

Change Order Prioritization List with Oct LNPA-WG meeting Weighted Averages

Table of Change Orders for NPAC SMS Release 4.0 (summer of 2001) sorted in order of cumulative SP priority (i.e., weighted average). The weighted average is based on the summary of a priority vote by each SP at the Oct LNPAWG meeting, then divided by the number of voting SPs. 1.00 is the highest possible priority and 22.00 is the lowest possible priority.

Change Order #	Description	NPAC Effort	SOA/LSMS	Weighted Avg
NANC 227 & NANC 254	Failed TN Problems	Med	N/A / Med-Low	4.83
NANC 219	NPAC Monitoring of Associations	Low	N/A / N/A	5.33
NANC 240	No SV Cancel on T2 Expiration	Low	Low / N/A	5.33
NANC 191 & NANC 291	DPC/SSN Value Edit	Low	N/A / N/A	5.42
NANC 297	Sending SVs in Recovery	Med/Low	N/A / N/A	7.50
NANC 192	NPA Split Load File	Medium	N/A / N/A	8.08
NANC 299	NPAC Interface Heartbeat	Medium	N/A / N/A	9.58
NANC 301	NPAC Network Level Heartbeat	Low	Low / Low	NR
NANC 230	Donor SOA PTO	Medium	Med / N/A	9.83
NANC 249	Modification Disconnect Pending Date	Low	Med / N/A	10.33
NANC 294	Due Date Edit (7 PM)	Medium	Med / N/A	10.50
NANC 200	NPA Split Notifications	Med/Low	Med/Med	10.75
ILL 130	Application Level Errors	High	High/High	10.83
NANC 217	Mass Update SPID	Medium	Med-High/Med-High	12.50
NANC 187	Recovery Linked Replies	Medium	Med/Med	12.58
NANC 285	SOA/LSMS Query Size	Low	Med-High / Med-High	12.92
NANC 169	Delta Bulk Data Download for Subscription Versions	Medium	N/A / Med-Low	13.92
NANC 179	TN Range Notification	Medium	Med-High / N/A	14.42
NANC 232	First Port Notification on Web BB	Low	N/A / N/A	14.92
NANC 193	Split Problems (Medium High)	High!	N/A / N/A	16.08
NANC 287	ASN1. Notification Recovery	Low!	Low/Low	18.75
NANC 218	Conflict Timestamp Broadcast SOA	Low	Low / N/A	18.83
ILL 23	Detailed Integrity Report	Low	N/A / N/A	19.75
NANC 138	Definition of Cause Code	Low	N/A / N/A	NR

Note: Change Orders that have been clarifications to previously documented Release 4 change orders have been merged in this document as indicated in the table below and will not be referenced separately as Release 4 change orders.

Change Order Retained	Change Order Merged and Removed
NANC 187	NANC 186
NANC 227	NANC 254
NANC 240	NANC 198

Change Orders rejected for Release 4.0.

Change Order Number	Change Order Description
ILL 5	Round Robin Broadcast to LSMS
ILL 23	Detailed Integrity Report
NANC 87	Viewing of Cancelled Subscription Versions by Old and New SPID Only
NANC 103	Increase of OSI Selector Size
NANC 122	Enhanced Key Expiration Strategy
NANC 169	Delta Bulk Data Download for Subscription Versions
NANC 193	TN Processing during NPAC SMS NPA Split Processing
NANC 204 & NANC 235	Inter-Service Provider Communication (Wireless)
NANC 299	NPAC Interface Heartbeat

Origination Date: 8/7/1998

Change Order Number: NANC 227/254

Description: Exclusion of Service Provider from an SV's Failed SP List

Cumulative SP Priority, Weighted Average: 4.83

Functional Backwards Compatible: NO

IMPACT/CHANGE ASSESSMENT

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

Business Need:

Currently, the NPAC will not permit information about an active ported number to be changed until all SPs have acknowledged receipt of the original information broadcast by NPAC about the number.

Consequently, an error such as wrong LRN cannot be fixed until the original, incorrect, information is broadcast successfully to all SPs. In this example, the customer could receive no incoming calls for hours or even days after cut-over.

Likewise, a subsequent port by a currently ported customer would be prevented by lack of successful broadcast of the original ported number information to all SPs.

With this change order, SPs can make changes quickly to minimize impact on newly ported customer's service and can do ports as scheduled when partial broadcast failure situations occur. Without this change order, only a complex and error prone manual method employed by NPAC personnel is available to circumvent this NPAC software restriction.

Description of Change:

The NPAC SMS currently rejects a request to "modify active" or "disconnect" an SV that has a partial failure status. Nothing can be done to the SV until the discrepant LSMS(s) come back on line, and either recover the broadcast, or accept a re-send from the NPAC.

A business scenario arose whereby a partial failure was affecting a customer's main number, and the New SP couldn't do anything to the SV until the partial failure was resolved.

The NPAC should provide a mechanism that allows activity (modify, disconnect, subsequent port) on the SV, regardless of the Failed SP List.

Jun 99, during the Pooling Assumptions walk-thru, four SV requirements were modified, and the functionality was moved into this change order. Basically, the "partial failure/failed" text is moved to this change order. The affected requirements are listed below:

SV-230 Modification of Number Pooling Subscription Version Information – Subscription Data

SV-240 Modification of Number Pooling Subscription Version Information – Status Update to Sending

SV-270 Modification of Number Pooling Subscription Version Information – Status Update

SV-280 Modification of Number Pooling Subscription Version Information – Failed SP List

Dec 99 LNPA-WG meeting, the consensus of the group is to not include pooling in this change order. The scope of this change order is for regular SVs. Open a new change order to capture pooling (so that we don't lose our work on this up to now).

Jan 00 LNPAWG meeting, the group talked about another option (resend exclusion). So, instead of the NPAC providing a mechanism that allows activity (modify, disconnect, subsequent port) on the SV, regardless of the Failed SP List, the NPAC will provide a mechanism that allows a Service Provider to be removed from a Failed SP List via the new resend exclusion function.

Requirements:

Req 1 – Subscription Version Failed SP List – Exclusion of a Service Provider from Resend

NPAC SMS shall allow NPAC Personnel, via the NPAC Administrative Interface, to request that a Service Provider be excluded from the Subscription Version Failed SP List when resending an Inter-Service Provider port or Intra-Service Provider port Version, and not broadcast to the Service Provider that is excluded.

Req 2 – Subscription Version Failed SP List – Logging of an Excluded Service Provider

NPAC SMS shall log the following information when a Service Provider is excluded from the Failed SP List based on a request by NPAC Personnel via the NPAC Administrative Interface: date, time, excluded SPID, current SPID, TN, SV-ID.

Req 3 – Subscription Version Failed SP List – Recovery of Excluded Service Provider
Subscription Versions

NPAC SMS shall, for a recovery of subscription data, in instances where the NPAC SMS excluded the Service Provider from the Failed SP List based on a request by NPAC Personnel via the NPAC Administrative Interface, allow the Local SMS to recover a Subscription Version with all current attributes, even though the Service Provider is no longer on the Failed SP List.

Req 4 – Subscription Version Failed SP List – Excluded Service Provider Log Data Availability
for the Excluded Service Provider Report

NPAC SMS shall allow the Excluded Service Provider log data to be available for the Excluded Service Provider Report.

Req 5 – Subscription Version Failed SP List – [Resend Excluded Service Provider Report by Current SPID](#) via OpGUI

NPAC SMS shall allow NPAC Personnel, via the NPAC Administrative Interface, to generate the [Resend Excluded Service Provider Report by Current SPID](#) on Excluded Service Provider log data.

Req 6 – Subscription Version Failed SP List – [Resend Excluded Service Provider Report by Current SPID](#) Request

NPAC SMS shall allow NPAC Personnel, via the NPAC Administrative Interface, to specify time range and current SPID option (of either an individual SPID or all SPIDs) when generating the [Resend Excluded Service Provider Report by Current SPID](#) on Excluded Service Provider log data.

Req 7 – Subscription Version Failed SP List – [Resend Excluded Service Provider Report by Current SPID](#) Request Sort Criteria

NPAC SMS shall use the following sort order when generating the [Resend Excluded Service Provider Report by Current SPID](#) on Excluded Service Provider log data:

1. current SPID (ascending)
2. TN (ascending)
3. date/time (earliest date/time to latest date/time)
4. excluded SPID (ascending)
5. SV-ID (ascending)

Req 8 – [Subscription Version Failed SP List –Resend Excluded Service Provider Report by Excluded SPID via OpGUI](#)

[NPAC SMS shall allow NPAC Personnel, via the NPAC Administrative Interface, to generate the Resend Excluded Service Provider Report by Excluded SPID on Excluded Service Provider log data.](#)

Req 9 – [Subscription Version Failed SP List – Resend Excluded Service Provider Report by Excluded SPID Request](#)

[NPAC SMS shall allow NPAC Personnel, via the NPAC Administrative Interface, to specify time range and excluded SPID option \(of either an individual SPID or all SPIDs\) when generating the Resend Excluded Service Provider Report by Excluded SPID on Excluded Service Provider log data.](#)

Req 10 – Subscription Version Failed SP List –Resend Excluded Service Provider Report by Excluded SPID Request Sort Criteria

NPAC SMS shall use the following sort order when generating the Excluded Service Provider Report on Excluded Service Provider log data:

1. excluded SPID (ascending)
2. TN/NPA-NXX-X (ascending)
3. date/time (earliest date/time to latest date/time)
4. currentSPID/Blockholder SPID (ascending)
5. SVID/Number Pool Block -ID (ascending)

IIS:

No change required.

GDMO:

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-- 21.0 LNP NPAC Subscription Version Managed Object Class

subscriptionVersionNPAC MANAGED OBJECT CLASS
...
subscriptionVersionNPAC-Behavior BEHAVIOUR
    DEFINED AS !
...
    When the subscription version broadcast is not successful to all
    service providers, the subscriptionFailedSP-List is populated with a
    list of the failed service providers.
If NPAC Personnel via the NPAC Administrative Interface, exclude a
    Service Provider from the subscriptionFailedSP-List, the list of
    Service Providers will not accurately reflect those Local SMSs
    that successfully processed this subscription version.
...

-- 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 download reason is set to
        'new1' for a new object, 'deletel' for a deleted object
        and 'modified' for a modified object.

An LSMS may receive subscription data during recovery, where more
    than one activity occurred for a given subscription version during
    the time the LSMS was not available. This will occur when NPAC
    Personnel via the OpGUI, exclude a Service Provider from the Failed
    SP List to allow the current Service Provider to perform some type
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of subsequent activity on that subscription version. Hence, when the LSMS performs recovery, the recovered data will contain data for the both activities (all current attributes). So, if the recovering LSMS is recovering a modified subscription version for which it did not receive the initial M-CREATE, the download reason is set to 'modified' for this subscription version object.

!;

ASN.1:

No change required.

M&P:

No change required.

Note:

With this change order, an LSMS may receive subscription data during recovery, where more than one activity occurred for a given subscription version during the time the LSMS was not available. This will occur when NPAC Personnel via the OpGUI, exclude a Service Provider from the Failed SP List to allow the current Service Provider to perform some type of subsequent activity on that subscription version. Hence, when the LSMS performs recovery, the recovered data will contain data for the both activities (all current attributes).

~~Origination Date: 6/5/1998~~

~~Change Order Number: NANC 219~~

~~Description: NPAC Monitoring of SOA/LSMS Associations~~

~~Cumulative SP Priority, Weighted Average: 5.33~~

~~Pure Backwards Compatible: YES~~

IMPACT/CHANGE ASSESSMENT

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

Business Need:

~~Currently SP associations can be down without SP awareness. This change order is requesting the ability for the NPAC to quickly recognize aborted associations and issue alarms. This enhancement will reduce the length of time a SP's association is down. This will decrease the number of partial failures and reduces the impacts of ported customers service due to incomplete/incorrect routing data in SP's network.~~

Description of Change:

~~It has been requested that NPAC Monitoring of SOA and LSMS associations be put into the NPAC SMS at the application (CMIP) layer. The approach suggested by the requestor would be to alarm whenever aborts are received or sent by the NPAC. When these alarms occur then have the NPAC Personnel contact the affected Service Provider (need M&Ps to document this contact procedure) to work to ensure the association is brought back up.~~

~~From this point forward, this change order will deal with the alarm abort option. The heartbeat abort option is NANC 299.~~

~~Jan 00 mtg, need logging for both loss of an association and bind requests.~~

Requirements:

~~Req 1— Association Monitoring~~

~~NPAC shall monitor the status of all association/function type/channel combinations between the NPAC SMS and each associated Service Provider.~~

~~Req 2— Detecting Association Aborts~~

~~NPAC SMS shall be capable of generating a unique alarmable error message when an association abort is sent or received by the NPAC SMS.~~

Req 3—Reporting Association Aborts

~~NPAC SMS shall be capable of reporting an association abort that is sent or received by the NPAC SMS.~~

Req 4—Logging Association Aborts Information

~~NPAC SMS shall log the following information when an association abort is sent/received by the NPAC SMS: date, time, SPID, association function bit mask, initiator of abort, reason for abort when initiated by the NPAC SMS, error-code, error-text.~~

~~Note: The error-code and error-text are extracted from the NpacAssociationUserInfo structure within each abort. An abort sent by the NPAC SMS may contain an error-code value of “access-denied”, “retry-same-host”, or “try-other-host”. If the NPAC SMS is taken offline, a Local SMS may receive an abort without NpacAssociationUserInfo data. If a Local SMS is taken offline, the NPAC SMS will receive an abort without NpacAssociationUserInfo data. A network problem may initiate a similar abort to both or either end of the interface between a Service Provider and the NPAC SMS.~~

Req 4.5—Logging Association Bind Information

~~NPAC SMS shall log the following information when an association bind request (AARQ) is received by the NPAC SMS: date, time, SPID, association function bit mask, recovery mode flag.~~

Req 4.5.1—Logging Association Bind NPAC SMS Response Information

~~NPAC SMS shall log the following information when an association bind response (AARE) is sent by the NPAC SMS: date, time, SPID, association function bit mask, error-code, and error-text.~~

~~Note: The error-code and error-text are extracted from the NpacAssociationUserInfo structure within each bind response. The error-code value will always be “success” and the error-text value will always be “” for a bind response.~~

Req 4.6—Logging Recovery Complete Information

~~NPAC SMS shall log the following information when a recovery complete request is received by the NPAC SMS: date, time, SPID, association function bit mask.~~

Req 5—Association Log Data Availability for the Association Log Report

~~NPAC SMS shall allow the association log data for both types of bind data, recovery complete data and abort data, to be available for the Association Log Report.~~

Req 6—Association Log Report via OpGUI

~~NPAC SMS shall allow NPAC Personnel, via the NPAC Administrative Interface, to generate the Association Log Report on association log data for both types of bind data, recovery complete data and abort data.~~

~~Req 7—Association Log Report Request~~

~~NPAC SMS shall allow NPAC Personnel, via the NPAC Administrative Interface, to specify time range and requesting SPID option (of either an individual SPID or all SPIDs) when generating the Association Log Report on association log data for types of both bind data, recovery complete data and abort data.~~

~~Req 7.5—Association Log Report Request Sort Criteria~~

~~NPAC SMS shall use sort criteria of SPID/alias for primary, and date/time as secondary when generating the Association Log Report on association log data for both types of bind data, recovery complete data and abort data.~~

~~Req 8—Association Log Report for Service Providers~~

~~NPAC SMS shall allow NPAC Personnel, via the NPAC Administrative Interface, to request the Association Log Report on association log data for both types of bind data, recovery complete data and abort data, for either a single Service Provider or all Service Providers.~~

~~Req 9—Association Log Report Format and SPID Selection/Display~~

~~NPAC SMS shall be capable of generating the Association Log Report on association log data for both types of bind data, recovery complete data and abort data, specifying the following:~~

- ~~1—Report Format (detail or summary)~~
- ~~2—SPID Selection (single Service Provider or all Service Providers)~~
- ~~3—SPID Display (actual SPID values, or encoding of all SPID values using aliases)~~

~~Req 10—Association Log Report for Individual Service Provider via LTI~~

~~NPAC SMS shall allow Service Provider Personnel, via the NPAC SOA Low-tech Interface, to request the Association Log Report on association log data for both types of bind data, recovery complete data and abort data, for only their own SPID.~~

~~Req 11—Association Log Report in Detail or Summary Format~~

~~NPAC SMS shall allow the Association Log Report of association log data for both types of bind data, recovery complete data and abort data, to be generated in either detail or summary format.~~

~~NOTE: Detail provides information on each log entry for bind/abort. Summary provides a total number per SPID for each category of log reporting (aborts, association bind requests, association bind responses, recovery completes).~~

~~Req 12—Association Log Report in Summary Format for Individual Service Provider~~

~~NPAC SMS shall allow NPAC Personnel, via the NPAC Administrative Interface, to request on behalf of an individual service provider the Association Log Report on association log data for both types of bind data, recovery complete data and abort data, in summary format, and shall encode the SPID value for all other Service Providers.~~

HS:

No change required.

GDMO:

No change required.

ASN.1:

No change required.

M&P:

Origination Date: 6/5/1998

Change Order Number: NANC 219

Description: NPAC Monitoring of SOA/LSMS Associations

Cumulative SP Priority, Weighted Average: 5.33

Pure Backwards Compatible: YES

IMPACT/CHANGE ASSESSMENT

<u>FRS</u>	<u>IIS</u>	<u>GDMO</u>	<u>ASN.1</u>	<u>NPAC</u>	<u>SOA</u>	<u>LSMS</u>
<u>Y</u>				<u>High</u>	<u>N/A</u>	<u>N/A</u>

Business Need:

(Revised 8/31/00 to reflect the full scope of this change order.)

Whenever an end-user is ported to a new Service Provider, the new Service Provider notifies other carriers that the end-user's service actually is moved by sending an activation message to the NPAC. The NPAC in turn immediately broadcasts routing data for the ported number to these carriers, for their use in properly routing calls to the ported number. However, if a Service Provider's LSMS is off-line at the time of the NPAC's broadcast, that Service Provider's network will not receive correct routing data in a timely manner for the newly ported number and calls from end-users on that Service Provider's network made to the ported number will fail.

This change order allows the NPAC to recognize quickly when an LSMS (or SOA) goes off line, i.e., when its association is aborted, and to issue an alarm. Further, this change order provides for reports of these events, including a monthly report of LSMS Percent Availability by region for every Service Provider's LSMS. Implementation of this change order will reduce the intervals that Service Providers' systems are inadvertently off-line as well as create a foundation for an LSMS Availability requirement. That is, implementation of this change order is expected to reduce LSMS down time and thus improve service to newly ported customers over the long term.

Description of Change:

It has been requested that NPAC Monitoring of SOA and LSMS associations be put into the NPAC SMS at the application (CMIP) layer. The approach suggested by the requestor would be to alarm whenever aborts are received or sent by the NPAC. When these alarms occur then have the NPAC Personnel contact the affected Service Provider (need M&Ps to document this contact procedure) to work to ensure the association is brought back up.

From this point forward, this change order will deal with the alarm abort option. The heartbeat abort option is NANC 299.

Jan 00 mtg. need logging for both loss of an association and bind requests.

July 00 meeting: In the Slow Horse subcommittee meeting it was determined that this change order needed to be amended to include the requirements for two additional reports that are needed for LSMS Percent Availability.

One report will be an Individual LSMS Availability Report that will be produced and distributed to the individual Service Providers/Service Bureaus with an LSMS association on a monthly basis and will contain the following:

- Association Log Report details
- Association Log Report summary
- Individual LSMS “raw” percentage availability
- Calculation used to compute the “raw” percent availability
- Individual LSMS percent availability with adjustment for NPAC unavailability
- Calculation used to compute the percent availability with adjustment for NPAC unavailability

The second report will be a Regional LSMS Availability Report that will contain the following data:

- Raw percentage availability
- Percent availability with adjustment for the NPAC unavailability

- “Appeal” percentage (Service Provider defined)

The Regional LSMS Availability report will be a rolling report that contains data for an 18 month period and will be distributed to the individual Service Providers with a LSMS association and the corresponding regional LLC.

Requirements:

Association Monitoring & Logging

Req 1 – Association Monitoring

NPAC shall monitor the status of all association/function type/channel combinations between the NPAC SMS and each associated Service Provider.

Req 2 – Detecting Association Aborts

NPAC SMS shall be capable of generating a unique alarmable error message when an association abort is sent or received by the NPAC SMS.

Req 3 – Reporting Association Aborts

NPAC SMS shall be capable of reporting an association abort that is sent or received by the NPAC SMS.

Req 4 – Logging Association Aborts Information

NPAC SMS shall log the following information when an association abort is sent/received by the NPAC SMS: date, time, SPID, association function bit mask, initiator of abort, reason for abort when initiated by the NPAC SMS, error-code, error-text.

Note: The error-code and error-text are extracted from the NpacAssociationUserInfo structure within each abort. An abort sent by the NPAC SMS may contain an error-code value of “access-denied”, “retry-same-host”, or “try-other-host”. If the NPAC SMS is taken offline, a Local SMS may receive an abort without NpacAssociationUserInfo data. If a Local SMS is taken offline, the NPAC SMS will receive an abort without NpacAssociationUserInfo data. A network problem may initiate a similar abort to both or either end of the interface between a Service Provider and the NPAC SMS.

Req 4.5 – Logging Association Bind Information

NPAC SMS shall log the following information when an association bind request (AARQ) is received by the NPAC SMS: date, time, SPID, association function bit mask, recovery mode flag.

Req 4.5.1 – Logging Association Bind NPAC SMS Response Information

NPAC SMS shall log the following information when an association bind response (AARE) is sent by the NPAC SMS: date, time, SPID, association function bit mask, error-code, and error-text.

Note: The error-code and error-text are extracted from the NpacAssociationUserInfo structure within each bind response. The error-code value will always be “success” and the error-text value will always be “” for a bind response.

Req 4.6 – Logging Recovery Complete Information

NPAC SMS shall log the following information when a recovery complete request is received by the NPAC SMS: date, time, SPID, association function bit mask.

Req 5 – Deleted

Association Log Reports

Req 6 – Association Log Report via OpGUI

NPAC SMS shall allow NPAC Personnel, via the NPAC Administrative Interface, to generate the Association Log Report on association log data for both types of bind data, recovery complete data and abort data.

Req 7 – Association Log Report Request

NPAC SMS shall allow NPAC Personnel, via the NPAC Administrative Interface, to specify time range and requesting SPID option (of either an individual SPID or all SPIDs) when generating the Association Log Report on association log data for types of both bind data, recovery complete data and abort data.

Req 7.5 – Association Log Report Request Sort Criteria

NPAC SMS shall use sort criteria of SPID for primary, system type for secondary, and date/time as third when generating the Association Log Report on association log data for both types of bind data, recovery complete data and abort data.

Req 7.6 – Association Log Report Display

NPAC SMS shall display the report data with headers indicating SOA or LSMS data.

Req 7.7 – Display of System Status in the Association Log Report at Report Start Time

NPAC SMS shall display the status of the each system (SOA or LSMS) at the report start time as the first line in each corresponding section of the Association Log Report.

Req 7.8 – Display of System Status in the Association Log Report at Report End Time

NPAC SMS shall display the status of the each system (SOA or LSMS) at the report end time as the last line in each corresponding section of the Association Log Report.

Req 7.9 – Valid System Status Values for the Association Log Report

NPAC SMS shall use values of “associated” and “not associated” for the status of each system at the report start and report end times.

