall default the Network Data Maximum Linked Recovered Objects tunable parameter to ten thousand (10,000) objects.

Req 28 – Network Data Maximum Linked Recovered Objects – Tunable Parameter Modification

NPAC SMS shall allow NPAC Personnel, via the NPAC Administrative Interface, to modify the Network Data Maximum Linked Recovered Objects tunable parameter.

Req 29 – Linked Replies Information – Network Data Recovery Maximum Size to SOA

NPAC SMS shall allow network data in response to a recovery request, via the SOA to NPAC SMS Interface, to a SOA that support Linked Replies, to be as large as the Network Data Maximum Linked Recovered Objects tunable parameter value.

Req 30 – Linked Replies Information – Network Data Recovery Maximum Size to Local SMS

NPAC SMS shall allow network data in response to a recovery request, via the NPAC SMS to Local SMS Interface, to a Local SMS that support Linked Replies, to be as large as the Network Data Maximum Linked Recovered Objects tunable parameter value.

Req 31 – Subscription Data Maximum Linked Recovered Objects – Tunable Parameter

NPAC SMS shall provide a Subscription Data Maximum Linked Recovered Objects tunable parameter which is defined as the maximum number of objects sent in response to a subscription data recovery request sent by an LSMS, when the LSMS supports Linked Replies.

Req 32 – Subscription Data Maximum Linked Recovered Objects – Tunable Parameter Default

NPAC SMS shall default the Subscription Data Maximum Linked Recovered Objects tunable parameter to ten thousand (10,000) objects.

Req 33 – Subscription Data Maximum Linked Recovered Objects – Tunable Parameter Modification

NPAC SMS shall allow NPAC Personnel, via the NPAC Administrative Interface, to modify the Subscription Data Maximum Linked Recovered Objects tunable parameter.

Req 34 – Linked Replies Information – Subscription Data Recovery Maximum Size to Local SMS

NPAC SMS shall allow subscription data in response to a recovery request, via the NPAC SMS to Local SMS Interface, to a Local SMS that support Linked Replies, to be as large as the Subscription Data Maximum Linked Recovered Objects tunable parameter value.

Req 35 – Notification Data Maximum Linked Recovered Notifications – Tunable Parameter

NPAC SMS shall provide a Notification Data Maximum Linked Recovered Notifications tunable parameter which is defined as the maximum number of notifications sent in response to a notification data recovery request sent by a SOA/LSMS, when the SOA/LSMS supports Linked Replies.

Req 36 – Notification Data Maximum Linked Recovered Notifications – Tunable Parameter Default

NPAC SMS shall default the Notification Data Maximum Linked Recovered Notifications tunable parameter to two thousand (2,000) notifications.

Req 37 – Notification Data Maximum Linked Recovered Notifications – Tunable Parameter Modification

NPAC SMS shall allow NPAC Personnel, via the NPAC Administrative Interface, to modify the Notification Data Maximum Linked Recovered Notifications tunable parameter.

Req 38 – Linked Replies Information – Notification Data Recovery Maximum Size to SOA

NPAC SMS shall allow notification data in response to a recovery request, via the SOA to NPAC SMS Interface, to a SOA that support Linked Replies, to be as large as the Notification Data Maximum Linked Recovered Notifications tunable parameter value.

Req 39 – Linked Replies Information – ~~Network-Notification~~ Data Recovery Maximum Size to Local SMS

NPAC SMS shall allow notification data in response to a recovery request, via the NPAC SMS to Local SMS Interface, to a Local SMS that support Linked Replies, to be as large as the Notification Data Maximum Linked Recovered Notifications tunable parameter value.

RR3-430 Number Pool Block Data Linked Replies Blocking Factor - Tunable Parameter

NPAC SMS shall provide a Number Pool Block Data Linked Replies Blocking Factor tunable parameter which is defined as the number of objects in a single linked reply sent in response to a number pool block data recovery request sent by a LSMS, when the LSMS supports Linked Replies.

RR3-431 Number Pool Block Data Linked Replies Blocking Factor - Tunable Parameter Default

NPAC SMS shall default the Number Pool Block Data Linked Replies Blocking Factor tunable parameter to fifty (50) objects.

RR3-432 Number Pool Block Data Linked Replies Blocking Factor - Tunable Parameter Modification

NPAC SMS shall allow NPAC Personnel, via the NPAC Administrative Interface, to modify the Number Pool Block Data Linked Replies Blocking Factor tunable parameter.

RR3-433 Number Pool Block Data Maximum Linked Recovered Objects - Tunable Parameter

NPAC SMS shall provide a Number Pool Block Data Maximum Linked Recovered Objects tunable parameter which is defined as the maximum number of objects sent in response to a number pool block recovery request sent by an LSMS, when the LSMS supports Linked Replies. (Previously related to NANC 187)

RR3-434 Number Pool Block Data Maximum Linked Recovered Objects - Tunable Parameter Default

NPAC SMS shall default the Number Pool Block Data Maximum Linked Recovered Objects tunable parameter to ten thousand (10,000) objects. (Previously related to NANC 187).

RR3-435 Number Pool Block Data Maximum Linked Recovered Objects - Tunable Parameter Modification

NPAC SMS shall allow NPAC Personnel, via the NPAC Administrative Interface, to modify the Number Pool Block Data Maximum Linked Recovered Objects tunable parameter. (Previously related to NANC 187)

RR6-105 Linked Replies Information - Sending Linked Replies During Number Pool Block Recovery to Local SMS

NPAC SMS shall send number pool block data in response to a recovery request, via the NPAC SMS to Local SMS Interface, to a Local SMS that support Linked Replies, in groups of objects based on the Number Pool Block Data Linked Replies Blocking Factor tunable parameter value.

RR6-106 Linked Replies Information - Number Pool Block Recovery Maximum Size to Local SMS

NPAC SMS shall allow number pool block data in response to a recovery request, via the NPAC SMS to Local SMS Interface, to a Local SMS that support Linked Replies, to be as large as the Number Pool Block Data Maximum Linked Recovered Objects tunable parameter value.

Add new tunable to Appendix C.

Name = Network Data Linked Replies Blocking Factor

Default Value = 50

Units = Objects

Valid Range = 1-2000.

Name = Subscription Data Linked Replies Blocking Factor

Default Value = 50

Units = Objects

Valid Range = 1-2000.

Name = Notification Data Linked Replies Blocking Factor

Default Value = 50

Units = Notifications

Valid Range = 1-2000.

Name = Number Pool Block Data Linked Replies Blocking Factor

Default Value = 50

Units = Objects

Valid Range = 1-2000.

Name = Network Data Maximum Linked Recovered Objects

Default Value = 10,000

Units = Objects

Valid Range = 1-10,000.

Name = Subscription Data Maximum Linked Recovered Objects

Default Value = 10,000

Units = Objects

Valid Range = 1-10,000.

Name = Notification Data Maximum Linked Recovered Notifications

Default Value = 2,000

Units = Notifications

Valid Range = 1-10,000.

Name = Number Pool Block Data Maximum Linked Recovered Objects

Default Value = 10000

Units = Objects

Valid Range = 1-10000.

IIS:

Chapter 4

4.8 Action Linked Replies (**this is a new section**)

Linked Reply functionality applies to Service Providers that have their SOA Linked Replies Indicator set to TRUE, or their Local SMS Linked Replies Indicator set to TRUE.

Linked replies will be returned as the response to an `lnpDownload` action request for *network* data if the number of messages returned exceeds the "Network Data Linked Reply Blocking Factor" tunable but is less than the "Network Data Maximum Linked Recovered Objects" tunable. If the number of network data objects to be returned exceeds the "Network Data Maximum Linked Recovered Objects" tunable, a "criteria-too-large" error will be returned to the requesting SOA/LSMS.

Linked replies will be returned as the response to an `lnpDownload` action request for *subscription* data if the number of objects returned exceeds the "Subscription Data Linked Reply Blocking Factor" tunable but is less than the "Subscription Data Maximum Linked Recovered

Objects" tunable. If the number of subscription data objects to be returned exceeds the "Subscription Data Maximum Linked Recovered Objects" tunable, a "criteria-too-large" error will be returned to the requesting LSMS.

Linked replies will be returned as the response to an InpNotificationRecovery action request for *notification* data if the number of notifications returned exceeds the "Notification Data Linked Reply Blocking Factor" tunable but is less than the "Notification Data Maximum Linked Recovered Notifications" tunable. If the number of notifications to be returned exceeds the "Notification Data Maximum Linked Recovered Notifications" tunable, a "criteria-too-large" error will be returned to the requesting SOA/LSMS.

As an example, a Service Provider's SOA was down, and is now performing notification recovery. During the downtime, 90 notifications were issued. Assuming the Notification Blocking Factor is set to 50 notifications, the recovering SOA would receive data from the NPAC SMS in the form of three linked replies. The first reply would contain 50 notifications, the second reply would contain 40 notifications, and the third reply would be empty (this is an indication that the NPAC SMS is finished sending data for this recovery request). In the case where the amount of data to be returned is less than or equal to the associated Blocking Factor, the M-ACTION response will be a normal response (i.e., non-linked response) and will not be a linked reply.

Below are the tunables that specify the download size:

Download Criteria	Tunable Name
Network data download request maximum linked reply size	Network Data Linked Replies Blocking Factor
Subscription download request maximum linked reply size	Subscription Data Linked Replies Blocking Factor
Notification download request maximum linked reply size	Notification Data Linked Replies Blocking Factor
Number Pool Block Data maximum linked reply size	Number Pool Block Linked Replies Blocking Factor
Total number of network data objects returned for a single download request	Network Data Maximum Linked Recovered Objects
Total number of subscription data objects returned for a single download request	Subscription Data Maximum Linked Recovered Objects
Total number of notification data notifications returned for a single download request	Notification Data Maximum Linked Recovered Objects
Total number of number pool block data objects returned for a single download request	Number Pool Block Data Maximum Linked Recovered Objects

B.7 Local SMS and SOA Recovery

(add to end of existing text)

If the Local SMS or SOA supports the receipt of linked action replies (based on the Local SMS Linked Replies Indicator and SOA Linked Replies Indicator, in the NPAC Customer record), the NPAC SMS will send linked action replies when a recovery request is initiated and the amount of data returned is greater than the associated Blocking Factor.

B.7.1.1 Sequencing of Events on Initialization/Resynchronization of Non-EDR Local SMS (previously NNP flow 5.2)

This scenario demonstrates how a non-EDR Local SMS resynchronizes itself with the NPAC SMS.

This scenario demonstrates the recovery of additions, deletions and modifications of network and subscription version data. The recovery of this data can cause status attribute value changes and serviceProvNPA-NXX-X deletions.

Step-by-step message flow text is shown below:

Local SMS personnel take action to resynchronize their Local SMS with the NPAC SMS.

The Non-EDR Local SMS establishes an association to the NPAC SMS with the resynchronization flag on, along with the network data management (networkDataMgmt) and data download (dataDownload) association functions set. The NPAC SMS will queue all current activity on the NPAC SMS until the service Local SMS sends in the InpRecoveryComplete action. All updates issued since the association establishment will be sent at the next normally scheduled retry interval.

1. Non-EDR Local SMS sends the InpDownload M-ACTION to start network data download. In this case, the Local SMS specifies the start time and end time. There are criteria other than time which may be specified. If one of the following is selected (all-network-data, all NPA-NXX-X data, a range of NPA-NXX-X data, a single NPA-NXX-X), the NPAC SMS sends the serviceProvNPA-NXX-X updates (creates, modifies, deletes) if the Local SMS's "NPAC Customer LSMS NPA-NXX-X Indicator" in their service provider profile on the NPAC SMS states it supports the object.
2. *If the requested object(s) exist and the Local SMS Linked Replies Indicator is set to FALSE, the NPAC SMS responds to the M-ACTION with updates. If the requested object(s) exist and the Local SMS Linked Replies Indicator is set to TRUE, the NPAC SMS will respond with either a single M-ACTION reply or with a linked M-ACTION reply. . In the case where the amount of data to be returned is less than or equal to the associated Blocking Factor (including the case where no objects are found), the M-ACTION response will be a single normal response (i.e., non-linked response). In the case where the amount of data to be returned is greater than the associated Blocking Factor, the M-ACTION response will be multiple linked M-ACTION replies, followed by a non-linked empty normal response (indicating the end of the linked reply data).*
3. Non-EDR Local SMS sends the InpDownload M-ACTION to start subscription data download. In this case, the Local SMS specifies the start time and end time. There are criteria other than time which may be specified.
4. *If the requested object(s) exist and the Local SMS Linked Replies Indicator is set to FALSE, the NPAC SMS responds to the M-ACTION with updates. If the requested*

object(s) exist and the Local SMS Linked Replies Indicator is set to TRUE, the NPAC SMS will respond with either a single M-ACTION reply or with a linked M-ACTION reply. In the case where the amount of data to be returned is less than or equal to the associated Blocking Factor (including the case where no objects are found), the M-ACTION response will be a single normal response (i.e., non-linked response). In the case where the amount of data to be returned is greater than the associated Blocking Factor, the M-ACTION response will be multiple linked M-ACTION replies, followed by a non-linked empty normal response (indicating the end of the linked reply data). All creates, modifies and deletes are received, a single record for each subscription version. (i.e. no ranges). The Non-EDR Local SMS will receive all the activity on subscription versions with a LNP type of 'pool'.

5. If any corrections were issued to the resyncing Local SMS, the NPAC SMS will send the M-EVENT-REPORT to the old service provider SOA of the subscriptionVersionStatus change and a list of failed Local SMSs (minus the resyncing Local SMS that no longer contains a discrepancy).
6. The old service provider SOA confirms the M-EVENT-REPORT.
7. If any corrections were issued to the resyncing Local SMS, the NPAC SMS will send the M-EVENT-REPORT to the current service provider SOA of the status change and a list of failed Local SMSs (minus the resyncing Local SMS that no longer contains a discrepancy).
8. The current service provider SOA confirms the M-EVENT-REPORT.
9. If any corrections were issued to the resyncing Local SMS for subscription versions with LNP type equal to 'pool', the NPAC SMS will send the numberPoolBlockStatusAttributeValueChange to the current block holder SOA, if the numberPoolBlockSOA-Origination indicator is TRUE, with the current number pool block status and a list of failed Local SMSs (minus the resyncing Local SMS that no longer contains the discrepancy).
10. The block holder SOA confirms the M-EVENT-REPORT.
11. If deletes were sent for any subscription versions with LNP type equal to 'pool' that completed the broadcast of the M-DELETES for a number pool block and corresponding subscription versions, then the NPAC SMS will send to all other Local SMSs. who support the serviceProvNPA-NXX-X object, the M-DELETE for the serviceProvNPA-NXX-X object.
12. Local SMS responds to the M-DELETE.
13. Non-EDR Local SMS sends M-ACTION, InpNotificationRecovery, to the NPAC SMS. The Non-EDR Local SMS specifies a time range.
14. *If the requested notification(s) exist and the Local SMS Linked Replies Indicator is set to FALSE, the NPAC SMS responds to the M-ACTION with the notification updates that occurred within the given time range. If the requested notification(s) exist and the Local SMS Linked Replies Indicator is set to TRUE, the NPAC SMS will respond with either a single M-ACTION reply or with a linked M-ACTION reply. In the case where the amount of data to be returned is less than or equal to the associated Blocking Factor (including the case where no objects are found), the M-ACTION response will be a single normal response (i.e., non-linked response). In the case where the amount of data to be returned is greater than the associated Blocking Factor, the M-ACTION response will be multiple linked M-ACTION replies, followed by a non-linked empty normal response (indicating the end of the linked reply data).*

15. Non-EDR Local SMS sends M-ACTION, InpRecoveryComplete, to set the resynchronization flag off.
16. NPAC SMS replies to the M-ACTION.

Normal processing resumes and any activity that the NPAC SMS had queued up during the recovery period will now be sent at the next scheduled retry interval.

B.7.1.2 Sequencing of Events on Initialization/Resynchronization of EDR Local SMS (previously NNP flow 5.1)

This scenario demonstrates how an EDR Local SMS resynchronizes itself with the NPAC SMS.

These scenarios demonstrate the recovery of additions, deletions and modifications of network, subscription version and number pool block data. The recovery of this data can cause status attribute value changes and serviceProvNPA-NXX-X deletions.

Step-by-step message flow text is shown below:

The EDR Local SMS establishes an association to the NPAC SMS with the resynchronization flag on, along with the network data management (networkDataMgmt) and data download (dataDownload) association functions set.

The NPAC SMS will queue all current activity on the NPAC SMS until the service Local SMS sends in the InpRecoveryComplete action. All updates issued since the association establishment will be sent at the next normally scheduled retry interval.

1. EDR Local SMS sends InpDownload M-ACTION to start network data download. In this case, the Local SMS specifies the start time and end time. There are criteria other than time which may be specified. If one of the following is selected (all-network-data, all NPA-NXX-X data, a range of NPA-NXX-X data, a single NPA-NXX-X), the NPAC SMS sends the serviceProvNPA-NXX-X updates (creates, modifies, deletes) if the Local SMS's "NPAC Customer LSMS NPA-NXX-X Indicator" in their service provider profile on the NPAC SMS states it supports the object.
2. *If the requested object(s) exist and the Local SMS Linked Replies Indicator is set to FALSE, the NPAC SMS responds to M-ACTION with updates. If the requested object(s) exist and the Local SMS Linked Replies Indicator is set to TRUE, the NPAC SMS will respond with either a single M-ACTION reply or with a linked M-ACTION reply. In the case where the amount of data to be returned is less than or equal to the associated Blocking Factor (including the case where no objects are found), the M-ACTION response will be a single normal response (i.e., non-linked response). In the case where the amount of data to be returned is greater than the associated Blocking Factor, the M-ACTION response will be multiple linked M-ACTION replies, followed by a non-linked empty normal response (indicating the end of the linked reply data).*
3. EDR Local SMS sends the InpDownload M-ACTION to start subscription data download. In this case, the Local SMS specifies the start time and end time. There are criteria other than time which may be specified.
4. *If the requested object(s) exist and the Local SMS Linked Replies Indicator is set to FALSE, the NPAC SMS responds to M-ACTION with updates. If the requested object(s) exist and the Local SMS Linked Replies Indicator is set to TRUE, the NPAC SMS will respond with either a single M-ACTION reply or with a linked*

M-ACTION reply. In the case where the amount of data to be returned is less than or equal to the associated Blocking Factor (including the case where no objects are found), the M-ACTION response will be a single normal response (i.e., non-linked response). In the case where the amount of data to be returned is greater than the associated Blocking Factor, the M-ACTION response will be multiple linked M-ACTION replies, followed by a non-linked empty normal response (indicating the end of the linked reply data). All creates, modifies and deletes are received, a single record for each subscription version. (i.e. no ranges) The EDR Local SMS will not receive any activity on subscription versions with LNP type of 'pool'.

5. If any corrections were issued to the resyncing Local SMS that involved the activation of a subscription version with the LNP type not equal to 'pool', the NPAC SMS will send the M-EVENT-REPORT to the old service provider SOA with the current subscriptionVersionStatus and a list of failed Local SMSs (minus the resyncing Local SMS that no longer contains a discrepancy).
6. The old service provider SOA confirms the M-EVENT-REPORT.
7. If any corrections were issued to the resyncing Local SMS that involved a subscription version with the LNP type not equal to 'pool', the NPAC SMS will send the M-EVENT-REPORT to the current service provider SOA with the current subscriptionVersionStatus and a list of failed Local SMSs (minus the resyncing Local SMS that no longer contains a discrepancy).
8. The current service provider SOA confirms the M-EVENT-REPORT.
9. EDR Local SMS sends the InpDownload M-ACTION to start number pool block data download. The Local SMS specifies the start time.
10. NPAC SMS responds to M-ACTION with updates.
11. NPAC SMS sends the M-EVENT-REPORTs to the block holder SOAs for any number pool block with the SOA-Origination indicator set to true whose numberPoolBlockFailed-SP-List and possibly numberPoolBlockStatus were just updated due to the number pool block download.
12. Block holder SOA confirms to the M-EVENT-REPORT.
13. If deletes were sent for any number pool blocks that completed the broadcast of the M-DELETES of a number pool block and corresponding subscription versions, then the NPAC SMS will send to all other Local SMSs the M-DELETE for the serviceProvNPA-NXX-X object. The NPAC SMS will queue up the M-DELETE request for the recovering Local SMS and send it at the completion of recovery mode.
14. Local SMS responds the M-DELETE.
15. EDR Local SMS sends M-ACTION, InpNotificationRecovery, to the NPAC SMS. The EDR Local SMS specifies a time range.
16. *If the requested notification(s) exist and the Local SMS Linked Replies Indicator is set to FALSE, the NPAC SMS responds to the M-ACTION with the notification updates that occurred within the given time range. If the requested notification(s) exist and the Local SMS Linked Replies Indicator is set to TRUE, the NPAC SMS will respond with either a single M-ACTION reply or with a linked M-ACTION reply. In the case where the amount of data to be returned is less than or equal to the associated Blocking Factor (including the case where no objects are found), the M-ACTION response will be a single normal response (i.e., non-linked response). In the case where the amount of data to be returned is greater than the associated Blocking Factor, the M-ACTION response will be multiple*

linked M-ACTION replies, followed by a non-linked empty normal response (indicating the end of the linked reply data).

17. EDR Local SMS sends M-ACTION, InpRecoveryComplete, to set the resynchronization flag off.

18. NPAC SMS replies to the M-ACTION.

Normal processing resumes and any activity that the NPAC SMS had queued up during the recovery period will now be sent at the next scheduled retry interval.

B.7.2 Sequencing of Events on Initialization/Resynchronization of SOA

This scenario demonstrates how a SOA resynchronizes itself with the NPAC SMS.

Step-by-step message flow text is shown below:

SOA personnel take action to resynchronize their SOA with the NPAC SMS.

The SOA establishes an association to the NPAC SMS with the resynchronization flag on, and the network data management (networkDataMgmt) association function set. The NPAC SMS will queue all current activity on the NPAC SMS until the service SOA sends in the InpRecoveryComplete action. All updates issued since the association establishment will be sent at the next normally scheduled retry interval.

1. SOA sends the InpDownload M-ACTION to start network data download. In this case, the SOA specifies the start time and end time. There are criteria other than time which may be specified. If one of the following is selected (all-network-data, all NPA-NXX-X data, a range of NPA-NXX-X data, a single NPA-NXX-X), the NPAC SMS sends the serviceProvNPA-NXX-X updates (creates, modifies, deletes) if the SOA's "NPAC Customer SOA NPA-NXX-X Indicator" in their service provider profile on the NPAC SMS states it supports the object.
2. *If the requested object(s) exist and the Local SMS Linked Replies Indicator is set to FALSE, the NPAC SMS responds to the M-ACTION with updates. If the requested object(s) exist and the Local SMS Linked Replies Indicator is set to TRUE, the NPAC SMS will respond with either a single M-ACTION reply or with a linked M-ACTION reply. In the case where the amount of data to be returned is less than or equal to the associated Blocking Factor (including the case where no objects are found), the M-ACTION response will be a single normal response (i.e., non-linked response). In the case where the amount of data to be returned is greater than the associated Blocking Factor, the M-ACTION response will be multiple linked M-ACTION replies, followed by a non-linked empty normal response (indicating the end of the linked reply data).*
3. SOA sends M-ACTION, InpNotificationRecovery, to the NPAC SMS. The SOA specifies a time range.
4. *If the requested notification(s) exist and the SOA Linked Replies Indicator is set to FALSE, the NPAC SMS responds to the M-ACTION with the notification updates that occurred within the given time range. If the requested notification(s) exist and the SOA Linked Replies Indicator is set to TRUE, the NPAC SMS will respond with either a single M-ACTION reply or with a linked M-ACTION reply. In the case where the amount of data to be returned is less than or equal to the associated Blocking Factor (including the case where no objects are found), the M-ACTION response will*

be a single normal response (i.e., non-linked response). In the case where the amount of data to be returned is greater than the associated Blocking Factor, the M-ACTION response will be multiple linked M-ACTION replies, followed by a non-linked empty normal response (indicating the end of the linked reply data).

5. SOA sends M-ACTION, lnpRecoveryComplete, to set the resynchronization flag off.
6. NPAC SMS replies to the M-ACTION.

Any activity that the NPAC SMS had queued up during the recovery period will now be sent.

Normal processing resumes and any activity that the NPAC SMS had queued up during the recovery period will now be sent at the next scheduled retry interval.

GDMO:

-- 1.0 LNP Download Action

```
lnpDownload ACTION
  BEHAVIOUR
    lnpDownloadDefinition,
    lnpDownloadBehavior;
  MODE CONFIRMED;
  WITH INFORMATION SYNTAX LNP-ASN1.DownloadAction;
  WITH REPLY SYNTAX LNP-ASN1.DownloadReply;
  REGISTERED AS {LNP-OIDS.lnp-action 1};
```

```
lnpDownloadDefinition BEHAVIOUR
  DEFINED AS !
    The lnpDownload action is the action that is used by the Local SMS
    and SOA to specify the objects to be downloaded from the NPAC SMS.
  !;
```

```
lnpDownloadBehavior BEHAVIOUR
  DEFINED AS !
    Preconditions: This action is issued from an lnpSubscriptions
    or an lnpNetwork object and all objects to be downloaded
    are specified in the action request.
```

Postconditions: After this action has been executed by the Local SMS or SOA specifying which objects to download, the NPAC SMS will determine which objects satisfy the download request and return them in the download action reply. Creation, deletion, and modification information will be included in the reply. All data for objects that have been modified is downloaded not just the information that was modified.

The SOA receives linked replies if their Service Provider SOA Linked Replies Indicator is set to TRUE on the NPAC SMS, and the amount of data is greater than the associated Blocking Factor.

The LSMS receives linked replies if their Service Provider LSMS Linked Replies Indicator is set to TRUE on the NPAC SMS, and the amount of data is greater than the associated Blocking Factor.

When the SOA or Local SMS Linked Replies Indicator is set to TRUE, linked replies will be returned as the response to a lnpDownload

action request for network data if the number of messages returned is less than the "Network Data Maximum Linked Recovered Objects" tunable, and the amount of data is greater than the Network Data Linked Replies Blocking Factor.

If the number of network data objects to be returned exceeds the "Network Data Maximum Linked Recovered Objects" tunable, a "criteria-too-large" error will be returned to the requesting SOA/LSMS. Each linked reply sent in response to a successfully processed lnpDownload action request for network data will contain a status of success (0). The returned data is sent in replies based on the "Network Data Linked Reply Blocking Factor" tunable, such that each linked reply is no larger than the "Network Data Linked Reply Blocking Factor" tunable value. The returned data is followed by an empty reply, to indicate the end of the data. If the number of network data objects to be returned is less than or equal to the Network Data Linked Replies Blocking Factor, tunable, a single non-linked reply will be sent back to the requesting SOA/LSMS.

When the Local SMS Linked Replies Indicator is set to TRUE, linked replies will be returned as the response to a lnpDownload Action request for subscription data if the number of messages returned is less than the "Subscription Data Maximum Linked Recovered Objects" tunable, and the amount of data is greater than the Network Data Linked Replies Blocking Factor. If the number of subscription data messages to be returned exceeds the "Subscription Data Maximum Linked Recovered Objects" tunable, a "criteria-too-large" error will be returned to the requesting LSMS. Each linked reply sent in response to a successfully processed lnpDownload action request for subscription data will contain a status of success (0). The returned data is sent in replies based on the "Subscription Data Linked Reply Blocking Factor" tunable, such that each linked reply is no larger than the "Subscription Data Linked Reply Blocking Factor" tunable value. The returned data is followed by an empty reply, to indicate the end of the data. If the number of subscription data objects to be returned is less than or equal to the Network Data Linked Replies Blocking Factor tunable, a single non-linked reply will be sent back to the requesting SOA/LSMS.

...

-- 15.0 Notification Recovery Action

```
lnpNotificationRecovery ACTION
  BEHAVIOUR
    lnpNotificationRecoveryDefinition,
    lnpNotificationRecoveryBehavior;
  MODE CONFIRMED;
  WITH INFORMATION SYNTAX LNP-ASN1.NetworkNotificationRecoveryAction;
  WITH REPLY SYNTAX LNP-ASN1.NetworkNotificationRecoveryReply;
  REGISTERED AS {LNP-OIDS.lnp-action 15};
```

```
lnpNotificationRecoveryDefinition BEHAVIOUR
  DEFINED AS !
    The lnpNotificationRecovery action is the action that can be
```

used by the SOA or LSMS to recover notification information that cannot be recovered by other means.

!;

`lnpNotificationRecoveryBehavior` BEHAVIOUR

DEFINED AS !

Preconditions: This action is issued from an `lnpNPAC-SMS` object from a SOA or LSMS that specified the recovery mode flag in the access control as true at association establishment.

Postconditions: After this action has been executed by the SOA or LSMS specifying recovery, the NPAC SMS will forward the notifications that occurred in the time range specified for the requesting system (SOA or LSMS) for the primary or associated SPID specified in the access control. Notifications are forwarded in the action reply.

The SOA receives linked replies if their Service Provider SOA Linked Replies Indicator is set to TRUE on the NPAC SMS, and the amount of data is greater than the associated Blocking Factor.

The LSMS receives linked replies if their Service Provider LSMS Linked Replies Indicator is set to TRUE on the NPAC SMS, and the amount of data is greater than the associated Blocking Factor.

When the SOA or Local SMS Linked Replies Indicator is set to TRUE, linked replies will be returned as the response to an `lnpNotificationRecovery` Action request for notification data if The number of notifications returned is less than the " Notification Data Maximum Linked Recovered Notifications" tunable, and the amount of data is greater than the Notification Data Linked Replies Blocking Factor. If the number of Notifications to be returned exceeds the "Notification Data Maximum Linked Recovered Notifications" tunable, a "criteria-too-large" error will be returned to the requesting LSMS. Each linked reply sent in response to a successfully Processed `lnpNotificationRecovery` action request for notification data will contain a status of success (0). The returned data is sent in replies based on the "Notification Data Linked Reply Blocking Factor" tunable, such that each linked reply is no larger than the " Notification Data Linked Reply Blocking Factor" tunable value. The returned data is followed by an empty reply, to indicate the end of the data. If the number of notification data objects to be returned is less than or equal to the Notification Data Linked Replies Blocking Factor tunable, a single non-linked reply will be sent back to the requesting SOA/LSMS.

ASN.1:

No change required.

M&P:

No change required.

Origination Date: 1/19/1998

Originator: Ameritech

Change Order Number: NANC 191

Description: DPC/SSN Value Edits

Cumulative SP Priority, Weighted Average:

Pure Backwards Compatible: YES

IMPACT/CHANGE ASSESSMENT

FRS	IIS	GDMO	ASN.1	NPAC	SOA	LSMS
Y		Y		Low	N/A	N/A

Business Need:

The current environment allows the new SP to send up final Global Title Translation data. This final GTT data is broadcasted by NPAC to all applicable subtending SPs in the Region. This has resulted in service-affecting TCAP routing errors for subtending SPs who do not have route sets built based on final GTT to the new SP, causing trouble-shooting expense and re-broadcast of the data to modify the DPCs to non-final GTT. This issue is addressed by NANC 291.

In addition, invalid GTT data (e.g. a DPC with no SSN, a DPC with Network ID set to 000, etc.) contained within the new SP CREATE has also resulted in TCAP routing errors when broadcasted to subtending SPs. This issue is addressed by this change order, NANC 191.

These two Change Orders will ensure that GTT data is formatted consistent with SS7 signaling standards and contains only non-final DPCs in accordance with recommendations documented in T1S1.6 standards for Local Number Portability. This will mitigate the trouble-shooting and NPAC broadcast expense due to incorrect or invalid GTT data.

Description of Change:

It has been requested that DPC and SSN values be edited to make sure that if a SSN is specified that the DPC is specified. This functionality was requested due to a problem with a large port where the DPC and SSN information entered by the originator was invalid. Currently the NPAC SMS does no validity checks on the SSN and DPC information other than it is of the format and type defined in the IIS and FRS.

The edits need to be verified by industry experts to ensure they are correct. Gary Sacra has taken an action item to obtain more information from T1/S1.6.

The following information was provided by Gary for DPC/SSN edits from T1/S1.6:

The 9-digit point code (DPC) is broken down into three components:

- 3-digit Network ID - valid range=001-255
- 3-digit Cluster ID - valid range=000-255
- 3-digit Member number - valid range=000-255

Subsystem Number (SSN) is a separate three digit number with a valid range of 000-255.

It does not make sense in the network to have a DPC without an SSN or vice versa.

Requirements:

Req 1 – Subscription Version – Verify CLASS SSN when CLASS DPC is populated

NPAC SMS shall verify the CLASS Sub-System Number (SSN) contains a value between 000-255 when the corresponding CLASS Destination Point Code (DPC) is populated with values for network value between 001-255, for cluster value between 000-255, and for member value between 000-255, from the new Service Provider in a Subscription Version creation, modification, or mass update for an Inter-Service Provider Port or Intra-Service Provider Port.

Req 2 – Subscription Version – Verify LIDB SSN when LIDB DPC is populated

NPAC SMS shall verify the LIDB Sub-System Number (SSN) contains a value between 000-255 when the corresponding LIDB Destination Point Code (DPC) is populated with values for network value between 001-255, for cluster value between 000-255, and for member value between 000-255, from the new Service Provider in a Subscription Version creation, modification, or mass update for an Inter-Service Provider Port or Intra-Service Provider Port.

Req 3 – Subscription Version – Verify CNAM SSN when CNAM DPC is populated

NPAC SMS shall verify the CNAM Sub-System Number (SSN) contains a value between 000-255 when the corresponding CNAM Destination Point Code (DPC) is populated with values for network value between 001-255, for cluster value between 000-255, and for member value between 000-255, from the new Service Provider in a Subscription Version creation, modification, or mass update for an Inter-Service Provider Port or Intra-Service Provider Port.

Req 4 – Subscription Version – Verify ISVM SSN when ISVM DPC is populated

NPAC SMS shall verify the ISVM Sub-System Number (SSN) contains a value between 000-255 when the corresponding ISVM Destination Point Code (DPC) is populated with values for network value between 001-255, for cluster value between 000-255, and for member value between 000-255, from the new Service Provider in a Subscription Version creation, modification, or mass update for an Inter-Service Provider Port or Intra-Service Provider Port.

Req 5 – Subscription Version – Verify WSMSC SSN when WSMSC DPC is populated

NPAC SMS shall verify the WSMSC Sub-System Number (SSN) contains a value between 000-255 when the corresponding WSMSC Destination Point Code (DPC) is populated with values for network value between 001-255, for cluster value between 000-255, and for member value between 000-255, from the new Service Provider in a Subscription Version creation, modification, or mass update for an Inter-Service Provider Port or Intra-Service Provider Port.

Req 6 – Subscription Version – Verify CLASS DPC when CLASS SSN is populated

NPAC SMS shall verify the CLASS Destination Point Code (DPC) contains values (network 001-255, cluster 000-255, member 000-255) when the corresponding CLASS Sub-System Number (SSN) is populated with a value (000-255), from the new Service Provider in a Subscription Version creation, modification, or mass update for an Inter-Service Provider Port or Intra-Service Provider Port.

Req 7 – Subscription Version – Verify LIDB DPC when LIDB SSN is populated

NPAC SMS shall verify the LIDB Destination Point Code (DPC) contains values (network 001-255, cluster 000-255, member 000-255) when the corresponding LIDB Sub-System Number (SSN) is populated with a value (000-255), from the new Service Provider in a Subscription Version creation, modification, or mass update for an Inter-Service Provider Port or Intra-Service Provider Port.

Req 8 – Subscription Version – Verify CNAM DPC when CNAM SSN is populated

NPAC SMS shall verify the CNAM Destination Point Code (DPC) contains values (network 001-255, cluster 000-255, member 000-255) when the corresponding CNAM Sub-System Number (SSN) is populated with a value (000-255), from the new Service Provider in a Subscription Version creation, modification, or mass update for an Inter-Service Provider Port or Intra-Service Provider Port.

Req 9 – Subscription Version – Verify ISVM DPC when ISVM SSN is populated

NPAC SMS shall verify the ISVM Destination Point Code (DPC) contains values (network 001-255, cluster 000-255, member 000-255) when the corresponding ISVM Sub-System Number (SSN) is populated with a value (000-255), from the new Service Provider in a Subscription Version creation, modification, or mass update for an Inter-Service Provider Port or Intra-Service Provider Port.

Req 10 – Subscription Version – Verify WSMSC DPC when WSMSC SSN is populated

NPAC SMS shall verify the WSMSC Destination Point Code (DPC) contains values (network 001-255, cluster 000-255, member 000-255) when the corresponding WSMSC Sub-System Number (SSN) is populated with a value (000-255), from the new Service Provider in a Subscription Version creation, modification, or mass update for an Inter-Service Provider Port or Intra-Service Provider Port.

Req 11 – Number Pool Block – Verify CLASS SSN when CLASS DPC is populated

NPAC SMS shall verify the CLASS Sub-System Number (SSN) contains a value (000-255) when the corresponding CLASS Destination Point Code (DPC) is populated with values (network 001-255, cluster 000-255, member 000-255), from the Block Holder Service Provider in a Block creation, modification, or mass update for Number Pooling.

Req 12 – Number Pool Block – Verify LIDB SSN when LIDB DPC is populated

NPAC SMS shall verify the LIDB Sub-System Number (SSN) contains a value (000-255) when the corresponding LIDB Destination Point Code (DPC) is populated with values (network 001-255, cluster 000-255, member 000-255), from the Block Holder Service Provider in a Block creation, modification, or mass update for Number Pooling.

Req 13 – Number Pool Block – Verify CNAM SSN when CNAM DPC is populated

NPAC SMS shall verify the CNAM Sub-System Number (SSN) contains a value (000-255) when the corresponding CNAM Destination Point Code (DPC) is populated with values (network 001-255, cluster 000-255, member 000-255), from the Block Holder Service Provider in a Block creation, modification, or mass update for Number Pooling.

Req 14 – Number Pool Block – Verify ISVM SSN when ISVM DPC is populated

NPAC SMS shall verify the ISVM Sub-System Number (SSN) contains a value (000-255) when the corresponding ISVM Destination Point Code (DPC) is populated with values (network 001-255, cluster 000-255, member 000-255), from the Block Holder Service Provider in a Block creation, modification, or mass update for Number Pooling.

Req 15 – Number Pool Block – Verify WSMSC SSN when WSMSC DPC is populated

NPAC SMS shall verify the WSMSC Sub-System Number (SSN) contains a value (000-255) when the corresponding WSMSC Destination Point Code (DPC) is populated with values (network 001-255, cluster 000-255, member 000-255), from the Block Holder Service Provider in a Block creation, modification, or mass update for Number Pooling.

Req 16 – Number Pool Block – Verify CLASS DPC when CLASS SSN is populated

NPAC SMS shall verify the CLASS Destination Point Code (DPC) contains values (network 001-255, cluster 000-255, member 000-255) when the corresponding CLASS Sub-System Number (SSN) is populated with a value (000-255), from the Block Holder Service Provider in a Block creation, modification, or mass update for Number Pooling.

Req 17 – Number Pool Block – Verify LIDB DPC when LIDB SSN is populated

NPAC SMS shall verify the LIDB Destination Point Code (DPC) contains values (network 001-255, cluster 000-255, member 000-255) when the corresponding LIDB Sub-System Number (SSN) is populated with a value (000-255), from the Block Holder Service Provider in a Block creation, modification, or mass update for Number Pooling.

Req 18 – Number Pool Block – Verify CNAM DPC when CNAM SSN is populated

NPAC SMS shall verify the CNAM Destination Point Code (DPC) contains values (network 001-255, cluster 000-255, member 000-255) when the corresponding CNAM Sub-System Number (SSN) is populated with a value (000-255), from the Block Holder Service Provider in a Block creation, modification, or mass update for Number Pooling.

Req 19 – Number Pool Block – Verify ISVM DPC when ISVM SSN is populated

NPAC SMS shall verify the ISVM Destination Point Code (DPC) contains values (network 001-255, cluster 000-255, member 000-255) when the corresponding ISVM Sub-System Number (SSN) is populated with a value (000-255), from the Block Holder Service Provider in a Block creation, modification, or mass update for Number Pooling.

Req 20 – Number Pool Block – Verify WSMSC DPC when WSMSC SSN is populated

NPAC SMS shall verify the WSMSC Destination Point Code (DPC) contains values (network 001-255, cluster 000-255, member 000-255) when the corresponding WSMSC Sub-System Number (SSN) is populated with a value (000-255), from the Block Holder Service Provider in a Block creation, modification, or mass update for Number Pooling.

Req 21 – DPC/SSN Edits – CLASS validation failure

NPAC SMS shall send back an error to the requesting Service Provider if a Subscription Version or Number Pool Block DPC/SSN consistency check for CLASS fails validation.

Req 22 – DPC/SSN Edits – LIDB validation failure

NPAC SMS shall send back an error to the requesting Service Provider if a Subscription Version or Number Pool Block DPC/SSN consistency check for LIDB fails validation.

Req 23 – DPC/SSN Edits – CNAM validation failure

NPAC SMS shall send back an error to the requesting Service Provider if a Subscription Version or Number Pool Block DPC/SSN consistency check for CNAM fails validation.

Req 24 – DPC/SSN Edits – ISVM validation failure

NPAC SMS shall send back an error to the requesting Service Provider if a Subscription Version or Number Pool Block DPC/SSN consistency check for ISVM fails validation.

Req 25 – DPC/SSN Edits – WSMSC validation failure

NPAC SMS shall send back an error to the requesting Service Provider if a Subscription Version or Number Pool Block DPC/SSN consistency check for WSMSC fails validation.

Req 26 – DPC/SSN Edits – CLASS DPC and SSN Required Data for Modification

NPAC SMS shall require values from the requesting Service Provider for both CLASS DPC and CLASS SSN to be sent to the NPAC SMS when modifying CLASS service for a Subscription Version or Number Pool Block, even if only one value is being modified.

Req 27 – DPC/SSN Edits – LIDB DPC and SSN Required Data for Modification

NPAC SMS shall require values from the requesting Service Provider for both LIDB DPC and LIDB SSN to be sent to the NPAC SMS when modifying LIDB service for a Subscription Version or Number Pool Block, even if only one value is being modified.

Req 28 – DPC/SSN Edits – CNAM DPC and SSN Required Data for Modification

NPAC SMS shall require values from the requesting Service Provider for both CNAM DPC and CNAM SSN to be sent to the NPAC SMS when modifying CNAM service for a Subscription Version or Number Pool Block, even if only one value is being modified.

Req 29 – DPC/SSN Edits – ISVM DPC and SSN Required Data for Modification

NPAC SMS shall require values from the requesting Service Provider for both ISVM DPC and ISVM SSN to be sent to the NPAC SMS when modifying ISVM service for a Subscription Version or Number Pool Block, even if only one value is being modified.

Req 30 – DPC/SSN Edits – WSMSC DPC and SSN Required Data for Modification

NPAC SMS shall require values from the requesting Service Provider for both WSMSC DPC and WSMSC SSN to be sent to the NPAC SMS when modifying WSMSC service for a Subscription Version or Number Pool Block, even if only one value is being modified.

Req 31 – DPC/SSN Edits – CLASS DPC and SSN Required Data for Mass Update

NPAC SMS shall require values from the NPAC Personnel for the requesting Service Provider for both CLASS DPC and CLASS SSN to be provided when mass updating CLASS service for a Subscription Version or Number Pool Block, even if only one value is being modified.

Req 32 – DPC/SSN Edits – LIDB DPC and SSN Required Data for Mass Update

NPAC SMS shall require values from the NPAC Personnel for the requesting Service Provider for both LIDB DPC and LIDB SSN to be provided when mass updating LIDB service for a Subscription Version or Number Pool Block, even if only one value is being modified.

Req 33 – DPC/SSN Edits – CNAM DPC and SSN Required Data for Mass Update

NPAC SMS shall require values from the NPAC Personnel for the requesting Service Provider for both CNAM DPC and CNAM SSN to be provided when mass updating CNAM service for a Subscription Version or Number Pool Block, even if only one value is being modified.

Req 34 – DPC/SSN Edits – ISVM DPC and SSN Required Data for Mass Update

NPAC SMS shall require values from the NPAC Personnel for the requesting Service Provider for both ISVM DPC and ISVM SSN to be provided when mass updating ISVM service for a Subscription Version or Number Pool Block, even if only one value is being modified.

Req 35 – DPC/SSN Edits – WSMSC DPC and SSN Required Data for Mass Update

NPAC SMS shall require values from the NPAC Personnel for the requesting Service Provider for both WSMSC DPC and WSMSC SSN to be provided when mass updating WSMSC service for a Subscription Version or Number Pool Block, even if only one value is being modified.

Req 36 – Subscription Version – Verify All Routing Data When Modifying Non-GTT Data

NPAC SMS shall when modifying non-GTT data, reject the modify request for any DPC/SSN value edit inconsistencies for CLASS, LIDB, CNAM, ISVM, or WSMSC, from the new/current Service Provider in a Subscription Version modification, or mass update for an Inter-Service Provider Port or Intra-Service Provider Port.

Req 37 – Subscription Version – Verify All Routing Data When Modifying CLASS Data

NPAC SMS shall when modifying CLASS DPC or CLASS SSN, reject the modify request for any DPC/SSN value edit inconsistencies for LIDB, CNAM, ISVM, or WSMSC, from the new/current Service Provider in a Subscription Version modification, or mass update for an Inter-Service Provider Port or Intra-Service Provider Port.

Req 38 – Subscription Version – Verify All Routing Data When Modifying LIDB Data

NPAC SMS shall when modifying LIDB DPC or LIDB SSN, reject the modify request for any DPC/SSN value edit inconsistencies for CLASS, CNAM, ISVM, or WSMSC, from the new/current Service Provider in a Subscription Version modification, or mass update for an Inter-Service Provider Port or Intra-Service Provider Port.

Req 39 – Subscription Version – Verify All Routing Data When Modifying CNAM Data

NPAC SMS shall when modifying CNAM DPC or CNAM SSN, reject the modify request for any DPC/SSN value edit inconsistencies for CLASS, LIDB, ISVM, or WSMSC, from the new/current Service Provider in a Subscription Version modification, or mass update for an Inter-Service Provider Port or Intra-Service Provider Port.

Req 40 – Subscription Version – Verify All Routing Data When Modifying ISVM Data

NPAC SMS shall when modifying ISVM DPC or ISVM SSN, reject the modify request for any DPC/SSN value edit inconsistencies for CLASS, LIDB, CNAM, or WSMSC, from the new/current Service Provider in a Subscription Version modification, or mass update for an Inter-Service Provider Port or Intra-Service Provider Port.

Req 41 – Subscription Version – Verify All Routing Data When Modifying WSMSC Data

NPAC SMS shall when modifying WSMSC DPC or WSMSC SSN, reject the modify request for any DPC/SSN value edit inconsistencies for CLASS, LIDB, CNAM, or ISVM, from the new/current Service Provider in a Subscription Version modification, or mass update for an Inter-Service Provider Port or Intra-Service Provider Port.

Req 42 – Number Pool Block – Verify All Routing Data When Modifying Non-GTT Data

NPAC SMS shall when modifying non-GTT data, reject the modify request for any DPC/SSN value edit inconsistencies for CLASS, LIDB, CNAM, ISVM, or WSMSC, from the new/current Service Provider in a Number Pool Block modification, or mass update for a Number Pool Block.

Req 43 – Number Pool Block – Verify All Routing Data When Modifying CLASS Data

NPAC SMS shall when modifying CLASS DPC or CLASS SSN, reject the modify request for any DPC/SSN value edit inconsistencies for LIDB, CNAM, ISVM, or WSMSC, from the new/current Service Provider in a Number Pool Block modification, or mass update for a Number Pool Block.

Req 44 – Number Pool Block – Verify All Routing Data When Modifying LIDB Data

NPAC SMS shall when modifying LIDB DPC or LIDB SSN, reject the modify request for any DPC/SSN value edit inconsistencies for CLASS, CNAM, ISVM, or WSMSC, from the new/current Service Provider in a Number Pool Block modification, or mass update for a Number Pool Block.

Req 45 – Number Pool Block – Verify All Routing Data When Modifying CNAM Data

NPAC SMS shall when modifying CNAM DPC or CNAM SSN, reject the modify request for any DPC/SSN value edit inconsistencies for CLASS, LIDB, ISVM, or WSMSC, from the new/current Service Provider in a Number Pool Block modification, or mass update for a Number Pool Block.

Req 46 – Number Pool Block – Verify All Routing Data When Modifying ISVM Data

NPAC SMS shall when modifying ISVM DPC or ISVM SSN, reject the modify request for any DPC/SSN value edit inconsistencies for CLASS, LIDB, CNAM, or WSMSC, from the new/current Service Provider in a Number Pool Block modification, or mass update for a Number Pool Block.

Req 47 – Number Pool Block – Verify All Routing Data When Modifying WSMSC Data

NPAC SMS shall when modifying WSMSC DPC or WSMSC SSN, reject the modify request for any DPC/SSN value edit inconsistencies for CLASS, LIDB, CNAM, or ISVM, from the new/current Service Provider in a Number Pool Block modification, or mass update for a Number Pool Block.

Req 48 – Subscription Version – Verify All Routing Data When Activating a Subscription Version

NPAC SMS shall when activating a Subscription Version, reject the activate request for any DPC/SSN value edit inconsistencies for CLASS, LIDB, CNAM, ISVM, or WSMSC, from the new Service Provider in an activation for an Inter-Service Provider Port or Intra-Service Provider Port.

Req 49 – Number Pool Block – Verify All Routing Data When Activating a Number Pool Block

NPAC SMS shall when scheduling a Block Create Event or activating a Number Pool Block, reject the scheduling or activate request for any DPC/SSN value edit inconsistencies for CLASS, LIDB, CNAM, ISVM, or WSMSC, from the new Service Provider in scheduling or activation for a Number Pool Block.

Req 50 – DPC/SSN Edits – Errors on DPC and SSN Required Data for Mass Update

NPAC SMS shall log an entry to be used for the mass update exception report when any of the required DPC/SSN data edits are violated when mass updating a Subscription Version or Number Pool Block, and continue processing the mass update request.

Note: in an example where 2000 SVs are being mass updated and 100 encountered DPC/SSN edit errors, the NPAC will perform the mass update by updating the 1900 SVs that are valid, and logging the remaining 100 SVs to be picked up the mass update exception report.

IIS:

No change required.

GDMO:

-- 21.0 LNP NPAC Subscription Version Managed Object Class

subscriptionVersionNPAC MANAGED OBJECT CLASS

...

subscriptionVersionNPAC-Behavior BEHAVIOUR
DEFINED AS !

...

When the subscription version is created, the subscriptionBusinessType is set according to the business days and hours selection of the old and new service providers.

When the subscription version is created, modified, or mass updated and contains a DPC value, a valid, corresponding SSN value must be present and vice versa. When modifying either DPC or SSN, both values must be sent to the NPAC SMS in the request, even if only one is being modified.

The Service Provider SOA can M-GET and M-SET subscriptionVersionNPAC objects via the SOA to NPAC SMS interface (SOA Management Association Function). Rules for M-SET are described below.

-- 30.0 Number Pool Block NPAC Data Managed Object Class

--

numberPoolBlockNPAC MANAGED OBJECT CLASS

...

numberPoolBlockNPAC-Behavior BEHAVIOUR
DEFINED AS !

...

The numberPoolBlockFailed-SP-List is set when a failure occurs in sending to the LSMSs. It contains the list of EDR and non-EDR service provider IDs who failed to successfully respond to the broadcasted data.

When the number pool block is created, modified, or mass updated and contains a DPC value, a valid, corresponding SSN value must be present and vice versa.

When modifying either DPC or SSN, both values must be sent to the NPAC SMS in the request, even if only one is being modified.

Service providers can M-GET any numberPoolBlockNPAC object from the LSMS and SOA.

-- 63.0 LNP Subscription Version Class Destination Point Code

```
subscriptionCLASS-DPC ATTRIBUTE
  WITH ATTRIBUTE SYNTAX LNP-ASN1.DPC;
  MATCHES FOR EQUALITY, ORDERING;
  BEHAVIOUR subscriptionCLASS-DPCBehavior;
  REGISTERED AS {LNP-OIDS.lnp-attribute 63};
```

```
subscriptionCLASS-DPCBehavior BEHAVIOUR
  DEFINED AS !
  This attribute is used to specify the subscription version
  CLASS Destination Point Code.
```

The 9-digit point code (DPC) is broken down into 3 components:
3-digit Network ID: Valid range 1-255.
3-digit Cluster ID: Valid range 0-255.
3-digit Member number: Valid range 0-255.

If the subscriptionCLASS-DPC attribute is provided, the subscriptionCLASS-SSN attribute must be provided.

The data is stored in BCD (e.g. a value of FFFFFFFF would be displayed as 255.255.255).

!;

-- 64.0 LNP Subscription Version Class SSN

```
subscriptionCLASS-SSN ATTRIBUTE
  WITH ATTRIBUTE SYNTAX LNP-ASN1.SSN;
  MATCHES FOR EQUALITY, ORDERING;
  BEHAVIOUR subscriptionCLASS-SSN-Behavior;
  REGISTERED AS {LNP-OIDS.lnp-attribute 64};
```

```
subscriptionCLASS-SSN-Behavior BEHAVIOUR
  DEFINED AS !
  This attribute is used to specify the subscription version
  CLASS SSN. The valid values on the NPAC SMS are 0-255.
```

If the subscriptionCLASS-SSN attribute is provided, the subscriptionCLASS-DPC attribute must be provided.

!;

-- 65.0 LNP Subscription CNAM Destination Point Code

```
subscriptionCNAM-DPC ATTRIBUTE
  WITH ATTRIBUTE SYNTAX LNP-ASN1.DPC;
  MATCHES FOR EQUALITY, ORDERING;
  BEHAVIOUR subscriptionCNAM-DPC-Behavior;
  REGISTERED AS {LNP-OIDS.lnp-attribute 65};
```

```
subscriptionCNAM-DPC-Behavior BEHAVIOUR
  DEFINED AS !
  This attribute is used to specify the CNAM Destination Point
  value for the subscription version.
```

The 9-digit point code (DPC) is broken down into 3 components:
3-digit Network ID: Valid range 1-255.
3-digit Cluster ID: Valid range 0-255.
3-digit Member number: Valid range 0-255.

If the subscriptionCNAM-DPC attribute is provided, the subscriptionCNAM-SSN attribute must be provided.

The data is stored in BCD (e.g. a value of FFFFFFF would be displayed as 255.255.255).

!;

-- 66.0 LNP Subscription CNAM SSN

subscriptionCNAM-SSN ATTRIBUTE
WITH ATTRIBUTE SYNTAX LNP-ASN1.SSN;
MATCHES FOR EQUALITY, ORDERING;
BEHAVIOUR subscriptionCNAM-SSN-Behavior;
REGISTERED AS {LNP-OIDS.lnp-attribute 66};

subscriptionCNAM-SSN-Behavior BEHAVIOUR
DEFINED AS !

This attribute is used to specify the CNAM SSN value for the subscription version.
The valid values on the NPAC SMS are 0-255.

If the subscriptionCNAM-SSN attribute is provided, the subscriptionCNAM-DPC attribute must be provided.

!;

-- 76.0 LNP Subscription ISVM Destination Point Code

subscriptionISVM-DPC ATTRIBUTE
WITH ATTRIBUTE SYNTAX LNP-ASN1.DPC;
MATCHES FOR EQUALITY, ORDERING;
BEHAVIOUR subscriptionISVM-DPC-Behavior;
REGISTERED AS {LNP-OIDS.lnp-attribute 76};

subscriptionISVM-DPC-Behavior BEHAVIOUR
DEFINED AS !

This attribute is used to specify the ISVM Destination Point value for the subscription version.

The 9-digit point code (DPC) is broken down into 3 components:
3-digit Network ID: Valid range 1-255.
3-digit Cluster ID: Valid range 0-255.
3-digit Member number: Valid range 0-255.

If the subscriptionISVM-DPC attribute is provided, the subscriptionISVM-SSN attribute must be provided.

The data is stored in BCD (e.g. a value of FFFFFFF would be displayed as 255.255.255).