Req 8 – Association Log Report for Service Providers

NPAC SMS shall allow NPAC Personnel, via the NPAC Administrative Interface, to request the Association Log Report on association log data for both types of bind data, recovery complete data and abort data, for either a single Service Provider or all Service Providers.

Req 9 – Association Log Report Format and SPID Selection/Display

NPAC SMS shall be capable of generating the Association Log Report on association log data for both types of bind data, recovery complete data and abort data, specifying the following:

1 – Report Format (detail or summary)

2 – SPID Selection (single Service Provider or all Service Providers)

3 – SPID Display (actual SPID values, or encoding of all SPID values using aliases)

Req 10 – Association Log Report for Individual Service Provider via LTI

NPAC SMS shall allow Service Provider Personnel, via the NPAC SOA Low-tech Interface, to request the Association Log Report on association log data for both types of bind data, recovery complete data and abort data, for only their own SPID.

Req 11 – Association Log Report in Detail or Summary Format

NPAC SMS shall allow the Association Log Report of association log data for both types of bind data, recovery complete data and abort data, to be generated in either detail or summary format.

NOTE: Detail provides information on each log entry for bind/abort. Summary provides a total number per SPID for each category of log reporting (aborts, association bind requests, association bind responses, recovery completes).

Req 12 – Association Log Report in Summary Format for Individual Service Provider

NPAC SMS shall allow NPAC Personnel, via the NPAC Administrative Interface, to request, on behalf of an individual service provider, the Association Log Report on association log data for both types of bind data, recovery complete data and abort data, in summary format, and shall encode the SPID value for all other Service Providers.

Individual LSMS Availability Report

Req 13 – Individual LSMS Availability Report for LSMS Associations

NPAC SMS shall produce a monthly Individual LSMS Availability Report, by region, for each Service Provider with an LSMS associated to the NPAC SMS.

Note: For the purpose of this report a Service Provider can also be a Service Bureau. Reports are not distributed to subtending customers of a Service Bureau because only the Service Bureau is being measured.

Req 14 – Relating of Multiple LSMS SPIDs to One Service Provider

NPAC SMS shall have the capability to relate multiple LSMS SPIDs together when these SPIDs belong to the same Service Provider and are updating the same network LNP routing database.

Req 15 – SPID Identifier for Service Providers with Multiple LSMS SPIDs

NPAC SMS shall identify a Service Provider with multiple LSMS SPIDs that update the same network LNP routing database with a composite SPID identifier.

Req 16 – Entry Mechanism for Relating Multiple LSMS SPIDs to One Service Provider

NPAC SMS shall provide a mechanism for NPAC Personnel to enter multiple LSMS SPIDs for one Service Provider when these LSMS SPIDs are updating the same network LNP routing database.

Req 17 – Individual LSMS Availability Report for Service Providers with Multiple LSMS SPID Associations

NPAC SMS shall be able to provide a composite Individual LSMS Availability Report for Service Providers that have multiple LSMS SPIDs associated to the NPAC SMS that update the same network LNP routing database.

Req 18 –Individual LSMS Availability Report Frequency

NPAC SMS shall automatically produce the Individual LSMS Availability Report on a tunable day of the month for the previous calendar month.

Req 19 – Entry Mechanism for Service Provider Maintenance Windows

NPAC SMS shall provide a mechanism for NPAC Personnel to enter the date, start time, and end time of multiple Service Provider Maintenance Windows.

Note: The Service Provider Maintenance Window is the industry approved maintenance windows for Service Providers as described in PIM 2 and approved by the LLCs.

Req 20 – Modify Mechanism for Service Provider Maintenance Windows

NPAC SMS shall provide a mechanism for NPAC Personnel to modify the date, start time, and end time of a Service Provider Maintenance Window.

Req 21 – Delete Mechanism for Service Provider Maintenance Windows

NPAC SMS shall provide a mechanism for NPAC Personnel to delete the date, start time, and end time of a Service Provider Maintenance Window.

Req 22 – Alarm if no Acknowledgement of Service Provider Maintenance Window

NPAC SMS shall send an error message and alarm if there has been no entry of a Service Provider Maintenance Window when the report is run.

Req 23 – Entry Mechanism for NPAC SMS Down Time for the Region

NPAC SMS shall provide a mechanism for NPAC Personnel to enter the date, start time, and end time of NPAC SMS down time outside of Service Provider Maintenance Windows that affects the region.

Req 24 – Entry Mechanism for NPAC SMS Down Time Affecting a Specific Service Provider

NPAC SMS shall provide a mechanism for NPAC Personnel to enter the date, start time, and end time of NPAC SMS down time outside of Service Provider Maintenance Windows that affects a specific Service Provider.

Req 25 – Modify Mechanism for NPAC SMS Down Time

NPAC SMS shall provide a mechanism for NPAC Personnel to modify the date, start time, and end time of NPAC SMS down time outside of Service Provider Maintenance Windows.

Req 26 – Delete Mechanism for NPAC SMS Down Time

NPAC SMS shall provide a mechanism for NPAC Personnel to delete the date, start time, and end time of NPAC SMS down time outside of Service Provider Maintenance Windows.

Req 27 – Individual LSMS Availability Report Contents

NPAC SMS shall generate the Individual LSMS Availability Report with the following content:

1. Input Criteria
2. Individual LSMS “raw” percent availability, composite for any Service Provider that has multiple LSMS SPIDs associated to the NPAC SMS that update the same network LNP routing database.
3. Calculation used to compute the individual LSMS “raw” percent availability. This calculation takes into account Service Providers that have multiple LSMS SPIDs that update the same network LNP routing database.
4. Individual LSMS percent availability adjusted for NPAC caused unavailability, composite for any Service Provider that has multiple LSMS SPIDs associated to the NPAC SMS that update the same network LNP routing database

5. [Calculation used to compute the individual LSMS percent availability adjusted for NPAC caused unavailability](#)
6. [Association Log Report Summary for the LSMS for the report month by SPID](#)
7. [Association Log Report Detail for the LSMS for the report month by SPID](#)

[Example report:](#)

Individual LSMS Availability Report for September

Service Provider Id 1234

Section 1:

Input Parameters:

Service Provider: abcd

Service Provider Maintenance Windows: 09/03/00 6:00 – 18:00

09/10/00 6:00 – 12:00

09/17/00 6:00 – 12:00

09/24/00 6:00 – 12:00

NPAC Downtime Outside of Service Provider Maintenance Windows: 09/15/00 16:00 – 18:00

09/25/00 1:00 – 2:00

09/20/00 8:00 – 8:20

Section 2:

LSMS RAW PERCENT AVAILABILITY = 99.90 %

Section 3:

CALCULATIONS

Total minutes for September = 43,200 minutes (24 hrs * 60 min * 30 days)

Total minutes of Service Provider Maintenance Windows in September = 1,800 minutes

(12 hrs * 60 min * 1 day) + (6 hrs * 60 min * 3 days)

Total minutes Available for Porting in September = 41,400 minutes (43,200 – 1,800)

LSMS Downtime In Minutes = 41 minutes (from NPAC logs)

09/01/00 01.33.47 - 09/01/00 01.52.17 8.5 minutes

.

.

.

09/23/00 11.03.47 - 09/24/00 11.23.17 19.5 minutes

Raw LSMS Availability = 41,359 minutes (41,400 – 41)

LSMS Raw Percent Availability = 99.90% (41359/41400*100)

Section 4

LSMS NPAC ADJUSTED PERCENTAGE AVAILABILITY = 99.90 %

Section 5:

CALCULATIONS

Total minutes in the month = 43,200 minutes (24 hrs * 60 min * 30 days)

Total minutes of Service Provider Maintenance Windows in September = 1,800 minutes

(12 hrs * 60 min * 1 day) + (6 hrs * 60 min * 3 days)

Total minutes of Downtime for NPAC SMS outside of Service Provider Maintenance Windows:

= 200 minutes

Total minutes Available for Porting in September Adjusted for NPAC Downtime

= 41,200 minutes (43,200 – 1,800 – 200)

LSMS Downtime In Minutes = 41 minutes (from NPAC logs)

LSMS\$ Availability adjusted for NPAC Downtime = 41,159 minutes (41,200 – 41)

LSMS\$ Percent Availability adjusted for NPAC Downtime = 99.90% (41159/41200*100)

Section 6:

Association Log Report – Summary

<u>System Type</u>	<u>SPID</u>	<u>Total Down Time</u>
LSMS	1234	41 minutes

Section 7:

Association Log Report – Detail

LSMS\$

<u>SPID</u>	<u>Date & Time</u>	<u>Type of Data</u>	<u>Error Code</u>	<u>Error Text</u>
abcd	09/01/00 00.00.01	Status = Not Associated		
abcd	09/01/00 00.33.47	Bind Request Received	Success	
abcd	09/01/00 00.33.47	Bind Response	Success	
abcd	09/01/00 00.34.48	Recovery Complete	Success	
abcd	09/03/00 18.03.07	Abort Received	Success	
abcd	09/03/00 18.08.42	Bind Request Received	Access denied	Invalid Key
abcd	09/03/00 18.13.37	Bind Request Received	Access denied	Invalid departure time
—				
—				
—				
abcd	09/30/00 06.21.47	Bind Request Received	Success	
abcd	09/30/00 06.21.47	Bind Response	Success	
abcd	09/30/00 06.21.47	Recovery Complete	Success	
abcd	09/30/00 24.00.00	Status = Associated		

Req 28 – “Raw” Percentage LSMS Availability Data Logging

NPAC SMS shall log the “raw” Percentage LSMS availability, region, and SPID from each Individual LSMS Availability Report for use in the Regional LSMS Availability Report.

Req 29 – Adjusted Percentage LSMS Availability Data Logging

NPAC SMS shall log the “adjusted” Percentage LSMS availability, region, and SPID from each individual LSMS Availability Report for use in the Regional LSMS Availability Report.

Req 30 – Maintenance of Data for Multiple LSMS SPIDs Reported as a Composite that become Independent LSMS SPIDs

NPAC SMS shall maintain data on multiple LSMS SPIDs that were reported as a composite, but become independent, under the composite SPID for the period prior to the LSMS SPIDs becoming independent.

Note: Historical data will not be recalculated.

Req 31 – Maintenance of Data for Multiple LSMS SPIDs Reported Independently that become a Composite

NPAC SMS shall maintain data on multiple LSMS SPIDs that were reported independently, but become a composite, under each LSMS SPID for the period prior to the LSMS SPIDs becoming a composite.

Note: Historical data will not be recalculated.

Req 32 – Individual LSMS Availability Report Distribution

NPAC SMS shall email the Individual LSMS Availability Report to the appropriate Service Provider or Service Bureau for which the report is generated.

Calculations to be used for the Individual LSMS Percent Availability

Req 33 – Calculation of Total Minutes in the Month

NPAC SMS shall determine the number of days in the given month and calculate the Total Minutes of Availability in the month (24 hours/day * 60 minutes/hour * X days a month).

Req 34 – Calculation of Total Minutes of Service Provider Maintenance Window in the Month

NPAC SMS shall calculate the Total Minutes of Service Provider Maintenance Window in the month using the number of hours and days of Service Provider maintenance: $(Y_1 \text{ hours/day} * 60 \text{ minutes/hour} * Z_1 \text{ days a month}) + (Y_2 \text{ hours/day} * 60 \text{ minutes/hour} * Z_2 \text{ days a month})$ where:

Y₁ = length of extended maintenance window

Z₁ = number of extended maintenance window days per month (first Sunday only at present time)

Y₂ = length of normal scheduled maintenance window

Z₂ = number of normal scheduled maintenance window days per month (number of Sundays in month minus number of extended maintenance Sundays)

Req 35 – Calculation of Maximum Minutes Available for Porting in the Month.

NPAC SMS shall calculate the Total Minutes of Scheduled LSMS Availability in the month by subtracting the Total Minutes of Service Provider Maintenance Window in the month from the Total Minutes of Monthly Availability.

Req 36 – Calculation of Total Minutes of LSMS Down Time for each LSMS

NPAC SMS shall calculate the time difference between each abort and corresponding bind request for an LSMS and then sum the times together for the monthly down time value.

Note: "Down time" is the time between an abort and the following bind request. Subsequent bind requests without corresponding aborts will be excluded from the calculation. "Down time" during the Service Provider Maintenance Window is not included in the Availability calculation. Aborts with an error-code of retry-other-host and retry-same-host are not to be included in the availability calculation because these error codes indicate NPAC SMS unavailability.

Req 37 – Calculation of LSMS Availability Time

NPAC SMS shall calculate all LSMS availability times based on the "bind" time.

Req 38 –LSMS Unavailability Time

NPAC SMS shall consider the LSMS unavailable between the "abort" time and the "bind" time.

Req 39 – Calculation of Down Time for Service Providers with multiple LSMS SPID Associations

NPAC SMS shall treat multiple LSMS SPID associations to the NPAC SMS from the same Service Provider that update the same network LNP routing database as one association for purposes of down time calculations.

Req 40 – Calculation of Total Minutes of Availability Time

NPAC SMS shall determine the Total Minutes of LSMS Availability Time by subtracting the Total Minutes of LSMS down time from the Total Minutes of Scheduled LSMS Availability for each LSMS Association.

Req 41 – Calculation of “Raw” Percentage for Individual LSMS Availability

NPAC SMS shall calculate the “raw” percent availability for a given LSMS for the given month by dividing the Total Minutes of Availability Time by the Total Minutes of Availability for Porting and multiplying by 100.

Note: “Raw” percent availability means that the percent availability is based on NPAC SMS logging data with adjustment for predefined Service Provider Maintenance Windows only.

Example of the Monthly Analysis:

The following is an example of the monthly analysis for service provider "Sample Telco" in the month of September 2000 with the Service Provider Maintenance Windows occurring every Sunday morning from 6:00 am to 6:00 pm CDT on the 1st Sunday, and 6:00 am to 12:00 noon CDT, i.e., 6 hours a week, the remaining Sundays. “Sample Telco” has a LSMS association to the NPAC SMS.

Total minutes in September = (24 hours/day * 60 minutes/hour * 30 days) 43,200 minutes

Total minutes of Service Provider Maintenance Windows in September = (12 hours/day * 60 minutes/hour * 1 days a month) + (6 hours/day * 60 minutes/hour * 3 days/month) = 1,800 minutes

Total minutes Available for Porting in September = (43,200 minutes - 1,800 minutes) = 41,400 minutes

Downtime for Sample Telco LSMS outside the Service Provider Maintenance Windows in September = 41 minutes

Availability time for Sample Telco in September = (41,400 minutes - 41 minutes) = 41,359 minutes

The “Raw” percentage LSMS Availability for Sample Telco in September = (41,359 minutes/41,400 minutes) X 100 = 99.90%

Req 42 – Calculation of Total Minutes of NPAC SMS Down Time for the Region

NPAC SMS shall calculate the total minutes of NPAC SMS down time, outside of Service Provider Maintenance Windows, for the region, for the month.

Req 43 – Calculation of Percent Availability Adjusted for NPAC SMS Unavailability

NPAC SMS shall calculate the percent availability for a given LSMS for the given month, adjusted for NPAC SMS unavailability, by subtracting the total minutes of NPAC SMS down time outside of Service Provider Maintenance Windows from the total minutes of Availability Time and dividing the result by the Total Minutes of Availability for Porting and multiplying by 100.

Example of the Monthly Analysis:

The following is an example of the monthly analysis for service provider "Sample Telco" in the month of September 2000 with the Service Provider Maintenance Windows occurring every Sunday morning from 6:00 am to 6:00 pm CDT on the 1st Sunday, and 6:00 am to 12:00 noon CDT, i.e., 6 hours a week, the remaining Sundays and adjustment for NPAC SMS unavailability. "Sample Telco" has a LSMS association to the NPAC SMS.

Total minutes in September = (24 hours/day * 60 minutes/hour * 30 days) 43,200 minutes

Total minutes of Service Provider Maintenance Windows in September = (12 hours/day * 60 minutes/hour * 1 days a month) + (6 hours/day * 60 minutes/hour * 3 days/month) = 1,800 minutes

NPAC SMS Down Time outside of Service Provider Maintenance Windows in September = 200 minutes

Total minutes Available for Porting adjusted for NPAC SMS Down Time outside of Service Provider Maintenance Windows = (43,200 minutes - 1,800 minutes - 200 minutes) = 41,200 minutes

Downtime for Sample Telco LSMS outside the Service Provider Maintenance Windows in September = 41 minutes

Availability time for Sample Telco in September = (41,200 minutes - 41 minutes = 41,159 minutes

The "adjusted" percentage LSMS Availability for Sample Telco in September = (41,159 minutes/41,200 minutes) X 100 = 99.90%

Regional LSMS Availability Report

Req 44 – Regional LSMS Availability Report for Service Providers and LLCs

NPAC SMS shall produce a monthly Regional LSMS Availability Report for each NPAC region to be distributed to each Service Provider that has an LSMS association to the region and to the corresponding regional LLC.

Note: For the purpose of this report a Service Provider can also be a Service Bureau. Reports are not distributed to subtending customers of a Service Bureau because only the Service Bureau is being measured.

Req 45 – Regional LSMS Availability Report Frequency

NPAC SMS shall automatically produce the Regional LSMS Availability Report on a tunable day of the month for the previous calendar month.

Req 46 –Regional LSMS Availability Report Input Data

NPAC SMS shall use the following input data to create the Regional LSMS Availability Report:

- A key to convert each Service Provider to an alias
- Previous tunable number of months LSMS Percent Availability
- Appeal data from the individual Service Providers

Req 47 – Entry Mechanism for Service Provider Appeal Data

NPAC SMS shall provide a mechanism for NPAC Personnel to enter the Appeal Data provided by the Service Provider.

Req 48 – Modify Mechanism for Service Provider Appeal Data

NPAC SMS shall provide a mechanism for NPAC Personnel to modify the Appeal Data provided by the Service Provider.

Req 49 – Delete Mechanism for Service Provider Maintenance Windows

NPAC SMS shall provide a mechanism for NPAC Personnel to delete the Appeal Data provided by the Service Provider.

Req 50– Regional LSMS Availability Report Content

NPAC SMS shall be capable of generating the Regional LSMS Availability Report with the following data:

1. Tunable number of months data, with a one month lag, on all LSMSs that have an association to the region (i.e.: latest data displayed in the June 1st report would be for the month of April)
2. “Raw” LSMS percent availability for each month for each LSMS associated to the region
3. LSMS percent availability with adjustment for NPAC SMS unavailability for each month for each LSMS associated to the region
4. Appeals percentages as provided by the individual Service Providers or Service Bureaus for each month for each LSMS associated to the region
5. SPID alias in place of a SPID for each LSMS associated to the region

Note 1: A Service Provider alias is used for confidentiality. Each Service Provider will receive a key for his own alias and corresponding regional LLCs will receive the conversion keys for all Service Providers in their region.

Note 2: Data will be composite for the Service Providers that have multiple LSMS SPIDs associated to the NPAC SMS that update the same network LNP routing database.

Req 51– Regional LSMS Availability Report Delivery Format

NPAC SMS shall deliver the Regional LSMS Availability Report in a comma separated format which can be imported into an Excel spreadsheet.

Example Report:

The following is a representation of what the Regional LSMS Availability Report would look like when imported into the Excel spreadsheet.

Regional LSMS Availability Report for February 1999 – July 2000
Midwest Region

	<u>February 1999</u>			<u>March 1999</u>			<u>...</u>			<u>July 2000</u>		
<u>SPID</u>	<u>Raw % Avail</u>	<u>Adj % Avail</u>	<u>Appeal % Avail</u>	<u>Raw % Avail</u>	<u>Adj % Avail</u>	<u>Appeal % Avail</u>	<u>Raw % Avail</u>	<u>Adj % Avail</u>	<u>Appeal % Avail</u>	<u>Raw % Avail</u>	<u>Adj % Avail</u>	<u>Appeal % Avail</u>
<u>abcd</u>	<u>99.90</u>			<u>98.59</u>						<u>100.00</u>		
		<u>99.95</u>			<u>99.00</u>						<u>100.00</u>	
			<u>100.00</u>			<u>99.50</u>						<u>100.00</u>
<u>defg</u>	<u>98.99</u>			<u>98.47</u>						<u>94.00</u>		
		<u>99.05</u>			<u>99.00</u>						<u>95.00</u>	
			<u>99.50</u>			<u>99.00</u>						<u>96.06</u>
.												
.												
.												
<u>wxyz</u>	<u>97.95</u>			<u>100.00</u>						<u>89.56</u>		
		<u>98.25</u>			<u>100.00</u>						<u>90.00</u>	
			<u>98.50</u>			<u>100.00</u>						<u>91.00</u>

Req 52 –Regional LSMS Availability Report Distribution

NPAC SMS shall email the Regional LSMS Availability Report to each Service Provider and Service Bureau that has an LSMS association to the NPAC region and to the corresponding regional LLCs.

Tunables

Req 53 – LSMS Availability Report Tunable Parameter

NPAC SMS shall provide an LSMS Availability Report tunable parameter that defines the day of the month that the Individual and Regional LSMS Availability Reports will be produced.

Req 54 – LSMS Availability Report Tunable Parameter Usage

NPAC SMS shall use the same tunable value for both the Individual LSMS Availability Report and the Regional LSMS Availability Report each month.

Req 55 – LSMS Availability Report Tunable Parameter Default

NPAC SMS shall default the LSMS Availability Report tunable parameter to one, representing the first day of the month.

Req 56 – LSMS Availability Report Tunable Parameter Valid Values

NPAC SMS shall use the values of 1 to 31 as valid values for the LSMS Availability Report tunable parameter.

Req 57 –LSMS Availability Data Storage Tunable Parameter

NPAC SMS shall provide an LSMS Availability Data Storage tunable parameter that defines the number of months that the LSMS Availability Data (raw, adjusted, and appealed) will be kept.

Req 58 –LSMS Availability Data Storage Tunable Parameter Default

NPAC SMS shall default the LSMS Availability Data Storage tunable parameter to eighteen, representing eighteen months.

Req 59 –LSMS Availability Data Storage Tunable Parameter Valid Values

NPAC SMS shall use the values of 1 to 24 as valid values for the Individual LSMS Availability Data Storage tunable parameter.

IIS:

No change required.

GDMO:

No change required.

ASN.1:

No change required.

M&P:

Origination Date: 10/15/1998

Change Order Number: NANC 240

Description: No cancellation of SVs based on expiration of T2 timer

Cumulative SP Priority, Weighted Average: 5.33

Pure Backwards Compatible: NO

Functional Backwards Compatible: YES

IMPACT/CHANGE ASSESSMENT

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

Business Need:

Currently the NPAC cancels an SV as a result of the new SP failing to send up a matching create within 18 hours. Additional work effort and operational concerns are created when this occurs, including the new SP re-contacting the old SP, and having to re-do the LSR/FOC paper work. In addition to excessive contact between both SPs, the extra work created can delay the actual port and increase the likelihood of disconnects in error. This change order will eliminate the cancellation of the SV and reduce the level of effort and operational issues.

Description of Change:

During the discussion of NANC 198, it was mentioned that Service Providers end up doing more work if the NPAC cancels an SV, at the expiration of the T2 timer, when a New SP does NOT send up a matching Create message.

Therefore, this change order has been opened to explore the possibility of changing the NPAC to cancel the SV, "*at some later date*", than the expiration of T2, which is what the current functionality requires (R5-23.4 New Service Provider Fails to Authorize Transfer of Service).

Keep in mind that if we determine we do NOT want the NPAC to auto cancel at the expiration of T2 (and want some later date), then we need to separate this from the T2 timer. Need to add the option that we may need to incorporate this auto cancel into some type of housekeeping, and not have it scheduled like today's T1 and T2 timers.