!;

-- 77.0 LNP Subscription ISVM SSN

```
subscriptionISVM-SSN ATTRIBUTE
  WITH ATTRIBUTE SYNTAX LNP-ASN1.SSN;
  MATCHES FOR EQUALITY, ORDERING;
  BEHAVIOUR subscriptionISVM-SSN-Behavior;
  REGISTERED AS {LNP-oids.lnp-attribute 77};
```

```
subscriptionISVM-SSN-Behavior BEHAVIOUR
  DEFINED AS !
  This attribute is used to specify the ISVM SSN
  value for the subscription version.
  The valid values on the NPAC SMS are 0-255.
```

**If the subscriptionISVM-SSN attribute is provided, the
subscriptionISVM-DPC attribute must be provided.**

```
!;
```

```
-- 78.0 LNP Subscription LIDB Destination Point Code
```

```
subscriptionLIDB-DPC ATTRIBUTE
  WITH ATTRIBUTE SYNTAX LNP-ASN1.DPC;
  MATCHES FOR EQUALITY, ORDERING;
  BEHAVIOUR subscriptionLIDB-DPC-Behavior;
  REGISTERED AS {LNP-oids.lnp-attribute 78};
```

```
subscriptionLIDB-DPC-Behavior BEHAVIOUR
  DEFINED AS !
  This attribute is used to specify the LIDB Destination Point
  value for the subscription version.
```

The 9-digit point code (DPC) is broken down into 3 components:
3-digit Network ID: Valid range 1-255.
3-digit Cluster ID: Valid range 0-255.
3-digit Member number: Valid range 0-255.

**If the subscriptionLIDB-DPC attribute is provided, the
subscriptionLIDB-SSN attribute must be provided.**

The data is stored in BCD (e.g. a value of FFFFFFFF would be
displayed as 255.255.255).

```
!;
```

```
-- 79.0 LNP Subscription LIDB SSN
```

```
subscriptionLIDB-SSN ATTRIBUTE
  WITH ATTRIBUTE SYNTAX LNP-ASN1.SSN;
  MATCHES FOR EQUALITY, ORDERING;
  BEHAVIOUR subscriptionLIDB-SSN-Behavior;
  REGISTERED AS {LNP-oids.lnp-attribute 79};
```

```
subscriptionLIDB-SSN-Behavior BEHAVIOUR
  DEFINED AS !
  This attribute is used to specify the LIDB SSN
  value for the subscription version.
  The valid values on the NPAC SMS are 0-255.
```

If the subscriptionLIDB-SSN attribute is provided, the

subscriptionLIDB-DPC attribute must be provided.

!;

-- 109.0 Subscription Version WSMSC Destination Point Code

subscriptionWSMSC-DPC ATTRIBUTE
WITH ATTRIBUTE SYNTAX LNP-ASN1.DPC;
MATCHES FOR EQUALITY, ORDERING;
BEHAVIOUR subscriptionWSMSC-DPCBehavior;
REGISTERED AS {LNP-OIDS.lnp-attribute 109};

subscriptionWSMSC-DPCBehavior BEHAVIOUR
DEFINED AS !
This attribute is used to specify the subscription version
WSMSC Destination Point Code.

The 9-digit point code (DPC) is broken down into 3 components:
3-digit Network ID: Valid range 1-255.
3-digit Cluster ID: Valid range 0-255.
3-digit Member number: Valid range 0-255.

**If the subscriptionWSMSC-DPC attribute is provided, the
subscriptionWSMSC-SSN attribute must be provided.**

The data is stored in BCD (e.g. a value of FFFFFFFF would be
displayed as 255.255.255).

!;

-- 110.0 LNP Subscription Version WSMSC SSN

subscriptionWSMSC-SSN ATTRIBUTE
WITH ATTRIBUTE SYNTAX LNP-ASN1.SSN;
MATCHES FOR EQUALITY, ORDERING;
BEHAVIOUR subscriptionWSMSC-SSN-Behavior;
REGISTERED AS {LNP-OIDS.lnp-attribute 110};

subscriptionWSMSC-SSN-Behavior BEHAVIOUR
DEFINED AS !
This attribute is used to specify the subscription version
WSMSC SSN. **The valid values on the NPAC SMS are 0-255.**

**If the subscriptionWSMSC-SSN attribute is provided, the
subscriptionWSMSC-DPC attribute must be provided.**

!;

-- 114.0 LNP Number Pool block Class Destination Point Code

numberPoolBlockCLASS-DPC ATTRIBUTE
WITH ATTRIBUTE SYNTAX LNP-ASN1.DPC;
MATCHES FOR EQUALITY, ORDERING;
BEHAVIOUR numberPoolBlockCLASS-DPCBehavior;
REGISTERED AS {LNP-OIDS.lnp-attribute 114};

numberPoolBlockCLASS-DPCBehavior BEHAVIOUR
DEFINED AS !
This attribute is used to specify the numberPoolBlock

CLASS Destination Point Code.

The 9-digit point code (DPC) is broken down into 3 components:

- 3-digit Network ID: Valid range 1-255.**
- 3-digit Cluster ID: Valid range 0-255.**
- 3-digit Member number: Valid range 0-255.**

If the numberPoolBlockCLASS-DPC attribute is provided, the numberPoolBlockCLASS-SSN attribute must be provided.

The data is stored in BCD (e.g. a value of FFFFFFFF would be displayed as 255.255.255). ~~The valid octet values on the NPAC SMS are 000-255.~~

!;

-- 115.0 LNP Number Pool Block Class SSN

```
numberPoolBlockCLASS-SSN ATTRIBUTE
  WITH ATTRIBUTE SYNTAX LNP-ASN1.SSN;
  MATCHES FOR EQUALITY, ORDERING;
  BEHAVIOUR numberPoolBlockCLASS-SSN-Behavior;
  REGISTERED AS {LNP-OIDS.lnp-attribute 115};
```

```
numberPoolBlockCLASS-SSN-Behavior BEHAVIOUR
  DEFINED AS !
  This attribute is used to specify the numberPoolBlock
  CLASS SSN. The valid values on the NPAC SMS are 0-255.
```

If the numberPoolBlockCLASS-SSN attribute is provided, the numberPoolBlockCLASS-DPC attribute must be provided.

!;

-- 116.0 LNP Number Pool Block CNAM Destination Point Code

```
numberPoolBlockCNAM-DPC ATTRIBUTE
  WITH ATTRIBUTE SYNTAX LNP-ASN1.DPC;
  MATCHES FOR EQUALITY, ORDERING;
  BEHAVIOUR numberPoolBlockCNAM-DPC-Behavior;
  REGISTERED AS {LNP-OIDS.lnp-attribute 116};
```

```
numberPoolBlockCNAM-DPC-Behavior BEHAVIOUR
  DEFINED AS !
  This attribute is used to specify the CNAM Destination Point
  Code for the numberPoolBlock.
```

The 9-digit point code (DPC) is broken down into 3 components:

- 3-digit Network ID: Valid range 1-255.**
- 3-digit Cluster ID: Valid range 0-255.**
- 3-digit Member number: Valid range 0-255.**

If the numberPoolBlockCNAM-DPC attribute is provided, the numberPoolBlockCNAM-SSN attribute must be provided.

The data is stored in BCD (e.g. a value of FFFFFFFF would be displayed as 255.255.255). ~~The valid octet values on the NPAC SMS are 000-255.~~

!;

-- 117.0 LNP Number Pool Block CNAM SSN

numberPoolBlockCNAM-SSN ATTRIBUTE
WITH ATTRIBUTE SYNTAX LNP-ASN1.SSN;
MATCHES FOR EQUALITY, ORDERING;
BEHAVIOUR numberPoolBlockCNAM-SSN-Behavior;
REGISTERED AS {LNP-OIDS.lnp-attribute 117};

numberPoolBlockCNAM-SSN-Behavior BEHAVIOUR
DEFINED AS !

This attribute is used to specify the CNAM SSN value for the numberPoolBlock. The valid values on the NPAC SMS are 0-255.

If the numberPoolBlockCNAM-SSN attribute is provided, the numberPoolBlockCNAM-DPC attribute must be provided.

!;

-- 123.0 LNP Number Pool Block ISVM Destination Point Code

numberPoolBlockISVM-DPC ATTRIBUTE
WITH ATTRIBUTE SYNTAX LNP-ASN1.DPC;
MATCHES FOR EQUALITY, ORDERING;
BEHAVIOUR numberPoolBlockISVM-DPC-Behavior;
REGISTERED AS {LNP-OIDS.lnp-attribute 123};

numberPoolBlockISVM-DPC-Behavior BEHAVIOUR
DEFINED AS !

This attribute is used to specify the ISVM Destination Point Code for the numberPoolBlock.

The 9-digit point code (DPC) is broken down into 3 components:

- 3-digit Network ID: Valid range 1-255.**
- 3-digit Cluster ID: Valid range 0-255.**
- 3-digit Member number: Valid range 0-255.**

If the numberPoolBlockISVM-DPC attribute is provided, the numberPoolBlockISVM-SSN attribute must be provided.

The data is stored in BCD (e.g. a value of FFFFFFFF would be displayed as 255.255.255). ~~The valid octet values on the NPAC SMS are 000-255.~~

!;

-- 124.0 LNP Number Pool Block ISVM SSN

numberPoolBlockISVM-SSN ATTRIBUTE
WITH ATTRIBUTE SYNTAX LNP-ASN1.SSN;
MATCHES FOR EQUALITY, ORDERING;
BEHAVIOUR numberPoolBlockISVM-SSN-Behavior;
REGISTERED AS {LNP-OIDS.lnp-attribute 124};

numberPoolBlockISVM-SSN-Behavior BEHAVIOUR
DEFINED AS !

This attribute is used to specify the ISVM SSN value for the numberPoolBlock. The valid values on the

NPAC SMS are 0-255.

If the numberPoolBlockISVM-SSN attribute is provided, the numberPoolBlockISVM-DPC attribute must be provided.

!;

-- 125.0 LNP Number Pool Block LIDB Destination Point Code

numberPoolBlockLIDB-DPC ATTRIBUTE
WITH ATTRIBUTE SYNTAX LNP-ASN1.DPC;
MATCHES FOR EQUALITY, ORDERING;
BEHAVIOUR numberPoolBlockLIDB-DPC-Behavior;
REGISTERED AS {LNP-OIDS.lnp-attribute 125};

numberPoolBlockLIDB-DPC-Behavior BEHAVIOUR
DEFINED AS !

This attribute is used to specify the LIDB Destination Point Code for the numberPoolBlock.

The 9-digit point code (DPC) is broken down into 3 components:

3-digit Network ID: Valid range 1-255.

3-digit Cluster ID: Valid range 0-255.

3-digit Member number: Valid range 0-255.

If the numberPoolBlockLIDB-DPC attribute is provided, the numberPoolBlockLIDB-SSN attribute must be provided.

The data is stored in BCD (e.g. a value of FFFFFFFF would be displayed as 255.255.255). ~~The valid octet on the NPAC SMS are 000-255.~~

!;

-- 126.0 LNP Number Pool Block LIDB SSN

numberPoolBlockLIDB-SSN ATTRIBUTE
WITH ATTRIBUTE SYNTAX LNP-ASN1.SSN;
MATCHES FOR EQUALITY, ORDERING;
BEHAVIOUR numberPoolBlockLIDB-SSN-Behavior;
REGISTERED AS {LNP-OIDS.lnp-attribute 126};

numberPoolBlockLIDB-SSN-Behavior BEHAVIOUR
DEFINED AS !

This attribute is used to specify the LIDB SSN value for the numberPoolBlock. The valid values on the NPAC SMS are 0-255.

If the numberPoolBlockLIDB-SSN attribute is provided, the numberPoolBlockLIDB-DPC attribute must be provided.

!;

-- 132.0 LNP Number Pool Block WSMSC Destination Point Code

numberPoolBlockWSMSC-DPC ATTRIBUTE
WITH ATTRIBUTE SYNTAX LNP-ASN1.DPC;
MATCHES FOR EQUALITY, ORDERING;
BEHAVIOUR numberPoolBlockWSMSC-DPC-Behavior;

REGISTERED AS {LNP-OIDS.lnp-attribute 132};

numberPoolBlockWSMSC-DPC-Behavior BEHAVIOUR

DEFINED AS !

This attribute is used to specify the WSMSC Destination Point Code for the numberPoolBlock.

The 9-digit point code (DPC) is broken down into 3 components:

3-digit Network ID: Valid range 1-255.

3-digit Cluster ID: Valid range 0-255.

3-digit Member number: Valid range 0-255.

If the numberPoolBlockWSMSC-DPC attribute is provided, the numberPoolBlockWSMSC-SSN attribute must be provided.

The data is stored in BCD (e.g. a value of FFFFFFFF would be displayed as 255.255.255). ~~The valid octet on the NPAC SMS are 000-255.~~

!;

-- 133.0 LNP Number Pool Block WSMSC SSN

numberPoolBlockWSMSC-SSN ATTRIBUTE

WITH ATTRIBUTE SYNTAX LNP-ASN1.SSN;

MATCHES FOR EQUALITY, ORDERING;

BEHAVIOUR numberPoolBlockWSMSC-SSN-Behavior;

REGISTERED AS {LNP-OIDS.lnp-attribute 133};

numberPoolBlockWSMSC-SSN-Behavior BEHAVIOUR

DEFINED AS !

This attribute is used to specify the WSMSC SSN value for the numberPoolBlock. The valid values on the NPAC SMS are 0-255.

If the numberPoolBlockWSMSC-SSN attribute is provided, the numberPoolBlockWSMSC-DPC attribute must be provided.

!;

-- 7.0 LNP Subscription Version Modify Action

subscriptionVersionModify ACTION

BEHAVIOUR

subscriptionVersionModifyDefinition,

subscriptionVersionModifyBehavior;

MODE CONFIRMED;

WITH INFORMATION SYNTAX LNP-ASN1.ModifyAction;

WITH REPLY SYNTAX LNP-ASN1.ModifyReply;

REGISTERED AS {LNP-OIDS.lnp-action 7};

subscriptionVersionModifyDefinition BEHAVIOUR

DEFINED AS !

The subscriptionVersionModify action is the action that can be used by the SOA to modify a subscription version via the SOA to NPAC SMS interface.

!;

subscriptionVersionModifyBehavior BEHAVIOUR

DEFINED AS !

Preconditions: This action is issued from an `lnpSubscriptions` object specifying the object to be modified by specifying the `subscriptionVersionId` or by specifying the `subscriptionTN` or a range of TNs (where the stop TN in the range is greater than the start TN) and the status of the subscription version. All attribute values to be modified shall also be specified.

Postconditions: The NPAC SMS has modified the subscription version. An error will be returned to the service provider if there is no version that is modifiable or if the modification fails due to authorization of the service provider or data validation.

Subscription versions with `subscriptionLNPTType` equal to 'pool' cannot be specified in the action.

Service Providers can modify attributes associated with active, pending or conflict subscription versions.

Old service providers can only modify the following attributes for pending or conflict subscription versions:

`subscriptionOldSP-DueDate`
`subscriptionOldSP-Authorization`
`subscriptionStatusChangeCauseCode`

The `subscriptionStatusChangeCauseCode` is an optional field and is only specified if the `subscriptionOldSP-Authorization` is false.

New service providers can only modify the following attributes for pending or conflict subscription versions:

`subscriptionLRN`
`subscriptionNewSP-DueDate`
`subscriptionCLASS-DPC`
`subscriptionCLASS-SSN`
`subscriptionLIDB-DPC`
`subscriptionLIDB-SSN`
`subscriptionCNAM-DPC`
`subscriptionCNAM-SSN`
`subscriptionISVM-DPC`
`subscriptionISVM-SSN`
`subscriptionEndUserLocationValue`
`subscriptionEndUserLocationType`
`subscriptionBillingId`

New service providers may specify modified valid values for the following attributes, when the service provider's "SOA WSMSC DPC SSN Data" indicator is TRUE, and may NOT specify these values when the indicator is set to FALSE:

`subscriptionWSMSC-DPC`
`subscriptionWSMSC-SSN`

A valid SSN value must be present for the corresponding DPC value and vice versa.

Validation will be done for both old and new service provider

data that is specified for pending or conflict subscription versions.

If validation fails no changes will be made and an error will be returned. If validation passes, the version will be modified and remain in a pending or active state.

New service providers can only modify the following attributes for active subscription versions:

subscriptionLRN
subscriptionCLASS-DPC
subscriptionCLASS-SSN
subscriptionLIDB-DPC
subscriptionLIDB-SSN
subscriptionCNAM-DPC
subscriptionCNAM-SSN
subscriptionISVM-DPC
subscriptionISVM-SSN
subscriptionEndUserLocationValue
subscriptionEndUserLocationType
subscriptionBillingId

New service providers may specify modified valid values for the following attributes, when the service provider's "SOA WSMSC DPC SSN Data" indicator is TRUE, and may NOT specify these values when the indicator is set to FALSE:

subscriptionWSMSC-DPC
subscriptionWSMSC-SSN

A valid SSN value must be present for the corresponding DPC value and vice versa.

If the data specified passes validation, the modified version is immediately broadcast. The modified subscription version will have a status of sending and broadcasts will begin. If validation fails, no changes will be made and an error will be returned in the action reply.

!;

-- 11.0 LNP New Service Provider Subscription Version Create

```
subscriptionVersionNewSP-Create ACTION
  BEHAVIOUR
    subscriptionVersionNewSP-CreateDefinition,
    subscriptionVersionNewSP-CreateBehavior;
  MODE CONFIRMED;
  WITH INFORMATION SYNTAX LNP-ASN1.NewSP-CreateAction;
  WITH REPLY SYNTAX LNP-ASN1.NewSP-CreateReply;
  REGISTERED AS {LNP-OIDS.lnp-action 11};
```

```
subscriptionVersionNewSP-CreateDefinition BEHAVIOUR
  DEFINED AS !
    The subscriptionVersionNewSP-Create action is the action that is
    used via the SOA to NPAC SMS interface by the
```

new service provider to create a new subscriptionVersionNPAC.
!;

subscriptionVersionNewSP-CreateBehavior BEHAVIOUR
DEFINED AS !

Preconditions: This action is issued from an lnpSubscriptions object. Creates can be performed provided there is only one currently active subscription or no subscription version in the NPAC; otherwise an action failure will be returned.

The new service provider must specify valid values for the following attributes:

subscriptionTN or a valid subscriptionVersionTN-Range
subscriptionLRN
subscriptionNewCurrentSP
subscriptionOldSP
subscriptionNewSP-DueDate
subscriptionCLASS-DPC
subscriptionCLASS-SSN
subscriptionLIDB-DPC
subscriptionLIDB-SSN
subscriptionCNAM-DPC
subscriptionCNAM-SSN
subscriptionISVM-DPC
subscriptionISVM-SSN
subscriptionLNPTtype
subscriptionPortingToOriginal-SPSwitch

The new service provider must specify valid values for the following attributes, when the service provider's "SOA WSMSC DPC SSN Data" indicator is TRUE, and must NOT specify these values when the indicator is set to FALSE:

subscriptionWSMSC-DPC
subscriptionWSMSC-SSN

The new service provider may specify valid values for the following attributes:

subscriptionEndUserLocationValue
subscriptionEndUserLocationType
subscriptionBillingId

A valid SSN value must be present for the corresponding DPC value and vice versa.

subscriptionPortingToOriginal-SPSwitch can only be specified as TRUE for a TN that is currently ported and is being ported back to the original service provider. If the value of subscriptionPortingToOriginal-SPSwitch is TRUE, the LRN and GTT data should be specified as NULL. If the variable is TRUE, when the activate occurs for the subscription version, the Local SMSs will receive a request to delete the old subscription version routing data in their networks. They will not receive any new network routing data for the subscription. Concurrence from the old service provider is required.

If the port of the subscription version is an intra-service provider port, the new service provider can use the subscriptionVersionNewSP-Create action specifying the old service provider equal to the new service provider. In this case, the old service provider create action is not required.

Postconditions: After this action has been executed, if the data specified passes validation, a pending subscription version or range of subscription versions will exist in the NPAC SMS. These validations are done as follows:

subscriptionTN or range of TNs are valid in a range open for porting by the new service provider. TN ranges must be specified where the stop TN in the range is greater than the start TN.

subscriptionLNPTType is specified to be "LSPP" or "LISP".

subscriptionNewSP-DueDate is a future date. If not specified, the time defaults to 00:00.00.

Old and New SP are valid service providers in the NPAC SMS.

LRN data is associated with the New Service Provider.

If a pre-existing version exists, validation will be done to insure that the new service provider previously specified is the same as the executor of the action.

If the validations succeed and the subscription version does not currently exist, a new subscription version will be created with a status of pending.

If the validations succeed and a pending subscription version exists, the new service provider create information will be applied to the existing pending subscription version.

If the validations fail, a new subscription version will not be created if one does not exist. If one already existed, it will be retained.

The action success or failure and reasons for failure will be returned in the action reply.

!;

-- 16.0 LNP Service Provider Number Pool Block Create

```
numberPoolBlock-Create ACTION
  BEHAVIOUR
    numberPoolBlock-CreateDefinition,
    numberPoolBlock-CreateBehavior;
  MODE CONFIRMED;
  WITH INFORMATION SYNTAX LNP-ASN1.NumberPoolBlock-CreateAction;
  WITH REPLY SYNTAX LNP-ASN1.NumberPoolBlock-CreateReply;
  REGISTERED AS {LNP-OIDS.lnp-action 16};
```

```
numberPoolBlock-CreateDefinition BEHAVIOUR
```


DEFINED AS !

The numberPoolBlock-Create action is the action that is used on the NPAC SMS via the SOA to NPAC SMS interface by the block holder SOA to create a new numberPoolBlockNPAC.

!;

numberPoolBlock-CreateBehavior BEHAVIOUR

DEFINED AS !

Preconditions: This action is issued from an lnpSubscriptions object.

The service provider block holder must specify valid values for the following attributes:

numberPoolBlockNPA-NXX-X
numberPoolBlockHolderSPID
numberPoolBlockLRN
numberPoolBlockCLASS-DPC
numberPoolBlockCLASS-SSN
numberPoolBlockLIDB-DPC
numberPoolBlockLIDB-SSN
numberPoolBlockCNAM-DPC
numberPoolBlockCNAM-SSN
numberPoolBlockISVM-DPC
numberPoolBlockISVM-SSN

If the SOA WSMSC DPC SSN Data Indicator is set in the service provider's profile, the following attributes must be provided:

numberPoolBlockWSMSC-DPC
numberPoolBlockWSMSC-SSN

A valid SSN value must be present for the corresponding DPC value and vice versa.

Postconditions: After this action has been executed, if the data specified passes validation, a number pool block with a status of 'sending' will exist on the NPAC SMS.

The validations performed are as follows:

The serviceProvNPA-NXX-X object exists and the current date and time are greater than or equal to the effective date of the serviceProvNPA-NXX-X object.

The requesting service provider is the block holder and service provider ID on the serviceProvNPA-NXX-X object.

LRN data is associated with the Block Holder Service Provider.

The attributes are all valid and correctly formatted.

If the validations succeed, a new number pool block and corresponding subscription versions will be created with a status of 'sending'. The NPAC SMS sends the object creation notification for the number pool block.

If the validations fail, no new number pool block or subscription versions will be created. If a number pool block already existed, it will be retained.

The action success or failure and reasons for failure will be returned in the action reply.

If the requesting SOA is not the owner of the serviceProvNPA-NXX-X, 'soa-not-authorized' will be selected in the error reply.

If the corresponding serviceProvNPA-NXX-X is not found, 'no-mpa-nxx-x-found' will be selected in the error reply.

If one of the attribute values is in error, 'invalid-data-values' will be selected in the error reply and the block-invalid-values will be present.

If the number pool block object already exists, 'number-pool-block-already-exists' will be selected in the error reply.

If the request is sent prior to the effective date, 'prior-to-effective-date' will be selected in the error reply.

If the request is sent and any subscription version objects exist within the TN range with a status of pending, conflict, cancel-pending or failed ("pending-like") and no active subscription version for that TN exists, 'invalid-subscription-versions' will be selected in the error reply.

!;

ASN.1:

No change required.

M&P:

TBD

Origination Date: 1/23/1998

Originator: NANC T&O

Change Order Number: NANC 192

Description: NPA Split NPAC SMS Load File

Pure Backwards Compatible: YES

IMPACT/CHANGE ASSESSMENT

FRS	IIS	GDMO	ASN.1	NPAC	SOA	LSMS
Y	Y			Med	N/A	N/A

Business Need:

Current NPA Split processing requires each SP to notify the NPAC of NPA-NXXs involved in an NPA Split. This process is new to SPs and is causing confusion, missed NPA Split processing, extra data clean up work for the SPs, and possible customer affecting outages.

This Change Order would eliminate the current NPAC process of SP notification, prevent manual data entry, and establish the means for NPAC to use the industry standard data from the [Telcordia™ LERG™ Routing Guide¹](#) to make sure the NPA Split processing is consistent within the industry.

Description of Change:

It was requested that current information in the LERG [Routing Guide](#) be used to load NPA Split information into the NPAC SMS. This would prevent manual data entry that could introduce errors when entering the NPA Split information.

John Malyar from Bellcore gathered some information for the group as to the whom, how, and when for files containing the data that are distributed in the industry currently. John indicated that NANPA identifies and announces the split. The LERG [Routing Guide](#) has tools to pull data for a split and distribute it electronically. This is one source from which a file can be obtained.

NeuStar will look at the file format, and determine if there is a mechanism that can be used to populate the data on the NPAC (since both NANPA and NPAC are NeuStar).

February 2000: During the LNPA-WG meeting the group discussed at a high level, the desired functionality of this change order. Redline changes to these bullet based on NeuStar questions and LNPAWG response in June 2002 meeting.

- Process the load file in the NPAC SMS.
- For each split in the file, check to see if the split is already scheduled:
 - 1.) if already scheduled, then make sure both old and new NPA-NXXs exist, and check if any effective date changes to split, or a removal from a scheduled or existing split.

¹ [“Telcordia” and “LERG Routing Guide” are trademarks of Telcordia Technologies, Inc..](#)

Perform necessary updates.

2.) if not yet scheduled, check for the new NPA-NXX. If already exists, error. Otherwise, continue with the scheduling of the split.

- When scheduling split, auto generate the new NPA-NXX with the effective date the same as the PDP start date/time (example, date with 6:00am as time), and broadcast the new NPA-NXX (if new is already there, reject the split and log error).
- When adding an NPA-NXX to an existing split, whether or not the permissive dial period has already started for the NPA (with other NXXs), the NPAC SMS would add this to the existing split.
- When removing an NPA-NXX from an existing split, broadcast the delete of the NPA-associated new NXX to all accepting SPs.
- When updating effective date of split, perform the following steps:
 - 1.) if a PDP start date is modified to a further out date, and no pending SVs for new NPA-NXX exist, NPAC changes date in split for PDP start date, and makes same date change to new NPA-NXX effective date.
 - 2.) If PDP start date is modified to a closer in date, delete the scheduled split data, delete the new NPA-NXX, and log error. Upon completion of the delete, M&P directs NPAC personnel to initiate the re-processing of the split file that has the modified closer in effective date. New NPA-NXX will be re-added with new closer in effective date to match new closer in PDP start date. At the time the NPAC SMS is to delete the new NPA-NXX, it will check if pending SVs exist, if yes then log an error (and let the SP take care of canceling these so that the new NPA-NXX can be deleted).
 - 3.) For any PDP start date modification, where pending-like SVs exist in the new NPA-NXX, log an error.
- NPAC needs to be able to reprocess a file, if any errors occurred, and shall not process any subsequent ones until the current one is fully successful, except in cases where the subsequent file or data corrects an error in a previous file.
- NPAC shall log an error if the split file says to modify the PDP start date and the split processing for that split has already occurred in the NPAC.

Requirements:

Req 1 – NPA Split – Load File from LERG [Routing Guide](#) Data

NPAC SMS shall allow an NPA Split Load Flat File from the LERG [Routing Guide](#), to be used to enter, modify, or remove NPA Split information into/from the NPAC SMS.

Note: The information from the LERG [Routing Guide](#) is assumed to include all necessary updates, including, but not limited to monthly plus emergency updates.

Req 2 – NPA Split – Load File from LERG [Routing Guide](#) Data During Housekeeping Process

NPAC SMS shall allow the NPA Split Load Flat File to be loaded into the NPA Split information in the NPAC SMS during the current housekeeping process.

Req 3 – NPA Split – Load File from LERG [Routing Guide](#) Data Processing Results

NPAC SMS shall be capable of storing NPA Split Load Flat File processing data that can be used to generate the NPA Split Load Flat File Exception Report.

Req 3.1 – NPA Split – Load File from LERG [Routing Guide](#) Data, Reject existing new NPA-NXX

NPAC SMS shall process the NPA Split Load Flat File and for each new NPA split that is not yet scheduled in the NPAC SMS, reject the request, log an entry to be used for the NPA Split exception report, and continue processing the NPA Split Load Flat File, when the new NPA-NXX already exists in the NPAC SMS and is not already part of an NPA Split.

Req 3.2 – NPA Split – Load File from LERG [Routing Guide](#) Data, Generate new NPA-NXX

NPAC SMS shall process the NPA Split Load Flat File and for each new NPA split that is not yet scheduled in the NPAC SMS, automatically generate and broadcast the new NPA-NXX, using the PDP start date/time as the value to populate the effective date for the new NPA-NXX.

Req 3.3 – NPA Split – Load File from LERG [Routing Guide](#) Data, Delete new NPA-NXX

NPAC SMS shall process the NPA Split Load Flat File and for each NPA split that is scheduled in the NPAC SMS and being removed as an NPA Split, automatically delete and broadcast the delete of the new NPA-NXX.

Req 4 – NPA Split – NPA Split Load Flat File Exception Report with An Existing New NPA-NXX

NPAC SMS shall provide an NPA Split Load Flat File Exception Report that identifies NPA split processing errors:

1. – NPA splits that cannot be added to the NPAC SMS because the new NPA-NXX already exists in the NPAC SMS at the time the NPA Split Load Flat File from the LERG [Routing Guide](#) is processed by the NPAC SMS, and that NPA-NXX is NOT already scheduled for an NPA Split in the NPAC SMS.
2. – NPA splits already scheduled in the NPAC SMS where the PDP start date is modified to a closer in date.
3. – NPA splits already scheduled in the NPAC SMS where the PDP start date is modified, and pending SVs exist in the new NPA-NXX.

Req 5 – NPA Split – Load File from LERG [Routing Guide](#) Data, Verifying Old and New NPA-NXX

NPAC SMS shall process the NPA Split Load Flat File and for each NPA split that is already scheduled in the NPAC SMS, verify the old and new NPA-NXXs exist, and generate an error if at least one does not exist.

Req 6 – NPA Split – Load File from LERG [Routing Guide](#) Data, Pushing Out PDP Start Date

NPAC SMS shall process the NPA Split Load Flat File and for each NPA split that is already scheduled in the NPAC SMS, check for an effective date change in the new NPA-NXX where the PDP start date is pushed out to a further date in the future, and if no pending subscription versions exist in the new NPA-NXX, update both the new NPA-NXX Effective Date and the PDP start date.

Note: The update of the new NPA-NXX effective date will be accomplished via a delete and re-add of the new NPA-NXX. Both of these will be broadcast to all accepting SOAs and LSMSs.

RN3-4.12 NPA Split – Exception Processing for Subscription Versions that exist in the New and Old NPA-NXX

NPAC SMS shall upon finding a subscription version that exists in the new NPA-NXX that currently exists in the old NPA-NXX during NPA split processing, do the following and continue processing:

- log an error
- the Subscription Version in the new NPA-NXX will be moved to old if active or to cancelled if it is in any pending state.
- the Subscription Version in the old NPA-NXX will be modified to the new NPA-NXX.

Req 7 – NPA Split – Load File from LERG [Routing Guide Data](#), Pulling In PDP Start Date

NPAC SMS shall process the NPA Split Load Flat File and for each NPA split that is already scheduled in the NPAC SMS, check for an effective date change in the new NPA-NXX where the PDP start date is pulled in to a closer date, and if no pending subscription versions exist in the new NPA-NXX, ~~delete the scheduled NPA split, delete the new NPA-NXX, update both the new NPA-NXX Effective Date and PDPD start date and log an error.~~

Note: ~~M&P will be added that indicate under this condition, NPAC Personnel will re-initiate the processing of the NPA Split file. The update of the new NPA-NXX effective date will be accomplished via a delete and re-add of the new NPA-NXX. Both of these will be broadcast to all accepting SOAs and LSMSs.~~

Req 8 – NPA Split – Load File from LERG [Routing Guide Data](#), Error Modifying PDP Start Date with Existing Subscription Versions

NPAC SMS shall process the NPA Split Load Flat File and for each NPA split that is already scheduled in the NPAC SMS, check for an effective date change in the new NPA-NXX where the PDP start date is modified, and if pending subscription versions exist in the new NPA-NXX, perform no updates to the NPA Split or new NPA-NXX, and log an error.

Req 9 – NPA Split – Load File from LERG [Routing Guide Data](#), Complete Processing of File

NPAC SMS shall process the NPA Split Load Flat File for each NPA split in the file, and shall NOT process any subsequent NPA Split Load Flat Files until the current file has been processed to completion, except in conditions where a subsequent file corrects an error in a previous file.

Req 10 – NPA Split – Load File from LERG [Routing Guide](#) Data, Re-Processing of File

NPAC SMS shall be capable of re-processing the NPA Split Load Flat File in cases where the file was not completely processed due to NPA split processing errors, except in conditions where a subsequent file corrects an error in a previous file.

Req 11 – NPA Split – Load File from LERG [Routing Guide](#) Data, Error Modifying PDP Start Date for NPA Split Already in Progress

NPAC SMS shall process the NPA Split Load Flat File for each NPA split in the file, and shall reject a modify PDP start date request, if the NPAC SMS has already initiated NPA Split processing for that NPA-NXX.

Req 12 – NPA Split – Load File from LERG [Routing Guide](#) Data, Adding an NXX to an Existing Split

NPAC SMS shall process the NPA Split Load Flat File and for an NPA split that is already scheduled or in permissive dialing in the NPAC SMS, and an additional NXX is being added to the split, the NPAC SMS shall accept the addition of the NXX to the existing split.

Note: The NPAC SMS will handle the additional split data appropriately (whether adding the NXX to the existing split, or creating a new split for the NPA-NXX), and maintain split data relationships between the existing split (NPA with different NXXs) and this newly added NXX (NPA with this new NXX), such that any subsequent actions on this split data will treat the relationship between all of the existing NPA-NXXs, and this newly added NXX, as part of the same split.

Req 13 – NPA Split – Load File from LERG [Routing Guide](#) Data Information on the Web

NPAC SMS shall inform all Service Providers about the processing of the NPA Split Load Flat File from LERG [Routing Guide](#) data via the Web bulletin board. The data field sent to the WEB bulletin board is the unique identifier for the file that is processed.

Note: the Web will contain the lastest full monthly file, plus the most recent incremental file.

Modifications to Section 3.5 of the FRS NPA Splits Requirements

AN3-4.1 NPA Split Information Source

~~The service provider responsible for the NPA split communicates NPA Split information to the NPAC default information source for NPA Split processing shall be the NPA Split Load Flat File, which is processed automatically based on a housekeeping process.~~

AN3-4.2 NPAC Personnel Manual NPA Split Request

NPAC SMS shall support a mechanism by which NPAC Personnel may manually enter the required information to initiate NPA Split processing.

Note: Manual entry of NPA Split information by NPAC Personnel is available in ‘emergency’ situations as deemed by industry and NPAC representatives. Manual entry of NPA Split information is not the default method for initiating NPA Split processing on the NPAC SMS.

RN3-4.1 NPA Split – NPA-NXX existence prior to the NPA Split

~~Deleted.~~ **NPAC SMS shall verify that only the new and the old NPA-NXX(s) involved in an NPA Split exist when NPAC personnel manually enter the split information.**

Note: When NPAC Personnel have to manually enter an NPA Split the New NPA-NXX(s) will automatically be broadcast to all accepting SOAs and LSMSS be opened via normal processing prior to the NPA Split.

RN3-4.2 NPA Split – New NPA-NXX existence prior to the NPA Split - Error

~~Deleted.~~ **NPAC SMS shall report an error to NPAC personnel and reject the manual NPA Split request upon determining that the new or old NPA-NXX(s) involved in an NPA Split do not already exist(s) at the time of entry when the NPA Split information is entered.**

RR3-XXX436 NPA Split – Old NPA-NXX non-existence prior to the NPA Split - Error

NPAC SMS shall report an error to NPAC personnel and reject the manual NPA Split request upon determining that the old NPA-NXX(s) involved in an NPA Split do(es) not already exist(s) at the time of entry.

RN3-4.3 NPA Split – NPA-NXX Effective Date Validation

~~Deleted.~~

RR3-XXX437 NPA Split – New NPA-NXX Creation

NPAC SMS shall automatically generate and broadcast the New NPA-NXX using the permissive dial period start date as the value to populate the effective date for the new NPA-NXX upon successful creation of the respective NPA Split information.

RN3-4.4 NPA Split – NPA-NXX Effective Date Validation – Error

~~Deleted.~~ **NPAC SMS shall report an error to NPAC personnel and reject the NPA Split upon determining that a new NPA-NXX involved in an NPA Split has an effective date not equal to the start of permissive dialing.**

RN3-4.5 NPA Split – NPA-NXX involved in one NPA Split Validation

~~NPAC SMS shall verify that the new NPA-NXX(s) involved in an NPA Split are not currently involved in another NPA Split when NPAC personnel enter the NPA split information *the NPA Split Load Flat File is processed.*~~ ~~DELETED~~

RN3-4.6 NPA Split – NPA-NXX involved in one NPA Split Validation

~~Deleted:~~ **NPAC SMS shall report an error to NPAC personnel and reject the manual NPA Split request upon determining that a new NPA-NXX involved in an NPA Split is currently involved in another NPA Split.**

Req 16 – NPA Split – NPA Split Load Flat File Exception Report with New NPA-NXX Already Involved in NPA Split

NPAC SMS shall provide an NPA Split Load Flat File Exception Report that identifies NPA splits that cannot be added to the NPAC SMS because the new NPA-NXX is currently involved in another NPA Split.

RN3-4.15 NPA Split – Entering of Split Data

~~Deleted:~~ **The NPAC SMS shall require the following data for manual entry of NPA Split information into the NPAC:**

- **the Service Provider Id**
- **the old and new NPA**
- **the affected NXX(s)**
- **the start date of the permissive dialing period**
- **the end date of the permissive dialing period**

RR3-XXX—438 NPA Split – Modification of Start Date of Permissive Dialing Date

NPAC SMS shall allow the modification of the permissive dial start date provided the modification is made prior to the scheduled permissive dial period start date and is modified to a date that is still prior to the permissive dial period end date.

RN3-4.19 NPA Split – Addition of NPA-NXX before or during Permissive Dialing -DELETED

~~NPAC SMS shall not allow the addition of an NPA-NXX to an NPA Split after the split data has been entered.~~

~~Note: Additional NPA-NXX(s) may be handled by manually entering a new NPA split into the NPAC SMS.~~

RN3-4.25 NPA Split - Old NPA-NXX involved in one NPA Split Validation

NPAC SMS shall verify that the old NPA-NXX(s) involved in an NPA Split are not currently involved in another NPA Split when **NPAC personnel manually enter the NPA split information or the NPA Split Load Flat File is processed.**

RN3-4.26 NPA Split - Old NPA-NXX involved in one NPA Split Validation - Error

~~Deleted.~~ **NPAC SMS shall report an error to NPAC personnel and reject the manual NPA Split request upon determining that an old NPA-NXX involved in an NPA Split is currently involved in another NPA Split.**

Req 17 – NPA Split – NPA Split Load Flat File Exception Report with Old NPA-NXX Already Involved in NPA Split

NPAC SMS shall provide an NPA Split Load Flat File Exception Report that identifies NPA splits that cannot be added to the NPAC SMS because the old NPA-NXX is currently involved in another NPA Split.

RN3-4.29 NPA Split - Old NPA-NXX and New NPA-NXX Ownership Validation - Error

~~Deleted.~~ **NPAC SMS shall report an error to NPAC personnel and reject the NPA Split upon determining that the owner of the old NPA-NXX does not match the owner of the new NPA-NXX for each NXX in a NPA split.**

Req 18 – NPA Split – NPA Split Load Flat File Exception Report with Mismatched SPIDs for Old and New NPA-NXX

NPAC SMS shall provide an NPA Split Load Flat File Exception Report that identifies NPA splits that cannot be added to the NPAC SMS because the owner of the old NPA-NXX does not match the owner of the new NPA-NXX.

RN3-4.31 NPA Split Current and Pending NPA Split Report

NPAC SMS shall support a Current and Pending NPA Split Report for NPA Splits before or during their permissive dialing period that contains all split data entered as defined in RN3-4.15.

NPA-NXX-X Holder, NPA Splits

RR3-32 NPA Splits and the Number Pool NPA-NXX-X Holder Information – New NPA Split Error Message if New NPA-NXX-X Already Exists ~~-DELETED~~

NPAC SMS shall reject the request and generate an error message ~~to the NPAC Personnel~~ when a request is made to add an NPA Split, and the new NPA-NXX-X already exists in the Number Pooling NPA-NXX-X Information. (Previously N-301)

Req 19 – NPA Split – NPA Split Load Flat File Exception Report with Already Existing New NPA-NXX-X ~~DELETED~~

NPAC SMS shall provide an NPA Split Load Flat File Exception Report that identifies NPA splits that cannot be added to the NPAC SMS because the new NPA-NXX-X already exists in the Number Pooling NPA-NXX-X Information.

IIS:

Flows B.8.2 and B.8.2.1, *NPA-NXX Split* will be updated from “Action is taken by the NPAC SMS personnel to create an NPA-NXX split.” to say, “NPAC SMS will create NPA-NXX split data based on information in the NPA Split Load Flat File from the LERG [Routing Guide](#).”

Also, “The NPA-NXX owner service provider first creates the new NPA-NXX.” will be updated say, “The NPAC SMS will automatically generate the add/modify/delete of the new NPA-NXX based on information in the NPA Split Load Flat File from the LERG [Routing Guide](#).”

GDMO:

No change required.

ASN.1:

No change required.

M&P:

1. SP can no longer contact NPAC personnel for entering/modifying/removing split information for them in the NPAC database.
2. NPAC personnel need to contact SP for NPA-NXXs on the NPA Split Load Flat File Exception Report.

Origination Date: 6/5/1998

Originator: Sprint

Change Order Number: NANC 218

Description: Conflict Timestamp Broadcast to SOA

Pure Backwards Compatible: NO

Interface and Functional Backwards Compatible: YES

IMPACT/CHANGE ASSESSMENT

FRS	IIS	GDMO	ASN.1	NPAC	SOA	LSMS
	Y	Y		Low	Low	N/A

Business Need:

Currently the SP does not know exactly when a telephone number was placed into conflict with out querying the NPAC database. SPs need to take action to resolve the conflict in order to complete the port.

This change order will provide a timestamp on the NPAC broadcast to the SPs SOA. This will minimize traffic to the NPAC and ensure the SP can take timely action.

Description of Change:

It has been requested that when a subscription gets placed in conflict, that the time that the subscription version was placed into conflict be broadcast in the status attribute value change notifications to the SOA. Currently it is defined in the IIS on page 262 (version 1.8) that NPAC is not required to send the timestamp information. This change would prevent the service provider SOA from having to query the NPAC anytime they need to retrieve a timestamp. This conflict timestamp is needed so that the new service provider knows when the 6-hour timer has expired and so that they can remove it from conflict. Also the presence of this timestamp indicates if the subscription has been placed into conflict before.

Requirements:

No change required (generically covered in R5-44.2 and R5-44.3).

IIS:

B.5.2.3 SubscriptionVersion Modify Prior to Activate Using M-ACTION

This scenario can only be performed when the subscriptionVersionStatus is conflict or pending.

Step-by-step message flow text is shown below:

1. Action is taken by a service provider to modify a subscriptionVersion by specifying the TN, TN range, and the version status, or by specifying the version ID of the subscription version to be modified; and the data to be modified.

The old service provider can only update the following attributes:

subscriptionOldSP-DueDate (seconds set to zeros)
subscriptionOldSP-Authorization
subscriptionStatusChangeCauseCode

NOTE: The subscriptionStatusChangeCauseCode can only be modified when the subscriptionOldSP-Authorization is set to FALSE

The new service provider can only update the attributes:

subscriptionLRN
subscriptionNewSP-DueDate (seconds set to zeros)
subscriptionCLASS-DPC
subscriptionCLASS-SSN
subscriptionLIDB-DPC
subscriptionLIDB-SSN
subscriptionCNAM-DPC
subscriptionCNAM-SSN
subscriptionISVM-DPC
subscriptionISVM-SSN
subscriptionWSMSC-DPC - if supported by the Service Provider SOA
subscriptionWSMSC-SSN - if supported by the Service Provider SOA
subscriptionEndUserLocationValue
subscriptionEndUserLocationType
subscriptionBillingId

2. Service provider SOA issues M-ACTION subscriptionVersionModify to the NPAC SMS InpSubscriptions object to update the version. The NPAC SMS validates the data.
3. If validation is successful, NPAC SMS will M-SET the attributes modified in the subscriptionVersionNPAC object and set the subscriptionModifiedTimeStamp.
4. The NPAC SMS will issue an M-SET response.
5. NPAC SMS replies to the M-ACTION with success or failure and reasons for failure.

Note: If the old service provider was the initiator of the M-ACTION that caused the subscription version status to change, the NPAC SMS would issue a subscriptionVersionStatusAttributeValueChange M-EVENT-REPORT to the old and new service provider SOAs.

6. NPAC SMS issues M-EVENT-REPORT attributeValueChange to the old service provider SOA. *If the subscriptionVersionStatus was set to conflict, include the subscriptionConflictTimeStamp attribute in the broadcast.*
7. The old service provider SOA returns M-EVENT-REPORT confirmation to the NPAC SMS.

8. NPAC SMS issues M-EVENT-REPORT attributeValueChange to the new service provider SOA. *If the subscriptionVersionStatus was set to conflict, include the subscriptionConflictTimeStamp attribute in the broadcast.*
9. The new service provider SOA returns M-EVENT-REPORT confirmation to the NPAC SMS.

B.5.2.4 SubscriptionVersion Modify Prior to Activate Using M-SET

This scenario shows a modify using an M-SET. The M-SET can only be performed when the subscriptionVersionStatus is conflict or pending.

Step-by-step message flow text is shown below:

1. Action is taken by a service provider to modify the subscriptionVersion by specifying the TN, TN range, and the version status, or by specifying the version ID of the subscription version to be modified; and the data to be modified. The old service provider can only update the following attributes:

subscriptionOldSP-DueDate (seconds set to zeros)
subscriptionOldSP-Authorization
subscriptionStatusChangeCauseCode

NOTE: The subscriptionStatusChangeCauseCode can only be modified when the subscriptionOldSP-Authorization is set to FALSE

The new service provider can only update the attributes:

subscriptionLRN
subscriptionNewSP-DueDate (seconds set to zeros)
subscriptionCLASS-DPC
subscriptionCLASS-SSN
subscriptionLIDB-DPC
subscriptionLIDB-SSN
subscriptionCNAM-DPC
subscriptionCNAM-SSN
subscriptionISVM-DPC
subscriptionISVM-SSN
subscriptionWSMSC-DPC - if supported by the Service Provider SOA
subscriptionWSMSC-SSN - if supported by the Service Provider SOA
subscriptionEndUserLocationValue
subscriptionEndUserLocationType
subscriptionBillingId

2. The new or old service provider SOA will issue an M-SET request for the attributes to be updated in the subscriptionVersionNPAC object. The request will be validated for an authorized service provider and validation of the attributes and values.
3. The NPAC SMS will issue an M-SET response indicating success or failure and reasons for failure.

Note: If the old service provider was the initiator of the M-SET that caused the subscription version status to change, the NPAC SMS would issue a subscriptionVersionStatusAttributeValueChange M-EVENT-REPORT to the old and new service provider SOAs

4. NPAC SMS issues M-EVENT-REPORT attributeValueChange to the old service provider SOA. *If the subscriptionVersionStatus was set to conflict, include the subscriptionConflictTimeStamp attribute in the broadcast.*

5. The old service provider SOA returns M-EVENT-REPORT confirmation to the NPAC SMS.
6. NPAC SMS issues M-EVENT-REPORT attributeValueChange to the new service provider SOA. *If the subscriptionVersionStatus was set to conflict, include the subscriptionConflictTimeStamp attribute in the broadcast.*
7. The new service provider SOA returns M-EVENT-REPORT confirmation to the NPAC SMS.

B.5.5.1 SubscriptionVersion Conflict and Conflict Resolution by the NPAC SMS

This scenario shows a version being placed into conflict and removed from conflict by the NPAC personnel.

Step-by-step message flow text is shown below:

1. NPAC personnel or NPAC SMS take action to set the status of a subscription to “conflict.”
2. NPAC SMS issues M-SET request to update subscriptionVersionStatus to “conflict,” subscriptionConflictTimeStamp, and subscriptionModifiedTimeStamp in the subscriptionVersionNPAC object.
3. NPAC SMS issues an M-SET response. If the M-SET fails, processing for this scenario stops.
4. NPAC SMS issues an M-EVENT-REPORT subscriptionVersionStatusAttributeValueChange to old service provider SOA.
5. The old service provider SOA returns an M-EVENT-REPORT confirmation to the NPAC SMS.
6. NPAC SMS issues subscriptionVersionStatusAttributeValueChange for status to new service provider SOA.
7. The new service provider SOA returns an M-EVENT-REPORT confirmation to the NPAC SMS.
8. NPAC SMS sends a subscriptionVersionStatusAttributeValueChange to set the old service provider’s authorization to “FALSE”. *Since the subscriptionVersionStatus was set to conflict, include the subscriptionConflictTimeStamp attribute in the broadcast.*
9. The old service provider SOA returns an M-EVENT-REPORT confirmation to the NPAC SMS.
10. NPAC SMS sends an AttributeValueChange to set the new service provider authorization to “FALSE”. *Since the subscriptionVersionStatus was set to conflict, include the subscriptionConflictTimeStamp attribute in the broadcast.*
11. The new service provider SOA returns an M-EVENT-REPORT confirmation to the NPAC SMS.
12. Once the conflict is resolved, NPAC personnel take action to remove the subscriptionVersion from conflict.
13. NPAC SMS issues an M-SET request to update the subscriptionModifiedTimeStamp and the subscriptionVersionStatus to “pending.”
14. NPAC SMS issues an M-SET response. If the M-SET fails, processing for this scenario stops.
15. NPAC SMS issues subscriptionVersionStatusAttributeValueChange for the new status to the old service provider SOA.
16. The old service provider SOA returns an M-EVENT-REPORT confirmation to the NPAC SMS.
17. NPAC SMS issues subscriptionVersionStatusAttributeValueChange for the new status to the new service provider SOA.
18. The new service provider SOA returns an M-EVENT-REPORT confirmation to the NPAC SMS.
19. NPAC SMS sends a subscriptionVersionStatusAttributeValueChange to the old service provider’s indicating the authorization has been set to “TRUE”.
20. The old service provider SOA returns an M-EVENT-REPORT confirmation to the NPAC SMS.

21. NPAC SMS sends an AttributeValueChange to the new service provider indicating the authorization has been set to “TRUE”.
22. The new service provider SOA returns an M-EVENT-REPORT confirmation to the NPAC SMS.

B.5.5.3 SubscriptionVersion Conflict: No Conflict Resolution

This scenario shows the action taken at the NPAC SMS when service providers do not reach a conflict resolution.

Step-by-step message flow text is shown below:

1. NPAC personnel or NPAC SMS take action to set a subscriptionVersionStatus to “conflict.”
2. NPAC SMS issues an M-SET request to set the subscriptionVersionStatus to “conflict,” the subscriptionConflictTimeStamp, and the subscriptionModifiedTimeStamp in the subscriptionVersionNPAC object.
3. NPAC SMS responds to M-SET. If the M-SET fails, processing stops for this scenario until the M-SET completes successfully.
4. NPAC SMS issues subscriptionVersionStatusAttributeValueChange to old service provider SOA for the new “conflict” status.
5. The old service provider SOA returns an M-EVENT-REPORT confirmation to the NPAC SMS.
6. NPAC SMS issues subscriptionVersionStatusAttributeValueChange to new service provider SOA for the “conflict” status.
7. The new service provider SOA returns an M-EVENT-REPORT confirmation to the NPAC SMS.
8. *NPAC SMS issues M-EVENT-REPORT attributeValueChange to old service provider SOA. Since the Subscription Version Status was set to conflict, include the subscriptionConflictTimeStamp attribute in the broadcast.*
9. *The old service provider SOA returns an M-EVENT-REPORT confirmation to the NPAC SMS.*
10. *NPAC SMS issues M-EVENT-REPORT attributeValueChange to new service provider SOA. Since the Subscription Version Status was set to conflict, include the subscriptionConflictTimeStamp attribute in the broadcast.*
11. *The new service provider SOA returns an M-EVENT-REPORT confirmation to the NPAC SMS.*
12. “Version Conflict Cancellation Window” expires without conflict resolution.
13. NPAC SMS issues an M-SET request to set the subscriptionVersionStatus to “cancel” in the subscriptionVersionNPAC object and sets the subscriptionCancellationTimeStamp and subscriptionModifiedTimeStamp.
14. NPAC SMS responds to M-SET. If the M-SET fails, processing stops for this scenario until the M-SET is successfully completed.
15. NPAC SMS issues *status* attribute value change for status to new service provider SOA for the “cancel” status.
16. The new service provider SOA returns an M-EVENT-REPORT confirmation to the NPAC SMS.
17. NPAC SMS issues *status* attribute value change for status to old service provider SOA for the “cancel” status.

18. The old service provider SOA returns an M-EVENT-REPORT confirmation to the NPAC SMS.

B.5.5.4 Subscription Version Conflict by Old Service Provider Explicitly Not Authorizing (First Create)

The old service provider SOA can put a pending subscription version into conflict by setting its authorization flag to **off**. This can be done on the subscriptionVersionOldSP-Create action, subscriptionVersionModify action, or M-SET of the attribute on the subscription version object.

This scenario shows the old service provider putting a new pending subscription version into conflict by turning the authorization flag off on the subscriptionVersionOldSP-Create. In this case, the old service provider's create action is the first sent to the NPAC SMS.

Step-by-step message flow text is shown below:

1. Action is taken by the old service provider to set a subscription version to conflict using the subscriptionVersionOldSP-Create action.
2. The old service provider SOA sends M-ACTION subscriptionVersionOldSP-Create to the NPAC SMS InpSubscriptions object to create a new subscriptionVersionNPAC with the status of "conflict".

The old service provider SOA specifies the following valid attributes:

subscriptionTN or valid subscriptionVersionTN-Range
subscriptionNewCurrentSP
subscriptionOldSP
subscriptionOldSP-DueDate (seconds set to zeros)
subscriptionOldSP-Authorization
subscriptionLNPTtype
subscriptionStatusChangeCauseCode

In this case, the subscriptionOldSP-Authorization is set to **NO**.

3. NPAC SMS issues M-CREATE to create the subscriptionVersionNPAC with a status of "conflict" and sets all the other attribute values from the subscriptionVersionOldSP-Create action.
4. NPAC SMS issues M-CREATE response.
5. NPAC SMS returns M-ACTION reply. This either reflects a success or failure and reasons for the failure.
6. If the action was successful, the NPAC SMS issues the M-EVENT-REPORT to the old service provider SOA notifying them of the object creation. *If the subscriptionVersionStatus was set to conflict, include the subscriptionConflictTimeStamp attribute in the broadcast.*
7. The old service provider SOA confirms the M-EVENT-REPORT.
8. If the action was successful, the NPAC SMS issues the M-EVENT-REPORT to the new service provider SOA notifying them of the object creation. *If the subscriptionVersionStatus was set to conflict, include the subscriptionConflictTimeStamp attribute in the broadcast.*
9. The new service provider SOA confirms the M-EVENT-REPORT.

GDMO:

No change required.

ASN.1:

No change required.

M&P:

No change required.

Origination Date: 8/12/1998

Originator: Sprint

Change Order Number: NANC 230

Description: Donor SOA Port-To-Original of an Intra-Service Provider Port

Pure Backwards Compatible: NO

Interface and Functional Backwards Compatible: YES

IMPACT/CHANGE ASSESSMENT

FRS	IIS	GDMO	ASN.1	NPAC	SOA	LSMS
Y	Y	Y		Med	Med	N/A

Business Need:

The current implementation does not allow an SP to revert an intra-ported TN from routing based on LRN to routing based on dialed digits (non-LRN) without disconnecting the TN. The disconnecting of the TN creates operational problems because the systems think that the TN is deleted/disconnected yet the customer is still in service. This change order will enable SPs to perform a "port to original" of an intra-ported TN. This will increase operational effectiveness and uninterrupted customer service.