The current proposed solution is to leave the SV as pending upon expiration of T2. This will be cleaned up by NPAC housekeeping in 30 days (Pending Subscription Retention parameter, (as indicated in RR5-5.1).

Requirements: add new req to say that Final Create Window shall be equal to the applicable Final Concurrence Window

R5-23.4 New Service Provider Fails to Authorize Transfer of Service

NPAC SMS shall ~~set~~ *not make any update to* the Subscription Version status ~~to cancel~~ when the Final ~~Concurrence~~ *Create* Window tunable parameter expires and a new Service Provider has not sent authorization for the transfer of service.

Req 1 – New Service Provider Final Create Window Expiration Notification

NPAC SMS shall upon expiration of the Final Create Window, where a new Service Provider has not sent authorization for the transfer of service, send a notification to both the old Service Provider that supports the Final Create Window Expiration Notification and the new Service Provider that supports the Final Create Window Expiration Notification via the SOA to NPAC SMS Interface, to inform them of the timer expiration.

Req 2 – New Service Provider Final Create Window Expiration Notification – Sending of Cause Code

NPAC SMS shall only send the Subscription Version Status Change Cause Code in the Final Create Window Expiration Notification when the old Service Provider authorization is **FALSE**.

Req 3 – NPAC Customer No New SP Concurrence Notification Indicator

NPAC SMS shall provide a mechanism to indicate whether a Service Provider supports the Final Create Window Expiration Notification for a Subscription Version upon the expiration of the New Service Provider Final Create Window.

Req 4 – NPAC Customer No New SP Concurrence Notification Indicator – Default

NPAC SMS shall default the No New SP Concurrence Notification Indicator to **FALSE**.

Req 5 – NPAC Customer No New SP Concurrence Notification Indicator – Modification

NPAC SMS shall allow NPAC Personnel, via the NPAC Administrative Interface, to modify the No New SP Concurrence Notification Indicator on the NPAC Customer record.

Req 6 – Subscription Version Information – Suppress Notification when Service Provider No New SP Concurrence Notification Indicator is False

NPAC SMS shall suppress the Final Create Window Expiration Window Notification, if the Service Provider's No New SP Concurrence Notification Indicator is **FALSE**.

Req 7 – Subscription Version Information – Send Notification when Service Provider No New SP Concurrence Notification Indicator is True

NPAC SMS shall send the Final Create Window Expiration Notification, if the Service Provider's No New SP Concurrence Notification Indicator is **TRUE**.

RR6-29 Notification Recovery

NPAC SMS shall support recovery of all CMIP notifications defined in the IIS that are emitted over the NPAC SMS to Local SMS and SOA to NPAC SMS interfaces. Examples of notifications to be recovered include:

- subscriptionVersionNewNPA-NXX
- subscriptionVersionDonorSP-CustomerDisconnectDate
- subscriptionVersionAudit-DiscrepancyRpt
- subscriptionAuditResults
- InpNPAC-SMS-Operational-Information
- subscriptionVersionNewSP-CreateRequest (time sensitive T1 New SP)
- subscriptionVersionOld-SP-ConcurrenceRequest (time sensitive T1 Old SP)
- subscriptionVersionOldSPFinalWindowExpiration (time sensitive T2 Old SP)
- subscriptionVersionStatusAttributeValueChange
- numberPoolBlockStatusAttributeValueChange
- attributeValueChange
- objectCreation
- objectDeletion
- *subscriptionVersionNewSP-FinalCreateWindowExpiration (if supported by the recovering SOA)*
-
- For a complete list of notifications reference the IIS.

IIS:

A new entry will be added in section 4.1.4, Notification Interface Functionality, to Exhibit 1, *The Notification Interface Functionality Table*.

B.5.1.6.4 Subscription Version Create: Failure to Receive Response from New SOA

This scenario shows ~~action taken by~~ the *process of the* NPAC SMS after not receiving any concurrence from the new service provider after the “Final Service Provider Concurrence ~~Failure~~ Window.”

The subscription version remains in the NPAC SMS with a status of pending.

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

1. NPAC SMS receives no *concurrency* ~~occurrence~~ from the new service provider SOA in “Service Provider Concurrency ~~Failure~~ Window” for the pending subscriptionVersionNPAC created by the old service provider SOA.
2. *NPAC SMS notifies the old service provider that support the notification according to their NPAC Customer No New SP Concurrency Notification Indicator in their service provider profile on the NPAC SMS, of the expiration of the final create window where the new service provider did not send up a Create action for this subscription version, with an M-EVENT-REPORT subscriptionVersionNewSP-FinalCreateWindowExpiration.*
3. *The old service provider SOA returns an M-EVENT-REPORT confirmation to the NPAC SMS.*
4. *NPAC SMS notifies the new service provider that support the notification according to their NPAC Customer No New SP Concurrency Notification Indicator in their service provider profile on the NPAC SMS, of the expiration of the final create window where the new service provider did not send up a Create action for this subscription version, with an M-EVENT-REPORT subscriptionVersionNewSP-FinalCreateWindowExpiration.*
5. *The new service provider SOA returns an M-EVENT-REPORT confirmation to the NPAC SMS.*
- ~~6. NPAC SMS issues M-SET for subscriptionVersionStatus to set it to “cancel” and the subscriptionModifiedTimeStamp in the subscriptionVersionNPAC object.~~
- ~~7. NPAC SMS responds to M-SET.~~
- ~~8. If the subscriptionVersionNPAC object was modified, the NPAC SMS notifies the old service provider of the status change.~~
- ~~9. The old service provider SOA returns an M-EVENT-REPORT confirmation to the NPAC SMS.~~
- ~~10. If the subscriptionVersionNPAC object was modified, the NPAC SMS notifies new service provider SOA of the status change.~~
- ~~11. The new service provider SOA returns an M-EVENT-REPORT confirmation to the NPAC SMS.~~

GDMO:

-- 21.0 LNP NPAC Subscription Version Managed Object Class

```
subscriptionVersionNPAC MANAGED OBJECT CLASS
  DERIVED FROM subscriptionVersion;
  CHARACTERIZED BY
    subscriptionVersionNPAC-Pkg;
  CONDITIONAL PACKAGES
    subscriptionVersionNewSP-FinalCreateWindowExpirationPkg PRESENT IF
      !the object is instantiated on the NPAC SMS!;
  REGISTERED AS {LNP-OIDS.lnp-objectClass 21};
```

```
subscriptionVersionNPAC-Pkg PACKAGE
  BEHAVIOUR
    subscriptionVersionNPAC-Definition,
    subscriptionVersionNPAC-Behavior;
  ATTRIBUTES
    subscriptionVersionStatus GET-REPLACE,
    subscriptionOldSP GET-REPLACE,
    subscriptionNewSP-DueDate GET-REPLACE,
    subscriptionNewSP-CreationTimeStamp GET-REPLACE,
    subscriptionOldSP-DueDate GET-REPLACE,
    subscriptionOldSP-Authorization GET-REPLACE,
    subscriptionStatusChangeCauseCode GET-REPLACE,
    subscriptionOldSP-AuthorizationTimeStamp GET-REPLACE,
    subscriptionBroadcastTimeStamp GET-REPLACE,
    subscriptionConflictTimeStamp GET-REPLACE,
    subscriptionCustomerDisconnectDate GET-REPLACE,
    subscriptionEffectiveReleaseDate GET-REPLACE,
    subscriptionDisconnectCompleteTimeStamp GET-REPLACE,
    subscriptionCancellationTimeStamp GET-REPLACE,
    subscriptionCreationTimeStamp GET-REPLACE,
    subscriptionFailed-SP-List GET-REPLACE,
    subscriptionModifiedTimeStamp GET-REPLACE,
    subscriptionOldTimeStamp GET-REPLACE,
    subscriptionOldSP-CancellationTimeStamp GET-REPLACE,
    subscriptionNewSP-CancellationTimeStamp GET-REPLACE,
    subscriptionOldSP-ConflictResolutionTimeStamp GET-REPLACE,
    subscriptionNewSP-ConflictResolutionTimeStamp GET-REPLACE,
    subscriptionPortingToOriginal-SPSwitch GET-REPLACE,
    subscriptionPreCancellationStatus GET-REPLACE,
    subscriptionTimerType GET,
    subscriptionBusinessType GET;
  NOTIFICATIONS
    subscriptionVersionOldSP-ConcurrenceRequest,
    subscriptionVersionNewSP-CreateRequest,
    subscriptionVersionOldSPFinalConcurrenceWindowExpiration,
    subscriptionVersionNewNPA-NXX,
    subscriptionVersionCancellationAcknowledgeRequest,
    subscriptionVersionDonorSP-CustomerDisconnectDate,
    subscriptionVersionStatusAttributeValueChange,
    "CCITT Rec. X.721 (1992) | ISO/IEC 10165-2 :
1992":attributeValueChange
      accessControlParameter,
    "CCITT Rec. X.721 (1992) | ISO/IEC 10165-2 : 1992":objectCreation
      accessControlParameter;
```

```

;

-- XXX.0 LNP Log Record for the LNP Subscription version New Service
-- Provider Final Create Window Expiration Notification

lnpLogNewSP-FinalCreateWindowExpiration Record MANAGED OBJECT CLASS
DERIVED FROM "CCITT Rec. X.721 (1992) | ISO/IEC 10165-2 :
1992":eventLogRecord;
CHARACTERIZED BY
    lnpLogNewSP-FinalCreateWindowExpirationPkg;
REGISTERED AS {LNP-OIDS.lnp-objectClass XXX};

lnpLogNewSP-FinalCreateWindowExpirationPkg PACKAGE
BEHAVIOUR
    lnpLogNewSP-FinalCreateWindowExpirationDefinition,
    lnpLogNewSP-FinalCreateWindowExpirationBehavior;
ATTRIBUTES
    subscriptionTN GET,
    subscriptionVersionId GET,
    subscriptionNewSP GET,
    subscriptionOldSP GET,
    subscriptionOldSP-DueDate GET,
    subscriptionOldSP-Authorization, GET
    subscriptionOldSP-AuthorizationTimeStamp GET,
    subscriptionStatusChangeCauseCode GET,
    subscriptionTimerType GET,
    subscriptionBusinessType GET,
    accessControl GET;
;

lnpLogNewSP-FinalCreateWindowExpirationDefinition BEHAVIOUR
DEFINED AS !
    The lnpLogNewSP-FinalCreateWindowExpirationRecord class is the managed
    object that is used to create log records for the
    subscriptionVersionNewSP-FinalCreateWindowExpiration Notification.
!;

lnpLogNewSP-FinalCreateWindowExpirationBehavior BEHAVIOUR
DEFINED AS !
    This log record can be used by any CME wanting to log the
    subscriptionVersionNewSP-FinalCreateWindowExpiration Notification.
!;

-- XXX.0 LNP Subscription Version New SP Final Create Window Expiration Package

subscriptionVersionNewSP-FinalCreateWindowExpirationPkg PACKAGE
BEHAVIOUR subscriptionVersionNewSP-FinalCreateWindowExpirationPkgBehavior;
NOTIFICATIONS
    subscriptionVersionNewSP-FinalCreateWindowExpiration;
REGISTERED AS {LNP-OIDS.lnp-package XXX};

subscriptionVersionNewSP-FinalCreateWindowExpirationPkgBehavior BEHAVIOUR
DEFINED AS !
    This package provides for conditionally including the
    subscriptionVersionNewSP-FinalCreateWindowExpiration notification.
!;

```

-- XXX.0 LNP Subscription Version New SP Final Create Window Expiration
-- Notification

```
subscriptionVersionNewSP-FinalCreateWindowExpiration NOTIFICATION
  BEHAVIOUR subscriptionVersionNewSP-FinalCreateWindowExpirationPkgBehavior;
  WITH INFORMATION SYNTAX LNP-ASN1.VersionNewSP-FinalCreateWindowExpiration
  AND ATTRIBUTE IDS
    tn subscriptionTN,
    version-id subscriptionVersionId,
    new-service-prov-id subscriptionNewSP,
    old-service-prov-id subscriptionOldSP,
    service-prov-due-date subscriptionOldSP-DueDate,
    service-prov-old-authorization subscriptionOldSP-Authorization,
    service-prov-authorization-creation-time-stamp
      subscriptionOldSP-AuthorizationTimeStamp,
    status-change-cause-code subscriptionStatusChangeCauseCode,
    access-control accessControl,
    subscription-timer-type subscriptionTimerType,
    subscription-business-type subscriptionBusinessType;
  REGISTERED AS {LNP-OIDS.lnp-notification XXX};
```

```
subscriptionVersionNewSP-FinalCreateWindowExpirationPkgBehavior BEHAVIOUR
  DEFINED AS !
```

This notification indicates the final create window has expired for concurrence of a subscription version. This occurs when an old service provider has sent a create request for a subscription version and the new service provider has not concurred to the port within the period of time of both the initial and final concurrence timers. Once the final create window has expired, this notification is sent to both the old and new service providers that support this notification.

On the NPAC SMS, the Final Create Window has expired, but the NPAC SMS has not updated the status to cancel.

The TN, the version id and the new and old service provider id, cause code, authorization flag and authorization timestamp values are sent. If the new service provider supports timer type, it will be sent. If the new service provider supports business type, it will be sent.

The subscription version remains in a status of pending or conflict.

!;

ASN.1:

```

NetworkNotificationRecoveryReply ::= SEQUENCE {
    status ENUMERATED {
        success (0),
        failed (1),
        time-range-invalid (2),
        criteria-to-large (3),
        no-data-selected (4)
    },
    system-choice CHOICE {

        lsms [1] SET OF SEQUENCE {
            managedObjectClass ObjectClass,
            managedObjectInstance ObjectInstance,
            notification CHOICE {
                subscription-version-new-mpa-nxx [1] VersionNewNPA-NXX-Recovery,
                lnp-mpac-sms-operational-information [2]
                    NPAC-SMS-Operational-InformationRecovery
            }
        },
        soa [2] SET OF SEQUENCE {
            managedObjectClass ObjectClass,
            managedObjectInstance ObjectInstance,
            notification CHOICE {
                subscription-version-new-mpa-nxx [1] VersionNewNPA-NXX-Recovery,
                subscription-version-donor-sp-customer-disconnect-date [2]
                    VersionCustomerDisconnectDateRecovery,
                subscription-version-audit-discrepancy-report [3]
                    AuditDiscrepancyRptRecovery,
                subscription-audit-results [4] AuditResultsRecovery,
                lnp-mpac-sms-operational-information [5]
                    NPAC-SMS-Operational-InformationRecovery,
                subscription-version-new-sp-create-request [6]
                    VersionNewSP-CreateRequestRecovery,
                subscription-version-old-sp-concurrence-request [7]
                    VersionOldSP-ConcurrenceRequestRecovery,
                subscription-version-old-sp-final-window-expiration [8]
                    VersionOldSPFinalConcurrenceWindowExpirationRecovery,
                subscription-version-cancellation-acknowledge-request [9]
                    VersionCancellationAcknowledgeRequestRecovery,
                subscriptionVersionStatusAttributeValueChange [10]
                    VersionStatusAttributeValueChangeRecovery,
                attribute-value-change [11] AttributeValueChangeInfo,
                object-creation [12] ObjectInfo,
                object-deletion [13] ObjectInfo,
                numberPoolBlockStatusAttributeValueChange [14]
                    NumberPoolBlockStatusAttributeValueChangeRecovery,
                subscription-version-new-sp-final-window-expiration [15]
                    VersionNewSP-FinalCreateWindowExpirationRecovery
            }
        }
    } OPTIONAL
}

```

```

VersionNewSP-FinalCreateWindowExpiration ::= SEQUENCE {
    version-create-request [0] VersionCreateConcurrenceRequest,

```

```
new-service-prov-id [1] ServiceProvId,  
service-prov-old-authorization [2] ServiceProvAuthorization,  
subscription-status-change-cause-code [3]  
    SubscriptionStatusChangeCauseCode OPTIONAL,  
access-control [4] InpAccessControl  
}  
  
VersionNewSP-FinalCreateWindowExpirationRecovery ::= SEQUENCE {  
    version-create-request [0] VersionCreateConcurrencyRequestRecovery,  
    new-service-prov-id [1] ServiceProvId,  
    service-prov-old-authorization [2] ServiceProvAuthorization,  
    subscription-status-change-cause-code [3]  
        SubscriptionStatusChangeCauseCode OPTIONAL  
}
```

M&P:

Origination Date: 1/19/1998

Change Order Number: NANC 191

Description: DPC/SSN value edits

Cumulative SP Priority, Weighted Average: 5.42

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 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 ~~an~~ scheduling or activation for a Number Pool Block.

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 LSMs. 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 FFFFFFF 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 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.
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-IDS.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-IDS.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-IDS.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:

Origination Date: 7/7/1999

Change Order Number: NANC 291

Description: SSN Edits in the NPAC SMS

Cumulative SP Priority, Weighted Average: 5.42

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 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, 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, 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, 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, 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, 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).

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).

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).

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).

!;

-- 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).

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).

!;

-- 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).

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).

!;

-- 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).

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).**

!;

-- 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).**

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).**

!;

-- 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).**

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).**

!;

-- 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).**

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).**

!;

-- 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).**

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).

!;

-- 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).

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).

!;

-- 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).

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).

!;

!;

-- 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-CreatBehavior 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-npa-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

Change Order Number: NANC 297

Description: Sending SV Problem During Recovery

Cumulative SP Priority, Weighted Average: 7.50

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, 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, and sending, at the time subscription data recovery is requested by the Local SMS.

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, and sending, at the time Number Pool Block data recovery is requested by the Local SMS.

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: 1/23/1998

Change Order Number: NANC 192

Description: NPA Split NPAC SMS Load File

Cumulative SP Priority, Weighted Average: 8.08

Pure Backwards Compatible: YES

IMPACT/CHANGE ASSESSMENT

FRS	IIS	GDMO	ASN.1	NPAC	SOA	LSMS
Y	Y			Medium	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 LERG to make sure the NPA Split processing is consistent within the industry.

Description of Change:

It was requested that current information in the LERG 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 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).

Feb 00, LNPA-WG meeting, the group discussed at a high level, the desired functionality of this change order.

- 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 yes, 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. Perform necessary updates.

- 2.) if no, 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-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, but leave new NPA-NXX effective date alone.
 - 2.) If PDP start date is modified to a closer in date, delete the scheduled split data and log error (M&P then kicks in to have NPAC personnel to delete new NPA-NXX, then re-add new NPA-NXX with new closer in effective date). Once re-added, NPAC personnel initiate the re-processing of the split file that has the modified closer in effective date. If pending SVs exist, then log an error (and let the SP take care of it).
 - 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.
 - NPAC when activating an SV, check if part of split and if new NPA-NXX, then reject if before PDP start date.
 - 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 Data

NPAC SMS shall allow an NPA Split Load Flat File from the LERG, to be used to enter, modify, or remove NPA Split information into/from the NPAC SMS.

Note: The information from the LERG is assumed to include monthly plus emergency updates.

Req 2 – NPA Split – Load File from LERG 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 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 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 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 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 5.1 – NPA Split – Load File from LERG 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 the PDP start date.

Note: The PDP start date in the NPA Split information in the NPAC SMS will reflect the new date, but the new NPA-NXX effective date will NOT be updated. Therefore, these two dates will contain different values (This is the only case for the difference in date values).

Req 5.2 – NPA Split – Load File from LERG 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 and log an error.

Req 5.3 – NPA Split – Load File from LERG 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, log an error.

Req 5.4 – NPA Split – Load File from LERG 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.

Req 5.5 – NPA Split – Load File from LERG 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.

Req 5.6 – NPA Split – Load File from LERG 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 5.7 – NPA Split – Load File from LERG 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 6 – NPA Split – OpGUI Read-Only Access

NPAC SMS shall provide NPAC Personnel, via the NPAC Administrative Interface, with read-only access to NPA Split information in the NPAC SMS.

Note: The updating of the NPA Split information in the NPAC SMS will be done by the NPAC SMS during the current housekeeping process.

Req 7 – NPA Split – Load File from LERG Data Information on the Web

NPAC SMS shall inform all Service Providers about the processing of the NPA Split Load Flat File from LERG 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 latest full monthly file, plus the most recent incremental file.

Req 7.5 – NPA Split – Subscription Version Activation Check

NPAC SMS shall when activating a Subscription Version, check if the NPA-NXX portion of a TN is part of an NPA split in the NPAC SMS as the new NPA-NXX, and if the new NPA-NXX has not yet reached its PDP start date, reject the Subscription Version activate request.

3.5 NPA Splits Requirements

AN3-4.1 NPA Split Information Source

~~Deleted. The service provider responsible for the NPA split communicates NPA Split information to the NPAC.~~

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

Deleted.

Note: New NPA-NXX(s) will be opened via normal processing prior to the NPA Split.

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

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

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

Deleted.

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

Deleted.

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.*

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 NPA Split upon determining that a new NPA-NXX involved in an NPA Split is currently involved in another NPA Split.~~

Req 8 – 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 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~~

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 enter the NPA split information~~ *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 NPA Split upon determining that an old NPA-NXX involved in an NPA Split is currently involved in another NPA Split.~~

Req 9 – 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 10 – 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.

3.5.1 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

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 12 – NPA Split – NPA Split Load Flat File Exception Report with Already Existing New NPA-NXX-X

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.” Also, “The NPA-NXX owner service provider first creates the new NPA-NXX.” will be updated say, “The NPAC SMS will automatically generate the new NPA-NXX based on information in the NPA Split Load Flat File from the LERG.”

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: 9/15/1999

Change Order Number: NANC 299

Description: NPAC Monitoring of SOA and LSMS Associations via Heartbeat

Cumulative SP Priority, Weighted Average: 9.58

Pure Backwards Compatible: YES

IMPACT/CHANGE ASSESSMENT

FRS	IIS	GDMO	ASN.1	NPAC	SOA	LSMS
Y	Y	Y	Y	Medium	Med to High	Med to High

Business Need:

N/A. Removed from R4 consideration.

Origination Date: 1/12/2000

Change Order Number: NANC 301

Description: NPAC Monitoring of SOA and LSMS Associations via NPAC TCP Level Heartbeat (transport layer)

Cumulative SP Priority, Weighted Average: NR

Pure Backwards Compatible: YES

IMPACT/CHANGE ASSESSMENT

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

Business Need:

In today’s operating environment, the NPAC doesn’t know if an SP’s SOA/LSMS association is available to receive downloads and other messages unless there is a failure to respond to an NPAC message. There are a number of reasons that may cause the SOA/LSMS association to be unavailable ranging from the transmission facility going down to software application problems.

If an association is unavailable when a download to activate a ported number is sent, partial failures will occur. Partial failures indicate that one or more SPs did not update their routing tables, and many calls intended for the ported customer will fail.

There are often long periods of time when there are no messages being sent across a given NPAC – SOA/LSMS association. Therefore, there is no way to know if the association is working. This change order would establish a periodic “heart-beat” monitor to determine the status of the SOA/LSMS.

This change order will facilitate monitoring SOA/LSMS availability and will minimize partial failure situations, thereby saving resolution time and improving customer service.

Description of Change:

Same as NANC 299, but using the TCP Keepalive feature (transport layer) instead of an application level heartbeat.

The requested functionality of this change order “*NPAC Monitoring of SOA and LSMS Associations via Heartbeat*” can be accomplished using the TCP Keepalive feature. Since no data flows across an idle TCP connection (i.e., between the two TCP modules), the TCP Keepalive feature can be used to poll the other end of an idle connection to make sure the connection is still available (active). This will also alleviate any situations of a half-open connection.