Description of Change:

The current NPAC SMS functionality does not allow a Donor SOA to create a PTO SV with LNPTType = LISP.

The business scenario is that a customer is “home'd” to switch A, then moves down the street and is “home'd” to switch B (still in same rate center, so was LISP-ed to switch B), then moves back up the street (and needs to be re “home'd” to switch A, but is still a working number). In this scenario, the SP should send an LISP PTO create and activate.

Requirements:

5.1.2.2.1.1 Subscription Version Creation – Inter-Service Provider Port

R5-15.2 Create “Inter-Service Provider porting to original Port” Subscription Version - New Service Provider Input Data

NPAC SMS shall require the following data from NPAC personnel or the new Service Provider upon Subscription Version creation for an Inter-Service Provider “porting to original” port:

Local Number Portability Type - Port Type. This field must be set to “LSPP” for “*Inter-Service Provider* porting to original” ports.

Ported Telephone Number(s) - this entry can be a single TN or a continuous range of TNs that identifies a subscription or a group of Subscription Versions that share the same attributes.

Due Date - date on which transfer of service from old facilities-based Service Provider to new facilities-based Service Provider is initially planned to occur.

New Facilities-based Service Provider ID - the identifier of the new facilities-based Service Provider.

Old Facilities-based Service Provider ID - the identifier of the old facilities-based Service Provider.

Porting to original - flag indicating whether or not this is a “porting to original” port. This flag must be set to “TRUE” for “*Inter-Service Provider* porting to original” ports, *and set to FALSE for other Inter-Service Provider ports.*

5.1.2.2.1.2 Subscription Version Creation - Intra-Service Provider Port

This section provides the Subscription Version Creation requirements for performing an Intra-Service Provider port of a TN. An Intra-Service Provider port of a TN is when a TN is ported to a new location within the current Service Provider network (i.e., the routing data is modified, but the Service Provider remains the same). A “port to original” port for an Intra-Service Provider port should be handled by a requesting user via submission of *an Intra-Service Provider “port to original” port to the NPAC SMS.*

RR5-4 Create “Intra-Service Provider Port” Subscription Version - Current Service Provider Input Data

NPAC SMS shall require the following data from the NPAC personnel or the Current (New) Service Provider at the time of Subscription Version Creation for an Intra-Service Provider port when **NOT** porting to original:

LNP Type - port type, this field must be set to “LISP” for Intra-Service Provider ports.

Ported Telephone Number(s) - this entry can be a single TN or a continuous range of TNs that identifies a subscription or group of Subscription Versions that share the same attributes.

Due Date - date on which Intra-Service Provider port is planned to occur.

New facilities-based Service Provider ID - current Service Provider within which the Intra-Service Provider port will occur.

Old facilities-based Service Provider ID - current Service Provider within which the Intra-Service Provider port will occur.

Location Routing Number (LRN) - identifier of the ported-to switch

Class DPC

Class SSN

LIDB DPC

LIDB SSN

CNAM DPC

CNAM SSN

ISVM DPC

ISVM SSN

WSMSC DPC (if supported by the Service Provider SOA)

WSMSC SSN (if supported by the Service Provider SOA)

Porting to Original – flag indicating whether or not this is a “porting to original” port. This flag must be set to FALSE for this type of Intra-Service Provider port.

Req 1 Create “Intra-Service Provider porting to original Port” Subscription Version - New Service Provider Input Data

NPAC SMS shall require the following data from NPAC personnel or the new Service Provider upon Subscription Version creation for an Intra-Service Provider “porting to original” port:

Local Number Portability Type - Port Type. This field must be set to “LISP” for “*Intra-Service Provider* porting to original” ports.

Ported Telephone Number(s) - this entry can be a single TN or a continuous range of TNs that identifies a subscription or a group of Subscription Versions that share the same attributes.

Due Date - date on which Intra-Service Provider port is planned to occur.

New Facilities-based Service Provider ID – current Service Provider within which the Intra-Service Provider port will occur.

Old Facilities-based Service Provider ID – current Service Provider within which the Intra-Service Provider port will occur.

Porting to original - flag indicating whether or not this is a “porting to original” port. This flag must be set to “TRUE” for “Intra-Service Provider porting to original” ports, and set to “FALSE” for other Intra-Service Provider ports.

RR5-6.1 Create “Intra-Service Provider Port” Subscription Version - Field-level Data Validation

NPAC SMS shall perform field-level data validations to ensure that the value formats for the following input data, if supplied, is valid according to the formats specified in Table 3-6 upon Subscription Version creation for an Intra-Service Provider port:

LNP Type

Ported TN(s)

Current Service Provider Due Date

Old Service Provider ID
New Service Provider ID
LRN
Class DPC
Class SSN
LIDB DPC
LIDB SSN
CNAM DPC
CNAM SSN
ISVM DPC
ISVM SSN
WSMSC DPC (if supported by the Service Provider SOA)
WSMSC SSN (if supported by the Service Provider SOA)
Porting to Original
Billing Service Provider ID
End-User Location - Value
End-User Location - Type

RR5-576 Create Inter-Service Provider Port-to-Original Port – NPAC and SOA After NPA-NXX-X Creation

NPAC SMS shall reject an inter-service provider Subscription Version Create message *where there is no active subscription version for the requested TN*, or an inter-service provider Port-to-Original Subscription Version Create message, for a TN within the 1K Block, from NPAC Personnel, a Service Provider SOA via the SOA to NPAC SMS Interface, or Service Provider via the NPAC SOA Low-tech Interface, after the Creation of the NPA-NXX-X, and prior to the existence of the Block in the NPAC SMS. (wording change to existing requirement)

Req 2 Create Intra-Service Provider Port-to-Original Port – NPAC and SOA After NPA-NXX-X Creation

NPAC SMS shall reject an intra-service provider Port-to-Original Subscription Version Create message for a TN within the 1K Block, from NPAC Personnel, a Service Provider SOA via the SOA to NPAC SMS Interface, or Service Provider via the NPAC SOA Low-tech Interface, after the Creation of the NPA-NXX-X, and prior to the existence of the Block in the NPAC SMS.

RR5-577 Create Intra- or Inter-Service Provider Port-to-Original Subscription Version – After Block Activation

NPAC SMS shall validate that the New Service Provider is the Block Holder, in an *intra-service provider Port-to-Original Subscription Version Create message* or inter-service provider port-to-original port for a TN within the 1K Block, once the Block exists in the NPAC SMS.

IIS:

New flow is shown below:

B.5.1.x SubscriptionVersion Create for Intra-Service Provider Port with Port-to-Original

This scenario shows how an intra-service port with port-to-original is processed.

SOA	NPAC SMS	Local SMS	
SOA takes action			1
→ M-ACTION svNewSP-Create			2
	Internal, M-CREATE Request svNPAC		3
	Internal, M-CREATE Response		4
← M-ACTION Response			5
← M-EVENT-REPORT objectCreation			6
→ M-EVENT-REPORT Confirm			7

1. Action is taken by the current provider SOA to create a new version of a subscriber that is porting back to the original switch.
2. Current provider SOA sends M-ACTION subscriptionVersionNewSP-Create to the NPAC SMS InpSubscriptions object to create a new subscriptionVersionNPAC. The SOA must specify the following valid attributes:

- subscriptionTN or a valid subscriptionVersionTN-Range
- subscriptionNewCurrentSP
- subscriptionOldSP
- subscriptionNewSP-DueDate (seconds set to zeros)
- subscriptionPortingToOriginal-SPSwitch (set to TRUE)
- subscriptionLRN
- subscriptionCLASS-DPC
- subscriptionCLASS-SSN
- subscriptionLIDB-DPC
- subscriptionLIDB-SSN
- subscriptionCNAM-DPC
- subscriptionCNAM-SSN
- subscriptionISVM-DPC
- subscriptionISVM-SSN
- subscriptionLNType (set to LISP)
- subscriptionWSMSC-DPC - if supported by the Service Provider SOA
- subscriptionWSMSC-SSN - if supported by the Service Provider SOA

The subscriptionNewCurrentServiceProv must be equal to the subscriptionOldServiceProv.

The following attributes are optional:

- subscriptionEndUserLocationValue
- subscriptionEndUserLocationType
- subscriptionBillingId

3. If the request is valid, the NPAC SMS will M-CREATE the subscriptionVersionNPAC object. The status will be set to “pending.” Also the subscriptionCreationTimeStamp, the subscriptionNewSP-AuthorizationTimeStamp, subscriptionOldSP-AuthorizationTimeStamp, and the subscriptionModifiedTimeStamp will be set.
4. NPAC SMS responds to M-CREATE.

5. NPAC SMS sends an action reply with success or failure and reasons for failure. If the action fails, no modifications are applied and processing stops for this scenario.
6. NPAC SMS notifies intra-service provider SOA of subscriptionVersionNPAC creation.
7. Service provider SOA sends M-EVENT-REPORT confirmation to NPAC SMS.

The intra-service subscriptionVersion now follows the same flow as an inter-service subscriptionVersionCreation to activate the subscriptionVersion on the NPAC SMS and create the subscriptionVersion on the Local SMSs.

The only difference is the M-EVENT-REPORT for the subscriptionVersionStatusAttributeValueChange is only sent to the new provider.

GDMO:

-- 11.0 LNP New Service Provider Subscription Version Create

```
subscriptionVersionNewSP-Create ACTION
  BEHAVIOUR
    subscriptionVersionNewSP-CreateDefinition,
    subscriptionVersionNewSP-CreateBehavior;
  MODE CONFIRMED;
  WITH INFORMATION SYNTAX LNP-ASN1.NewSP-CreateAction;
  WITH REPLY SYNTAX LNP-ASN1.NewSP-CreateReply;
  REGISTERED AS {LNP-OIDS.lnp-action 11};

subscriptionVersionNewSP-CreateDefinition BEHAVIOUR
  DEFINED AS !
    The subscriptionVersionNewSP-Create action is the action that is
    used via the SOA to NPAC SMS interface by the
    new service provider to create a new subscriptionVersionNPAC.
  !;

subscriptionVersionNewSP-CreateBehavior BEHAVIOUR
  DEFINED AS !
    Preconditions: This action is issued from an lnpSubscriptions
    object. Creates can be performed provided there is only one
    currently active subscription or no subscription version in the
    NPAC; otherwise an action failure will be returned.

    The new service provider must specify valid values for the
    following attributes:

    subscriptionTN or a valid subscriptionVersionTN-Range
    subscriptionLRN
    subscriptionNewCurrentSP
    subscriptionOldSP
    subscriptionNewSP-DueDate
    subscriptionCLASS-DPC
    subscriptionCLASS-SSN
    subscriptionLIDB-DPC
    subscriptionLIDB-SSN
    subscriptionCNAM-DPC
    subscriptionCNAM-SSN
    subscriptionISVM-DPC
    subscriptionISVM-SSN
    subscriptionLNPTtype
    subscriptionPortingToOriginal-SPSwitch
```


The new service provider must specify valid values for the following attributes, when the service provider's "SOA WSMSC DPC SSN Data" indicator is TRUE, and must NOT specify these values when the indicator is set to FALSE:

subscriptionWSMSC-DPC
subscriptionWSMSC-SSN

The new service provider may specify valid values for the following attributes:

subscriptionEndUserLocationValue
subscriptionEndUserLocationType
subscriptionBillingId

subscriptionPortingToOriginal-SPSwitch can only be specified as TRUE for a TN that is currently ported and is being ported back to the original service provider, **along with the home switch of the NPA-NXX**. If the value of subscriptionPortingToOriginal-SPSwitch is TRUE, the LRN and GTT data should be specified as NULL. If the **value of subscriptionPortingToOriginal-SPSwitch** is TRUE, when the activate occurs for the subscription version, the Local SMSs will receive a request to delete the old subscription version routing data in their networks. They will not receive any new network routing data for the subscription. Concurrence from the old service provider is required. **If the value of subscriptionPortingToOriginal-SPSwitch is TRUE, the LNP Type may be either "LSPP" or "LISP"**.

If the port of the subscription version is an intra-service provider port, the new service provider can use the subscriptionVersionNewSP-Create action specifying the old service provider equal to the new service provider. In this case, the old service provider create action is not required.

Postconditions: After this action has been executed, if the data specified passes validation, a pending subscription version or range of subscription versions will exist in the NPAC SMS. These validations are done as follows:

subscriptionTN or range of TNs are valid in a range open for porting by the new service provider. TN ranges must be specified where the stop TN in the range is greater than the start TN.

subscriptionLNPTType is specified to be "LSPP" or "LISP".

subscriptionNewSP-DueDate is a future date. If not specified, the time defaults to 00:00.00.

Old and New SP are valid service providers in the NPAC SMS.

LRN data is associated with the New Service Provider.

If a pre-existing version exists, validation will be done to insure

that the new service provider previously specified is the same as the executor of the action.

If the validations succeed and the subscription version does not currently exist, a new subscription version will be created with a status of pending.

If the validations succeed and a pending subscription version exists, the new service provider create information will be applied to the existing pending subscription version.

If the validations fail, a new subscription version will not be created if one does not exist. If one already existed, it will be retained.

The action success or failure and reasons for failure will be returned in the action reply.

!;

ASN.1:

No change required.

M&P:

No change required.

Origination Date: 12/9/1998

Originator: Sprint

Change Order Number: NANC 249

Description: Modification of Dates for a Disconnect Pending SV

Pure Backwards Compatible: NO

Interface and Functional Backwards Compatible: YES

IMPACT/CHANGE ASSESSMENT

FRS	IIS	GDMO	ASN.1	NPAC	SOA	LSMS
Y	Y	Y		Low	Med	N/A

Business Need:

The current situation requires an SP to cancel the existing order and create a new order to change a pending disconnect date. This change order would allow modification of the customer disconnect date resulting in labor savings in the work center.

Description of Change:

The NPAC should be changed to allow a Service Provider to modify the CDD (Customer Disconnect Date) and ERD (Effective Release Date) for an SV that has a status of “disconnect pending”.

The current Service Provider would send a subscriptionVersionModify using an M-ACTION. The two attributes that would need to be added as “modifiable” are subscriptionCustomerDisconnectDate and subscriptionEffectiveReleaseDate.

Requirements:

R5-25 Modify Subscription Version - Invalid Version Status Notification

NPAC SMS shall return an error to the originating NPAC personnel, *NPAC SOA Low-tech Interface users*, or SOA to NPAC SMS interface user if the version status is sending, failed, partial failure, canceled, cancel pending, *or* old ~~or disconnect pending~~ upon Subscription Version modification.

Req 1 Modify Disconnect Pending Subscription Version - Input Data

NPAC SMS shall allow the following data to be modified for a disconnect pending Subscription Version:

- Customer Disconnect Date
- Effective Release Date

Req 2 Modify Disconnect Pending Subscription Version - Field-level Data Validation

NPAC SMS shall perform field-level data validations to ensure that the value formats for the following input data, if supplied, is valid according to the formats specified in Table 3-6 upon Subscription Version modification of a disconnect pending version:

Customer Disconnect Date
Effective Release Date

RR5-11 Modify Active/Disconnect Pending Subscription Version - Service Provider Owned

NPAC SMS shall allow only NPAC personnel and the current Service Provider to modify their own active/*disconnect pending* Subscription Versions.

Req 3 Modify Disconnect Pending Subscription Version - Version Identification

NPAC SMS shall require the following data from NPAC personnel, *NPAC SOA Low-tech Interface users*, or SOA to NPAC SMS interface users to identify the disconnect pending Subscription Version to be modified:

Ported Telephone Numbers (or a specified range of numbers) and status of Disconnect Pending
or
Subscription Version ID

R5-39.1 Modify Active/Disconnect Pending Subscription Version - Validation Failure Notification

NPAC SMS shall send an appropriate error message to the originating user if the modified active/*disconnect pending* Subscription Version fails validations.

R5-39.2 Modify Active/Disconnect Pending Subscription Version - Validation Error Processing

NPAC SMS shall leave the original version intact upon validation failure of a modified active/*disconnect pending* Subscription Version.

Req 4 Activation Of A Modified Disconnect Pending Subscription Version when ERD is Modified to Current Date

NPAC SMS shall proceed with the broadcast immediate disconnect subscription process upon successful modification of a disconnect pending Subscription Version, only in cases where the Effective Release Date has been modified to the current date/time or previous date/time, in the NPAC SMS.

Note: If the ERD is set to a future date/time, the NPAC SMS will not broadcast any updates at the time of modification. The disconnect broadcast will occur once the future date/time has been reached in the NPAC SMS.

Req 5 Modify Disconnect Pending Subscription Version – Rejection for Empty CDD

NPAC SMS shall reject a Subscription Version Modify Disconnect Pending Request, if the new value for the Customer Disconnect Date is not populated.

Note to Service Providers: If changing the Customer Disconnect Date, the date must be populated in the message that is sent to the NPAC. If the SOA is not changing the date, the date must still be sent to the NPAC in the Modify Disconnect Pending Request with the same/current value.

Note to Service Providers: In the case where a SOA is modifying a range of disconnect-pending Subscription Versions that have different CDD or ERD values, all of the Subscription Versions in that range will be updated to the same CDD or ERD value, even though they previously had different values.

Req 6 Modify Disconnect Pending Subscription Version – Valid Dates for CDD and ERD

NPAC SMS shall allow a Subscription Version Modify Disconnect Pending Request, to contain date/time values in the past for the Customer Disconnect Date and Effective Release Date.

IIS:

New flow is shown below:

B.5.2.x SubscriptionVersion Modify Disconnect Pending Version Using M-ACTION by a Service Provider SOA

This scenario shows the modification of a disconnect pending subscription. The modification of a disconnect pending subscription version can be performed using an M-ACTION only by the current service provider SOA.

Current SOA	NPAC SMS	Local SMS	
SOA takes action			1
→ M-ACTION svModify			2
	Internal, M-SET Request svNPAC		3
	Internal, M-SET Response		4
← M-ACTION Response			5

1. Action is taken by current service provider to modify a disconnect pending subscription version by specifying the TN, TN range, and the version status, or by specifying the version ID of the subscription version to be modified; and the data to be modified.

The current service provider can only modify the following attributes:

subscriptionCustomerDisconnectDate
subscriptionEffectiveReleaseDate

2. Current service provider SOA issues M-ACTION ModifySubscriptionVersion to the NPAC SMS InpSubscriptions object to update the disconnect pending version. The NPAC SMS validates the data.
3. If the M-ACTION data validates, NPAC SMS issues M-SET to the subscriptionVersionNPAC. The subscriptionModifiedTimeStamp is set, and any other modified attributes are updated.

4. NPAC SMS issues M-SET response indicating success or failure.
5. NPAC SMS replies to the M-ACTION with success or failure and reasons for failure to the service provider SOA. If the action fails, no modifications are applied and processing stops. Failure reasons include accessDenied (not the current service provider) and invalidArgumentValue (validation problems).

If the newly modified ERD is the current date or a previous date, the NPAC will follow the “immediate disconnect” flow (B.5.4.1). Otherwise, it will follow the future dated ERD flow (B.5.4.2).

GDMO:

-- 7.0 LNP Subscription Version Modify Action

subscriptionVersionModify ACTION

BEHAVIOUR

subscriptionVersionModifyDefinition,
subscriptionVersionModifyBehavior;
MODE CONFIRMED;
WITH INFORMATION SYNTAX LNP-ASN1.ModifyAction;
WITH REPLY SYNTAX LNP-ASN1.ModifyReply;
REGISTERED AS {LNP-OIDS.lnp-action 7};

subscriptionVersionModifyDefinition BEHAVIOUR

DEFINED AS !

The subscriptionVersionModify action is the action that can be used by the SOA to modify a subscription version via the SOA to NPAC SMS interface.

!;

subscriptionVersionModifyBehavior BEHAVIOUR

DEFINED AS !

Preconditions: This action is issued from an lnpSubscriptions object specifying the object to be modified by specifying the subscriptionVersionId or by specifying the subscriptionTN or a range of TNs (where the stop TN in the range is greater than the start TN) and the status of the subscription version. All attribute values to be modified shall also be specified.

Postconditions: The NPAC SMS has modified the subscription version. An error will be returned to the service provider if there is no version that is modifiable or if the modification fails due to authorization of the service provider or data validation.

Subscription versions with subscriptionLNPTType equal to 'pool' cannot be specified in the action.

Service Providers can modify attributes associated with active, pending, **disconnect-pending** or conflict subscription versions.

Old service providers can only modify the following attributes for pending or conflict subscription versions:

subscriptionOldSP-DueDate
subscriptionOldSP-Authorization
subscriptionStatusChangeCauseCode

The subscriptionStatusChangeCauseCode is an optional field and is only specified if the subscriptionOldSP-Authorization is false.

New service providers can only modify the following attributes for pending or conflict subscription versions:

subscriptionLRN
subscriptionNewSP-DueDate
subscriptionCLASS-DPC
subscriptionCLASS-SSN
subscriptionLIDB-DPC
subscriptionLIDB-SSN
subscriptionCNAM-DPC
subscriptionCNAM-SSN
subscriptionISVM-DPC
subscriptionISVM-SSN
subscriptionEndUserLocationValue
subscriptionEndUserLocationType
subscriptionBillingId

New service providers may specify modified valid values for the following attributes, when the service provider's "SOA WSMSC DPC SSN Data" indicator is TRUE, and may NOT specify these values when the indicator is set to FALSE:

subscriptionWSMSC-DPC
subscriptionWSMSC-SSN

Validation will be done for both old and new service provider data that is specified for pending or conflict subscription versions.

If validation fails no changes will be made and an error will be returned. If validation passes, the version will be modified and remain in a pending, **disconnect pending** or active state.

New service providers can only modify the following attributes for active subscription versions:

subscriptionLRN
subscriptionCLASS-DPC
subscriptionCLASS-SSN
subscriptionLIDB-DPC
subscriptionLIDB-SSN
subscriptionCNAM-DPC
subscriptionCNAM-SSN
subscriptionISVM-DPC
subscriptionISVM-SSN
subscriptionEndUserLocationValue
subscriptionEndUserLocationType
subscriptionBillingId

New service providers may specify modified valid values for the following attributes, when the service provider's "SOA WSMSC DPC SSN Data" indicator is TRUE, and may NOT specify these values when the indicator is set to FALSE:

subscriptionWSMSC-DPC
subscriptionWSMSC-SSN

For the modification of an active subscription version where the data specified passes validation, the modified version is immediately broadcast. The modified subscription version will have a status of sending and broadcasts will begin. If validation fails, no changes will be made and an error will be returned in the action reply.

The new/current service provider can only modify the following attributes for a disconnect-pending subscription version:

subscriptionCustomerDisconnectDate
subscriptionEffectiveReleaseDate

For the modification of a disconnect-pending subscription version where the Effective Release Date is specified to a current or previous date/time, and passes validation, then the modified version is immediately broadcast. The modified subscription version will have a status of sending and broadcasts will begin. If validation fails, no changes will be made and an error will be returned in the action reply.

~~If the data specified passes validation, the modified version is immediately broadcast. The modified subscription version will have a status of sending and broadcasts will begin. If validation fails, no changes will be made and an error will be returned in the action reply.~~

!;

ASN.1:

```
subscriptionModifyData ::= SEQUENCE {
  subscription-lrn [0] LRN OPTIONAL,
  subscription-new-sp-due-date [1] GeneralizedTime OPTIONAL,
  subscription-old-sp-due-date [2] GeneralizedTime OPTIONAL,
  subscription-old-sp-authorization [3] ServiceProvAuthorization OPTIONAL,
  subscription-class-dpc [4] EXPLICIT DPC OPTIONAL,
  subscription-class-ssn [5] EXPLICIT SSN OPTIONAL,
  subscription-lidb-dpc [6] EXPLICIT DPC OPTIONAL,
  subscription-lidb-ssn [7] EXPLICIT SSN OPTIONAL,
  subscription-isvm-dpc [8] EXPLICIT DPC OPTIONAL,
  subscription-isvm-ssn [9] EXPLICIT SSN OPTIONAL,
  subscription-cnam-dpc [10] EXPLICIT DPC OPTIONAL,
  subscription-cnam-ssn [11] EXPLICIT SSN OPTIONAL,
  subscription-end-user-location-value [12] EndUserLocationValue OPTIONAL,
  subscription-end-user-location-type [13] EndUserLocationType OPTIONAL,
  subscription-billing-id [14] BillingId OPTIONAL,
  subscription-status-change-cause-code [15]
    SubscriptionStatusChangeCauseCode OPTIONAL,
  subscription-wsmc-dpc [16] EXPLICIT DPC OPTIONAL,
  subscription-wsmc-ssn [17] EXPLICIT SSN OPTIONAL,
  subscription-customer-disconnect-date [18] GeneralizedTime OPTIONAL,
  subscription-effective-release-date [19] GeneralizedTime OPTIONAL
}
```

```
SubscriptionModifyInvalidData ::= CHOICE {
```



```
subscription-lrn [0] EXPLICIT LRN,  
subscription-new-sp-due-date [1] EXPLICIT GeneralizedTime,  
subscription-old-sp-due-date [2] EXPLICIT GeneralizedTime,  
subscription-old-sp-authorization [3] EXPLICIT ServiceProvAuthorization,  
subscription-class-dpc [4] EXPLICIT DPC,  
subscription-class-ssn [5] EXPLICIT SSN,  
subscription-lidb-dpc [6] EXPLICIT DPC,  
subscription-lidb-ssn [7] EXPLICIT SSN,  
subscription-isvm-dpc [8] EXPLICIT DPC,  
subscription-isvm-ssn [9] EXPLICIT SSN,  
subscription-cnam-dpc [10] EXPLICIT DPC,  
subscription-cnam-ssn [11] EXPLICIT SSN,  
subscription-end-user-location-value [12] EXPLICIT EndUserLocationValue,  
subscription-end-user-location-type [13] EXPLICIT EndUserLocationType,  
subscription-billing-id [14] EXPLICIT BillingId,  
subscription-status-change-cause-code [15]  
    EXPLICIT SubscriptionStatusChangeCauseCode,  
subscription-wsmc-dpc [16] EXPLICIT DPC,  
subscription-wsmc-ssn [17] EXPLICIT SSN,  
subscription-customer-disconnect-date [18] EXPLICIT GeneralizedTime,  
subscription-effective-release-date [19] EXPLICIT GeneralizedTime  
}
```

M&P:

No change required.

Origination Date: 5/27/1999

Originator: AT&T

Change Order Number: NANC 287

Description: ASN.1 Change for Required Field in VersionNewNPA-NXX and VersionNewNPA-NXX Recovery Notification

Pure Backwards Compatible: NO

Interface and Functional Backwards Compatible: NO

Re-Compile Only Backwards Compatible: YES

IMPACT/CHANGE ASSESSMENT

FRS	IIS	GDMO	ASN.1	NPAC	SOA	LSMS
			Y	Low	Low	Low

Business Need:

Currently, there is an ASN.1 definition error that requires a change order due to the fact that a recompile action is necessary for all SOAs and LSMSs. This will change a field that is defined as optional to required.

Description of Change:

(Recompile only). The current ASN.1 has incorrect field definition. The requested change is to make the service-prov-mpa-nxx-value of the VersionNewNPA-NXX notification and VersionNewNPA-NXX-Recovery notification a required field instead of 'optional'.

Requirements:

No change required.

IIS:

No change required.

GDMO:

No change required.

ASN.1:

See below.