With this change order, the NPAC SMS is being required to enable the TCP Keepalive feature. The NPAC SMS will serve as the server side, and the local system (SOA or LSMS) will serve as

the client side. Optionally (but recommended), the Service Provider can enable the TCP Keepalive feature to ensure an active connection. If only the NPAC SMS were to enable the TCP Keepalive feature, a situation exists where the local side may not detect an inactive connection (and therefore not try to re-associate). If the local system does enable the TCP Keepalive feature, they would also detect an inactive connection (and accordingly attempt to re-associate with a new bind request). In this example, the length of time that the Service Provider is un-available will be greater if the local side has not enabled the TCP Keepalive feature since they are relying on NPAC Personnel to contact them about an aborted association (rather than having their own system recognize the abort and initiate a new bind request to the NPAC SMS).

Utilizing the TCP Keepalive feature of the HP-UX OTS stack software (otsadm) involves starting the stack software with the -K option. With this feature enabled, all subsequent TCP connections initiated from OTS/RFC1006 will have the TCP_KEEPALIVE option set, which allows TCP to inform OTS/RFC1006 of lower layer failures. With the TCP Keepalive feature turned on, the OTS stack software uses the tcp_keepstart, tcp_keepfreq, and tcp_keepstop system tunables to execute the keep-alive message. The tcp_keepstart tunable is the number of seconds that a TCP connection can be idle before keep-alive packets will be sent attempting to solicit a response. When a packet is received, keep-alive packets are not longer sent unless the connection is idle again for this period of time. The tcp_keepfreq tunable is the interval in seconds at which keep-alive packets will be sent on a TCP connection once they have been started. The receipt of a packet will stop the sending of keep-alive packets. The tcp_keepstop tunable is the number of seconds keep-alive packets will be sent on a TCP connection without the receipt of a packet after which the connection will be dropped and an abort message sent up the stack to the application. The setting of these tunables apply across a machine for all TCP connections.

The values of the tcp_keepstart, tcp_keepfreq, and tcp_keepstop must be determined by the LNPA-WG. The default values are tcp_keepstart=7200 secs, tcp_keepfreq=75 secs, and tcp_keepstop=600 secs. In order to detect an inactive associations as soon as possible, the following values have been suggested based on current testing efforts: tcp_keepstart=60 secs, tcp_keepfreq=60 secs, and tcp_keepstop=60 secs.

Additionally, the NPAC SMS needs to provide logging functionality (which is documented in change order NANC 219). This is accomplished by enabling the TCP Keepalive feature of the OTS stack software such that it recognizes an inactive association and issues an abort to the application for a given association. Since an inactive connection will appear as a stack abort to the server (in this case the NPAC SMS), logging will be done as an abort from a client (in this case the local system).

In summary, the requested change is for the NPAC SMS to enable the TCP Keepalive feature on all TCP connections initiated from OTS/RFC1006.

The TCP Keepalive feature was introduced to the HP OTS stack software in November 1999 (patch PHNE_17376). Jan 00, Jim loaded the stack patch on a test box at ESI. He worked with Beth to test the patch. The TCP level heartbeat worked fine one-way (from NPAC to local system not supporting the patch). Beth is planning on loading the patch on her local system and testing the other way as well. It is believed that enabling the TCP Keepalive will solve many of the association control problems that have experienced in the production environment.

Feb 00, LNPA-WG meeting, the group proposes that we have a con call to discuss this further. The desire is to have this functionality implemented prior to R4.

Requirements:

Req 1 – NPAC SMS Monitoring of SOA and Local SMS Connections via a TCP Level Heartbeat

The NPAC SMS shall be capable of supporting a TCP Level Heartbeat via the TCP Keepalive Feature.

IIS:

No change required.

GDMO:

No change required.

ASN.1:

No change required.

M&P:

No change required.

Origination Date: 8/12/1998

Change Order Number: NANC 230

Description: Allow a Donor SOA to Create a Port-to-Original on an intra-service provider port

Cumulative SP Priority, Weighted Average: 9.83

Pure Backwards Compatible: NO

Functional Backwards Compatible: YES

IMPACT/CHANGE ASSESSMENT

FRS	IIS	GDMO	ASN.1	NPAC	SOA	LSMS
Y	Y	Y		Medium	Medium	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 LNPTYPE = 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

RR5-76 Create Intra- or 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, *intra--service provider Port-to-Original Subscription Version Create message*, or 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, where there is no active subscription version for the TN in the NPAC SMS specific to an inter-Service Provider Subscription Version Create message only.

RR5-77 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
- subscriptionLNPTType (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

Change Order Number: NANC 249

Description: Modification of Dates for a Disconnect Pending SV

Cumulative SP Priority, Weighted Average: 10.33

Pure Backwards Compatible: NO

Functional Backwards Compatible: YES (for Service Provider’s that do NOT implement the ability to perform a modification)

IMPACT/CHANGE ASSESSMENT

FRS	IIS	GDMO	ASN.1	NPAC	SOA	LSMS
Y	Y	Y		Low	Medium	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: If changing the Customer Disconnect Date, the date must be populated. If not changing the date, assume the date stays with the previous value.

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] GeneralizedTime OPTIONAL,
subscription-effective-release-date [19] GeneralizedTime OPTIONAL
}

No change required.

M&P:

No change required.

Origination Date: 8/1/1999

Change Order Number: NANC 294

Description: Changing Due Date Edit Functionality in the NPAC SMS for 7p on Due Date Problems

Cumulative SP Priority, Weighted Average: 10.50

Pure Backwards Compatible: YES

IMPACT/CHANGE ASSESSMENT

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

Business Need:

Currently the NPAC SMS operates on GMT (Greenwich Mean Time) and operating business hours (e.g., timers, due dates, etc.) are 7AM – 7 PM. When emergency porting conditions are encountered, the NPAC operating system prohibits the SP from initiating same day porting events due to the difference between GMT and SP time zones creating a variance in the date. There is a manual process requiring conversion of local time to GMT to ensure the dates on the SVs match. This change order would eliminate the manual process for these situations to ensure customers are not out of service any longer than necessary and omissions to large customer porting conversions are quickly resolved.

Description of Change:

Service Providers involved in last minute emergency porting situations, cannot create/concur/activate SVs that are created after 7p (eastern standard time) on the due date. Since those created after 7p EST, equate to after midnight GMT the next day on the NPAC SMS, the old SP cannot concur to the port, and the new SP cannot activate at this point in time since timers have not expired.

This problem exists for initial creates as well as concurs, if either one happens after 7p EST.

Two options were discussed: 1.) change the NPAC SMS to run and store in central time; 2.) change the NPAC SMS edit to allow a concurrence in the past (i.e., local date/time concurrence). It was noted that the first option still has a problem with ports in the western region, west coast region, and Hawaii, albeit the problem window is smaller.

Upon further analysis, option #1 is a huge effort, and does not resolve the issue (it just narrows the window). Option #2 was deemed to be the best solution at this point. However, the local date/time needs to be limited to ensure this functionality does not open the window for “pamming” (port slamming).

Using option #2, a new tunable (“GMT Time Adjustment”) per region would only open the window for local date/time to the largest differential time zone in that region from the NPAC (i.e., from a map perspective, the left most time zone [“prevailing time zone”] in that specific region). The time zone would be adjusted for standard/daylight, and the tunable would have a valid range of 4-10 hours (4 hours is EDT, 10 hours is Hawaiian standard time).

Two tunables may be required to account for both standard time and daylight time. However, this is more of an implementation detail. This local date/time adjustment still allows an SP to send up the date with zeros in the time portion. This will accommodate SPs that always sends all zeros in SV create messages (even though this would be more than the 4-10 hour local date/time range). Discussion and analysis need to determine if the local date/time adjustment should be allows for both Creates or just a concurrence that happens to an existing port, but the current time is after 7p EST on the due date.

Dec 99 LNPA-WG meeting, the group decided to forego the 29 hour day, the ability to have a due date mismatch, and the GMT Time Adjustment tunable. Instead it was agreed to just allow the concurrence to the port (2nd create) to be sent after the 7p EST window, and specify the previous day (in NPAC GMT), which is still the current day (in SP’s local time). The due dates still need to match.

Requirements:

Req 1 – Subscription Version – Due Date Validation for Second/Concurrence Create Message for a Subscription Version Inter-Service Provider Port

NPAC SMS shall allow the due date to be a past date upon Subscription Version concurrence (2nd create for this Subscription Version) for an Inter-Service Provider port.

IIS:

B.5.1.3 SubscriptionVersion Create by Second SOA (New Service Provider)

In this scenario, the old service provider has already issued its request causing the subscriptionVersionNPAC to be created. The new service provider is now following with its own create action.

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

1. New service provider SOA personnel take action to create a new subscription version.
2. New service provider SOA sends M-ACTION subscriptionVersionNewSP-Create to NPAC SMS InpSubscriptions object to create a new subscriptionVersionNPAC. The new service provider SOA must specify the following valid attributes:

- subscriptionTN or a valid subscriptionVersionTN-Range
- subscriptionNewCurrentSP
- subscriptionOldSP
- subscriptionNewSP-DueDate (seconds set to zeros)
- subscriptionLNPTtype
- subscriptionPortingToOriginal-SP Switch

The following items must be provided unless subscriptionPortingToOriginal-SP is true:

- subscriptionLRN
- 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

The following attributes are optional:

- subscriptionEndUserLocationValue
- subscriptionEndUserLocationType
- subscriptionBillingId

If a TN range is specified in the request, it would result in an M-SET request and M-EVENT-REPORT for each TN.

If the new service provider is not the new service provider specified in the initial create by the old service provider, an accessDenied error will be returned.

If any attribute is invalid, an action failure will be returned, indicating invalidArgumentValue. Other appropriate errors will be returned.

If the due date for the port is a previous date, the NPAC SMS accepts a value of a previous date from a service provider, in order to match the due date of the port that was previously received from the Old Service Provider.

3. If successful, the NPAC SMS sets the subscriptionModifiedTimeStamp, subscriptionCreationTimeStamp, and all data specified in the M-ACTION.
4. NPAC SMS responds to M-SET.
5. NPAC SMS sends M-ACTION reply with success or failure and reasons for failure.
6. NPAC SMS issues the M-EVENT-REPORT with the following attributes to the old service provider when the subscriptionNewSP-DueDate changes value.
 - subscriptionNewSP-DueDate
 - subscriptionNewSP-CreationTimeStamp
7. Old service provider SOA issues M-EVENT-REPORT confirmation.
8. If the M-ACTION was successful, the NPAC SMS issues M-EVENT-REPORT to the new service provider for all attributes updated from the preceding list of modifiable attributes in addition to the following:
 - subscriptionNewSP-DueDate
 - subscriptionNewSP-CreationTimeStamp
9. New service provider SOA issues M-EVENT-REPORT confirmation.

B.5.1.4 SubscriptionVersion Create by Second SOA (Old Service Provider) with Authorization to Port

In this scenario, the new service provider has already issued its request causing the subscriptionVersionNPAC to be created. The old service provider is now following with its own create action authorizing the port.

Note: This is an optional step.

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

1. Old service provider SOA personnel take action to create a old subscription version.
2. Old service provider SOA sends M-ACTION subscriptionVersionOldSP-Create to NPAC SMS InpSubscriptions object to create an old subscriptionVersionNPAC. The old service provider SOA must specify the following valid attributes:
 - subscriptionTN or a valid subscriptionVersionTN-Range
 - subscriptionNewCurrentSP
 - subscriptionOldSP
 - subscriptionOldSP-Authorization
 - subscriptionOldSP-DueDate (seconds set to zeros)
 - subscriptionLNPTtype

If a TN range is specified in the request, it would result in an M-SET request and M-EVENT-REPORT for each TN.

If the old service provider is not the old service provider specified in the initial create request by the new service provider, an accessDenied error will be returned.

If any attribute is invalid, an invalidArgumentValue will be returned, indicating invalid data values. Other appropriate errors will also be returned.

If the due date for the port is a previous date, the NPAC SMS accepts a value of a previous date from a service provider, in order to match the due date of the port that was previously received from the New Service Provider.

3. If the data is valid, the NPAC SMS sets the subscriptionOldSP-AuthorizationTimeStamp, subscriptionModifiedTimeStamp and all data specified in the M-ACTION.
4. NPAC SMS responds to M-SET.
5. NPAC SMS sends M-ACTION reply with success or failure and reasons for failure.
6. If the M-ACTION was successful, the NPAC SMS issues M-EVENT-REPORT attribute value change to the old service provider for all attributes updated from the following list:

subscriptionOldSP-DueDate
subscriptionOldSP-Authorization
subscriptionOldSP-AuthorizationTimeStamp

7. Old service provider SOA issues M-EVENT-REPORT confirmation.
8. If the M-ACTION was successful, the NPAC SMS issues M-EVENT-REPORT attribute value change to the new service provider for all attributes updated from the preceding list. The following attributes are sent in the attributeValueChangeNotification:

subscriptionOldSP-DueDate
subscriptionOldSP-Authorization
subscriptionOldSP-AuthorizationTimeStamp

9. New service provider issues M-EVENT-REPORT confirmation.

GDMO:

-- 21.0 LNP NPAC Subscription Version Managed Object Class

subscriptionVersionNPAC MANAGED OBJECT CLASS

...

subscriptionVersionNPAC-Behavior BEHAVIOUR
DEFINED AS !

...

Upon subscription version creation, the subscriptionOldSP-DueDate and subscriptionNewSP-DueDate must match. **If the due date for the port is a previous date, the NPAC SMS accepts a value of a previous date from a service provider, in order to match the due date of the port that was previously received from the other Service Provider (new or old).**

...

ASN.1:

No change required.

M&P:

No change required.

Origination Date: 2/28/1998

Change Order Number: NANC 200

Description: Notification of NPA Splits

Cumulative SP Priority, Weighted Average: 10.75

Pure Backwards Compatible: NO

Functional Backwards Compatible: YES

IMPACT/CHANGE ASSESSMENT

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

Business Need:

Currently not all SPs are aware of NPA Splits and are not performing their database updates, thus causing database errors and industry confusion. In order to ensure that customer service is not negatively affected during an NPA Split, it is essential that the NPAC and all SPs databases be synchronized.

This change order will provide notifications via the NPAC interface to all SPs regarding NPA – NXX Split information.

Description of Change:

It has been requested that to facilitate synchronization during NPA split, the NPAC via the mechanized interface should notify the SOA and LSMSs. The preferred method would be to have a new managed object that contains all split information. It would still be up to the respective system to perform the splits, but all systems would be in sync. A second alternative would be to have the NPAC issue a notification that states the NPAC is start/ending split processing.

Note: Some SPs may have zero effort on this change effort, if NANC 192 is also implemented, and those SPs also take the input from the LERG (thereby ignoring this new M-EVENT-REPORT).

Requirements:

Req 1 – NPA Split – NPA Split Notification for Start PDP

NPAC SMS shall send an NPA Split notification to all Service Providers that support NPA Split Notification Information via the SOA to NPAC SMS Interface and NPAC SMS to Local Interface, once the NPAC SMS has completed the NPA Split Start Processing (start PDP).

Req 2 – NPA Split – NPA Split Notification for End PDP

NPAC SMS shall send an NPA Split notification to all Service Providers that support NPA Split Notification Information via the SOA to NPAC SMS Interface and NPAC SMS to Local Interface, once the NPAC SMS has completed the NPA Split End Processing (end PDP).

Req 3 – NPA Split – NPA Split Notification for Removal of NXX

NPAC SMS shall send an NPA Split notification to all Service Providers that support NPA Split Notification Information via the SOA to NPAC SMS Interface and NPAC SMS to Local Interface, once the NPAC SMS has removed an NXX from an NPA Split only in cases where the NPA Split is currently in PDP.

Req 4 – NPA Split – Filters for NPA Split Notification

NPAC SMS shall apply NPA-NXX Filters to NPA Split Notifications.

Req 5 – NPAC Customer SOA NPA Split Notification Indicator

NPAC SMS shall provide a mechanism to indicate whether a Service Provider supports receiving the NPA Split Notification message, by sending this message to their SOA via the SOA to NPAC SMS Interface.

Req 6 – NPAC Customer SOA NPA Split Notification Indicator – Default

NPAC SMS shall default the SOA NPA Split Notification Indicator to **FALSE**.

Req 7 – NPAC Customer SOA NPA Split Notification Indicator – Modification

NPAC SMS shall allow NPAC Personnel, via the NPAC Administrative Interface, to modify the SOA NPA Split Notification Indicator on the NPAC Customer record.

Req 8 – NPA Split Information – Service Provider SOA NPA Split Notification Indicator Sending of NPA Split Notification

NPAC SMS shall send NPA Split Notification Information, via the SOA to NPAC SMS Interface, if the Service Provider's SOA NPA Split Notification Indicator is **TRUE**.

Req 9 – NPA Split Information – Service Provider SOA NPA Split Notification Indicator Suppression of NPA Split Notification

NPAC SMS shall suppress NPA Split Notification Information, via the SOA to NPAC SMS Interface, if the Service Provider's SOA NPA Split Notification Indicator is **FALSE**.

Req 10 – NPAC Customer LSMS NPA Split Notification Indicator

NPAC SMS shall provide a mechanism to indicate whether a Service Provider supports receiving the NPA Split Notification message, by sending this message to their Local SMS via the NPAC SMS to Local SMS Interface.

Req 11 – NPAC Customer LSMS NPA Split Notification Indicator – Default

NPAC SMS shall default the LSMS NPA Split Notification Indicator to **FALSE**.

Req 12 – NPAC Customer LSMS NPA Split Notification Indicator – Modification

NPAC SMS shall allow NPAC Personnel, via the NPAC Administrative Interface, to modify the LSMS NPA Split Notification Indicator on the NPAC Customer record.

Req 13 – NPA Split Information – Service Provider LSMS NPA Split Notification Indicator
Sending of NPA Split Notification

NPAC SMS shall send NPA Split Notification Information, via the NPAC SMS to Local SMS Interface, if the Service Provider's LSMS NPA Split Notification Indicator is **TRUE**.

Req 14 – NPA Split Information – Service Provider LSMS NPA Split Notification Indicator
Suppression of NPA Split Notification

NPAC SMS shall suppress NPA Split Notification Information, via the NPAC SMS to Local SMS Interface, if the Service Provider's LSMS NPA Split Notification Indicator is **FALSE**.

RR6-29 Notification Recovery

NPAC SMS shall support recovery of all CMIP notifications defined in the IIS that are emitted over the NPAC SMS to Local SMS and SOA to NPAC SMS interfaces. Examples of notifications to be recovered include:

- subscriptionVersionNewNPA-NXX
- subscriptionVersionDonorSP-CustomerDisconnectDate
- subscriptionVersionAudit-DiscrepancyRpt
- subscriptionAuditResults
- InpNPAC-SMS-Operational-Information
- subscriptionVersionNewSP-CreateRequest (time sensitive T1 New SP)
- subscriptionVersionOld-SP-ConcurrenceRequest (time sensitive T1 Old SP)
- subscriptionVersionOldSPFinalWindowExpiration (time sensitive T2 Old SP)
- subscriptionVersionStatusAttributeValueChange
- numberPoolBlockStatusAttributeValueChange
- attributeValueChange
- objectCreation
- objectDeletion
- *InpNetworkNPA-SplitInformation (if supported by the recovering SP)*
-

- For a complete list of notifications reference the IIS.

IIS:

A new entry will be added in section 4.1.4, Notification Interface Functionality, to Exhibit 1, *The Notification Interface Functionality Table*.

New flow is shown below:

B.4.5.x NPA Split Processing Notification

This scenario shows the broadcast of an NPA Split notification by the NPAC SMS.

SOA	NPAC SMS	Local SMS	
	NPAC SMS completes NPA Split processing		1
		→ M-EVENT-REPORT InpNetworkNPA-SplitInformation	2
		← M-EVENT-REPORT Confirm	3
←M-EVENT-REPORT InpNetworkNPA-SplitInformation			4
→ M-EVENT-REPORT Confirm			5

1. Action is taken by the NPAC SMS to process NPA Split.
2. The NPAC SMS sends an M-EVENT-REPORT request to all Local SMS(s) accepting downloads for the NPA-NXX for the InpNetworkNPA-SplitInformation notification.
3. The Local SMS(s) respond by sending an M- EVENT-REPORT confirmation back to the NPAC SMS.
4. The NPAC SMS sends an M-EVENT-REPORT request to all SOA(s) accepting downloads for the NPA-NXX for the InpNetworkNPA-SplitInformation notification.
5. The SOA(s) respond by sending an M- EVENT-REPORT confirmation back to the NPAC SMS.