Current asn.1:

```
VersionNewNPA-NXX ::= SEQUENCE {
    service-prov-mpa-nxx-id NPA-NXX-ID,
    service-prov-mpa-nxx-value NPA-NXX OPTIONAL,
    service-prov-mpa-nxx-effective-time-stamp GeneralizedTime,
    service-prov-id ServiceProvId,
```

```
    access-control LnpAccessControl  
}
```

Proposed:

```
VersionNewNPA-NXX ::= SEQUENCE {  
    service-prov-mpa-nxx-id NPA-NXX-ID,  
    service-prov-mpa-nxx-value NPA-NXX,  
    service-prov-mpa-nxx-effective-time-stamp GeneralizedTime,  
    service-prov-id ServiceProvId,  
    access-control LnpAccessControl  
}
```

Current asn.1:

```
VersionNewNPA-NXX-Recovery ::= SEQUENCE {  
    service-prov-mpa-nxx-id NPA-NXX-ID,  
    service-prov-mpa-nxx-value NPA-NXX OPTIONAL,  
    service-prov-mpa-nxx-effective-time-stamp GeneralizedTime,  
    service-prov-id ServiceProvId  
}
```

Proposed:

```
VersionNewNPA-NXX-Recovery ::= SEQUENCE {  
    service-prov-mpa-nxx-id NPA-NXX-ID,  
    service-prov-mpa-nxx-value NPA-NXX,  
    service-prov-mpa-nxx-effective-time-stamp GeneralizedTime,  
    service-prov-id ServiceProvId  
}
```

M&P:

No change required.

Origination Date: 7/7/1999

Originator: Bell Atlantic

Change Order Number: NANC 291

Description: SSN Edits in the NPAC SMS

Pure Backwards Compatible: YES (however, operational impacts to SPs)

IMPACT/CHANGE ASSESSMENT

FRS	IIS	GDMO	ASN.1	NPAC	SOA	LSMS
Y		Y		Low	N/A	N/A

Business Need:

The current environment allows the new SP to send up final Global Title Translation data. This final GTT data is broadcasted by NPAC to all applicable subtending SPs in the Region. This has resulted in service-affecting TCAP routing errors for subtending SPs who do not have route sets built based on final GTT to the new SP, causing trouble-shooting expense and re-broadcast of the data to modify the DPCs to non-final GTT. This issue is addressed by this change order, NANC 291.

In addition, invalid GTT data (e.g. a DPC with no SSN, a DPC with Network ID set to 000, etc.) contained within the new SP CREATE has also resulted in TCAP routing errors when broadcasted to subtending SPs. This issue is addressed by NANC 191.

These two Change Orders will ensure that GTT data is formatted consistent with SS7 signaling standards and contains only non-final DPCs in accordance with recommendations documented in T1S1.6 standards for Local Number Portability. This will mitigate the trouble-shooting and NPAC broadcast expense due to incorrect or invalid GTT data.

Description of Change:

The NPAC SMS should edit and prevent a new Service Provider CREATE message from specifying final Global Title Translations for CLASS, LIDB, CNAM, ISVM MWI, and WSMSC.

Description of Issue:

There have been instances when the new Service Provider, upon sending the new SP CREATE message to NPAC, has provided final Global Title Translation data for the Destination Point Codes and Subsystem Numbers for CLASS, LIDB, CNAM, and/or ISVM MWI. This final GTT data is broadcasted by NPAC to all applicable subtending service providers in the Region. This has resulted in TCAP routing errors for subtending service providers who do not have route sets built based on final GTT to the new SP.

Some SPs using final, but not sure how much of a problem this is creating. In all cases discussed, led to new SP changing SSN to gateway value instead of final value.

All SPs need to figure out if there is a requirement to broadcast final GTT instead of gateway, and if so, their willingness to change this approach. SPs will need to substitute final in their own network. SPs should understand that if no arrangement is set up between the providers, then routing errors (to the new SP's customer) will occur. This affect creates, modifies, and mass update functionality.

Proposed Change Order:

Implement an edit in NPAC that will reject a new SP CREATE message if the message contains a Destination Point Code with a non-zero (000) Subsystem Number for CLASS, LIDB, CNAM, ISVM MWI, or Wireless Short Message Service. This edit shall be settable (active or inactive) on a service and Regional NPAC combination basis (i.e., there will be five settable edits per region). It shall apply to that specific service's DPCs associated with ported and pooled DNs. For 1K block pooling, the NPAC SMS will reject creation of block data containing a non-zero Subsystem Number, whether by NPAC personnel or via the new SP's SOA, if the edit is active for that specific service.

Requirements:

The backwards compatibility sunset period for the CLASS SSN Edit Flag Indicator, LIDB SSN Edit Flag Indicator, CNAM SSN Edit Flag Indicator, ISVM SSN Edit Flag Indicator, and WSMSC SSN Edit Flag Indicator, is two major NPAC SMS Releases (i.e., if implemented in R4, it is only guaranteed to be available through R5, and may be unavailable starting with R6).

Req 1 – DPC/SSN Edits – CLASS SSN Edit Flag Indicator

NPAC SMS shall provide a CLASS SSN Edit Flag Indicator, which is defined as an indicator on whether or not CLASS DPC/SSN consistency edits will be enforced by the NPAC SMS, upon Subscription Version or Number Pool Block Creation, Modification, or mass update.

Req 2 – DPC/SSN Edits – LIDB SSN Edit Flag Indicator

NPAC SMS shall provide a LIDB SSN Edit Flag Indicator, which is defined as an indicator on whether or not LIDB DPC/SSN consistency edits will be enforced by the NPAC SMS, upon Subscription Version or Number Pool Block Creation, Modification, or mass update.

Req 3 – DPC/SSN Edits – CNAM SSN Edit Flag Indicator

NPAC SMS shall provide a CNAM SSN Edit Flag Indicator, which is defined as an indicator on whether or not CNAM DPC/SSN consistency edits will be enforced by the NPAC SMS, upon Subscription Version or Number Pool Block Creation, Modification, or mass update.

Req 4 – DPC/SSN Edits – ISVM SSN Edit Flag Indicator

NPAC SMS shall provide a ISVM SSN Edit Flag Indicator, which is defined as an indicator on whether or not ISVM DPC/SSN consistency edits will be enforced by the NPAC SMS, upon Subscription Version or Number Pool Block Creation, Modification, or mass update.

Req 5 – DPC/SSN Edits – WSMSC SSN Edit Flag Indicator

NPAC SMS shall provide a WSMSC SSN Edit Flag Indicator, which is defined as an indicator on whether or not WSMSC DPC/SSN consistency edits will be enforced by the NPAC SMS, upon Subscription Version or Number Pool Block Creation, Modification, or mass update.

Req 6 – DPC/SSN Edits – CLASS SSN Rejection for Non-Zero Value

NPAC SMS shall, based on the CLASS SSN Edit Flag Indicator for CLASS service when the value is TRUE, reject a Subscription Version or Number Pool Block Creation, Modification of any data, [Activation](#) or mass update of any data, when the CLASS Destination Point Code (DPC) for that specific service contains a value (network 001-255, cluster 000-255, member 000-255), and the corresponding CLASS Sub-System Number (SSN) is not a zero (000) value.

Req 7 – DPC/SSN Edits – LIDB SSN Rejection for Non-Zero Value

NPAC SMS shall, based on the LIDB SSN Edit Flag Indicator for LIDB service when the value is TRUE, reject a Subscription Version or Number Pool Block Creation, Modification of any data, [Activation](#) or mass update of any data, when the LIDB Destination Point Code (DPC) for that specific service contains a value (network 001-255, cluster 000-255, member 000-255), and the corresponding LIDB Sub-System Number (SSN) is not a zero (000) value.

Req 8 – DPC/SSN Edits – CNAM SSN Rejection for Non-Zero Value

NPAC SMS shall, based on the CNAM SSN Edit Flag Indicator for CNAM service when the value is TRUE, reject a Subscription Version or Number Pool Block Creation, Modification of any data, [Activation](#) or mass update of any data, when the CNAM Destination Point Code (DPC) for that specific service contains a value (network 001-255, cluster 000-255, member 000-255), and the corresponding CNAM Sub-System Number (SSN) is not a zero (000) value.

Req 9 – DPC/SSN Edits – ISVM SSN Rejection for Non-Zero Value

NPAC SMS shall, based on the ISVM SSN Edit Flag Indicator for ISVM service when the value is TRUE, reject a Subscription Version or Number Pool Block Creation, Modification of any data, [Activation](#) or mass update of any data, when the ISVM Destination Point Code (DPC) for that specific service contains a value (network 001-255, cluster 000-255, member 000-255), and the corresponding ISVM Sub-System Number (SSN) is not a zero (000) value.

Req 10 – DPC/SSN Edits – WSMSC SSN Rejection for Non-Zero Value

NPAC SMS shall, based on the WSMSC SSN Edit Flag Indicator for WSMSC service when the value is TRUE, reject a Subscription Version or Number Pool Block Creation, Modification of any data, [Activation](#) or mass update of any data, when the WSMSC Destination Point Code (DPC) for that specific service contains a value (network 001-255, cluster 000-255, member 000-255), and the corresponding WSMSC Sub-System Number (SSN) is not a zero (000) value.

Req 11 – DPC/SSN Edits – CLASS SSN Edit Flag Indicator – OpGUI Modification

NPAC SMS shall allow the NPAC Personnel, via the NPAC Administrative Interface, to modify the CLASS SSN Edit Flag Indicator.

Req 12 – DPC/SSN Edits – LIDB SSN Edit Flag Indicator – OpGUI Modification

NPAC SMS shall allow the NPAC Personnel, via the NPAC Administrative Interface, to modify the LIDB SSN Edit Flag Indicator.

Req 13 – DPC/SSN Edits – CNAM SSN Edit Flag Indicator – OpGUI Modification

NPAC SMS shall allow the NPAC Personnel, via the NPAC Administrative Interface, to modify the CNAM SSN Edit Flag Indicator.

Req 14 – DPC/SSN Edits – ISVM SSN Edit Flag Indicator – OpGUI Modification

NPAC SMS shall allow the NPAC Personnel, via the NPAC Administrative Interface, to modify the ISVM SSN Edit Flag Indicator.

Req 15 – DPC/SSN Edits – WSMSC SSN Edit Flag Indicator – OpGUI Modification

NPAC SMS shall allow the NPAC Personnel, via the NPAC Administrative Interface, to modify the WSMSC SSN Edit Flag Indicator.

Req 16 – DPC/SSN Edits – CLASS SSN Edit Flag Indicator Default

NPAC SMS shall default the CLASS SSN Edit Flag Indicator to **TRUE**.

Req 17 – DPC/SSN Edits – LIDB SSN Edit Flag Indicator Default

NPAC SMS shall default the LIDB SSN Edit Flag Indicator to **TRUE**.

Req 18 – DPC/SSN Edits – CNAM SSN Edit Flag Indicator Default

NPAC SMS shall default the CNAM SSN Edit Flag Indicator to **TRUE**.

Req 19 – DPC/SSN Edits – ISVM SSN Edit Flag Indicator Default

NPAC SMS shall default the ISVM SSN Edit Flag Indicator to **TRUE**.

Req 20 – DPC/SSN Edits – WSMSC SSN Edit Flag Indicator Default

NPAC SMS shall default the WSMSC SSN Edit Flag Indicator to **TRUE**.

IIS:

No change required.

GDMO:

-- 21.0 LNP NPAC Subscription Version Managed Object Class

subscriptionVersionNPAC MANAGED OBJECT CLASS

...

```
subscriptionVersionNPAC-Behavior BEHAVIOUR
  DEFINED AS !
```

...

When the subscription version is created, the subscriptionBusinessType is set according to the business days and hours selection of the old and new service providers.

When the subscription version is created, modified, or mass updated and contains a DPC value, the corresponding SSN value must be set to 0 (zero), if the corresponding SSN edit flag indicator is true.

The Service Provider SOA can M-GET and M-SET subscriptionVersionNPAC objects via the SOA to NPAC SMS interface (SOA Management Association Function). Rules for M-SET are described below.

```
-- 30.0 Number Pool Block NPAC Data Managed Object Class
```

```
--
```

```
numberPoolBlockNPAC MANAGED OBJECT CLASS
```

...

```
numberPoolBlockNPAC-Behavior BEHAVIOUR
  DEFINED AS !
```

...

The numberPoolBlockFailed-SP-List is set when a failure occurs in sending to the LSMSs. It contains the list of EDR and non-EDR service provider IDs who failed to successfully respond to the broadcasted data.

When the numberPoolBlock is created, modified, or mass updated and contains a DPC value, the corresponding SSN value must be set to 0 (zero), if the corresponding SSN edit flag indicator is true.

Service providers can M-GET any numberPoolBlockNPAC object from the LSMS and SOA.

```
-- 63.0 LNP Subscription Version Class Destination Point Code
```

```
subscriptionCLASS-DPC ATTRIBUTE
  WITH ATTRIBUTE SYNTAX LNP-ASN1.DPC;
  MATCHES FOR EQUALITY, ORDERING;
  BEHAVIOUR subscriptionCLASS-DPCBehavior;
  REGISTERED AS {LNP-OIDS.lnp-attribute 63};
```

```
subscriptionCLASS-DPCBehavior BEHAVIOUR
```

```
  DEFINED AS !
```

This attribute is used to specify the subscription version CLASS Destination Point Code.

If the subscriptionCLASS-DPC attribute is provided, the subscriptionCLASS-SSN attribute must be 0 (zero), if the corresponding SSN edit flag indicator is true.

The data is stored in BCD (e.g. a value of FFFFFFFF would be displayed as 255.255.255).

```
!;
```

```
-- 64.0 LNP Subscription Version Class SSN
```


subscriptionCLASS-SSN ATTRIBUTE
WITH ATTRIBUTE SYNTAX LNP-ASN1.SSN;
MATCHES FOR EQUALITY, ORDERING;
BEHAVIOUR subscriptionCLASS-SSN-Behavior;
REGISTERED AS {LNP-OIDS.lnp-attribute 64};

subscriptionCLASS-SSN-Behavior BEHAVIOUR
DEFINED AS !
This attribute is used to specify the subscription version
CLASS SSN.

**If the subscriptionCLASS-SSN attribute is provided, the
value must be 0 (zero), if the corresponding SSN edit flag
indicator is true.**

!;

-- 65.0 LNP Subscription CNAM Destination Point Code

subscriptionCNAM-DPC ATTRIBUTE
WITH ATTRIBUTE SYNTAX LNP-ASN1.DPC;
MATCHES FOR EQUALITY, ORDERING;
BEHAVIOUR subscriptionCNAM-DPC-Behavior;
REGISTERED AS {LNP-OIDS.lnp-attribute 65};

subscriptionCNAM-DPC-Behavior BEHAVIOUR
DEFINED AS !
This attribute is used to specify the CNAM Destination Point
value for the subscription version.

**If the subscriptionCNAM-DPC attribute is provided, the
subscriptionCNAM-SSN attribute must be 0 (zero), if the
corresponding SSN edit flag indicator is true.**

The data is stored in BCD (e.g. a value of FFFFFFFF would be displayed
as 255.255.255).

!;

-- 66.0 LNP Subscription CNAM SSN

subscriptionCNAM-SSN ATTRIBUTE
WITH ATTRIBUTE SYNTAX LNP-ASN1.SSN;
MATCHES FOR EQUALITY, ORDERING;
BEHAVIOUR subscriptionCNAM-SSN-Behavior;
REGISTERED AS {LNP-OIDS.lnp-attribute 66};

subscriptionCNAM-SSN-Behavior BEHAVIOUR
DEFINED AS !
This attribute is used to specify the CNAM SSN
value for the subscription version.

**If the subscriptionCNAM-SSN attribute is provided, the
value must be 0 (zero), if the corresponding SSN edit flag
indicator is true.**

!;

-- 76.0 LNP Subscription ISVM Destination Point Code

subscriptionISVM-DPC ATTRIBUTE
WITH ATTRIBUTE SYNTAX LNP-ASN1.DPC;
MATCHES FOR EQUALITY, ORDERING;
BEHAVIOUR subscriptionISVM-DPC-Behavior;
REGISTERED AS {LNP-OIDS.lnp-attribute 76};

subscriptionISVM-DPC-Behavior BEHAVIOUR
DEFINED AS !
This attribute is used to specify the ISVM Destination Point
value for the subscription version.

**If the subscriptionISVM-DPC attribute is provided, the
subscriptionISVM-SSN attribute must be 0 (zero, if the
corresponding SSN edit flag indicator is true).**

The data is stored in BCD (e.g. a value of FFFFFFFF would be
displayed as 255.255.255).

!;

-- 77.0 LNP Subscription ISVM SSN

subscriptionISVM-SSN ATTRIBUTE
WITH ATTRIBUTE SYNTAX LNP-ASN1.SSN;
MATCHES FOR EQUALITY, ORDERING;
BEHAVIOUR subscriptionISVM-SSN-Behavior;
REGISTERED AS {LNP-OIDS.lnp-attribute 77};

subscriptionISVM-SSN-Behavior BEHAVIOUR
DEFINED AS !
This attribute is used to specify the ISVM SSN
value for the subscription version.

**If the subscriptionISVM-SSN attribute is provided, the
value must be 0 (zero), if the corresponding SSN edit flag
indicator is true.**

!;

-- 78.0 LNP Subscription LIDB Destination Point Code

subscriptionLIDB-DPC ATTRIBUTE
WITH ATTRIBUTE SYNTAX LNP-ASN1.DPC;
MATCHES FOR EQUALITY, ORDERING;
BEHAVIOUR subscriptionLIDB-DPC-Behavior;
REGISTERED AS {LNP-OIDS.lnp-attribute 78};

subscriptionLIDB-DPC-Behavior BEHAVIOUR
DEFINED AS !
This attribute is used to specify the LIDB Destination Point
value for the subscription version.

**If the subscriptionLIDB-DPC attribute is provided, the
subscriptionLIDB-SSN attribute must be 0 (zero), if the
corresponding SSN edit flag indicator is true.**

The data is stored in BCD (e.g. a value of FFFFFFFF would be
displayed as 255.255.255).

!;

-- 79.0 LNP Subscription LIDB SSN

subscriptionLIDB-SSN ATTRIBUTE
WITH ATTRIBUTE SYNTAX LNP-ASN1.SSN;
MATCHES FOR EQUALITY, ORDERING;
BEHAVIOUR subscriptionLIDB-SSN-Behavior;
REGISTERED AS {LNP-OIDS.lnp-attribute 79};

subscriptionLIDB-SSN-Behavior BEHAVIOUR
DEFINED AS !
This attribute is used to specify the LIDB SSN
value for the subscription version.

**If the subscriptionLIDB-SSN attribute is provided, the
value must be 0 (zero), if the corresponding SSN edit flag
indicator is true.**

!;

-- 109.0 Subscription Version WSMSC Destination Point Code

subscriptionWSMSC-DPC ATTRIBUTE
WITH ATTRIBUTE SYNTAX LNP-ASN1.DPC;
MATCHES FOR EQUALITY, ORDERING;
BEHAVIOUR subscriptionWSMSC-DPCBehavior;
REGISTERED AS {LNP-OIDS.lnp-attribute 109};

subscriptionWSMSC-DPCBehavior BEHAVIOUR
DEFINED AS !
This attribute is used to specify the subscription version
WSMSC Destination Point Code.

**If the subscriptionWSMSC-DPC attribute is provided, the
subscriptionWSMSC-SSN attribute must be 0 (zero), if the
corresponding SSN edit flag indicator is true.**

The data is stored in BCD (e.g. a value of FFFFFFFF would be
displayed as 255.255.255).

!;

-- 110.0 LNP Subscription Version WSMSC SSN

subscriptionWSMSC-SSN ATTRIBUTE
WITH ATTRIBUTE SYNTAX LNP-ASN1.SSN;
MATCHES FOR EQUALITY, ORDERING;
BEHAVIOUR subscriptionWSMSC-SSN-Behavior;
REGISTERED AS {LNP-OIDS.lnp-attribute 110};

subscriptionWSMSC-SSN-Behavior BEHAVIOUR
DEFINED AS !
This attribute is used to specify the subscription version
WSMSC SSN.

**If the subscriptionWSMSC-SSN attribute is provided, the
value must be 0 (zero), if the corresponding SSN edit flag
indicator is true.**

!;

-- 114.0 LNP Number Pool block Class Destination Point Code

numberPoolBlockCLASS-DPC ATTRIBUTE
WITH ATTRIBUTE SYNTAX LNP-ASN1.DPC;
MATCHES FOR EQUALITY, ORDERING;
BEHAVIOUR numberPoolBlockCLASS-DPCBehavior;
REGISTERED AS {LNP-OIDS.lnp-attribute 114};

numberPoolBlockCLASS-DPCBehavior BEHAVIOUR
DEFINED AS !
This attribute is used to specify the numberPoolBlock
CLASS Destination Point Code.

**If the numberPoolBlockCLASS-DPC attribute is provided, the
numberPoolBlockCLASS-SSN attribute must be 0 (zero), if the
corresponding SSN edit flag indicator is true.**

The data is stored in BCD (e.g. a value of FFFFFFFF would be displayed
as 255.255.255). ~~The valid octet values on the NPAC SMS are 000-255.~~

!;

-- 115.0 LNP Number Pool Block Class SSN

numberPoolBlockCLASS-SSN ATTRIBUTE
WITH ATTRIBUTE SYNTAX LNP-ASN1.SSN;
MATCHES FOR EQUALITY, ORDERING;
BEHAVIOUR numberPoolBlockCLASS-SSN-Behavior;
REGISTERED AS {LNP-OIDS.lnp-attribute 115};

numberPoolBlockCLASS-SSN-Behavior BEHAVIOUR
DEFINED AS !
This attribute is used to specify the numberPoolBlock
CLASS SSN. The valid values on the NPAC SMS are 0-255.

**If the numberPoolBlockCLASS-SSN attribute is provided, the
value must be 0 (zero), if the corresponding SSN edit flag
indicator is true.**

!;

-- 116.0 LNP Number Pool Block CNAM Destination Point Code

numberPoolBlockCNAM-DPC ATTRIBUTE
WITH ATTRIBUTE SYNTAX LNP-ASN1.DPC;
MATCHES FOR EQUALITY, ORDERING;
BEHAVIOUR numberPoolBlockCNAM-DPC-Behavior;
REGISTERED AS {LNP-OIDS.lnp-attribute 116};

numberPoolBlockCNAM-DPC-Behavior BEHAVIOUR
DEFINED AS !
This attribute is used to specify the CNAM Destination Point
Code for the numberPoolBlock.

If the numberPoolBlockCNAM-DPC attribute is provided, the

numberPoolBlockCNAM-SSN attribute must be 0 (zero), if the corresponding SSN edit flag indicator is true.

The data is stored in BCD (e.g. a value of FFFFFFFF would be displayed as 255.255.255). ~~The valid octet values on the NPAC SMS are 000-255.~~

!;

-- 117.0 LNP Number Pool Block CNAM SSN

numberPoolBlockCNAM-SSN ATTRIBUTE
WITH ATTRIBUTE SYNTAX LNP-ASN1.SSN;
MATCHES FOR EQUALITY, ORDERING;
BEHAVIOUR numberPoolBlockCNAM-SSN-Behavior;
REGISTERED AS {LNP-OIDS.lnp-attribute 117};

numberPoolBlockCNAM-SSN-Behavior BEHAVIOUR
DEFINED AS !
This attribute is used to specify the CNAM SSN value for the numberPoolBlock. The valid values on the NPAC SMS are 0-255.

If the numberPoolBlockCNAM-SSN attribute is provided, the value must be 0 (zero), if the corresponding SSN edit flag indicator is true.

!;

-- 123.0 LNP Number Pool Block ISVM Destination Point Code

numberPoolBlockISVM-DPC ATTRIBUTE
WITH ATTRIBUTE SYNTAX LNP-ASN1.DPC;
MATCHES FOR EQUALITY, ORDERING;
BEHAVIOUR numberPoolBlockISVM-DPC-Behavior;
REGISTERED AS {LNP-OIDS.lnp-attribute 123};

numberPoolBlockISVM-DPC-Behavior BEHAVIOUR
DEFINED AS !
This attribute is used to specify the ISVM Destination Point Code for the numberPoolBlock.

If the numberPoolBlockISVM-DPC attribute is provided, the numberPoolBlockISVM-SSN attribute must be 0 (zero), if the corresponding SSN edit flag indicator is true.

The data is stored in BCD (e.g. a value of FFFFFFFF would be displayed as 255.255.255). ~~The valid octet values on the NPAC SMS are 000-255.~~

!;

-- 124.0 LNP Number Pool Block ISVM SSN

numberPoolBlockISVM-SSN ATTRIBUTE
WITH ATTRIBUTE SYNTAX LNP-ASN1.SSN;
MATCHES FOR EQUALITY, ORDERING;
BEHAVIOUR numberPoolBlockISVM-SSN-Behavior;
REGISTERED AS {LNP-OIDS.lnp-attribute 124};

numberPoolBlockISVM-SSN-Behavior BEHAVIOUR

DEFINED AS !

This attribute is used to specify the ISVM SSN value for the numberPoolBlock. The valid values on the NPAC SMS are 0-255.

If the numberPoolBlockISVM-SSN attribute is provided, the value must be 0 (zero), if the corresponding SSN edit flag indicator is true.

!;

-- 125.0 LNP Number Pool Block LIDB Destination Point Code

numberPoolBlockLIDB-DPC ATTRIBUTE
WITH ATTRIBUTE SYNTAX LNP-ASN1.DPC;
MATCHES FOR EQUALITY, ORDERING;
BEHAVIOUR numberPoolBlockLIDB-DPC-Behavior;
REGISTERED AS {LNP-OIDS.lnp-attribute 125};

numberPoolBlockLIDB-DPC-Behavior BEHAVIOUR

DEFINED AS !

This attribute is used to specify the LIDB Destination Point Code for the numberPoolBlock.

If the numberPoolBlockLIDB-DPC attribute is provided, the numberPoolBlockLIDB-SSN attribute must be 0 (zero), if the corresponding SSN edit flag indicator is true.

The data is stored in BCD (e.g. a value of FFFFFFFF would be displayed as 255.255.255). ~~The valid octet on the NPAC SMS are 000-255.~~

!;

-- 126.0 LNP Number Pool Block LIDB SSN

numberPoolBlockLIDB-SSN ATTRIBUTE
WITH ATTRIBUTE SYNTAX LNP-ASN1.SSN;
MATCHES FOR EQUALITY, ORDERING;
BEHAVIOUR numberPoolBlockLIDB-SSN-Behavior;
REGISTERED AS {LNP-OIDS.lnp-attribute 126};

numberPoolBlockLIDB-SSN-Behavior BEHAVIOUR

DEFINED AS !

This attribute is used to specify the LIDB SSN value for the numberPoolBlock. The valid values on the NPAC SMS are 0-255.

If the numberPoolBlockLIDB-SSN attribute is provided, the value must be 0 (zero), if the corresponding SSN edit flag indicator is true.

!;

-- 132.0 LNP Number Pool Block WSMSC Destination Point Code

numberPoolBlockWSMSC-DPC ATTRIBUTE
WITH ATTRIBUTE SYNTAX LNP-ASN1.DPC;
MATCHES FOR EQUALITY, ORDERING;

```
BEHAVIOUR numberPoolBlockWSMSC-DPC-Behavior;  
REGISTERED AS {LNP-OIDS.lnp-attribute 132};
```

```
numberPoolBlockWSMSC-DPC-Behavior BEHAVIOUR  
DEFINED AS !
```

This attribute is used to specify the WSMSC Destination Point Code for the numberPoolBlock.

If the numberPoolBlockWSMSC-DPC attribute is provided, the numberPoolBlockWSMSC-SSN attribute must be 0 (zero), if the corresponding SSN edit flag indicator is true.

The data is stored in BCD (e.g. a value of FFFFFFFF would be displayed as 255.255.255). ~~The valid octet on the NPAC SMS are 000-255.~~

```
!;
```

```
-- 133.0 LNP Number Pool Block WSMSC SSN
```

```
numberPoolBlockWSMSC-SSN ATTRIBUTE  
WITH ATTRIBUTE SYNTAX LNP-ASN1.SSN;  
MATCHES FOR EQUALITY, ORDERING;  
BEHAVIOUR numberPoolBlockWSMSC-SSN-Behavior;  
REGISTERED AS {LNP-OIDS.lnp-attribute 133};
```

```
numberPoolBlockWSMSC-SSN-Behavior BEHAVIOUR  
DEFINED AS !
```

This attribute is used to specify the WSMSC SSN value for the numberPoolBlock. The valid values on the NPAC SMS are 0-255.

If the numberPoolBlockWSMSC-SSN attribute is provided, the value must be 0 (zero), if the corresponding SSN edit flag indicator is true.

```
!;
```

```
!;
```

```
-- 7.0 LNP Subscription Version Modify Action
```

```
subscriptionVersionModify ACTION  
BEHAVIOUR  
subscriptionVersionModifyDefinition,  
subscriptionVersionModifyBehavior;  
MODE CONFIRMED;  
WITH INFORMATION SYNTAX LNP-ASN1.ModifyAction;  
WITH REPLY SYNTAX LNP-ASN1.ModifyReply;  
REGISTERED AS {LNP-OIDS.lnp-action 7};
```

```
subscriptionVersionModifyDefinition BEHAVIOUR  
DEFINED AS !
```

The subscriptionVersionModify action is the action that can be used by the SOA to modify a subscription version via the SOA to NPAC SMS interface.

```
!;
```

```
subscriptionVersionModifyBehavior BEHAVIOUR  
DEFINED AS !
```

Preconditions: This action is issued from an lnpSubscriptions object specifying the object to be modified by specifying the subscriptionVersionId or by specifying the subscriptionTN or a range of TNs (where the stop TN in the range is greater than the start TN) and the status of the subscription version. All attribute values to be modified shall also be specified.

Postconditions: The NPAC SMS has modified the subscription version. An error will be returned to the service provider if there is no version that is modifiable or if the modification fails due to authorization of the service provider or data validation.

Subscription versions with subscriptionLNPTType equal to 'pool' cannot be specified in the action.

Service Providers can modify attributes associated with active, pending or conflict subscription versions.

Old service providers can only modify the following attributes for pending or conflict subscription versions:

subscriptionOldSP-DueDate
subscriptionOldSP-Authorization
subscriptionStatusChangeCauseCode

The subscriptionStatusChangeCauseCode is an optional field and is only specified if the subscriptionOldSP-Authorization is false.

New service providers can only modify the following attributes for pending or conflict subscription versions:

subscriptionLRN
subscriptionNewSP-DueDate
subscriptionCLASS-DPC
subscriptionCLASS-SSN
subscriptionLIDB-DPC
subscriptionLIDB-SSN
subscriptionCNAM-DPC
subscriptionCNAM-SSN
subscriptionISVM-DPC
subscriptionISVM-SSN
subscriptionEndUserLocationValue
subscriptionEndUserLocationType
subscriptionBillingId

New service providers may specify modified valid values for the following attributes, when the service provider's "SOA WSMSC DPC SSN Data" indicator is TRUE, and may NOT specify these values when the indicator is set to FALSE:

subscriptionWSMSC-DPC
subscriptionWSMSC-SSN

An SSN value of 0 (zero) must be present when its corresponding DPC value is populated, if the corresponding SSN Edit Flag Indicator is set to TRUE.

Validation will be done for both old and new service provider data that is specified for pending or conflict subscription versions.

If validation fails no changes will be made and an error will be returned. If validation passes, the version will be modified and remain in a pending or active state.

New service providers can only modify the following attributes for active subscription versions:

subscriptionLRN
subscriptionCLASS-DPC
subscriptionCLASS-SSN
subscriptionLIDB-DPC
subscriptionLIDB-SSN
subscriptionCNAM-DPC
subscriptionCNAM-SSN
subscriptionISVM-DPC
subscriptionISVM-SSN
subscriptionEndUserLocationValue
subscriptionEndUserLocationType
subscriptionBillingId

New service providers may specify modified valid values for the following attributes, when the service provider's "SOA WSMSC DPC SSN Data" indicator is TRUE, and may NOT specify these values when the indicator is set to FALSE:

subscriptionWSMSC-DPC
subscriptionWSMSC-SSN

An SSN value of 0 (zero) must be present when its corresponding DPC value is populated, if the corresponding SSN Edit Flag Indicator is set to TRUE.

If the data specified passes validation, the modified version is immediately broadcast. The modified subscription version will have a status of sending and broadcasts will begin. If validation fails, no changes will be made and an error will be returned in the action reply.

!;

-- 11.0 LNP New Service Provider Subscription Version Create

```
subscriptionVersionNewSP-Create ACTION
  BEHAVIOUR
    subscriptionVersionNewSP-CreateDefinition,
    subscriptionVersionNewSP-CreateBehavior;
  MODE CONFIRMED;
  WITH INFORMATION SYNTAX LNP-ASN1.NewSP-CreateAction;
  WITH REPLY SYNTAX LNP-ASN1.NewSP-CreateReply;
  REGISTERED AS {LNP-OIDS.lnp-action 11};
```

```
subscriptionVersionNewSP-CreateDefinition BEHAVIOUR
  DEFINED AS !
```

The subscriptionVersionNewSP-Create action is the action that is used via the SOA to NPAC SMS interface by the new service provider to create a new subscriptionVersionNPAC.

!;

subscriptionVersionNewSP-CreateBehavior BEHAVIOUR

DEFINED AS !

Preconditions: This action is issued from an lnpSubscriptions object. Creates can be performed provided there is only one currently active subscription or no subscription version in the NPAC; otherwise an action failure will be returned.

The new service provider must specify valid values for the following attributes:

subscriptionTN or a valid subscriptionVersionTN-Range
subscriptionLRN
subscriptionNewCurrentSP
subscriptionOldSP
subscriptionNewSP-DueDate
subscriptionCLASS-DPC
subscriptionCLASS-SSN
subscriptionLIDB-DPC
subscriptionLIDB-SSN
subscriptionCNAM-DPC
subscriptionCNAM-SSN
subscriptionISVM-DPC
subscriptionISVM-SSN
subscriptionLNPTtype
subscriptionPortingToOriginal-SPSwitch

The new service provider must specify valid values for the following attributes, when the service provider's "SOA WSMSC DPC SSN Data" indicator is TRUE, and must NOT specify these values when the indicator is set to FALSE:

subscriptionWSMSC-DPC
subscriptionWSMSC-SSN

The new service provider may specify valid values for the following attributes:

subscriptionEndUserLocationValue
subscriptionEndUserLocationType
subscriptionBillingId

An SSN value of 0 (zero) must be present when its corresponding DPC value is populated, if the corresponding SSN Edit Flag Indicator is set to TRUE.

subscriptionPortingToOriginal-SPSwitch can only be specified as TRUE for a TN that is currently ported and is being ported back to the original service provider. If the value of subscriptionPortingToOriginal-SPSwitch is TRUE, the LRN and GTT data should be specified as NULL. If the variable is TRUE, when the activate occurs for the subscription version, the Local SMSs will receive a request to delete the old subscription version

routing data in their networks. They will not receive any new network routing data for the subscription. Concurrence from the old service provider is required.

If the port of the subscription version is an intra-service provider port, the new service provider can use the subscriptionVersionNewSP-Create action specifying the old service provider equal to the new service provider. In this case, the old service provider create action is not required.

Postconditions: After this action has been executed, if the data specified passes validation, a pending subscription version or range of subscription versions will exist in the NPAC SMS. These validations are done as follows:

subscriptionTN or range of TNs are valid in a range open for porting by the new service provider. TN ranges must be specified where the stop TN in the range is greater than the start TN.

subscriptionLNPTtype is specified to be "LSPP" or "LISP".

subscriptionNewSP-DueDate is a future date. If not specified, the time defaults to 00:00.00.

Old and New SP are valid service providers in the NPAC SMS.

LRN data is associated with the New Service Provider.

If a pre-existing version exists, validation will be done to insure that the new service provider previously specified is the same as the executor of the action.

If the validations succeed and the subscription version does not currently exist, a new subscription version will be created with a status of pending.

If the validations succeed and a pending subscription version exists, the new service provider create information will be applied to the existing pending subscription version.

If the validations fail, a new subscription version will not be created if one does not exist. If one already existed, it will be retained.

The action success or failure and reasons for failure will be returned in the action reply.

!;

-- 16.0 LNP Service Provider Number Pool Block Create

```
numberPoolBlock-Create ACTION
  BEHAVIOUR
    numberPoolBlock-CreateDefinition,
    numberPoolBlock-CreateBehavior;
  MODE CONFIRMED;
  WITH INFORMATION SYNTAX LNP-ASN1.NumberPoolBlock-CreateAction;
  WITH REPLY SYNTAX LNP-ASN1.NumberPoolBlock-CreateReply;
```

REGISTERED AS {LNP-OIDS.lnp-action 16};

numberPoolBlock-CreateDefinition BEHAVIOUR

DEFINED AS !

The numberPoolBlock-Create action is the action that is used on the NPAC SMS via the SOA to NPAC SMS interface by the block holder SOA to create a new numberPoolBlockNPAC.

!;

numberPoolBlock-CreateBehavior BEHAVIOUR

DEFINED AS !

Preconditions: This action is issued from an lnpSubscriptions object.

The service provider block holder must specify valid values for the following attributes:

numberPoolBlockNPA-NXX-X
numberPoolBlockHolderSPID
numberPoolBlockLRN
numberPoolBlockCLASS-DPC
numberPoolBlockCLASS-SSN
numberPoolBlockLIDB-DPC
numberPoolBlockLIDB-SSN
numberPoolBlockCNAM-DPC
numberPoolBlockCNAM-SSN
numberPoolBlockISVM-DPC
numberPoolBlockISVM-SSN

If the SOA WSMSC DPC SSN Data Indicator is set in the service provider's profile, the following attributes must be provided:

numberPoolBlockWSMSC-DPC
numberPoolBlockWSMSC-SSN

An SSN value of 0 (zero) must be present when its corresponding DPC value is populated, if the corresponding SSN Edit Flag Indicator is set to TRUE.

Postconditions: After this action has been executed, if the data specified passes validation, a number pool block with a status of 'sending' will exist on the NPAC SMS.

The validations performed are as follows:

The serviceProvNPA-NXX-X object exists and the current date and time are greater than or equal to the effective date of the serviceProvNPA-NXX-X object.

The requesting service provider is the block holder and service provider ID on the serviceProvNPA-NXX-X object.

LRN data is associated with the Block Holder Service Provider.

The attributes are all valid and correctly formatted.

If the validations succeed, a new number pool block and corresponding

subscription versions will be created with a status of 'sending'. The NPAC SMS sends the object creation notification for the number pool block.

If the validations fail, no new number pool block or subscription versions will be created. If a number pool block already existed, it will be retained.

The action success or failure and reasons for failure will be returned in the action reply.

If the requesting SOA is not the owner of the serviceProvNPA-NXX-X, 'soa-not-authorized' will be selected in the error reply.

If the corresponding serviceProvNPA-NXX-X is not found, 'no-mpa-nxx-x-found' will be selected in the error reply.

If one of the attribute values is in error, 'invalid-data-values' will be selected in the error reply and the block-invalid-values will be present.

If the number pool block object already exists, 'number-pool-block-already-exists' will be selected in the error reply.

If the request is sent prior to the effective date, 'prior-to-effective-date' will be selected in the error reply.

If the request is sent and any subscription version objects exist within the TN range with a status of pending, conflict, cancel-pending or failed ("pending-like") and no active subscription version for that TN exists, 'invalid-subscription-versions' will be selected in the error reply.

!;

ASN.1:

No change required.

M&P:

No change required.

Notes:

1. Operational impacts must be socialized to individual SPs. This includes, changing these values on all Blocks and SVs prior to the release, so that activity after the release will not run into the problem of not being able to perform the requested change because other data within that Block or SV must now meet the edits imposed by this change order. Because of this, all Service Providers may need to talk to other Service Providers that have arrangements to recognize final GTT data.

2. Also appropriate Canadian GTT values should be set to FALSE. This needs to be performed during conversion weekend, after the new software is installed and prior to the NPAC SMS accepting associations in the Canadian region.
3. Several Service Providers have requested that NPAC send out an informational e-mail broadcast when they announce the upcoming weekend downtime for NPAC to install the software for this release, to inform SPs about the problem if they have not cleaned up all their DPC/SSNs.

Origination Date: 9/15/1999

Originator: Sprint

Change Order Number: NANC 297

Description: Sending SV Problem During Recovery

Pure Backwards Compatible: YES

IMPACT/CHANGE ASSESSMENT

FRS	IIS	GDMO	ASN.1	NPAC	SOA	LSMS
Y		Y		Med-Low	N/A	N/A

Business Need:

The current NPAC SMS implementation for LSMS recovery does not support the recovery of SVs with a status of sending. Therefore, at the completion of SV recovery processing, an SP is not guaranteed to have recovered all missed/failed SVs and has to request the NPAC Personnel to resend all missed/failed SVs. This change order will result in an LSMS recovering all missed/failed SVs that contain a status of sending which fall within their requested recovery time period, which in turn provides an operational cost savings, and database integrity between the NPAC SMS and LSMS.

Description of Change:

If an LSMS is down during the broadcast, and the NPAC SMS has sent out the final retry, the LSMS will not be able to recover this broadcast (either in recovery or once recovery is complete and normal processing continues).

It was discussed that the way to ensure the recovering LSMS gets the sending SVs, is to include any of these SVs. By including these, along with the appropriate download reason, the LSMS would be able to recover sending SVs.

An SP could have a problem if the SV is sent twice (once for the recovery, and once at the next retry attempt). This is why the 2nd requirement (remove from failed list) was added to this change order.

Requirements:

Req 1 – Subscription Data Recovery – Statuses of Subscription Versions Recovered

NPAC SMS shall include Subscription Versions with a status of active, partial failure, disconnect-pending, old with a failed list, and sending, at the time subscription data recovery is requested by the Local SMS and processed by the NPAC SMS, for all Subscription Versions with broadcast activity during the requested recovery timeframe.

Req 2 – Subscription Data Recovery – Removal of Service Provider from Failed SP List of Subscription Versions Recovered

NPAC SMS shall remove a Service Provider from the Failed SP List of a Subscription Version with a status of sending, even if there are additional retry attempts, after the subscription data recovery response has been sent to the Local SMS of that Service Provider.

Req 3 – Subscription Data Recovery – Suppression of Broadcast of Subscription Versions Recovered

NPAC SMS shall ensure that the download of subscription data that was in a sending status at the start of the Subscription Data recovery process, even if there are additional retry attempts, is not sent to the Service Provider at the completion of recovery that included subscription data to the Local SMS.

Req 4 – Number Pool Block Data Recovery – Statuses of Number Pool Blocks Recovered

NPAC SMS shall include Number Pool Blocks with a status of active, partial failure, ~~disconnect-pending~~, old with a failed list, and sending, at the time Number Pool Block data recovery is requested by the Local SMS and processed by the NPAC SMS, for all Number Pool Blocks with broadcast activity during the requested recovery timeframe.

Req 5 – Number Pool Block Data Recovery – Removal of Service Provider from Failed SP List of Number Pool Blocks Recovered

NPAC SMS shall remove a Service Provider from the Failed SP List of a Number Pool Block with a status of sending, even if there are additional retry attempts, after the Number Pool Block data recovery response has been sent to the Local SMS of that Service Provider.

Req 6 – Number Pool Block Data Recovery – Suppression of Broadcast of Number Pool Blocks Recovered

NPAC SMS shall ensure that the download of Number Pool Block data that was in a sending status at the start of the Number Pool Block Data recovery process, even if there are additional retry attempts, is not sent to the Service Provider at the completion of recovery that included Number Pool Block data to the Local SMS.

IIS:

No change required.

GDMO:

-- 1.0 LNP Download Action

```
lnpDownload ACTION
  BEHAVIOUR
    lnpDownloadDefinition,
    lnpDownloadBehavior;
  MODE CONFIRMED;
  WITH INFORMATION SYNTAX LNP-ASN1.DownloadAction;
  WITH REPLY SYNTAX LNP-ASN1.DownloadReply;
  REGISTERED AS {LNP-OIDS.lnp-action 1};
```


lnpDownloadDefinition BEHAVIOUR

DEFINED AS !

The lnpDownload action is the action that is used by the Local SMS and SOA to specify the objects to be downloaded from the NPAC SMS.

!;

lnpDownloadBehavior BEHAVIOUR

DEFINED AS !

Preconditions: This action is issued from an lnpSubscriptions or an lnpNetwork object and all objects to be downloaded are specified in the action request.

Postconditions: After this action has been executed by the Local SMS or SOA specifying which objects to download, the NPAC SMS will determine which objects satisfy the download request and return them in the download action reply. Creation, deletion, and modification information will be included in the reply. All data for objects that have been modified is downloaded not just the information that was modified.

Subscription versions and number pool blocks with a status of active and partial-failure will be recovered. Also Subscription versions and number pool blocks with a status of sending at the start of the recovery process will be recovered.

...
!;

ASN.1:

No change required.

M&P:

No change required.

Origination Date: 8/16/00

Originator: LNPA WG

Change Order Number: NANC 316

Description: Change the NSAP Field Size Declaration in ASN.1 – ASN.1 Recompile

Interface and Functional Backwards Compatible: NO

Re-Compile Only Backwards Compatible: YES

IMPACT/CHANGE ASSESSMENT

FRS	IIS	GDMO	ASN.1	NPAC	SOA	LSMS
			Y	Low	Low	Low

This change order is a recompile of the ASN.1 only.

As described in change order NANC 315 (FRS Document Only Change – NSAP Field Size) that was incorporated in FRS Release 3.0.2, the NSAP field currently uses only 12 of the 20 octets declared as the field size. The other 8 are for a port number but this is not currently used. The ASN.1 should be updated to be a field of size 12 octets. This would eliminate the need for the NPAC software to truncate the data sent by the SOAs and LSMSs.

ASN.1 Update:

```
OSI-Address ::= SEQUENCE {
    nsap    OCTET STRING (SIZE (20012)),
    tsap    OCTET STRING (SIZE (1..4)),
    ssap    OCTET STRING (SIZE (1..4)),
    psap    OCTET STRING (SIZE (1..4))
}
```

Requirements:

No change required.

IIS:

No change required.

GDMO:

No change required.

M&P:

No change required.

Origination Date: 10/25/00

Originator: Verizon

Change Order Number: NANC 319

Description: NPAC Edit to Ensure NPA-NXX of LRN is in Same LATA as NPA-NXX of Ported TN

Pure Backwards Compatible: YES

IMPACT/CHANGE ASSESSMENT

FRS	IIS	GDMO	ASN.1	NPAC	SOA	LSMS
Y				???	N/A	N/A

Business Need:

Local Number Portability (LNP) standards require that service providers assign at least one Location Routing Number (LRN) per switch per LATA that the switch serves. Post-query LNP call processing in the various switch types requires that the NPA-NXX of an LRN that is returned from the database must be in the same LATA as the NPA-NXX of the dialed number.

Currently, the NPAC does not perform any edits on a New Service Provider CREATE or MODIFY messages in order to ensure that the NPA-NXXs of both the LRN and the ported TN are in the same LATA.

When a call is placed to a ported TN associated with an LRN from an NPA-NXX in a different LATA, the call fails in the originating switch, resulting in a service-affecting condition that is predominantly identified only after customer complaints.

Description of Change:

This proposed Change Order is a request for an NPAC edit on New Service Provider CREATE and MODIFY messages that would reject any CREATE or MODIFY if the NPA-NXXs of the LRN and ported TN contained in the CREATE or MODIFY are not in the same LATA. This edit would eliminate this particular service-affecting condition as well as the expense of troubleshooting the cause and working with the New Service Provider to modify their LRN.

Currently the NPAC has no concept of a LATA. When a new NPA-NXX is opened the LERG [Routing Guide](#) assigns a LATA ID. Every NPA-NXX has a LATA association. It is a 3-digit number. There is one LRN per switch per LATA served by that switch, but there can be multiple NPAs in a LATA and multiple LATAs in an NPA. An NPA-NXX is associated with a rate area, a LATA boundary consists of many rate areas, but an NPA-NXX can never span a LATA boundary. A Service Provider can have multiple rate areas serviced by a single switch. This edit would ensure that the NPA-NXX of the TN and the NPA-NXX of the LRN are associated with the same LATA ID. LATAs can cross both state boundaries and NPAC regions. The LERG [Routing Guide](#) would be the source of the LATA information rather than the Service Providers. If there is no LATA in the LERG [Routing Guide](#) information for the NPA-NXX of the TN or the NPA-NXX of the LRN, then the NPAC would reject the create request. If there were a modification or

mass update of an LRN to active SVs, this edit would be applied. This would also apply to Pooled Blocks. LATA should not be selection criteria for Mass Update.

Requirements:

Req 1 LATA ID Information Source

NPAC SMS shall obtain LATA ID information from the LERG [Routing Guide](#).

Req 2 Association of LATA ID with NPA-NXXs

NPAC SMS shall associate a LATA ID with each NPA-NXX used by the NPAC SMS.

Req 3 Association of LATA ID with LRNs

NPAC SMS shall associate a LATA ID with each LRN used by the NPAC SMS.

Req 4 LRN – LATA ID Relationship

Deleted.

Req 5 NPA-NXX – LATA ID Relationship

Deleted.

Req 6 Validation of LATA ID for Subscription Version Creates

NPAC shall reject Subscription Version Create Requests if the NPA-NXX of the TN and the NPA-NXX of the LRN have different LATA IDs.

Req 7 Validation of LATA ID for Subscription Version Modifies

NPAC shall reject Subscription Version Modify Requests if the NPA-NXX of the TN and the NPA-NXX of the LRN have different LATA IDs.

Req 8 Validation of LATA ID for Number Pool Block Creates

NPAC shall reject Number Pool Block Create Requests if the NPA-NXX of the NPA-NXX-X and the NPA-NXX of the LRN have different LATA IDs.

Req 9 Validation of LATA ID for Number Pool Block Modifies

NPAC shall reject Number Pool Block Modify Requests if the NPA-NXX of the NPA-NXX-X and the NPA-NXX of the LRN have different LATA IDs.

Req 10 – Validation of LATA ID Errors on Mass Updates

NPAC SMS shall log an entry to be used for the mass update exception report when any of the LATA ID data edits are violated when mass updating a Subscription Version or Number Pool Block, and continue processing the mass update request.

Note: in an example where 2000 SVs are being mass updated and 100 encountered LATA ID edit errors, the NPAC will perform the mass update by updating the 1900 SVs that are valid, and logging the remaining 100 SVs to be picked up on the mass update exception report.

3-439 Validation of LATA ID for NPA-NXX Creates

NPAC shall reject NPA-NXX Create requests if a valid LATA ID reference does not exist in the LERG Routing Guide.

3-440 Validation of LATA ID for LRN Creates

NPAC shall reject LRN Create requests if a valid LATA ID reference does not exist in the LERG Routing Guide.

IIS

No Change Required

GDMO

No Change Required

ASN.1

No Change Required

M&P

TBD

Origination Date: 12/13/00

Originator: LNPA WG

Change Order Number: NANC 322

Description: Clean Up of Failed SP Lists based on Service Provider BDD Response File

Pure Backwards Compatible: YES

IMPACT/CHANGE ASSESSMENT

FRS	IIS	GDMO	ASN.1	NPAC	SOA	LSMS
Y				???	N/A	???

Business Need:

During discussion of change order NANC 169 at the December 2000 LNPA WG meeting it was decided to write a new change order to address the clean up of Failed SP Lists once a service provider received and processed a Bulk Data Download File or a Delta Bulk Data Download File and responded to the NPAC with its Service Provider BDD Response File.

Description of Change:

It has been requested that NPAC clean up Failed SP Lists using data received in the Service Provider BDD Response File resulting from the processing of a Bulk Data Download File or a Delta Bulk Data Download File.

Requirements:

Req 1 Processing of the Service Provider BDD Response File for Subscription Versions

NPAC SMS shall process the Service Provider BDD Response File, containing “positive” response records for the original BDD file, received from a Service Provider’s ftp site as a result of the Service Provider receiving and processing a Bulk Data Download File or a Delta Bulk Data Download File for Subscription Versions.

Note: in an example where 1000 SVs are selected and placed in the BDD File, the NPAC will expect the Service Provider to provide a response file for those 1000 records, which would include up to 1000 “positive” responses. The definition of a “positive” record in the response file is one where the Service Provider and the NPAC are in sync (whether the Service Provider updated their database or already had the record in their database). So a “positive” response is synchronization-based, not action-based, and the NPAC will use this “positive” response as an indication to remove the Service Provider from the failed list, if applicable.

So, a Service Provider receives a delta BDD that contains 1000 SVs, and they add 990 to their database, and confirm that 8 are already in their database and don’t need any changes. The BDD Response File would contain 998 “positive” responses that the NPAC would then process.

Req 2 Processing of the Service Provider BDD Response File for Number Pooling Blocks

NPAC SMS shall process the Service Provider BDD Response File, containing “positive” response records for the original BDD file, received from a Service Provider’s ftp site as a result of the Service Provider receiving and processing a Bulk Data Download File or a Delta Bulk Data Download File for Number Pooling Blocks.

Note: in an example where 12 Blocks are selected and placed in the BDD File, the NPAC will expect the Service Provider to provide a response file for those 12 records, which would include up to 12 “positive” responses. The definition of a “positive” record in the response file is one where the Service Provider and the NPAC are in sync (whether the Service Provider updated their database or already had the record in their database). So a “positive” response is synchronization-based, not action-based, and the NPAC will use this “positive” response as an indication to remove the Service Provider from the failed list, if applicable.

So, a Service Provider receives a delta BDD that contains 12 Blocks, and they add 10 to their database, and confirm that 1 is already in their database and doesn’t need any changes. The BDD Response File would contain 11 “positive” responses that the NPAC would then process.

Req 3 Removing a Service Provider from a Subscription Version Failed SP List

NPAC SMS shall remove a Service Provider from a Subscription Version Failed SP List based on the SVID contained in the Service Provider BDD Response File and the timestamp in the file name being greater than or equal to the broadcast timestamp.

Req 4 Removing a Service Provider from a Number Pooling Block Failed SP List

NPAC SMS shall remove a Service Provider from a Number Pooling Block Failed SP List based on the BlockID contained in the Service Provider BDD Response File and the timestamp in the file name being greater than or equal to the broadcast timestamp.

Req 5 Service Provider Not Found on the Failed SP List

NPAC SMS shall continue processing the Service Provider BDD Response File after finding that the SPID for one of the data items in the Service Provider BDD Response File does not match a SPID on the Failed SP List.

Req 6 Validation of SPID in the Service Provider BDD Response File Against SPID of the FTP Directory

NPAC SMS shall validate the SPID of the FTP directory against the SPID in the Service Provider BDD Response File it is retrieving.

Req 7 File Name Format for Service Provider BDD Response File

NPAC SMS shall require the file name format of the Service Provider BDD Response File to be the original BDD File Name with a dash and the SPID appended at the end.

Example: Subscription Versions BDD File for SPID 4768

BDD File Name NPANXX-NPANXX.DD-MM-YYYYHH24MISS
Service Provider BDD Response File Name NPANXX-NPANXX.DD-MM-YYYYHH24MISS-4768

Req 8 File Contents for Service Provider BDD Response File

NPAC SMS shall require the file contents of the Service Provider BDD Response File to contain a minimum format of SVID/PooledBlock ID and TN/PooledBlock, based on a response file for either Subscription Version data or Block data.

Note: A Service Provider can either send back the same file (with SPID value appended at the end of the file name), or a truncated version of the rest of the data, as long as the first two columns are in the response file.

Example of BDD Response File: Subscription Versions BDD Response File for SPID 4768 (Block Response Files would contain the parenthetical attributes)

SVID (or Block ID) <pipe> TN (or Block value) <pipe> <CR>
123987|7032281234 <CR> (end of first TN with “positive” response)
123988|7032281235<CR> (end of second TN with “positive” response)
123989|7032281236 <CR> (end of third TN with “positive” response)
123990|7032281237 <CR> (end of fourth TN with “positive” response)
123991|7032281238 <CR> (end of fifth TN with “positive” response)

Note: There will be separate files for Subscription Versions and Number Pool Blocks.

Req 9 Complete File Processing for Service Provider BDD Response File

NPAC SMS shall require the file contents of the Service Provider BDD Response File to contain a “positive” response for each “in-sync” record from the original BDD File, and the NPAC SMS shall successfully process each record in a Service Provider BDD Response File once.

Note: Service Providers cannot provide more than one BDD Response File for any given BDD File. The definition of a “positive” record in the response file is one where the Service Provider and the NPAC are “in-sync” (whether the Service Provider updated their database or already had the record in their database). So a “positive” response is synchronization-based, not action-based, and the NPAC will use this “positive” response as an indication to remove the Service Provider from the failed list, if applicable.

Example files and table will be added to Appendix E in the FRS.