GDMO:

-- 11.0 LNP Network Managed Object Class

```

InpNetwork MANAGED OBJECT CLASS
  DERIVED FROM "CCITT Rec. X.721 (1992) | ISO/IEC 10165-2 : 1992":top;
  CHARACTERIZED BY
    InpNetworkPkg;
  CONDITIONAL PACKAGES
    InpDownloadPkg PRESENT IF
      !the object is instantiated on the NPAC SMS!;
    InpNetworkNPA-SplitInformationPkg PRESENT IF
      !the object is instantiated on the NPAC SMS!;
  REGISTERED AS {LNP-OIDS.lnp-objectClass 11};

InpNetworkPkg PACKAGE
  BEHAVIOUR
    InpNetworkDefinition,
    InpNetworkBehavior;
  ATTRIBUTES

```

```
    lnpNetworkName GET;
;

lnpNetworkDefinition BEHAVIOUR
  DEFINED AS !
    The lnpNetwork class is the managed object that is used as the
    container object for the serviceProvNetwork objects.
    This object has been created primarily for scoping efficiency.

    The lnpDownloadPkg will only be used for lnpNetwork object
    instantiated on the NPAC SMS (Data Download Association Function).
    This package is used for initiating from the Local SMS or SOA
    downloading of serviceProvNetwork, serviceProvNPA-NXX,
    serviceProvNPA-NXX-X and serviceProvLRN object creation,
    modification, or deletion to the Local SMS or SOA from
    the NPAC SMS.
  !;

lnpNetworkBehavior BEHAVIOUR
  DEFINED AS !
    Local SMS, SOA, and NPAC SMS Managed Object used for the Local SMS to
    NPAC SMS and the SOA to NPAC SMS interfaces.

    The Local SMS, SOA, and the NPAC SMS can M-GET any lnpNetwork
    object (Data Download Association Function). The lnpNetworkName
    attribute is read only and can not be changed via the NPAC SMS
    to Local SMS or SOA to NPAC SMS Interfaces once the object
    has been created. The value of lnpNetworkName will always
    be "lnpNetwork".

    Only one of these objects will exist and it will only be
    created at startup of the CMIP agent software on the NPAC SMS
    the Local SMS or SOA.

    The lnpDownloadPkg will only be used for an lnpNetwork object
    instantiated on the NPAC SMS. This package is used for initiating
    downloading of NPA-NXX and LRN object creation or deletion
    to the Local SMS (Data Download Association Function). Also,
    the package is used for initiating downloading of NPA-NXX-X
    object creation, modification, or deletion to the Local SMS
    (Data Download Association Function).

    The lnpNetworkNPA-SplitInformationPkg will only be used for an
    lnpNetwork object instantiated on the NPAC SMS. This package
    is used for updating NPA Split information for activities of
    removal of an NPA-NXX from an NPA Split, start PDP, and end PDP
    to the Local SMS
  !;

-- XXX.0 LNP Log Record for the LNP Network NPA Split Information Notification

lnpLogNPA-SplitInformationRecord MANAGED OBJECT CLASS
  DERIVED FROM "CCITT Rec. X.721 (1992) | ISO/IEC 10165-2 :
1992":eventLogRecord;
  CHARACTERIZED BY
    lnpLogNPA-SplitInformationPkg;
  REGISTERED AS {LNP-OIDS.lnp-objectClass XXX};
```

```
lnpLogNPA-SplitInformationPkg PACKAGE
  BEHAVIOUR
    lnpLogNPA-SplitInformationDefinition,
    lnpLogNPA-SplitInformationBehavior;
  ATTRIBUTES
    serviceProvID GET,
    serviceProvOldNPA-Value GET,
    serviceProvNewNPA-Value GET,
    serviceProvNXX-Value GET,
    serviceProvDownloadReason GET,
    ServiceProvNPAC-CompletionTimeStamp GET,
    accessControl GET;
;

lnpLogNPA-SplitInformationDefinition BEHAVIOUR
  DEFINED AS !
    The lnpLogNPA-SplitInformationRecord class is the managed
    object that is used to create log records for the
    lnpNetworkNPA-SplitInformation Notification.
  !;

lnpLogNPA-SplitInformationBehavior BEHAVIOUR
  DEFINED AS !
    This log record can be used by any CME wanting to log the
    lnpNetworkNPA-SplitInformation Notification.
  !;

-- XXX.0 LNP Network NPA Split Information Package

lnpNetworkNPA-SplitInformationPkg PACKAGE
  BEHAVIOUR lnpNetworkNPA-SplitInformationPkgBehavior;
  NOTIFICATIONS
    lnpNetworkNPA-SplitInformation;
  REGISTERED AS {LNP-OIDS.lnp-package XXX};

lnpNetworkNPA-SplitInformationPkgBehavior BEHAVIOUR
  DEFINED AS !
    This package provides for conditionally including the
    lnpNetworkNPA-SplitInformation notification.
  !;

-- XXX.0 LNP Service Provider NPAC Completion TimeStamp

serviceProvNPAC-CompletionTimeStamp ATTRIBUTE
  WITH ATTRIBUTE SYNTAX LNP-ASN1.GeneralTime;
  MATCHES FOR EQUALITY, ORDERING;
  BEHAVIOUR serviceProvNPAC-CompletionTimeStampBehavior;
  REGISTERED AS {LNP-OIDS.lnp-attribute XXX};

serviceProvNPAC-CompletionTimeStampBehavior BEHAVIOUR
  DEFINED AS !
    This attribute is used to store the NPAC SMS completion time of the
    NPA Split activity (start PDP, remove NPA-NXX from a split, end
    PDP) for a given NPA-NXX.
  !;
```

-- XXX.0 LNP Service Provider New NPA Value

```
serviceProvNewNPA-Value ATTRIBUTE
  WITH ATTRIBUTE SYNTAX LNP-ASN1.NPA;
  MATCHES FOR EQUALITY, ORDERING;
  BEHAVIOUR serviceProvNewNPA-NXX-ValueBehavior;
  REGISTERED AS {LNP-OIDS.lnp-attribute XXX};
```

```
serviceProvNewNPA-NXX-ValueBehavior BEHAVIOUR
  DEFINED AS !
    This attribute is used to specify the new NPA value
    of an NPA Split.
```

!;

-- XXX.0 LNP Service Provider Old NPA Value

```
serviceProvOldNPA-Value ATTRIBUTE
  WITH ATTRIBUTE SYNTAX LNP-ASN1.NPA;
  MATCHES FOR EQUALITY, ORDERING;
  BEHAVIOUR serviceProvOldNPA-NXX-ValueBehavior;
  REGISTERED AS {LNP-OIDS.lnp-attribute XXX};
```

```
serviceProvOldNPA-NXX-ValueBehavior BEHAVIOUR
  DEFINED AS !
    This attribute is used to specify the old NPA value
    of an NPA split.
```

!;

-- XXX.0 LNP Service Provider NXX Value

```
serviceProvNXX-Value ATTRIBUTE
  WITH ATTRIBUTE SYNTAX LNP-ASN1.NXX;
  MATCHES FOR EQUALITY, ORDERING;
  BEHAVIOUR serviceProvNXX-ValueBehavior;
  REGISTERED AS {LNP-OIDS.lnp-attribute XXX};
```

```
serviceProvNXX-ValueBehavior BEHAVIOUR
  DEFINED AS !
    This attribute is used to specify an NXX value.
```

!;

-- XXX.0 LNP Network NPA Split Information Notification

```
lnpNetworkNPA-SplitInformation NOTIFICATION
  BEHAVIOUR lnpNetworkNPA-SplitInformationPkgBehavior;
  WITH INFORMATION SYNTAX LNP-ASN1.lnpNetworkNPA-SplitInformation
  AND ATTRIBUTE IDS
    service-prov-id serviceProvID,
    old-ntp serviceProvOldNPA-Value,
    new-ntp serviceProvNewNPA-Value,
    affected-nxx serviceProvNXX-Value,
    download-reason serviceProvDownloadReason,
    npac-completion-time serviceProvNPAC-CompletionTimeStamp,
    access-control accessControl;
  REGISTERED AS {LNP-OIDS.lnp-notification XXX};
```

InpNetworkNPA-SplitInformationPkgBehavior BEHAVIOUR

DEFINED AS !

This notification contains information about an NPA split that has been processed on the NPAC SMS.

This notification is sent at the start of the permissive dial period (PDP), at the end of PDP and when an NXX is removed from the NPA split.

All attributes are always sent. If the download reason is set to "start PDP", the npa-split-npac-completion-time contains the time the start NPA split activity was completed on the NPAC SMS.

If the download reason is set to "end PDP", the npa-split-npac-completion-time contains the time the end NPA split activity was completed on the NPAC SMS. If the download reason is set to "deletel", an affected-NXX was removed from the NPA split.

The SOA receives this notification if their Service Provider SOA Split Notification Indicator is set to TRUE on the NPAC SMS.

The LSMS receives this notification if their Service Provider LSMS Split Notification Indicator is set to TRUE on the NPAC SMS.

!;

ASN.1:

```
DownloadReason ::= ENUMERATED {
    new1 (0),
    deletel(1),
    modified (2),
    audit-discrepancy (3),
    start-pdp (4),
    end-pdp (5)
}
```

```
InpNetworkNPA-SplitInformation ::= SEQUENCE {
    service-prov-id ServiceProvId,
    new-mpa NPA,
    old-mpa NPA,
    affected-nxx NXX,
    download-reason DownloadReason,
    npac-completion-time GeneralizedTime,
    access-control InpAccessControl
}
```

```
InpNetworkNPA-SplitInformationRecovery ::= SEQUENCE {
    service-prov-id ServiceProvId,
```

```

new-mpa MPA,
old-mpa MPA,
affected-nxx NXX,
download-reason DownloadReason,
mpac-completion-time GeneralizedTime
}

NetworkNotificationRecoveryReply ::= SEQUENCE {
    status ENUMERATED {
        success (0),
        failed (1),
        time-range-invalid (2),
        criteria-to-large (3),
        no-data-selected (4)
    },
    system-choice CHOICE {

        lsms [1] SET OF SEQUENCE {
            managedObjectClass ObjectClass,
            managedObjectInstance ObjectInstance,
            notification CHOICE {
                subscription-version-new-mpa-nxx [1] VersionNewMPA-NXX-Recovery,
                lnp-mpac-sms-operational-information [2]
                    NPAC-SMS-Operational-InformationRecovery
                lnp-network-mpa-split-information [3]
                    lnpNetworkMPA-SplitInformationRecovery
            }
        },
        soa [2] SET OF SEQUENCE {
            managedObjectClass ObjectClass,
            managedObjectInstance ObjectInstance,
            notification CHOICE {
                subscription-version-new-mpa-nxx [1] VersionNewMPA-NXX-Recovery,
                subscription-version-donor-sp-customer-disconnect-date [2]
                    VersionCustomerDisconnectDateRecovery,
                subscription-version-audit-discrepancy-report [3]
                    AuditDiscrepancyRptRecovery,
                subscription-audit-results [4] AuditResultsRecovery,
                lnp-mpac-sms-operational-information [5]
                    NPAC-SMS-Operational-InformationRecovery,
                subscription-version-new-sp-create-request [6]
                    VersionNewSP-CreateRequestRecovery,
                subscription-version-old-sp-concurrence-request [7]
                    VersionOldSP-ConcurrenceRequestRecovery,
                subscription-version-old-sp-final-window-expiration [8]
                    VersionOldSPFinalConcurrenceWindowExpirationRecovery,
                subscription-version-cancellation-acknowledge-request [9]
                    VersionCancellationAcknowledgeRequestRecovery,
                subscriptionVersionStatusAttributeValueChange [10]
                    VersionStatusAttributeValueChangeRecovery,
                attribute-value-change [11] AttributeValueChangeInfo,
                object-creation [12] ObjectInfo,
                object-deletion [13] ObjectInfo,
                numberPoolBlockStatusAttributeValueChange [14]
                    NumberPoolBlockStatusAttributeValueChangeRecovery,
                lnp-network-mpa-split-information [15]
                    lnpNetworkMPA-SplitInformationRecovery
            }
        }
    }
}

```

```
    }  
  }  
} OPTIONAL  
}
```

NXX ::= NumberString(SIZE(3))

M&P:

Origination Date: 1/6/1997

Change Order Number: ILL 130

Description: Application Level Errors

Cumulative SP Priority, Weighted Average: 10.83

Pure Backwards Compatible: NO

Functional Backwards Compatible: YES

IMPACT/CHANGE ASSESSMENT

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

Business Need:

The current interface has very limited error message detail. This change order will allow understanding of errors more rapidly by returning a text explanation of the error. This will reduce the amount of time it takes work centers to manually research errors and resolve troubles.

Description of Change:

Errors in the SOA and LSMS interfaces are being treated as CMIP errors and it may sometimes be difficult for a SOA to know the true reason for an error from the NPAC SMS and therefore indicate a meaningful error message to its users. It has been requested that application level error be defined where appropriate and returned as text to the requestor (SOA/LSMS).

Jan 00 LNPAWG meeting, additional information regarding the error processing has been requested. The following text describes the difference in current error processing and future error processing with the requested functionality of this change order (*italics* indicates the differences between today's functionality and the proposed future functionality).

Today:

When the NPAC SMS experiences an error when processing any of the actions defined in the GDMO/ASN.1, the appropriate error data is returned. (example NewSP-CreateReply).

```

ActionResult ::= SEQUENCE {
    managedObjectClass          ObjectClass          OPTIONAL ,
    managedObjectInstance      ObjectInstance      OPTIONAL ,
    currentTime                 [5] IMPLICIT GeneralizedTime OPTIONAL ,
    actionReply                 [6] IMPLICIT ActionReply  OPTIONAL
}
    
```

```

ActionReply ::= SEQUENCE {
    actionType      ActionTypeId,
    actionReplyInfo [4] ANY DEFINED BY actionType
}

ActionTypeId ::= CHOICE {
    globalForm      [2] IMPLICIT OBJECT IDENTIFIER ,
    localForm       [3] IMPLICIT INTEGER
}

NewSP-CreateReply ::= SEQUENCE {
    status [0] SubscriptionVersionActionReply,
    invalid-data [1] NewSP-CreateInvalidData OPTIONAL
}

```

Note: the object id in the globalForm of the ActionTypeId indicates the NewSP-CreateReply action reply specified in the LNP asn.

ILL 130:

When the NPAC SMS experiences an application level error when processing any of the actions defined in the GDMO/ASN.1, a processingFailure will be returned with LnpSpecificInfo containing the error text.

```

ActionResult ::= SEQUENCE {
    managedObjectClass      ObjectClass      OPTIONAL ,
    managedObjectInstance   ObjectInstance  OPTIONAL ,
    currentTime              [5] IMPLICIT GeneralizedTime  OPTIONAL ,
    actionReply              [6] IMPLICIT ActionReply      OPTIONAL
}

ActionReply ::= SEQUENCE {
    actionType      ActionTypeId,
    actionReplyInfo [4] ANY DEFINED BY actionType
}

ActionTypeId ::= CHOICE {
    globalForm      [2] IMPLICIT OBJECT IDENTIFIER ,
    localForm       [3] IMPLICIT INTEGER
}

ProcessingFailure ::= SEQUENCE {
    managedObjectClass      ObjectClass ,
    managedObjectInstance   ObjectInstance  OPTIONAL ,
    specificErrorInfo       [5] SpecificErrorInfo
}

SpecificErrorInfo ::= SEQUENCE {
    errorId      OBJECT IDENTIFIER,
    errorInfo    ANY DEFINED BY errorId
}

LnpSpecificInfo ::= GraphicString255

```

Feb 00, LNPA-WG meeting, the group discussed on the 2/9/00 con call that a flash cut has a high degree of risk, so we should be looking at another option. During the Feb meeting, it was discussed and agreed that a backwards compatible approach was needed. The current approach is to create duplicate “sister” ACTIONS that will return the error text string to the requesting SP. A sunset period will allow SPs time to upgrade their systems. At the end of the sunset period, the original ACTIONS will be removed, and the new ACTIONS (with the error text string) will be the only method of sending the requested ACTIONS to the NPAC SMS.

Optionally, at the end of the sunset period the structure of the original ACTIONS can be modified to mirror the duplicate “sister” ACTIONS, for one major release of the NPAC SMS (this allows SPs to use either the original or new ACTIONS with the error text string). At the time the subsequent release is implemented, the duplicate ACTIONS can be deleted. At this point in time, the original ACTION names with the new error text string will be the only valid ACTIONS in the NPAC SMS.

Requirements:

Req 1 – NPAC SMS Application Level Errors

NPAC SMS shall provide application level errors in the CMIP messaging, in the SOA to NPAC SMS Interface and NPAC SMS to Local SMS Interface.

Req 2 – NPAC SMS Application Level Errors Details

NPAC SMS shall use the application level errors defined in Table TBD in the IIS.

IIS:

Appendix A, Errors will be changed. An example is shown below:

Managed Object Class	CMIP Error	Message Text	Additional Information
InpSubscription	duplicateObject Instance	101-A pending, conflict, or cancel-pending subscription version already exists.	

Appendix B, ensure all message flow text implies the correct reply data.

GDMO:

-- xx.0 LNP Download Action With Error Text

```

InpDownloadWithErrorText ACTION
  BEHAVIOUR
    InpDownloadWithErrorTextDefinition,
    InpDownloadWithErrorTextBehavior;
  MODE CONFIRMED;
  WITH INFORMATION SYNTAX LNP-ASN1.DownloadAction;
  WITH REPLY SYNTAX LNP-ASN1.DownloadReplyWithErrorText;
  REGISTERED AS {LNP-OIDS.lnp-action xx};

```

```

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

```

```

InpDownloadWithErrorTextBehavior BEHAVIOUR
  DEFINED AS !
    See InpDownload ACTION for behaviour definition.

    In addition to the existing InpDownload ACTION behaviour, this
    action's reply contains an optional error text string to be
    returned if the action is not successful.
  !;

```

-- xx.0 LNP Recovery Complete Action With Error Text

```

InpRecoveryCompleteWithErrorText ACTION
  BEHAVIOUR
    InpRecoveryCompleteWithErrorTextDefinition,
    InpRecoveryCompleteWithErrorTextBehavior;
  MODE CONFIRMED;

```

```
WITH INFORMATION SYNTAX LNP-ASN1.RecoveryCompleteAction;  
WITH REPLY SYNTAX LNP-ASN1.RecoveryCompleteReplyWithErrorText;  
REGISTERED AS {LNP-OIDS.lnp-action xx};
```

```
lnpRecoveryCompleteWithErrorTextDefinition BEHAVIOUR
```

```
DEFINED AS !
```

```
    The lnpRecoveryCompleteWithErrorText action is used by the Local SMS  
    or SOA to specify the system has recovered from downtime and the  
    transactions performed since the association establishment can now be  
    sent from the NPAC SMS.
```

```
!;
```

```
lnpRecoveryCompleteWithErrorTextBehavior BEHAVIOUR
```

```
DEFINED AS !
```

```
    See lnpRecoveryComplete ACTION for behaviour definition.
```

```
    In addition to the existing lnpRecoveryComplete ACTION behaviour,  
    this action's reply contains an optional error text string to be  
    returned if the action is not successful.
```

```
!;
```

```
-- xx.0 LNP Subscription Version Activate Action With Error Text
```

```
subscriptionVersionActivateWithErrorText ACTION
```

```
BEHAVIOUR
```

```
    subscriptionVersionActivateWithErrorTextDefinition,  
    subscriptionVersionActivateWithErrorTextBehavior;
```

```
MODE CONFIRMED;
```

```
WITH INFORMATION SYNTAX LNP-ASN1.ActivateAction;
```

```
WITH REPLY SYNTAX LNP-ASN1.ActivateReplyWithErrorText;
```

```
REGISTERED AS {LNP-OIDS.lnp-action xx};
```

```
subscriptionVersionActivateWithErrorTextWithErrorTextDefinition BEHAVIOUR
```

```
DEFINED AS !
```

```
    The subscriptionVersionActivateWithErrorText action is the action  
    that can be  
    used by the SOA of the new service provider to activate a  
    subscription version id, tn or a range of tns via the SOA to  
    NPAC SMS interface.
```

```
!;
```

```
subscriptionVersionActivateWithErrorTextBehavior BEHAVIOUR
```

```
DEFINED AS !
```

```
    See subscriptionVersionActivate ACTION for behaviour definition.
```

```
    In addition to the existing subscriptionVersionActivate ACTION  
    behaviour, this action's reply contains an optional error text  
    string to be returned if the action is not successful.
```

```
!;
```

```
-- xx.0 LNP Subscription Version Cancel Action With Error Text
```

```
subscriptionVersionCancelWithErrorText ACTION
```

```
BEHAVIOUR
```

```
    subscriptionVersionCancelWithErrorTextDefinition,  
    subscriptionVersionCancelWithErrorTextBehavior;  
MODE CONFIRMED;  
WITH INFORMATION SYNTAX LNP-ASN1.CancelAction;  
WITH REPLY SYNTAX LNP-ASN1.CancelReplyWithErrorText;  
REGISTERED AS {LNP-OIDS.lnp-action xx};
```

```
subscriptionVersionCancelWithErrorTextWithErrorTextDefinition BEHAVIOUR  
DEFINED AS !
```

```
    The subscriptionVersionCancelWithErrorText action is the action  
    that can be  
    used by the SOA to cancel a subscription version via the SOA to  
    NPAC SMS interface.
```

```
!;
```

```
subscriptionVersionCancelWithErrorTextBehavior BEHAVIOUR  
DEFINED AS !
```

```
    See subscriptionVersionCancel ACTION for behaviour definition.
```

```
    In addition to the existing subscriptionVersionCancel ACTION  
    behaviour, this action's reply contains an optional error text  
    string to be returned if the action is not successful.
```

```
!;
```

```
-- xx.0 LNP Subscription Version Disconnect Action With Error Text
```

```
subscriptionVersionDisconnectWithErrorText ACTION  
BEHAVIOUR
```

```
    subscriptionVersionDisconnectWithErrorTextDefinition,  
    subscriptionVersionDisconnectWithErrorTextBehavior;  
MODE CONFIRMED;  
WITH INFORMATION SYNTAX LNP-ASN1.DisconnectAction;  
WITH REPLY SYNTAX LNP-ASN1.DisconnectReplyWithErrorText;  
REGISTERED AS {LNP-OIDS.lnp-action xx};
```

```
subscriptionVersionDisconnectWithErrorTextDefinition BEHAVIOUR  
DEFINED AS !
```

```
    The subscriptionVersionDisconnectWithErrorText action is the action  
    that is  
    used by the SOA to disconnect a subscription version via the SOA to  
    NPAC SMS interface.
```

```
!;
```

```
subscriptionVersionDisconnectWithErrorTextBehavior BEHAVIOUR  
DEFINED AS !
```

```
    See subscriptionVersionDisconnect ACTION for behaviour definition.
```

```
    In addition to the existing subscriptionVersionDisconnect ACTION  
    behaviour, this action's reply contains an optional error text  
    string to be returned if the action is not successful.
```

```
!;
```

```
-- xx.0 LNP Subscription Version Modify Action With Error Text
```

```
subscriptionVersionModifyWithErrorText ACTION
```

```
BEHAVIOUR
    subscriptionVersionModifyWithErrorTextDefinition,
    subscriptionVersionModifyWithErrorTextBehavior;
MODE CONFIRMED;
WITH INFORMATION SYNTAX LNP-ASN1.ModifyAction;
WITH REPLY SYNTAX LNP-ASN1.ModifyReplyWithErrorText;
REGISTERED AS {LNP-OIDS.lnp-action xx};
```

```
subscriptionVersionModifyWithErrorTextDefinition BEHAVIOUR
DEFINED AS !
    The subscriptionVersionModifyWithErrorText action is the action
    that can be
    used by the SOA to modify a subscription version via the SOA to
    NPAC SMS interface.
!;
```

```
subscriptionVersionModifyWithErrorTextBehavior BEHAVIOUR
DEFINED AS !
    See subscriptionVersionModify ACTION for behaviour definition.

    In addition to the existing subscriptionVersionModify ACTION
    behaviour, this action's reply contains an optional error text
    string to be returned if the action is not successful.
!;
```

```
-- xx.0 LNP New Service Provider Cancellation Acknowledge Request
-- With Error Text
```

```
subscriptionVersionNewSP-CancellationAcknowledgeWithErrorText ACTION
BEHAVIOUR
    subscriptionVersionNewSP-CancellationAcknowledgeWithErrorTextDefinition,
    subscriptionVersionNewSP-CancellationAcknowledgeWithErrorTextBehavior;
MODE CONFIRMED;
WITH INFORMATION SYNTAX LNP-ASN1.CancellationAcknowledgeAction;
WITH REPLY SYNTAX LNP-ASN1.CancellationAcknowledgeReplyWithErrorText;
REGISTERED AS {LNP-OIDS.lnp-action xx};
```

```
subscriptionVersionNewSP-CancellationAcknowledgeWithErrorTextDefinition BEHAVIOUR
DEFINED AS !
    The subscriptionVersionNewSP-CancellationAcknowledgeWithErrorText action
    is the action that is used via the SOA to NPAC
    SMS interface by the new service provider to acknowledge
    cancellation of a subscriptionVersionNPAC with a status of
    cancel-pending.
!;
```

```
subscriptionVersionNewSP-CancellationAcknowledgeWithErrorTextBehavior BEHAVIOUR
DEFINED AS !
    See subscriptionVersionCancellationAcknowledge ACTION for behaviour
    definition.

    In addition to the existing subscriptionVersionCancellationAcknowledge
    ACTION behaviour, this action's reply contains an optional error text
    string to be returned if the action is not successful.
!;
```

```
-- xx.0 LNP Subscription Version Remove From Conflict With Error Text

subscriptionVersionRemoveFromConflictWithErrorText ACTION
  BEHAVIOUR
    subscriptionVersionRemoveFromConflictWithErrorTextDefinition,
    subscriptionVersionRemoveFromConflictWithErrorTextBehavior;
  MODE CONFIRMED;
  WITH INFORMATION SYNTAX LNP-ASN1.RemoveFromConflictAction;
  WITH REPLY SYNTAX LNP-ASN1.RemoveFromConflictReplyWithErrorText;
  REGISTERED AS {LNP-OIDS.lnp-action xx};

subscriptionVersionRemoveFromConflictWithErrorTextDefinition BEHAVIOUR
  DEFINED AS !
    The subscriptionVersionRemoveFromConflictWithErrorText action
    is the action that is used via the SOA to NPAC
    SMS interface by either the old or new service provider to set the
    subscription version status from conflict to pending.
  !;

subscriptionVersionRemoveFromConflictWithErrorTextBehavior BEHAVIOUR
  DEFINED AS !
    See subscriptionVersionRemoveFromConflict ACTION for behaviour
    definition.

    In addition to the existing subscriptionVersionRemoveFromConflict
    ACTION behaviour, this action's reply contains an optional error
    text string to be returned if the action is not successful.
  !;

-- xx.0 LNP New Service Provider Subscription Version Create With Error Text

subscriptionVersionNewSP-CreateWithErrorText ACTION
  BEHAVIOUR
    subscriptionVersionNewSP-CreateWithErrorTextDefinition,
    subscriptionVersionNewSP-CreateWithErrorTextBehavior;
  MODE CONFIRMED;
  WITH INFORMATION SYNTAX LNP-ASN1.NewSP-CreateAction;
  WITH REPLY SYNTAX LNP-ASN1.NewSP-CreateReplyWithErrorText;
  REGISTERED AS {LNP-OIDS.lnp-action xx};

subscriptionVersionNewSP-CreateWithErrorTextDefinition BEHAVIOUR
  DEFINED AS !
    The subscriptionVersionNewSP-CreateWithErrorText 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-CreateWithErrorTextBehavior BEHAVIOUR
  See subscriptionVersionNewSP-Create ACTION for behaviour definition.

  In addition to the existing subscriptionVersionNewSP-Create ACTION
  behaviour, this action's reply contains an optional error text
  string to be returned if the action is not successful.
  !;
```

-- xx.0 LNP Old Service Provider Cancellation Acknowledge Request
-- With Error Text

```
subscriptionVersionOldSP-CancellationAcknowledgeWithErrorText ACTION
  BEHAVIOUR
    subscriptionVersionOldSP-CancellationAcknowledgeWithErrorTextDefinition,
    subscriptionVersionOldSP-CancellationAcknowledgeWithErrorTextBehavior;
  MODE CONFIRMED;
  WITH INFORMATION SYNTAX LNP-ASN1.CancellationAcknowledgeAction;
  WITH REPLY SYNTAX LNP-ASN1.CancellationAcknowledgeReplyWithErrorText;
  REGISTERED AS {LNP-OIDS.lnp-action xx};
```

```
subscriptionVersionOldSP-CancellationAcknowledgeWithErrorTextDefinition BEHAVIOUR
  DEFINED AS !
  The subscriptionVersionOldSP-CancellationAcknowledgeWithErrorText action
  is the action that is used via the SOA to NPAC
  SMS interface by the old service provider to acknowledge
  cancellation of a subscriptionVersionNPAC with a status of
  cancel-pending.
  !;
```

```
subscriptionVersionOldSP-CancellationAcknowledgeWithErrorTextBehavior BEHAVIOUR
  DEFINED AS !
  See subscriptionVersionOldSP-CancellationAcknowledge ACTION
  for behaviour definition.

  In addition to the existing
  subscriptionVersionOldSP-CancellationAcknowledge ACTION
  behaviour, this action's reply contains an optional error text
  string to be returned if the action is not successful.
  !;
```

-- xx.0 LNP Old Service Provider Subscription Version Create With Error Text

```
subscriptionVersionOldSP-CreateWithErrorText ACTION
  BEHAVIOUR
    subscriptionVersionOldSP-CreateWithErrorTextDefinition,
    subscriptionVersionOldSP-CreateWithErrorTextBehavior;
  MODE CONFIRMED;
  WITH INFORMATION SYNTAX LNP-ASN1.OldSP-CreateAction;
  WITH REPLY SYNTAX LNP-ASN1.OldSP-CreateReplyWithErrorText;
  REGISTERED AS {LNP-OIDS.lnp-action xx};
```

```
subscriptionVersionOldSP-CreateWithErrorTextDefinition BEHAVIOUR
  DEFINED AS !
  The subscriptionVersionOldSP-CreateWithErrorText action is the action
  that is
  used via the SOA to NPAC SMS interface by the
  old service provider to create a new subscriptionVersionNPAC.
  !;
```

```
subscriptionVersionOldSP-CreateWithErrorTextBehavior BEHAVIOUR
  DEFINED AS !
  See subscriptionVersionOldSP-Create ACTION for behaviour definition.
```

In addition to the existing subscriptionVersionOldSP-Create ACTION behaviour, this action's reply contains an optional error text string to be returned if the action is not successful.

!;

-- xx.0 Notification Recovery Action With Error Text

```
lnpNotificationRecoveryWithErrorText ACTION
  BEHAVIOUR
    lnpNotificationRecoveryWithErrorTextDefinition,
    lnpNotificationRecoveryWithErrorTextBehavior;
  MODE CONFIRMED;
  WITH INFORMATION SYNTAX LNP-ASN1.NetworkNotificationRecoveryAction;
  WITH REPLY SYNTAX LNP-ASN1.NetworkNotificationRecoveryReplyWithErrorText;
  REGISTERED AS {LNP-OIDS.lnp-action xx};
```

```
lnpNotificationRecoveryWithErrorTextDefinition BEHAVIOUR
  DEFINED AS !
    The lnpNotificationRecoveryWithErrorText action is the action
    that can be
    used by the SOA or LSMS to recover notification information that
    cannot be recovered by other means.
```

!;

```
lnpNotificationRecoveryWithErrorTextBehavior BEHAVIOUR
  DEFINED AS !
    See lnpNotificationRecovery ACTION for behaviour definition.

    In addition to the existing lnpNotificationRecovery ACTION
    behaviour, this action's reply contains an optional error text
    string to be returned if the action is not successful.
```

!;

-- xx.0 LNP Service Provider Number Pool Block Create With Error Text

```
numberPoolBlock-CreateWithErrorText ACTION
  BEHAVIOUR
    numberPoolBlock-CreateWithErrorTextDefinition,
    numberPoolBlock-CreateWithErrorTextBehavior;
  MODE CONFIRMED;
  WITH INFORMATION SYNTAX LNP-ASN1.NumberPoolBlock-CreateAction;
  WITH REPLY SYNTAX LNP-ASN1.NumberPoolBlock-CreateReplyWithErrorText;
  REGISTERED AS {LNP-OIDS.lnp-action xx};
```

```
numberPoolBlock-CreateWithErrorTextDefinition BEHAVIOUR
  DEFINED AS !
    The numberPoolBlock-CreateWithErrorText 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-CreateWithErrorTextBehavior BEHAVIOUR
  DEFINED AS !
    See numberPoolBlock-Create ACTION for behaviour definition.
```

In addition to the existing `numberPoolBlock-Create` ACTION behaviour, this action's reply contains an optional error text string to be returned if the action is not successful.

!;

ASN.1:

ActivateReplyWithErrorText ::= SubscriptionVersionActionReplyWithErrorText

CancellationAcknowledgeReplyWithErrorText ::=
SubscriptionVersionActionReplyWithErrorText

CancelReplyWithErrorText ::= SubscriptionVersionActionReplyWithErrorText

DisconnectReplyWithErrorText ::= SEQUENCE {
status SubscriptionVersionActionReplyWithErrorText,
version-id SET OF SubscriptionVersionId OPTIONAL
}

DownloadReply ::= SEQUENCE {
status ENUMERATED {
success (0),
failed (1),
time-range-invalid (2),
criteria-to-large (3),
no-data-selected (4)
},
downloaddata [0] CHOICE {
subscriber-data [0] SubscriptionDownloadData,
network-data [1] NetworkDownloadData,
block-data [2] BlockDownloadData
} OPTIONAL,
error-text [1] GraphicString255 OPTIONAL
}

ModifyReplyWithErrorText ::= SEQUENCE {
status SubscriptionVersionActionReplyWithErrorText,
invalid-data SubscriptionModifyInvalidData OPTIONAL
}

NetworkNotificationRecoveryReply ::= SEQUENCE {
status ENUMERATED {
success (0),
failed (1),
time-range-invalid (2),
criteria-to-large (3),
no-data-selected (4)
},
system-choice [0] CHOICE {

lsms [1] SET OF SEQUENCE {
managedObjectClass ObjectClass,
managedObjectInstance ObjectInstance,
notification CHOICE {
subscription-version-new-npa-nxx [1] VersionNewNPA-NXX-Recovery,
lnp-npac-sms-operational-information [2]
NPAC-SMS-Operational-InformationRecovery
}
}
},
soa [2] SET OF SEQUENCE {

```

managedObjectClass ObjectClass,
managedObjectInstance ObjectInstance,
notification CHOICE {
    subscription-version-new-mpa-nxx [1] VersionNewMPA-NXX-Recovery,
    subscription-version-donor-sp-customer-disconnect-date [2]
        VersionCustomerDisconnectDateRecovery,
    subscription-version-audit-discrepancy-report [3]
        AuditDiscrepancyRptRecovery,
    subscription-audit-results [4] AuditResultsRecovery,
    lnp-npac-sms-operational-information [5]
        NPAC-SMS-Operational-InformationRecovery,
    subscription-version-new-sp-create-request [6]
        VersionNewSP-CreateRequestRecovery,
    subscription-version-old-sp-concurrence-request [7]
        VersionOldSP-ConcurrenceRequestRecovery,
    subscription-version-old-sp-final-window-expiration [8]
        VersionOldSPFinalConcurrenceWindowExpirationRecovery,
    subscription-version-cancellation-acknowledge-request [9]
        VersionCancellationAcknowledgeRequestRecovery,
    subscriptionVersionStatusAttributeValueChange [10]
        VersionStatusAttributeValueChangeRecovery,
    attribute-value-change [11] AttributeValueChangeInfo,
    object-creation [12] ObjectInfo,
    object-deletion [13] ObjectInfo,
    numberPoolBlockStatusAttributeValueChange [14]
        NumberPoolBlockStatusAttributeValueChangeRecovery
}
}
} OPTIONAL,
error-text [1] GraphicString255 OPTIONAL
}

NewSP-CreateReplyWithErrorText ::= SEQUENCE {
    status [0] SubscriptionVersionActionReplyWithErrorText,
    invalid-data [1] NewSP-CreateInvalidData OPTIONAL
}

NumberPoolBlock-CreateReply ::= SEQUENCE {
    block-id [0] BlockId,
    status [1] ENUMERATED {
        success (0),
        failed (1),
        soa-not-authorized (2),
        no-mpa-nxx-x-found (3),
        invalid-data-values (4),
        number-pool-block-already-exists (5),
        prior-to-effective-date (6),
        invalid-subscription-versions (7)
    },
    block-invalid-values [2] NumberPoolBlock-CreateInvalidData OPTIONAL,
    error-text [3] GraphicString255 OPTIONAL
}

OldSP-CreateReplyWithErrorText ::= SEQUENCE {
    status SubscriptionVersionActionReplyWithErrorText,
    invalid-data OldSP-CreateInvalidData OPTIONAL
}

```

```
RecoveryCompleteReply ::= SEQUENCE {
    status ResultsStatus,
    subscriber-data [1] SubscriptionDownloadData OPTIONAL,
    network-data [2] NetworkDownloadData OPTIONAL,
    block-data [3] BlockDownloadData OPTIONAL,
    error-text [4] GraphicString255 OPTIONAL
}
```

```
RemoveFromConflictReplyWithErrorText ::=
    SubscriptionVersionActionReplyWithErrorText
```

```
SubscriptionVersionActionReply ::= ENUMERATED { -- to be removed in release x.0
    success (0),
    failed (1),
    soa-not-authorized (2),
    no-version-found (3),
    invalid-data-values (4),
    version-create-already-exists (5)
}
```

```
SubscriptionVersionActionReplyWithErrorText ::= SEQUENCE {
    status-code SubscriptionVersionStatus,
    error-text [1] GraphicString255 OPTIONAL -- present if status not success
}
```

```
SubscriptionVersionActionStatus ::= ENUMERATED {
    success (0),
    failed (1),
    soa-not-authorized (2),
    no-version-found (3),
    invalid-data-values (4),
    version-create-already-exists (5)
}
```

M&P:

When resolving errors with an SP, USAs need a list of all potential errors in table.

Note:

This, as written, is not backwards compatible. All SOAs and LSMSs must flash cut during the same weekend as the NPAC SMS.

Origination Date: 5/22/1998

Change Order Number: NANC 217

Description: Mass Update of SPID

Cumulative SP Priority, Weighted Average: 12.50

Functional Backwards Compatible: NO

IMPACT/CHANGE ASSESSMENT

FRS	IIS	GDMO	ASN.1	NPAC	SOA	LSMS
Y	Y			Medium	Med/High	Med/High

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 make SPID change for given ported telephone numbers, the current NPAC operation requires each involved active ported telephone numbers to be deleted, and each involved pending telephone numbers to be cancelled. During the transition period, call routing can be affected and customer service is impacted. Once these actions have been taken and the NPAC network data updated, the active and pending ported telephone numbers information must be re-created. This functionality causes the customer to be out of service during this 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).

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 SP2. Next, SP2 would delete all LRNs, 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 its 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.

Requirements:

Req 0.1 – SPID Mass Update – OpGUI Entry

NPAC SMS shall allow NPAC Personnel, via the NPAC SMS Administrative Interface, to enter selection input criteria for a SPID Mass Update Request Process.

Req 0.2 – 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) upon completion of the entry of the selection input criteria in the NPAC SMS Administrative Interface, for a SPID Mass Update Request Process in the NPAC SMS.

Req 1 – 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 NPA-NXX-X data, and subordinate Number Pool Block and Subscription Version data in the NPAC SMS.

Req 2 – 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 Local Interface, when performing the SPID Mass Update Request Process.

Req 3 – SPID Mass Update – NPAC SMS Processing of Requested Data Based on Status

NPAC SMS shall only migrate existing NPA-NXX, LRN, and NPA-NXX-X data, as well as Number Pool Block and Subscription Version data that contains a status of active, partial failure, disconnect pending, or old with a FailedSP-List, when performing the SPID Mass Update Request Process.

Note: “old” history data contain a status of cancelled, or old with an empty FailedSP-List, and will not be migrated.

Req 3.1 – SPID Mass Update – SIC-SMURF File Names

NPAC SMS shall follow the SIC-SMURF file naming convention as described in Appendix E.

Req 3.2 – SPID Mass Update – SIC-SMURF File Formats

NPAC SMS shall follow the SIC-SMURF file format as described in Appendix E.

Req 3.3 – SPID Mass Update – SIC-SMURF NPA-NXX File Processing

NPAC SMS shall use the SIC-SMURF NPA-NXX file to update the SPID associated with NPA-NXXs in the NPAC SMS during the SPID Mass Update Request Process.

Req 3.4 – SPID Mass Update – SIC-SMURF LRN File Processing

NPAC SMS shall use the SIC-SMURF LRN file to update the SPID associated with LRNs, Number Pool Blocks, and Subscription Versions in the NPAC SMS during the SPID Mass Update Request Process.

Req 3.5 – SPID Mass Update – SIC-SMURF NPA-NXX-X File Processing

NPAC SMS shall use the SIC-SMURF NPA-NXX-X file to update the SPID associated with NPA-NXX-Xs in the NPAC SMS during the SPID Mass Update Request Process.

Req 4 – SPID Mass Update – Service Provider Active Indicator

Deleted.

Req 5 – SPID Mass Update – Service Provider Active Indicator Default

Deleted.

Req 6 – SPID Mass Update – Service Provider Active Indicator OpGUI Modification

Deleted.

Req 7 – SPID Mass Update – Maximum Level of Granularity

NPAC SMS shall perform the SPID Mass Update Request Process at a maximum level of granularity of a single SPID.

Req 8 – SPID Mass Update – Minimum Level of Granularity

NPAC SMS shall perform the SPID Mass Update Request Process at a minimum level of granularity of an NPA-NXX-X.

Req 9 –

Deleted.

Req 10 –

Deleted.

Req 11 –
Deleted.

Req 12 – SPID Mass Update – Creation of Number Pool Block for Old Service Provider

NPAC SMS shall create a Number Pool Block with a new version id for the old Service Provider for a Number Pool Block that contains a status of active, partial failure, disconnect pending, or old with a FailedSP-List, prior to the SPID Mass Update Request Process.

Req 13 – SPID Mass Update – Creation of Number Pool Block 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 Number Pool Block with a new version id for the old Service Provider for a Number Pool Block that contains a status of active, partial failure, disconnect pending, or old with a FailedSP-List, prior to the SPID Mass Update Request Process.

Req 14 – 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 old Service Provider for a subscription version that contains a status of active, partial failure, disconnect pending, or old with a FailedSP-List, prior to the SPID Mass Update Request Process.

Req 15 – 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 old Service Provider for a subscription version that contains a status of active, partial failure, disconnect pending, or old with a FailedSP-List, prior to the SPID Mass Update Request Process.

Req 16 – SPID Mass Update – Exclusion of Data During Recovery

NPAC SMS shall exclude data in a recovery request for activity related to SPID Mass Update Request Process activity.

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.0001.0002.10-13-1996081122

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

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.0001.0002.10-13-1996081122

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

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.0001.0002.10-13-1996081122

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

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.

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.

Origination Date: 1/7/1998

Change Order Number: NANC 187

Description: Linked Action Replies

Cumulative SP Priority, Weighted Average: 12.58

Functional Backwards Compatible: YES

IMPACT/CHANGE ASSESSMENT

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

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**.

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, 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**.

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

NPAC SMS shall send Network, Subscription, 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 –

Deleted.

Req 13 – 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 14 – 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 15 – 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 16 – 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 17 – 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 18 – 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 19 – 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 20 – 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 21 – 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 22 – 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 23 – 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 24 – 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 25 – 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 26 – 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 27 – Network Data Maximum Recovered Objects – Tunable Parameter

NPAC SMS shall provide a Network Data Maximum 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 28 – Network Data Maximum Recovered Objects – Tunable Parameter Default

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

Req 29 – Network Data Maximum Recovered Objects – Tunable Parameter Modification

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

Req 30 – 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 Recovered Objects tunable parameter value.

Req 31 – 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 Recovered Objects tunable parameter value.

Req 32 – Subscription Data Maximum Recovered Objects – Tunable Parameter

NPAC SMS shall provide a Subscription Data Maximum 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 33 – Subscription Data Maximum Recovered Objects – Tunable Parameter Default

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

Req 34 – Subscription Data Maximum Recovered Objects – Tunable Parameter Modification

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

Req 35 – 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 Recovered Objects tunable parameter value.

Req 36 – Notification Data Maximum Recovered Notifications – Tunable Parameter

NPAC SMS shall provide a Notification Data Maximum 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 37 – Notification Data Maximum Recovered Notifications – Tunable Parameter Default

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

Req 38 – Notification Data Maximum Recovered Notifications – Tunable Parameter Modification

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

Req 39 – 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 Recovered Notifications tunable parameter value.

Req 40 – Linked Replies Information – Network 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 Recovered Notifications tunable parameter value.

Add new tunable to Appendix C.

Name = Network Data Linked Replies Blocking Factor

Default Value = 50

Units = Objects

Valid Range = 2-10000.

Name = Subscription Data Linked Replies Blocking Factor
Default Value = 50
Units = Objects
Valid Range = 2-10000.

Name = Notification Data Linked Replies Blocking Factor
Default Value = 50
Units = Notifications
Valid Range = 2-10000.

Name = Network Data Maximum Recovered Objects
Default Value = 10,000
Units = Objects
Valid Range = 100-10,000.

Name = Subscription Data Maximum Recovered Objects
Default Value = 10,000
Units = Objects
Valid Range = 100-10,000.

Name = Notification Data Maximum Recovered Notifications
Default Value = 2,000
Units = Notifications
Valid Range = 100-2,000.

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 InpDownload 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 Recovered Objects" tunable. If the number of network data objects to be returned exceeds the "Network Data Maximum 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 InpDownload 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 Recovered Objects" tunable. If the number of subscription data objects to be returned exceeds the "Subscription Data Maximum 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 Recovered Notifications" tunable. If the number of notifications to be returned exceeds the "Notification Data Maximum 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).

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

Total number of network data objects returned for a single download request	Network Data Maximum Recovered Objects
Total number of subscription data objects returned for a single download request	Subscription Data Maximum Recovered Objects
Total number of notification data notifications returned for a single download request	Notification Data Maximum 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.

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 a single or linked M-ACTION reply (always followed by an empty reply). If no objects are found, the NPAC SMS will respond with two linked replies, first an M_ACTION reply (with no data) followed by an empty reply.

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 a single or linked M-ACTION reply (always followed by an empty reply). If no objects are found, the NPAC SMS will respond with two linked replies, first an M-ACTION reply (with no data) followed by an empty reply.* 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 numberPoolBlockStatusAttributeValueChanged 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 a single or linked M-ACTION reply (always followed by an empty reply). If no notifications are found, the NPAC SMS will respond with two linked replies, first an M-ACTION reply (with no data) followed by an empty reply.

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 a single or linked M-ACTION reply (always followed by an empty reply). If no objects are found, the NPAC SMS will respond with two linked replies, first an M-ACTION reply (with no data) followed by an empty reply.*
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 a single or linked M-ACTION reply (always followed by an empty reply). If no objects are found, the NPAC SMS will respond with two linked replies, first an M-ACTION reply (with no data) followed by an empty reply.* 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 a single or linked M-ACTION reply (always followed by an empty*

reply). If no notifications are found, the NPAC SMS will respond with two linked replies, first an M-ACTION reply (with no data) followed by an empty reply.

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 a single or linked M-ACTION reply (always followed by an empty reply). If no objects are found, the NPAC SMS will respond with two linked replies, first an M-ACTION reply (with no data) followed by an empty reply.*
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 a single or linked M-ACTION reply (always followed by an empty reply). If no notifications are*

found, the NPAC SMS will respond with two linked replies, first an M-ACTION reply (with no data) followed by an empty reply.

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.

    The LSMS receives linked replies if their Service Provider
    LSMS Linked Replies Indicator is set to TRUE on the NPAC SMS.