IIS

No Change Required

GDMO

No Change Required

ASN.1

No Change Required

M&P

TBD (need to cover how NPAC is notified that the SP BDD Response File has been placed in the ftp site; recommend that the response file not be generated by a SP who has processed a BDD file that contains the complete database dump)

Origination Date: 01/10/2001

Originator: LNPA WG

Change Order Number: NANC 323

Description: Partial Migration of a SPID via Mass Update

Interface and Functional Backwards Compatible: NO

IMPACT/CHANGE ASSESSMENT

FRS	IIS	GDMO	ASN.1	NPAC	SOA	LSMS
Y	Y			Med	Med-High	Med-High

January 2001: After much discussion on the NANC 217 change order the LNPA WG decided that it would be best to have two change orders for updating of SPIDs. NANC 217 would be retained and used to cover the simple case where a SPID is being completely retired (merger or acquisition) and a new change order (NANC 323) created to cover the partial update of a SPID (parts of a company’s assets are transferred to another company). The majority of the information in the NANC 217 change order has been moved into this new change order. The ‘Business Need’ and ‘Description of Change’ that follows was copied directly from NANC 217 so that the history of the requested change would not be lost, however, this change order **will not** address the complete migration of one SPID to another. The complete migration of one SPID to another is covered in NANC 217.

Business Need:

Currently the NPAC does not have the ability to broadcast a mass update on SPID. SPs are experiencing the need to change the SPID on ported telephone numbers. Examples that cause this situation for SPs are mergers, service area trading, data system consolidations, etc. In order to make a SPID change for given ported telephone numbers, the current NPAC operation requires each involved active-like ported telephone numbers to be deleted, and each involved pending subscription to be cancelled resulting in a large coordination effort among service providers. Coordination with all service providers utilizing the NPA/NXX is required to facilitate the SPID change. During the transition period, call routing will be affected and customer service is impacted. Once these actions have been taken and the new network data updated at NPAC, the active-like and pending ported telephone numbers information must be re-created. This procedure causes the customer to be out of service during the process and also increase the porting traffic over the interface.

This Change Order would allow the NPAC to perform this functionality without affecting the customer while reducing porting traffic over the interface.

Description of Change:

It has been requested that Mass Update functionality be enhanced to allow SPID to be changed for all network data and subordinate subscription data. The current NPAC functionality allows mass updates to LRN, GTT data, and optional data (e.g., billing ID) for all active subscriptions currently serviced by that specific Service Provider, by NPA-NXX.

Having this functionality would facilitate a situation where one Service Provider (SP1) purchases/merges with another Service Provider (SP2), and all LNP data needs to be consolidated into a single SPID (on the NPAC) or separated into multiple SPIDs.

Today, the NPAC requires all active subscriptions to be disconnected, and all pending subscriptions to be cancelled, by NPA-NXX for all NPA-NXXs owned by or ported away from SP2. Next, SP2 would delete all LRNs, and then delete all NPA-NXXs. SP1 would then have to add the NPA-NXXs and LRNs that were just deleted by SP2. Finally, the pending and activated SVs would need to be “re-created” under the presumption that SP1 is now the code holder for the NPA-NXXs.

The proposed solution with this change order is the NPAC would perform all of this processing “under the sheets”, and not require SP1 and SP2 to perform all of these steps. The issue of notifications (whether to send or suppress) is NOT addressed at this point in time.

After further analysis it was determined that the current NPAC implementation includes 23 tables that contain a customer SPID. Each will have to be addressed (at a business level) to determine correct NPAC processing should the SPID be modified.

The other issues to determine include:

1. length of time to complete this update.
2. which notifications need to be sent out over the SOA interface, since we are modifying numerous objects.
3. what do we do with current Network and Subscription records (update them with new SPID; or create new ones for the new SPID, and move the previous ones to OLD).

After much discussion on the 7/8/98 telecon, it was decided that the scope of this change order is huge, and it’s frequency of use is undetermined at this point in time (speculation is relatively small).

Additionally, AT&T requested that all SPs look at the possibility of performing some type of database migration/conversion instead of having the NPAC perform all of the updates, then have to broadcast to all SPs. The database migration/conversion could potentially be accomplished by using a new NPAC “bulk download file” to update the local database.

The current position for this change order is to have a brief discussion at the Wed, 7/15 meeting in Chicago. The group will seek volunteers for a sub-committee to further analyze this change order in the context of how to accomplish a “merger” using today’s functionality, and investigate potential solutions using a “bulk download file” approach, and a full NPAC solution with notifications across the interface. Participants include, AT&T (Beth), Bellcore (John), ESI (Jim), GTE (Gene), MCI (Gustavo), PacBell (Jackie), and Sprint (Dave).

The subcommittee will also talk about the potential of a "partial cut" from one SPID to another (possibly do on a market by market basis, or NPA by NPA basis). During the 11/23/98 telecon, it was determined that Beth’s proposed short term solution would not be easy to accomplish.

Details on the telecon will be available at the Dec LNPAWG meeting.

Dec LNPAWG (Atlanta), Mass update is the long term solution, but wanted to have short term solution. In the case of MCI and Brooks, they deleted the SVs, deleted the network data, then put it back out there under the new SPID.

What we looked at for an NPAC manual update, then produce BDD, would require code changes. Plus, BDD would be all records instead of just changed ones. Also, SVs would be modified instead of activated, so the current BDD by time range would NOT pick these up. Current solution is customer impacting. Two long term options are the actual mass update of this change order, or having the NPAC internally update the SPID, then create appropriate BDD files that capture the changes within the time range.

Jan 00 LNPAWG meeting, the current processing approach is to have the NPAC perform this processing on the NPAC database, then when complete, create separate Bulk Data Download files for the different areas of data (i.e., NPA-NXX, LRN, NPA-NXX-X, Block, SV) that could then be used by each SOA/LSMS to update their local database. However, since this would require Service Providers to wait until the NPAC completed this processing, before they could update their own database, the new approach is for the NPAC to create Selection Input Criteria SPID Mass Update Request Files (SIC-SMURF) that could be used by the NPAC and all Service Providers as the input for everyone to update their own database. It was agreed that we no longer needed the results files.

December 00: Additional information was added to both the Business Need and Description of Change by Sprint to cover the situation of a single SPID being split into multiple SPIDs.

July 02: four major points were discussed, all to resolution.

1. LNP Type was discussed. Situation is where a migration causes an SV to have the same value for both old SPID and new SPID. Initially, the intent was to add a requirement to modify the LNP Type (from LSPP to LISP). After further input and investigation, it was determined that this migration could only be performed on NPAC data, and not Service Provider data. The result is that LNP Type will NOT be modified during the migration process.
2. Minimum granularity at the dash-x level was discussed, and determined to be correct. Cannot use the current de-pool process to change ownership because it would take customers out of service for working numbers for the block holder.
3. Selection criteria of network data and/or LRN. Consistency needs to be enforced, so if NPA-NXX and LRN are not both in the selection criteria, then issue an error to the user. As an example, NPA-NXX of 703-222 is owned by the *migrating from* SPID, which also uses 703-222-0000 as it's LRN. When performing the input data for the migration, only one of these are specified as selection criteria, which will cause an error to be issued to the NPAC user. Both the NPA-NXX and the LRN must be specified for the migration process to continue and generate the correct SMURF files.
4. Pending-Like SVs. It was discussed that migrating these SVs would likely cause problems for the *migrating to* SPID, because they would not have any previous knowledge and would either not take appropriate action, or they would receive notifications for SVs that none of their systems recognize. The resolution was to invoke behavior similar to the "pending-like, no-actives" that is currently in place for Number Pooling. So, a SPID Migration tool will be developed to identify pending-like SVs, and those SVs would need to be "cleaned-up" prior to the migration (i.e., they would need to be activated or cancelled). M&Ps will be established to ensure that no pending-likes exist prior to the execution of the migration process, and also capture the new behavior, including how to handle exceptions.

Requirements:

Req 1 SPID Mass Update – OpGUI Entry

NPAC SMS shall allow NPAC Personnel, via the NPAC SMS Administrative Interface, to enter selection input criteria (mandatory: migrating away from SPID, migrating to SPID; at least one of the following three: NPA-NXX, LRN, and/or NPA-NXX-X) for a partial SPID Mass Update Request Process.

Req 2 SPID Mass Update – Generation of SIC-SMURF Files

NPAC SMS shall provide a mechanism that generates ~~Selection Input Criteria SPID Mass Update Request Files~~ (SIC-SMURF) for NPA-NXX, LRN, and/or NPA-NXX-X upon completion of the entry of the selection input criteria in the NPAC SMS Administrative Interface, for a partial SPID Mass Update Request Process in the NPAC SMS.

Req 3 SPID Mass Update – NPAC SMS Processing of Requested Data

NPAC SMS shall provide a mechanism to mass update SPID information according to the requested selection input criteria, when changing from one SPID to another SPID in selected NPA-NXX, LRN, and/or NPA-NXX-X data, and subordinate Number Pool Block and Subscription Version data in the NPAC SMS.

Req 4 SPID Mass Update – Suppression of Notifications

NPAC SMS shall suppress notifications to all Service Providers via the SOA to NPAC SMS Interface and NPAC SMS to LSMS Interface, when performing the partial SPID Mass Update Request Process.

Req 5 SPID Mass Update – NPAC SMS Processing of Requested Data Based on Status

NPAC SMS shall migrate NPA-NXX, LRN, and/or NPA-NXX-X data, as well as Number Pool Block and Subscription Version data that have ‘active-like’ or statuses when performing the partial SPID Mass Update Request Process.

Notes:

- ‘Active-like’ Blocks or Subscription Versions are defined to be Blocks or Subscription Versions that contain a status of active, sending, partial failure, old with a Failed SP List, or disconnect pending.
- ‘Pending-like’ Blocks or Subscription Versions are defined to be Blocks or Subscription Versions that contain a status of pending, conflict, cancel-pending, or failed. These will be required to be cleaned-up (activated or cancelled) prior to the execution of the migration process, so that none exist during the migration process.
- “Old” history data containing a status of cancelled or old with an empty FailedSP-List will NOT be migrated.

Req 6 SPID Mass Update – SIC-SMURF File Names

NPAC SMS shall follow the SIC-SMURF file naming convention as described in Appendix E.

Req 7 SPID Mass Update – SIC-SMURF File Formats

NPAC SMS shall follow the SIC-SMURF file format as described in Appendix E.

Req 8 SPID Mass Update – SIC-SMURF NPA-NXX File Processing – Update NPA-NXX Network Data

NPAC SMS shall use the SIC-SMURF NPA-NXX file to update the SPID associated with NPA-NXXs in the NPAC SMS, from the *migrating away from SPID* value to the *migrating to SPID* value, during the partial SPID Mass Update Request Process.

Req 9 SPID Mass Update – SIC-SMURF NPA-NXX File Processing – Update Old SPID on SV Data

NPAC SMS shall use the SIC-SMURF NPA-NXX file to update the old service provider SPID on ‘active-like’ subscription versions when the NPA-NXX codeholder SPID is the same as the *migrating away from SPID* value in the old service provider SPID on the ‘active-like’ subscription version, from the *migrating away from SPID* value to the *migrating to SPID* value, during the partial SPID Mass Update Request Process.

Note: Service Providers need to be aware that if they query the NPAC SMS, [historical copies of subscription versions and number pool blocks will still contain the SPIDs they had prior to migration and the old service provider SPID has been migrated they may get old service provider information that is incorrect.](#)

Req 10 SPID Mass Update – SIC-SMURF LRN File Processing – Update LRN Data

NPAC SMS shall use the SIC-SMURF LRN file to update the SPID associated with LRNs in the NPAC SMS, from the *migrating away from SPID* value to the *migrating to SPID* value, during the partial SPID Mass Update Request Process.

Req 11 SPID Mass Update – SIC-SMURF LRN File Processing – Update Block Data

NPAC SMS shall update the blockholder SPID on Number Pool Blocks associated with the LRN that was updated in the NPAC SMS, from the *migrating away from SPID* value to the *migrating to SPID* value, during the partial SPID Mass Update Request Process.

Req 12 SPID Mass Update – SIC-SMURF-LRN File Processing – Update SV Data

NPAC SMS shall update the new service provider SPID on subscription versions, regardless of LNP Type, associated with the LRN that was updated in the NPAC SMS, from the *migrating away from SPID* value to the *migrating to SPID* value, during the partial SPID Mass Update Request Process.

Req 13 SPID Mass Update – SIC-SMURF NPA-NXX-X File Processing – Update NPA-NXX-X

NPAC SMS shall use the SIC-SMURF NPA-NXX-X file to update the SPID associated with NPA-NXX-Xs in the NPAC SMS, from the *migrating away from SPID* value to the *migrating to SPID* value, during the partial SPID Mass Update Request Process.

Req 14 SPID Mass Update – Maximum Level of Granularity

NPAC SMS shall perform the partial SPID Mass Update Request Process at a maximum level of granularity of a single SPID.

Req 15 SPID Mass Update – Minimum Level of Granularity

NPAC SMS shall perform the partial SPID Mass Update Request Process at a minimum level of granularity of an NPA-NXX-X.

Req 16 SPID Mass Update – Creation of Number Pool Block for Old Service Provider

NPAC SMS shall create an old Number Pool Block with a new version id for the *migrating away from SPID*, for a Number Pool Block that contains a status of active, partial failure, or old with a FailedSP-List, prior to the partial SPID Mass Update Request Process.

Req 17 SPID Mass Update – Creation of Number Pool Block for Old Service Provider – No Broadcast

NPAC SMS shall broadcast no data to the SOAs and LSMSs due to the creation of an old Number Pool Block with a new version id for the *migrating away from SPID*, for a Number Pool Block that contains a status of active, partial failure, or old with a FailedSP-List, prior to the partial SPID Mass Update Request Process.

Req 18 SPID Mass Update – Creation of Subscription Version for Old Service Provider

NPAC SMS shall create an old subscription version with a new version id for the *migrating away from SPID*, for a subscription version that contains a status of active, partial failure, disconnect pending, or old with a FailedSP-List, prior to the partial SPID Mass Update Request Process.

Req 19 SPID Mass Update – Creation of Subscription Version for Old Service Provider – No Broadcast

NPAC SMS shall broadcast no data to the SOAs and Local SMSs due to the creation of an old subscription version with a new version id for the *migrating away from SPID*, for a subscription version that contains a status of active, partial failure, disconnect pending, or old with a FailedSP-List, prior to the partial SPID Mass Update Request Process.

Req 20 SPID Mass Update – Exclusion of Data During Recovery

NPAC SMS shall exclude data in a recovery request for activity related to partial SPID Mass Update Request Process activity.

Req 21 SPID Mass Update – Rejection for ‘pending-like’ Number Pool Blocks or Subscription Versions

NPAC SMS shall reject a SPID Mass Update Request Process by NPAC Personnel, if any “pending-like” Number Pool Blocks or Subscription Versions exist where the *migrating away from SPID* value is present.

Note: For Number Pool Blocks this will be the Block Holder SPID, and for Subscription Versions this will be either the New SPID or Old SPID.

Req 22 Update SPID on ‘pending-like’ Subscription Versions – Creation of Subscription Version for Old Service Provider

Deleted

Req 23 Update SPID on ‘pending-like’ Subscription Versions – Creation of Subscription Version for Old Service Provider – No Broadcast

Deleted.

Req 24 Update SPID on Messages Queued for Recovery

NPAC SMS shall apply the SPID update to any messages that are in the queue for recovery.

Req 25 SPID Mass Update – Consistency Check Across Network Data and LRN

NPAC SMS shall perform a consistency check across the selection criteria for NPA-NXX, LRN, and/or NPA-NXX-X, to ensure applicable data belonging to the *migrating away from SPID* is included in the SMURF files for NPA-NXX, LRN, and/or NPA-NXX-X, and issue an error to NPAC Personnel, during the partial SPID Mass Update Request Process.

Note: The selection criteria of network data and/or LRN will have consistency edits enforced. In the case where all applicable data are NOT in the selection criteria, an error will be issued to the NPAC Personnel. As an example, NPA-NXX of 703-222 is owned by the *migrating from* SPID, which also uses 703-222-0000 as its primary LRN, and has a Number Pool Block of 703-567-2 which uses the 703-222-0000 LRN. When performing the input data for the migration, only one of these are specified as selection criteria, which will cause an error to be issued to the NPAC user. The NPA-NXX, LRN, and NPA-NXX-X must all be specified for the migration process to continue and generate the correct SMURF files.

IIS:

Appendix E

SIC-SMURF NPA-NXX Download File

The SIC-SMURF NPA-NXX download file is used as input to the SPID mass update process in the NPAC SMS and all SOAs/LSMSs, to convert NPA-NXX data from the Old SPID to the New SPID. This file contains individual fields that are pipe delimited, with a carriage return (CR) after each SIC-SMURF NPA-NXX record.

The file name for the SIC-SMURF NPA-NXX download file will be in the format:

SIC-SMURF-NPANXX.OldSPID.NewSPID.DD-MM-YYYYHH24MISS (The SIC-SMURF-NPANXX portion is the literal string "SIC-SMURF-NPANXX". The OldSPID is the four digit ID of the Old Service Provider. The NewSPID is the four digit ID of the New Service Provider.)

The SIC-SMURF NPA-NXX file given in the example would be named:

SIC-SMURF-NPANXX.0001.0002.25-12-1996081122

EXPLANATION OF THE FIELDS IN THE SIC-SMURF NPA-NXX DOWNLOAD FILE		
Field Number	Field Name	Value in Example
1	Old Service Provider Id	0001
2	New Service Provider Id	0002
3	NPA-NXX Value	312382

Example File:

0001 0002 312382(CR)	(end of NPA-NXX 1)
0001 0002 312383(CR)	(end of NPA-NXX 2)
0001 0002 312386(CR)	(end of NPA-NXX 3)
0001 0002 312382(CR)	(end of NPA-NXX 4)
0001 0002 312392(CR)	(end of NPA-NXX 5)

SIC-SMURF LRN Download File

The SIC-SMURF LRN download file is used as input to the SPID mass update process in the NPAC SMS and all SOAs/LSMSs, to convert LRN, Block (SOA/LSMS optional), Subscription Version, and scheduled event for Block (NPAC only) data from the Old SPID to the New SPID. This file contains individual fields that are pipe delimited, with a carriage return (CR) after each SIC-SMURF LRN record.

The file name for the SIC-SMURF LRN download file will be in the format:

SIC-SMURF-LRN.OldSPID.NewSPID.DD-MM-YYYYHH24MISS (The SIC-SMURF-LRN portion is the literal string "SIC-SMURF-LRN". The OldSPID is the four digit ID of the Old Service Provider. The NewSPID is the four digit ID of the New Service Provider.)

The SIC-SMURF-LRN file given in the example would be named:

SIC-SMURF-LRN.0001.0002.25-12-1996081122

EXPLANATION OF THE FIELDS IN THE SIC-SMURF LRN DOWNLOAD FILE		
Field Number	Field Name	Value in Example
1	Old Service Provider Id	0001
2	New Service Provider Id	0002
3	LRN Value	3123820000

Example File:

```
0001|0002|3123820000 (CR)      (end of LRN 1)
0001|0002|3123830000 (CR)      (end of LRN 2)
0001|0002|3123860000 (CR)      (end of LRN 3)
0001|0002|3123820000 (CR)      (end of LRN 4)
0001|0002|3123920000 (CR)      (end of LRN 5)
```

SIC-SMURF NPA-NXX-X Download File

The SIC-SMURF NPA-NXX-X download file is used as input to the SPID mass update process in the NPAC SMS and all SOAs/LSMSs, to convert NPA-NXX-X data (SOA/LSMS optional) from the Old SPID to the New SPID. This file contains individual fields that are pipe delimited, with a carriage return (CR) after each SIC-SMURF NPA-NXX-X record.

The file name for the SIC-SMURF NPA-NXX-X download file will be in the format:

SIC-SMURF-NPANXXX.OldSPID.NewSPID.DD-MM-YYYYHH24MISS (The SIC-SMURF-NPANXXX portion is the literal string "SIC-SMURF-NPANXXX". The OldSPID is the four digit ID of the Old Service Provider. The NewSPID is the four digit ID of the New Service Provider.)

The SIC-SMURF-NPA-NXX-X file given in the example would be named:

SIC-SMURF-NPANXXX.0001.0002.25-12-1996081122

EXPLANATION OF THE FIELDS IN THE SIC-SMURF NPA-NXX-X DOWNLOAD FILE

Field Number	Field Name	Value in Example
1	Old Service Provider Id	0001
2	New Service Provider Id	0002
3	NPA-NXX-X Value	3123820

Example File:

0001 0002 3123820(CR)	(end of NPA-NXX-X 1)
0001 0002 3123824(CR)	(end of NPA-NXX-X 2)
0001 0002 3123862(CR)	(end of NPA-NXX-X 3)
0001 0002 3123868(CR)	(end of NPA-NXX-X 4)
0001 0002 3123928(CR)	(end of NPA-NXX-X 5)

GDMO:

No change required.

ASN.1:

No change required.

M&P:

Since the SPID Mass Update Request Process is very different from the existing M&P write-up for mass update, a new section will be created in chapter 8.

The SPID Mass Update Request Process must be flash cut on NPAC and all LSMSs during an agreed upon quiet period.

Need to define M&P steps. Use current mass update process as baseline, and add changes to reflect SPID Mass Update Request Process. Call NPAC personnel to give update info (both old and new SPs). This could be at as high a level of the Old SPID to the New SPID, Old SPID for these NPAs to the New SPID, or as low a level of the Old SPID for this NPA-NXX-X to the New SPID. NPAC personnel will enter this into the GUI and use this to generate the “abbreviated format” files (with summary records, like on board, SELECTION INPUT CRITERIA SPID MASS UPDATE REQUEST FILE – SIC-SMURF). These are moved to the FTP site, and are available to the SPs. The requesting SP verifies file, and authorizes the migration. The amount of time for the migration down time is agreed upon by NPAC and all SPs on a case-by-case basis. NPAC and all SPs start their own migration process.

Assumption is NPAC is down during this migration period.

The migration process for NPAC will create an old SV for the active ones in the old SP at the time of moving to the new.

A tool/query that will check for “pending-like” Blocks and SVs will need to be incorporated.

NPAC Personnel will work with the applicable SPs to get these cleaned-up prior to the creation of the SMURF files. The records will need to either be activated or cancelled.

Notes:

SPs need to look internally, if there might be a billing issue on the local side.

~~The NPAC billing information will not be changed for days prior to mass update of SPID. Billing information will not be changed by Mass Update of SPID.~~

Origination Date: 4/12/02

Originator: Telcordia

Change Order Number: NANC 354

Description: Delta Download File Creation by Time Range for Network Data (cousin of 169)

Cumulative SP Priority, Weighted Average:

Pure Backwards Compatible: YES-NO. New bulk data download file naming convention may require changes on the Local systems to process the files. There is no impact to the interface. (May have operational impacts since this is optional functionality and not over the SOA to NPAC interface, or the NPAC to LSMS interface).

IMPACT/CHANGE ASSESSMENT

FRS	IIS	GDMO	ASN.1	NPAC	SOA	LSMS
Y				Med-:Low	???	???

Business Need:

(the following text is copied from the existing NANC 169 change order).

Currently the NPAC does not have the ability to create a delta bulk data download file by date and time range. This change order is expected to help with an SP’s capability to ‘catch-up’ faster after an extended outage, as porting volume increases. The ability to create a delta bulk data download file by date and time range (downloading only the actual data required) reduces the work effort of the SP while getting the SP back in-sync with the NPAC in a more timely manner which in turn facilitates proper call routing.

(New text for NANC 354, which is a variant of NANC 169)

With this change order the NPAC will have the ability to generate a delta BDD file for NPA-NXX, LRN, and NPA-NXX-X data.

Description of Change:

((the following text is copied from the existing NANC 169 change order).

Need to change functionality when requesting NPA-NXX, LRN, and NPA-NXX-X BDD with a time range. Currently, the NPAC provides all data (no selection criteria available). The start and end time ranges will be included in the file name.

(New text for NANC 354, which is a variant of NANC 169)

For NPA-NXX and LRN the time range will be based on when that NPA-NXX or LRN was created/deleted in the NPAC, and for NPA-NXX-X the time range will be based on when that NPA-NXX-X was created/modified/deleted in the NPAC.

Delta BDD functionality for network data will also have an option to provide the latest view of activity in the file (e.g., if an NPA-NXX is added, then deleted, the BDD file would contain the last activity, “delete this NPA-NXX”).

For NPA-NXX and LRN, the activity includes adds and deletes. For NPA-NXX-X, the activity includes adds, modifies, and deletes.

NOTE: The implementation of NANC 356 will introduce modifications to NPA-NXX.

Requirements:

Req 1 Network Data Information Bulk Download File Creation – Network Data

NPAC SMS shall allow NPAC personnel to request a set of bulk data download files for Network data, which consists of NPA-NXX, LRN, and NPA-NXX-X, via the NPAC Administrative Interface. (existing NPAC SMS functionality)

Req 2 Network Data Information Bulk Download File Creation – Selection Criteria

NPAC SMS shall include the Requesting Service Provider, *All Network Data* or *Latest View of Network Data Activity* Choice, and Time Range as Selection Criteria fields for the Network Data bulk data download files via the NPAC Administrative Interface.

Req 3 Network Data Information Bulk Download File Creation – All Network Data or Latest View of Network Data Activity Choice

NPAC SMS shall allow NPAC Personnel to select either *All Network Data* or *Latest View of Network Data Activity*, and shall use the selected choice, for Network Data.

Req 4 Network Data Information Bulk Download File Creation – Data in All Network Data Choice

NPAC SMS shall use the *All Network Data* selection to include all Network Data in the Network Data Bulk Data Download files.

Req 5 Network Data Information Bulk Download File Creation – Data in Latest View of Network Data Activity Choice

NPAC SMS shall use the *Latest View of Network Data Activity* selection to include all Network Data, in order to capture activation, modification (NPA-NXX-X only), and deletion transactions for Network Data, but only include the latest instance of the Network Data in the Network Data Bulk Data Download files, when Network Data has more than one activity (e.g., addition, then modification of an NPA-NXX-X) within the specified time range.

Note to Service Providers – The format of the BDD file doesn't change based on the status of the Network Data but some of the fields may be blank. Example: Creates and modifies would have all the attributes specified but disconnect and deletes would have many fields null.

Req 6 Network Data Information Bulk Download File Creation – Time Range

Fields

NPAC SMS shall use the Start Time Range entry field as an inclusive start range, and the End Time Range entry field as an inclusive end range, for Network Data data that were broadcast during the specified Time Range.

Note to Service Providers – The NPAC Administrative Interface is settable for the GUI user’s local time (e.g., a USA in Sterling will have the local time set to Eastern Time). M&Ps will be established to determine the correct time range on the request of the BDD file.

Req 7 Network Data Information Bulk Download File Creation – Time Range Fields and Network Data Data Model

NPAC SMS shall use the Start and End Time Range entry fields to include Network Data, based on the appropriate Broadcast Time Stamp, in order to capture the start of broadcast activity for Activation/Modification/Disconnect, when generating the file for the *Latest View of Network Data Activity* selection.

Req 8 Network Data Information Bulk Download File Creation – Selection Criteria Combinations

NPAC SMS shall edit the selection criteria combination as shown in the table below:

	Time Range	TN Range
All Network Data	Rejected	Not Available
Latest View of Network Data Activity	Required	Not Available

Such that a combination of:

- All with a Time Range shall be rejected.
- Latest View shall require a Time Range.
- TN Range shall not be available for either All or Latest View.

Req 9 Network Data Information Bulk Data Download – Network Data Results

NPAC SMS shall provide a bulk data download file, based on the selection criteria, that contains all Network Data in the NPAC SMS.

Req 10 Network Data Information Bulk Data Download – Network Data Results Sort Order

NPAC SMS shall sort the Network Data Bulk Data Download files, in ascending order based on the value in the NPA-XX/LRN/NPA-NXX-X attribute.

Req 11 Network Data Information Bulk Data Download – Filters for Network Data

NPAC SMS shall apply NPA-NXX Filters to Network Data in the creation of bulk data download files.

Req 12 Network Data Information Bulk Data Download – FTP Sub-Directory

NPAC SMS shall automatically put the Network Data bulk data download files into the FTP sub-directory of the Service Provider, based on SPID, that requested the creation of the Network Data bulk data download files.

IIS

No Change Required

GDMO

No Change Required

ASN.1

No Change Required

M&P

Yes – Need to add a section for Network Data Bulk Data Downloads.