    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 Recovered Objects" tunable.
```

If the number of network data objects to be returned exceeds the "Network Data Maximum 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.

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 Recovered Objects" tunable. If the number of subscription data messages to be returned exceeds the "Subscription Data Maximum 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.

...

-- 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.

The LSMS receives linked replies if their Service Provider LSMS Linked Replies Indicator is set to TRUE on the NPAC SMS.

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 Recovered Notifications" tunable. If the number of Notifications to be returned exceeds the "Notification Data Maximum 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.

ASN.1:

No change required.

M&P:

No change required.

Origination Date: 5/12/1998

Change Order Number: NANC 285

Description: SOA/LSMS Requested Subscription Version Query Max Size

Cumulative SP Priority, Weighted Average: 12.92

Pure Backwards Compatible: YES (but may require local operational changes)

IMPACT/CHANGE ASSESSMENT

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

Business Need:

Currently the NPAC responds with an error message of Criteria Too Large for queries with a response greater than 150 SVs.

This change order will prevent the NPAC from sending the Criteria Too Large error message if it reaches the maximum tunable value (150 SVs) for SVs queries. The NPAC will return 150 SVs at a time with the ability to query subsequent data until all SVs are returned.

Description of Change:

A SOA/LSMS request for a Subscription Version query that exceeds the maximum size tunable (“Maximum Subscriber Query”), returns an error message to the SOA.

It has been requested the NPAC return SVs up to the max tunable amount instead. The SOA/LSMS would accept this message, then use it’s contents to send another query to the NPAC, starting with the next TN, and so on until all SVs are returned to the SOA/LSMS.

It will be up to the SOA/LSMS to manage the data returned from the NPAC and determine the next request to send to the NPAC in order to get the next set of SVs.

The NPAC will continue to return SVs that meet the selection criteria. However, the NPAC will not return a “count” to the SOA/LSMS for number of records that match the selection criteria.

This solution will resolve problems where the SV time stamp that the NPAC users for recovery is the same for large ranges, and therefore is exceeds the maximum TN query amount.

Jim Rooks will provide additional information on a proposed solution given the inclusion of NANC 279 into this change order.

Jim’s response is shown below:

#1 This change order requests the 'more' capability that will be supported by queries in the LTI. This implementation requires 2 changes.

#2, the service providers should modify their systems to support the following SV query operations to the NPAC:

- a. When data is returned from an SV Query and there are exactly n (tunable) records returned, the SP must assume that they didn't get all the data from their query.
- b. After processing the first n records, they should send a new query that picks up where the data from the prior query ended.
- c. The SV data returned from the NPAC for SV queries will be sorted by TN and then by SVID so a filter can be created to pick up where the prior query ended.
- d. For example, if a SOA query to the NPAC returns exactly 150 records and the last SV returned was TN '303-555-0150' with SVID of 1234. The filter used on the next query would be: All SVs where ((TN > 303-555-0150) OR (TN = 303-555-0150 AND SVID > 1234)). The NPAC does support OR filters.
- e. Once the results from the NPAC returns less than 150 records, the SP can assume they received all records in the requested query.

Requirements:

Req 1 – Subscription Version Query – Maximum Subscription Version Query by the SOA

NPAC SMS shall return the Maximum Subscription Query tunable value of Subscription Versions to a SOA, via the SOA to NPAC SMS Interface, when the user requests a Subscription Version query and the number of Subscription Version records that meet the query criteria exceed the Maximum Subscription Query tunable value.

Req 2 – Subscription Version Query – Maximum Subscription Version Query by the LSMS

NPAC SMS shall return the Maximum Subscription Query tunable value of Subscription Versions to a Local SMS, via the NPAC SMS to Local SMS Interface, when the user requests a Subscription Version query and the number of Subscription Version records that meet the query criteria exceed the Maximum Subscription Query tunable value.

Req 3 – Subscription Version Query – Sort Order

NPAC SMS shall return Subscription Versions as a result of a Subscription Version query, sorted in TN (primary, ascending) and SV-ID (secondary, ascending) order.

IIS:

4.7 Subscription Version Queries (this is a new section)

If a subscription version query is requested by the SOA/LSMS, and the results are larger than the Maximum Subscription Query tunable value, the NPAC SMS will return subscription versions up to that max value. The SOA/LSMS would accept this message, then use it's contents to send another query to the NPAC SMS, starting with the next TN, and so on until all SVs are returned to the SOA/LSMS. It will be up to the SOA/LSMS to manage the data returned from the NPAC SMS and determine the next request to send to the NPAC SMS in order to get the next set of subscription versions.

The NPAC SMS will continue to return subscription versions that meet the selection criteria. However, the NPAC SMS will not return a "count" to the SOA/LSMS for number of records that match the selection criteria. Service providers should modify their systems to support the following subscription version query operations to the NPAC SMS:

1. When data is returned from a subscription version query and there are exactly n (tunable) records returned, the SP must assume that they didn't get all the data from their query.
2. After processing the first n records, they should send a new query that picks up where the data from the prior query ended.
3. The subscription version data returned from the NPAC SMS for subscription version queries will be sorted by TN and then by subscription version ID so a filter can be created to pick up where the prior query ended.
4. For example, if a SOA query to the NPAC SMS returns exactly 150 records and the last subscription version returned was TN '303-555-0150' with subscription version ID of 1234. The filter used on the next query would be: All subscription versions where ((TN > 303-555-0150) OR (TN = 303-555-0150 AND subscription version ID > 1234)). The NPAC SMS does support OR filters.
5. Once the results from the NPAC SMS returns less than 150 records, the SP can assume they received all records in the requested query.

As an example, a Service Provider's SOA sends an Subscription Version query to the NPAC SMS, There are 225 Subscription Versions that meet the selection criteria. Assuming the Maximum Subscription Query tunable value is set to 150 Subscription Versions, the SOA would receive data from the NPAC SMS in the form of 150 Subscription Versions in 150 linked replies (1 SV per linked reply) followed by an reply (for a total of 151 linked replies). The SOA would then send another query based on the algorithm described above. The SOA would then receive data from the NPAC SMS in the form of 75 Subscription Versions in 75 linked replies (1 SV per linked reply) followed by an reply (for a total of 76 linked replies).

B.5.6 SubscriptionVersion Query

This scenario shows subscriptionVersion query from service provider systems to the NPAC SMS.

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

1. Action is taken by either a service provider SOA or Local SMS for retrieving one or more versions of a subscription.
2. The service provider SOA or Local SMS issues a scoped filtered M-GET from the InpSubscriptions object to retrieve a specific version for a subscription version TN or can request all subscription versions. However, the service provider SOA is limited by a scope and filter in their search capabilities. The filter will currently support all the attributes on the subscriptionVersionNPAC.

3. ~~The NPAC SMS replies with the requested subscriptionVersion data if the requested number of records is less than or equal to “Max SubscriberQuery” specified in the NPAC SMS. Otherwise a complexityLimitation error will be returned.~~

The NPAC SMS replies with the requested subscriptionVersion data if the requested number of records is less than or equal to “Maximum Subscription Query” tunable value specified in the NPAC SMS. If the requested subscriptionVersion data exceeds the tunable value, then the number of subscriptionVersion records that equal the tunable value will be returned. The service provider SOA or Local SMS will use the data returned to submit a subsequent query, starting with the next record from where the previous query finished. Only when subscriptionVersion data is returned that contains less than the tunable value, is it safe for the service provider SOA or Local SMS to assume all data has been retrieved from the NPAC SMS.

The query return data includes:

- subscriptionTN
- subscriptionLRN
- subscriptionNewCurrentSP
- subscriptionOldSP
- subscriptionNewSP-DueDate
- subscriptionNewSP-CreationTimeStamp
- subscriptionOldSP-DueDate
- subscriptionOldSP-Authorization
- subscriptionOldSP-AuthorizationTimeStamp
- subscriptionActivationTimeStamp
- subscriptionBroadcastTimeStamp
- subscriptionConflictTimeStamp
- subscriptionCustomerDisconnectDate
- subscriptionDisconnectCompleteTimeStamp
- subscriptionEffectiveReleaseDate
- subscriptionVersionStatus
- 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
- subscriptionLNPTType
- subscriptionPreCancellationStatus
- subscriptionCancellationTimeStamp
- subscriptionOldTimeStamp
- subscriptionModifiedTimeStamp
- subscriptionCreationTimeStamp
- subscriptionOldSP-CancellationTimeStamp

subscriptionNewSP-CancellationTimeStamp
subscriptionOldSP-ConflictResolutionTimeStamp
subscriptionNewSP-ConflictResolutionTimeStamp
subscriptionPortingToOriginal-SPSwitch
subscriptionFailedSP-List
subscriptionDownloadReason
subscriptionTimerType
subscriptionBusinessType

GDMO:

-- 21.0 LNP NPAC Subscription Version Managed Object Class

subscriptionVersionNPAC MANAGED OBJECT CLASS

...

~~If a Service Provider SOA or Local SMS does a scoped filtered M-GET for subscription versions, this request will only be successful if the number of records to be returned is less than or equal to the NPAC SMS tunable parameter, "Max Subscriber Query", in the Service Data table.~~

...

The SOA or Local SMS may issue a scoped and filtered M-GET request to the NPAC SMS. If the number of objects exceeds the Maximum Subscription Query tunable value, then the number of records that equal the tunable value will be returned, followed by an empty reply to indicate the end of the returned data. The SOA or Local SMS will use the data returned to submit a subsequent query, starting with the next record from where the previous query finished. Only when the subscription version data is returned that contains less than the tunable value, has all the data been returned. The subscription version linked replies will be sorted by TN and then by subscription version ID so a filter can be created to return the next set of data where the TN value is greater than the last TN returned, OR the TN is equal to the last TN returned AND the subscription version id is greater than the last subscription version id returned. (e.g. (TN > 123-456-7890 OR (TN = 123-456-7890 AND ID > 1234))

ASN.1:

No change required.

M&P:

No change required.

Origination Date: 5/23/1997

Change Order Number: NANC 169

Description: Delta Download File Creation by Time Range for SVs

Cumulative SP Priority, Weighted Average: 13.92

Pure Backwards Compatible: YES (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				Medium	N/A	Med-Low

Business Need:

N/A. Removed from R4 consideration.

Origination Date: 11/25/1997

Change Order Number: NANC 179

Description: TN Range Notifications

Cumulative SP Priority, Weighted Average: 14.42

Pure Backwards Compatible: NO

Functional Backwards Compatible: YES

IMPACT/CHANGE ASSESSMENT

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

Business Need:

Currently SOA systems receive notifications on a TN by TN basis. This change order will allow them to receive a single notification from the NPAC for a TN range instead of individual notifications for each TN. This will reduce the number of messages received and time required by SPs to compare outputs to their internal service order processing systems.

Description of Change:

Currently notifications for TN range related operations come as individual notifications for each TN in the range. It has been suggested that the notifications for all TN's in a range be combined into one notification.

After further analysis, it was determined that this should be revised to include all appropriate ~~“pending” and “sending”~~ status attribute value changes and attribute value changes, plus return to donor notifications.

Additional Write-Up:

Currently notifications for TN range related operations come as individual notifications for each TN in the range. It has been suggested that the notifications for all TNs in a range be combined into one notification.

This would include the following notifications:

- Object Creation (1 set of info for the TN range, plus a list of TN/SV-ID pairing)
- Attribute Value Change (1 set of info for the TN range, plus list of SV-ID)
- Status Attribute Value Change (1 set of info for the TN range, plus list of SV-ID)
- Return to Donor Notifications (1 set of info for the TN range, plus list of SV-ID)
- Subscription Version Cancellation Resolution Request
- Subscription Version New SP Create Request

- Subscription Version Old SP Concurrence Request
- Subscription Version Old SP Final Concurrence Timer Expiration

Any action that is performed in a TN range basis that results in above notifications will be sent in a range format.

Benefits of NANC 179:

- Large reduction in number of messages sent to the SOA and NPAC SMS.
- Reduces NPAC SMS database activity due to less logging and processing.
- Improved interface performance for both NPAC SMS and SOA.

The range notifications would not be emitted from a specific subscription version in the range, as these notifications are to date. They would have to be emitted from the container object for the subscription versions (InpSubscriptions).

Requirements:

The backwards compatibility sunset period for the TN Range Notification 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 TN Range Notification Indicator

NPAC SMS shall provide a mechanism to indicate whether a Service Provider supports receiving TN Range Notifications via the SOA to NPAC SMS Interface.

Req 2 – NPAC Customer TN Range Notification Indicator – Default

NPAC SMS shall default the TN Range Notification Indicator to **FALSE**.

Req 3 – NPAC Customer TN Range Notification Indicator – Modification

NPAC SMS shall allow NPAC Personnel, via the NPAC Administrative Interface, to modify the TN Range Notification Indicator on the NPAC Customer record.

Req 4 – TN Range Notification Information – Service Provider TN Range Notification Indicator Sending of TN Range Notifications

NPAC SMS shall send TN Range Notifications, via the SOA to NPAC SMS Interface, if the Service Provider's TN Range Notification Indicator is **TRUE**.

Req 5 – TN Range Notification Information – Service Provider TN Range Notification Indicator Suppression of TN Range Notifications

NPAC SMS shall suppress TN Range Notifications and send individual TN Notifications, via the SOA to NPAC SMS Interface, if the Service Provider's TN Range Notification Indicator is **FALSE**.

Req 6 – TN Range Notification Information – Single TN Range Notifications

NPAC SMS shall send a single TN Range Notification when the same data applies to all TNs in the range.

Req 7 – TN Range Notification Information – Breakup of TN Range Notifications

NPAC SMS shall send more than one TN Range Notification when the same feature data does NOT apply to all TNs in the range, by breaking up the TN Range and sending TN Range Notifications such that the same feature data applies to all TNs in the smaller broken up TN Ranges.

Req 8 – TN Range Notification Information – Recovery of TN Range Notifications

NPAC SMS shall send TN Range Notifications during recovery that mimic the same TN Range Notifications that would have been received by the Service Provider had they been associated during the original broadcast of the TN Range Notifications.

Req 9 – TN Range Notification Information – Single NPA-NXX

NPAC SMS shall only allow a TN Range Notification to be inclusive within a single NPA-NXX.

IIS:

The following text is an excerpt from the end of section 5.2.3 “*Data Origination Authentication*” on how access control is handled for the Object Creation, Object Deletion and Attribute Value Change Notifications:

ObjectCreation, ObjectDeletion, and AttributeValueChange should use the “information” attribute (*i.e.*, sub-index 6.1.7.3, 7.1.6.3, and 8.1.6.3 in section 9.21.5, *subscriptionVersionNPACNotifications*, Exhibit 83), which is an ANY DEFINED BY to contain the access control field. The values and authentication for the notification access control fields are the same as above.

This section would need to be modified to add the following text:

For range ObjectCreation and AttributeValueChange notifications the access control would not be placed in the information attribute but rather in the access control attribute defined. This would allow for the access control information to only be present once in the range notifications.

GDMO:

-- 14.0 LNP Subscriptions Managed Object Class

```
lnpSubscriptions MANAGED OBJECT CLASS
  DERIVED FROM "CCITT Rec. X.721 (1992) | ISO/IEC 10165-2 : 1992":top;
  CHARACTERIZED BY
    lnpSubscriptionsPkg,
    subscriptionVersionLocalSMS-CreatePkg;
  CONDITIONAL PACKAGES
  lnpDownloadPkg PRESENT IF
    !the object is instantiated on the NPAC SMS!,
  subscriptionVersionOldSP-CreatePkg PRESENT IF
    !the object is instantiated on the NPAC SMS!,
  subscriptionVersionNewSP-CreatePkg PRESENT IF
    !the object is instantiated on the NPAC SMS!,
  subscriptionVersionDisconnectPkg PRESENT IF
    !the object is instantiated on the NPAC SMS!,
  subscriptionVersionModifyPkg PRESENT IF
    !the object is instantiated on the NPAC SMS!,
  subscriptionVersionActivatePkg PRESENT IF
    !the object is instantiated on the NPAC SMS!,
  subscriptionVersionCancelPkg PRESENT IF
    !the object is instantiated on the NPAC SMS!,
  subscriptionVersionOldSP-CancellationPkg PRESENT IF
    !the object is instantiated on the NPAC SMS!,
  subscriptionVersionNewSP-CancellationPkg PRESENT IF
    !the object is instantiated on the NPAC SMS!,
  subscriptionVersionRemoveFromConflictPkg PRESENT IF
    !the object is instantiated on the NPAC SMS!,
  subscriptionVersionRangeStatusAttributeValueChangePkg PRESENT IF
    !the object is instantiated on the NPAC SMS!,
  subscriptionVersionRangeAttributeValueChangePkg PRESENT IF
    !the object is instantiated on the NPAC SMS!,
  subscriptionVersionRangeObjectCreationPkg PRESENT IF
    !the object is instantiated on the NPAC SMS!;
  subscriptionVersionRangeDonorSP-CustomerDisconnectDatePkg PRESENT IF
    !the object is instantiated on the NPAC SMS!;
  subscriptionVersionRangeCancellationAcknowledgeRequestPkg PRESENT IF
    !the object is instantiated on the NPAC SMS!;
  subscriptionVersionRangeNewSP-CreateRequestPkg PRESENT IF
    !the object is instantiated on the NPAC SMS!;
  subscriptionVersionRangeOldSP-ConcurrenceRequestPkg PRESENT IF
    !the object is instantiated on the NPAC SMS!;
  subscriptionVersionRangeOldSPFinalConcurrenceWindowExpirationPkg PRESENT IF
    !the object is instantiated on the NPAC SMS!;

  REGISTERED AS {LNP-OIDS.lnp-objectClass 14};

lnpSubscriptionsPkg PACKAGE
  BEHAVIOUR
    lnpSubscriptionsDefinition,
    lnpSubscriptionsBehavior;
  ATTRIBUTES
    lnpSubscriptionsName GET;
  NOTIFICATIONS
    subscriptionVersionLocalSMS-ActionResults
```

;

lnpSubscriptionsDefinition BEHAVIOUR

DEFINED AS !

Local SMS and NPAC SMS Managed Object for the SOA to NPAC SMS and the Local SMS to NPAC SMS interface.

The lnpSubscriptions class is the managed object that is used as the container object for the subscription version objects on the NPAC SMS and the Local SMS.

Local SMS interfaces must be able to support scope/filtered M-SETs and M-DELETES with a TN range as the primary filter.

!;

lnpSubscriptionsBehavior BEHAVIOUR

DEFINED AS !

Local SMS and NPAC SMS Managed Object

The Local SMS (Data Download Association Function) and the service provider SOA (SOA Management Association Function) can M-GET any lnpSubscriptions object. The lnpSubscriptionsName attribute is read only and can not be changed via the Local SMS Interface once the object has been created. The value of lnpSubscriptionsName will always be "lnpSubscriptions".

Only one of these objects will exist and it will only be created at startup of the CMIP agent software on the NPAC SMS or the Local SMS.

The lnpDownloadPkg will only be used for a lnpSubscriptions object instantiated on the NPAC SMS. This package is used to used for initiating downloading of subscriptionVersions object creation, deletion, or modifications to the Local SMS (Data Download Association Function).

The subscriptionVersionOldSP-CreatePkg will only be used for a lnpSubscriptions object instantiated on the NPAC SMS. This package is used for creation of subscription versions for porting TNs by the old service provider.

The subscriptionVersionNewSP-CreatePkg will only be used for a lnpSubscriptions object instantiated on the NPAC SMS. This package is used for creation of subscription versions for porting TNs by the new service provider.

The subscriptionVersionDisconnectPkg will only be used for a lnpSubscriptions object instantiated on the NPAC SMS. This package is used for disconnection of a ported TN by the current service provider.

The subscriptionVersionModifyPkg will only be used for a lnpSubscriptions object instantiated on the NPAC SMS. This package is used for modification of a ported TN by a service provider.

The `subscriptionVersionActivatePkg` will only be used for a `lnpSubscriptions` object instantiated on the NPAC SMS. This package is used for activation of a ported TN by a new service provider.

The `subscriptionVersionCancelPkg` will only be used for a `lnpSubscriptions` object instantiated on the NPAC SMS. This package is used for cancellation of a ported TN by a service provider.

The `subscriptionVersionOldSP-CancellationPkg` will only be used for a `lnpSubscriptions` object instantiated on the NPAC SMS. This package is used for acknowledgment of subscription versions with status values of cancel-pending. Acknowledgments from both old and new service provider SOAs take a version from cancel-pending and to a canceled state. This action is used by the old service provider SOA.

The `subscriptionVersionNewSP-CancellationPkg` will only be used for a `lnpSubscriptions` object instantiated on the NPAC SMS. This package is used for acknowledgment of subscription versions with status values of cancel-pending. Acknowledgments from both old and new service provider SOAs take a version out of cancel-pending and to a canceled state. This action is used by the new service provider SOA.

The `subscriptionVersionRemoveFromConflictPkg` will only be used for a `lnpSubscriptions` object instantiated on the NPAC SMS. This package is used for setting the status of subscription versions with status values of conflict to pending. This action is used by either the new or old service provider SOA.

The SOA receives `subscriptionVersionRangeStatusAttributeValueChange` notifications if their Service Provider TN Range Notification Indicator is set to TRUE on the NPAC SMS. The `subscriptionVersionRangeStatusAttributeValueChangePkg` is used to send the `subscriptionVersionRangeStatusAttributeValueChange` notification. When this package is sent, it will include one set of information for the TN range, plus a list of Subscription Version IDs. If the feature data does not apply to all TNs in the original range, notifications will be broken up into smaller TN Range Notifications such that the feature data applies to all TNs in the smaller TN Range, and will be sent in separate messages.

The SOA receives `subscriptionVersionRangeAttributeValueChange` notifications if their Service Provider TN Range Notification Indicator is set to TRUE on the NPAC SMS. The `subscriptionVersionRangeAttributeValueChangePkg` is used to send the `subscriptionVersionRangeAttributeValueChange` notification. When this package is sent, it will include one set of information for the TN range, plus a list of Subscription Version IDs. If the feature data does not apply to all TNs in the original range, notifications will be broken up into smaller TN Range Notifications such that the feature data applies to all TNs in the smaller TN Range, and will be sent in separate messages.

The SOA receives `subscriptionVersionRangeObjectCreation` notifications if their Service Provider TN Range Notification Indicator is set to TRUE on the NPAC SMS. The `subscriptionVersionRangeObjectCreationPkg` is used to send the `subscriptionVersionRangeObjectCreation` notification. When this package is sent, it will include one set of information for the TN range, plus a paired list of TN/Subscription Version ID combinations. If the feature data does not apply to all TNs in the range, notifications will be broken up into smaller TN Range Notifications such that the feature data applies to all TNs in the smaller TN Range, and will be sent in separate messages.

The SOA receives `subscriptionVersionRangeDonorSP-CustomerDisconnectDate` notifications if their Service Provider TN Range Notification Indicator is set to TRUE on the NPAC SMS. The `subscriptionVersionRangeDonorSP-CustomerDisconnectDatePkg` is used to send the `subscriptionVersionRangeDonorSP-CustomerDisconnectDate` notification. When this package is sent, it will include one set of information for the TN range, plus a paired list of TN/Subscription Version ID combinations. If the feature data does not apply to all TNs in the range, notifications will be broken up into smaller TN Range Notifications such that the feature data applies to all TNs in the smaller TN Range, and will be sent in separate messages.

The SOA receives `subscriptionVersionRangeCancellationAcknowledgeRequest` notifications if their Service Provider TN Range Notification Indicator is set to TRUE on the NPAC SMS. The `subscriptionVersionRangeCancellationAcknowledgeRequestPkg` is used to send the `subscriptionVersionRangeCancellationAcknowledgeRequest` notification. When this package is sent, it will include one set of information for the TN range, plus a paired list of TN/Subscription Version ID combinations. If the feature data does not apply to all TNs in the range, notifications will be broken up into smaller TN Range Notifications such that the feature data applies to all TNs in the smaller TN Range, and will be sent in separate messages.

The SOA receives `subscriptionVersionRangeNewSP-CreateRequest` notifications if their Service Provider TN Range Notification Indicator is set to TRUE on the NPAC SMS. The `subscriptionVersionRangeNewSP-CreateRequestPkg` is used to send the `subscriptionVersionRangeNewSP-CreateRequest` notification. When this package is sent, it will include one set of information for the TN range, plus a paired list of TN/Subscription Version ID combinations. If the feature data does not apply to all TNs in the range, notifications will be broken up into smaller TN Range Notifications such that the feature data applies to all TNs in the smaller TN Range, and will be sent in separate messages.

The SOA receives `subscriptionVersionRangeOldSP-ConcurrenceRequest` notifications if their Service Provider TN Range Notification Indicator is set to TRUE on the NPAC SMS. The `subscriptionVersionRangeOldSP-ConcurrenceRequestPkg` is used to

send the `subscriptionVersionRangeOldSP-ConcurrenceRequest` notification. When this package is sent, it will include one set of information for the TN range, plus a paired list of TN/Subscription Version ID combinations. If the feature data does not apply to all TNs in the range, notifications will be broken up into smaller TN Range Notifications such that the feature data applies to all TNs in the smaller TN Range, and will be sent in separate messages.

The SOA receives `subscriptionVersionRangeOldSPFinalConcurrenceWindowExpiration` notifications if their Service Provider TN Range Notification Indicator is set to TRUE on the NPAC SMS. The `subscriptionVersionRangeOldSPFinalConcurrenceWindowExpirationPkg` is used to send the `subscriptionVersionRangeOldSPFinalConcurrenceWindowExpiration` notification. When this package is sent, it will include one set of information for the TN range, plus a paired list of TN/Subscription Version ID combinations. If the feature data does not apply to all TNs in the range, notifications will be broken up into smaller TN Range Notifications such that the feature data applies to all TNs in the smaller TN Range, and will be sent in separate messages.

!;

-- 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.

Notifications to be recovered are requested by time range. Time range requests will be limited to a tunable range specified in the NPAC

SMS. All data in the download time period, regardless of the amount of data, will be returned.

The recovery of the SOA and LSMS notifications are independent requests. Notifications can be recovered until they are purged from the database. The tunable used to determine when to purge the notifications is "Notify Log Retention Period" which defaults to 90 days.

For all download requests, the Local SMS or SOA should behave as follows in response to the possible download M-ACTION response from the NPAC SMS:

Success - process the data received from the NPAC SMS, continue processing.

No-data-selected -- no data was found, continue processing.

Criteria-too-large (using the MaxNotificationRecovery tunable) - break up the request into a smaller time range and re-issue the request to the NPAC SMS.

Time-range-invalid (using the Maximum Download Duration tunable) - break up the request into shorter time ranges and re-issue the request to the NPAC SMS.

Failed - go into retry mode. Re-issue the request a configurable number of additional retry attempts with an "x" amount of delay between requests ("x" is a configurable amount of time after receiving the failure for each request). If a failed response is received for the final retry request, abort the association and re-start the recovery process. Note: It is recommended that the Local SMS or SOA use the same value that the NPAC SMS uses for the retry interval. It is also recommended that the Local

SMS

use a value of at least two (2) for configurable number of additional retry attempts.

For activities that specify "continue processing", the Local SMS or SOA should send the NPAC SMS, either the next lnpDownload action for a different type of data, or an lnpRecoveryComplete request, depending on where the response appears in the flow.

The SOA or LSMS is capable of recovering data based on the association functions. The SOA recovers network data and notification data using the network data management association function (networkDataMgmt). The LSMS recovers network data and subscription data using the data download association function (dataDownload) and recovers notification data using the network data management association function (networkDataMgmt).

The SOA recovers subscriptionVersionRangeStatusAttributeValueChange notifications if their Service Provider TN Range Notification Indicator is set to TRUE on the NPAC SMS.

The subscriptionVersionRangeStatusAttributeValueChangePkg is used to send the subscriptionVersionRangeStatusAttributeValueChange notification. When this package is sent, it will include one set of information

for the TN range, plus a list of Subscription Version IDs. If the feature data does not apply to all TNs in the original range, notifications will be broken up into smaller TN Range Notifications such that the feature data applies to all TNs in the smaller TN Range, and will be sent in separate messages.

The SOA recovers `subscriptionVersionRangeAttributeValueChange` notifications if their Service Provider TN Range Notification Indicator is set to TRUE on the NPAC SMS. The `subscriptionVersionRangeAttributeValueChangePkg` is used to send the `subscriptionVersionRangeAttributeValueChange` notification. When this package is sent, it will include one set of information for the TN range, plus a list of Subscription Version IDs. If the feature data does not apply to all TNs in the original range, notifications will be broken up into smaller TN Range Notifications such that the feature data applies to all TNs in the smaller TN Range.

The SOA recovers `subscriptionVersionRangeObjectCreation` notifications if their Service Provider TN Range Notification Indicator is set to TRUE on the NPAC SMS. The `subscriptionVersionRangeObjectCreationPkg` is used to send the `subscriptionVersionRangeObjectCreation` notification. When this package is sent, it will include one set of information for the TN range, plus a paired list of TN/Subscription Version ID combinations. If the feature data does not apply to all TNs in the range, notifications will be broken up into smaller TN Range Notifications such that the feature data applies to all TNs in the smaller TN Range, and will be sent in separate messages.

The SOA recovers `subscriptionVersionRangeDonorSP-CustomerDisconnectDate` notifications if their Service Provider TN Range Notification Indicator is set to TRUE on the NPAC SMS. The `subscriptionVersionRangeDonorSP-CustomerDisconnectDatePkg` is used to send the `subscriptionVersionRangeDonorSP-CustomerDisconnectDatePkg` notification. When this package is sent, it will include one set of information for the TN range, plus a paired list of TN/Subscription Version ID combinations. If the feature data does not apply to all TNs in the range, notifications will be broken up into smaller TN Range Notifications such that the feature data applies to all TNs in the smaller TN Range, and will be sent in separate messages.

The SOA recovers `subscriptionVersionRangeCancellationAcknowledgeRequest` notifications if their Service Provider TN Range Notification Indicator is set to TRUE on the NPAC SMS. The `subscriptionVersionRangeCancellationAcknowledgeRequestPkg` is used to send the `subscriptionVersionRangeCancellationAcknowledgeRequest` notification. When this package is sent, it will include one set of information for the TN range, plus a paired list of TN/Subscription Version ID combinations. If the feature data does not apply to all TNs in the range, notifications will be broken up into smaller TN Range Notifications such that the feature data applies to all TNs in the smaller TN Range, and will be sent in separate messages.

The SOA recovers

subscriptionVersionRangeNewSP-CreateRequest notifications if their Service Provider TN Range Notification Indicator is set to TRUE on the NPAC SMS. The subscriptionVersionRangeNewSP-CreateRequestPkg is used to send the subscriptionVersionRangeNewSP-CreateRequest notification. When this package is sent, it will include one set of information for the TN range, plus a paired list of TN/Subscription Version ID combinations. If the feature data does not apply to all TNs in the range, notifications will be broken up into smaller TN Range Notifications such that the feature data applies to all TNs in the smaller TN Range, and will be sent in separate messages.

The SOA recovers

subscriptionVersionRangeOldSP-ConcurrenceRequest notifications if their Service Provider TN Range Notification Indicator is set to TRUE on the NPAC SMS. The subscriptionVersionRangeOldSP-ConcurrenceRequestPkg is used to send the subscriptionVersionRangeOldSP-ConcurrenceRequest notification. When this package is sent, it will include one set of information for the TN range, plus a paired list of TN/Subscription Version ID combinations. If the feature data does not apply to all TNs in the range, notifications will be broken up into smaller TN Range Notifications such that the feature data applies to all TNs in the smaller TN Range, and will be sent in separate messages.

The SOA recovers

subscriptionVersionRangeOldSPFinalConcurrenceWindowExpiration notifications if their Service Provider TN Range Notification Indicator is set to TRUE on the NPAC SMS. The subscriptionVersionRangeOldSPFinalConcurrenceWindowExpirationPkg is used to send the subscriptionVersionRangeOldSPFinalConcurrenceWindowExpiration notification. When this package is sent, it will include one set of information for the TN range, plus a paired list of TN/Subscription Version ID combinations. If the feature data does not apply to all TNs in the range, notifications will be broken up into smaller TN Range Notifications such that the feature data applies to all TNs in the smaller TN Range, and will be sent in separate messages.

!;

-- XXX.0 LNP Log Record for the Subscription Version Range Attribute Value
-- Change Notification

```
lnpLogRangeAttributeValueChangeRecord MANAGED OBJECT CLASS
  DERIVED FROM "CCITT Rec. X.721 (1992) | ISO/IEC 10165-2 :
1992":eventLogRecord;
  CHARACTERIZED BY
    lnpLogRangeAttributeValueChangePkg;
  REGISTERED AS {LNP-OIDS.lnp-objectClass XXX};
```

```
lnpLogRangeAttributeValueChangePkg PACKAGE
  BEHAVIOUR
    lnpLogRangeAttributeValueChangeDefinition,
    lnpLogRangeAttributeValueChangeBehavior;
  ATTRIBUTES
```

```
        subscriptionVersionRangeAttributeValueChangeInfo GET,
        accessControl GET;
;

lnpLogRangeAttributeValueChangeDefinition BEHAVIOUR
  DEFINED AS !
    The lnpLogAttributeValueChangeRecord class is the managed
    object that is used to create log records for the
    subscriptionVersionRangeAttributeValueChange Notification.
  !;

lnpLogRangeAttributeValueChangeBehavior BEHAVIOUR
  DEFINED AS !
    This log record can be used by any CME wanting to log the
    subscriptionVersionRangeAttributeValueChange Notification.
  !;

-- XXX.0 LNP Log Record for the Subscription Version Range Object Creation
Notification

lnpLogRangeObjectCreationRecord MANAGED OBJECT CLASS
  DERIVED FROM "CCITT Rec. X.721 (1992) | ISO/IEC 10165-2 :
1992":eventLogRecord;
  CHARACTERIZED BY
    lnpLogRangeObjectCreationPkg;
  REGISTERED AS {LNP-OIDS.lnp-objectClass XXX};

lnpLogRangeObjectCreationPkg PACKAGE
  BEHAVIOUR
    lnpLogRangeObjectCreationDefinition,
    lnpLogRangeObjectCreationBehavior;
  ATTRIBUTES
    subscriptionVersionRangeObjectInfo GET,
    accessControl GET;
;

lnpLogRangeObjectCreationDefinition BEHAVIOUR
  DEFINED AS !
    The lnpLogRangeObjectCreationRecord class is the managed
    object that is used to create log records for the
    subscriptionVersionRangeObjectCreation Notification.
  !;

lnpLogRangeObjectCreationChangeBehavior BEHAVIOUR
  DEFINED AS !
    This log record can be used by any CME wanting to log the
    subscriptionVersionObjectCreation Notification.
  !;

-- XXX.0 LNP Log Record for the Subscription Version Range Status Attribute Value
-- Change Notification

lnpLogRangeStatusAttributeValueChangeRecord MANAGED OBJECT CLASS
  DERIVED FROM "CCITT Rec. X.721 (1992) | ISO/IEC 10165-2 :
1992":eventLogRecord;
  CHARACTERIZED BY
    lnpLogRangeStatusAttributeValueChangePkg;
```

REGISTERED AS {LNP-OIDS.lnp-objectClass XXX};

lnpLogRangeStatusAttributeValueChangePkg PACKAGE
BEHAVIOUR

lnpLogRangeStatusAttributeValueChangeDefinition,
lnpLogRangeStatusAttributeValueChangeBehavior;

ATTRIBUTES

subscriptionVersionRangeStatusAttributeValueChangeInfo GET,
accessControl GET;

;

lnpLogRangeStatusAttributeValueChangeDefinition BEHAVIOUR

DEFINED AS !

The lnpLogStatusAttributeValueChangeRecord class is the managed
object that is used to create log records for the
subscriptionVersionRangeStatusAttributeValueChange Notification.

!;

lnpLogRangeStatusAttributeValueChangeBehavior BEHAVIOUR

DEFINED AS !

This log record can be used by any CME wanting to log the
subscriptionVersionRangeStatusAttributeValueChange Notification.

!;

-- XXX.0 LNP Log Record for the Subscription Version Range Donor Disconnect
-- Notification

lnpLogRangeDonorSP-CustomerDisconnectDateRecord MANAGED OBJECT CLASS

DERIVED FROM "CCITT Rec. X.721 (1992) | ISO/IEC 10165-2 :

1992":eventLogRecord;

CHARACTERIZED BY

lnpLogRangeDonorSP-CustomerDisconnectDatePkg;

REGISTERED AS {LNP-OIDS.lnp-objectClass XXX};

lnpLogRangeDonorSP-CustomerDisconnectDatePkg PACKAGE

BEHAVIOUR

lnpLogRangeDonorSP-CustomerDisconnectDateDefinition,
lnpLogRangeDonorSP-CustomerDisconnectDateBehavior;

ATTRIBUTES

subscriptionVersionRangeDonorSP-CustomerDisconnectDateInfo GET,
accessControl GET;

;

lnpLogRangeDonorSP-CustomerDisconnectDateDefinition BEHAVIOUR

DEFINED AS !

The lnpLogRangeDonorSP-CustomerDisconnectDateRecord class is the managed
object that is used to create log records for the
subscriptionVersionRangeDonorSP-CustomerDisconnectDate Notification.

!;

lnpLogRangeDonorSP-CustomerDisconnectDateBehavior BEHAVIOUR

DEFINED AS !

This log record can be used by any CME wanting to log the
subscriptionVersionRangeDonorSP-CustomerDisconnectDate Notification.

!;

-- XXX.0 LNP Log Record for the Subscription Version Range Cancellation

-- Acknowledge Request Notification

lnpLogRangeCancellationAcknowledgeRequestRecord MANAGED OBJECT CLASS
DERIVED FROM "CCITT Rec. X.721 (1992) | ISO/IEC 10165-2 :

1992":eventLogRecord;

CHARACTERIZED BY

lnpLogRangeCancellationAcknowledgeRequestPkg;

REGISTERED AS {LNP-OIDS.lnp-objectClass XXX};

lnpLogRangeCancellationAcknowledgeRequestPkg PACKAGE

BEHAVIOUR

lnpLogRangeCancellationAcknowledgeRequestDefinition,

lnpLogRangeCancellationAcknowledgeRequestBehavior;

ATTRIBUTES

subscriptionVersionRangeCancellationAcknowledgeRequestInfo GET,

accessControl GET;

;

lnpLogRangeCancellationAcknowledgeRequestDefinition BEHAVIOUR

DEFINED AS !

The lnpLogRangeCancellationAcknowledgeRequestRecord class is the managed object that is used to create log records for the subscriptionVersionRangeCancellationAcknowledgeRequest Notification.

!;

lnpLogRangeCancellationAcknowledgeRequestBehavior BEHAVIOUR

DEFINED AS !

This log record can be used by any CME wanting to log the subscriptionVersionRangeCancellationAcknowledgeRequest Notification.

!;

-- XXX.0 LNP Log Record for the Subscription Version Range New SP

-- Create Request Notification

lnpLogRangeNewSP-CreateRequestRecord MANAGED OBJECT CLASS

DERIVED FROM "CCITT Rec. X.721 (1992) | ISO/IEC 10165-2 :

1992":eventLogRecord;

CHARACTERIZED BY

lnpLogRangeNewSP-CreateRequestPkg;

REGISTERED AS {LNP-OIDS.lnp-objectClass XXX};

lnpLogRangeNewSP-CreateRequestPkg PACKAGE

BEHAVIOUR

lnpLogRangeNewSP-CreateRequestDefinition,

lnpLogRangeNewSP-CreateRequestBehavior;

ATTRIBUTES

subscriptionVersionRangeNewSP-CreateRequestInfo GET,

accessControl GET;

;

lnpLogRangeNewSP-CreateRequestDefinition BEHAVIOUR

DEFINED AS !

The lnpLogRangeNewSP-CreateRequestRecord class is the managed object that is used to create log records for the subscriptionVersionRangeNewSP-CreateRequest Notification.

!;

```

InpLogRangeNewSP-CreateRequestBehavior BEHAVIOUR
  DEFINED AS !
    This log record can be used by any CME wanting to log the
    subscriptionVersionRangeNewSP-CreateRequest Notification.
  !;

-- XXX.0 LNP Log Record for the Subscription Version Range Old SP
--   Concurrence Request Notification

InpLogRangeOldSP-ConcurrenceRequestRecord MANAGED OBJECT CLASS
  DERIVED FROM "CCITT Rec. X.721 (1992) | ISO/IEC 10165-2 :
  1992":eventLogRecord;
  CHARACTERIZED BY
    InpLogRangeOldSP-ConcurrenceRequestPkg;
  REGISTERED AS {LNP-OIDS.lnp-objectClass XXX};

InpLogRangeOldSP-ConcurrenceRequestPkg PACKAGE
  BEHAVIOUR
    InpLogRangeOldSP-ConcurrenceRequestDefinition,
    InpLogRangeOldSP-ConcurrenceRequestBehavior;
  ATTRIBUTES
    subscriptionVersionRangeOldSP-ConcurrenceRequestInfo GET,
    accessControl GET;
  ;

InpLogRangeOldSP-ConcurrenceRequestDefinition BEHAVIOUR
  DEFINED AS !
    The InpLogRangeOldSP-ConcurrenceRequestRecord class is the managed
    object that is used to create log records for the
    subscriptionVersionRangeOldSP-ConcurrenceRequest Notification.
  !;

InpLogRangeOldSP-ConcurrenceRequestBehavior BEHAVIOUR
  DEFINED AS !
    This log record can be used by any CME wanting to log the
    subscriptionVersionRangeOldSP-ConcurrenceRequest Notification.
  !;

-- XXX.0 LNP Log Record for the Subscription Version Range Old SP
--   Final Concurrence Window Expiration Notification

InpLogRangeOldSPFinalConcurrenceWindowExpirationRecord MANAGED OBJECT CLASS
  DERIVED FROM "CCITT Rec. X.721 (1992) | ISO/IEC 10165-2 :
  1992":eventLogRecord;
  CHARACTERIZED BY
    InpLogRangeOldSPFinalConcurrenceWindowExpirationPkg;
  REGISTERED AS {LNP-OIDS.lnp-objectClass XXX};

InpLogRangeOldSPFinalConcurrenceWindowExpirationPkg PACKAGE
  BEHAVIOUR
    InpLogRangeOldSPFinalConcurrenceWindowExpirationDefinition,
    InpLogRangeOldSPFinalConcurrenceWindowExpirationBehavior;
  ATTRIBUTES
    subscriptionVersionRangeOldSPFinalConcurrenceWindowExpirationInfo GET,
    accessControl GET;
  ;

```

```
lnpLogRangeOldSPFFinalConcurrenceWindowExpirationDefinition BEHAVIOUR
  DEFINED AS !
    The lnpLogRangeOldSPFFinalConcurrenceWindowExpirationRecord class is
    the managed object that is used to create log records for the
    subscriptionVersionRangeOldSPFFinalConcurrenceWindowExpiration
    Notification.
  !;

lnpLogRangeOldSPFFinalConcurrenceWindowExpirationBehavior BEHAVIOUR
  DEFINED AS !
    This log record can be used by any CME wanting to log the
    subscriptionVersionRangeOldSPFFinalConcurrenceWindowExpiration
    Notification.
  !;

-- XXX.0 LNP Subscription Version Range Attribute Value Change Package

subscriptionVersionRangeAttributeValueChangePkg PACKAGE
  BEHAVIOUR subscriptionVersionRangeAttributeValueChangePkgBehavior;
  NOTIFICATIONS
    subscriptionVersionRangeAttributeValueChange;
  REGISTERED AS {LNP-OIDS.lnp-package XXX};

subscriptionVersionRangeAttributeValueChangePkgBehavior BEHAVIOUR
  DEFINED AS !
    This package provides for conditionally including the
    subscriptionVersionRangeAttributeValueChange notification.
  !;

-- XXX.0 LNP Subscription Version Range Object Creation Package

subscriptionVersionRangeObjectCreationPkg PACKAGE
  BEHAVIOUR subscriptionVersionRangeObjectCreationPkgBehavior;
  NOTIFICATIONS
    subscriptionVersionRangeObjectCreation;
  REGISTERED AS {LNP-OIDS.lnp-package XXX};

subscriptionVersionRangeObjectCreationPkgBehavior BEHAVIOUR
  DEFINED AS !
    This package provides for conditionally including the
    subscriptionVersionRangeObjectCreation notification.
  !;

-- XXX.0 LNP Subscription Version Range Status Attribute Value Change Package

subscriptionVersionRangeStatusAttributeValueChangePkg PACKAGE
  BEHAVIOUR subscriptionVersionRangeStatusAttributeValueChangePkgBehavior;
  NOTIFICATIONS
    subscriptionVersionRangeStatusAttributeValueChange;
  REGISTERED AS {LNP-OIDS.lnp-package XXX};

subscriptionVersionRangeStatusAttributeValueChangePkgBehavior BEHAVIOUR
  DEFINED AS !
    This package provides for conditionally including the
    subscriptionVersionRangeStatusAttributeValueChange notification.
  !;
```

```
-- XXX.0 LNP Subscription Version Range Donor Disconnect Package

subscriptionVersionRangeDonorSP-CustomerDisconnectDatePkg PACKAGE
  BEHAVIOUR subscriptionVersionRangeDonorSP-CustomerDisconnectDatePkgBehavior;
  NOTIFICATIONS
    subscriptionVersionRangeDonorSP-CustomerDisconnectDate;
  REGISTERED AS {LNP-OIDS.lnp-package XXX};

subscriptionVersionRangeDonorSP-CustomerDisconnectDatePkgBehavior BEHAVIOUR
  DEFINED AS !
    This package provides for conditionally including the
    subscriptionVersionRangeDonorSP-CustomerDisconnectDate notification.
  !;

-- XXX.0 LNP Subscription Version Range Cancellation Acknowledge Package

subscriptionVersionRangeCancellationAcknowledgeRequestPkg PACKAGE
  BEHAVIOUR subscriptionVersionRangeCancellationAcknowledgeRequestPkgBehavior;
  NOTIFICATIONS
    subscriptionVersionRangeCancellationAcknowledgeRequest;
  REGISTERED AS {LNP-OIDS.lnp-package XXX};

subscriptionVersionRangeCancellationAcknowledgeRequestPkgBehavior BEHAVIOUR
  DEFINED AS !
    This package provides for conditionally including the
    subscriptionVersionRangeCancellationAcknowledgeRequest notification.
  !;

-- XXX.0 LNP Subscription Version Range New SP Create Package

subscriptionVersionRangeNewSP-CreateRequestPkg PACKAGE
  BEHAVIOUR subscriptionVersionRangeNewSP-CreateRequestPkgBehavior;
  NOTIFICATIONS
    subscriptionVersionRangeNewSP-CreateRequest;
  REGISTERED AS {LNP-OIDS.lnp-package XXX};

subscriptionVersionRangeNewSP-CreateRequestPkgBehavior BEHAVIOUR
  DEFINED AS !
    This package provides for conditionally including the
    subscriptionVersionRangeNewSP-CreateRequest notification.
  !;

-- XXX.0 LNP Subscription Version Range Old SP Concurrence Package

subscriptionVersionRangeOldSP-ConcurrenceRequestPkg PACKAGE
  BEHAVIOUR subscriptionVersionRangeOldSP-ConcurrenceRequestPkgBehavior;
  NOTIFICATIONS
    subscriptionVersionRangeOldSP-ConcurrenceRequest;
  REGISTERED AS {LNP-OIDS.lnp-package XXX};

subscriptionVersionRangeOldSP-ConcurrenceRequestPkgBehavior BEHAVIOUR
  DEFINED AS !
    This package provides for conditionally including the
    subscriptionVersionRangeOldSP-ConcurrenceRequest notification.
  !;

-- XXX.0 LNP Subscription Version Range Old SP Final Concurrence Window
```

Expiration Package

```
subscriptionVersionRangeOldSPFinalConcurrenceWindowExpirationPkg PACKAGE
  BEHAVIOUR
    subscriptionVersionRangeOldSPFinalConcurrenceWindowExpirationPkgBehavior;
  NOTIFICATIONS
    subscriptionVersionRangeOldSPFinalConcurrenceWindowExpiration;
  REGISTERED AS {LNP-OIDS.lnp-package XXX};
```

```
SubscriptionVersionRangeOldSPFinalConcurrenceWindowExpirationPkgBehavior
  BEHAVIOUR
  DEFINED AS !
    This package provides for conditionally including the
    subscriptionVersionRangeOldSPFinalConcurrenceWindowExpiration
    notification.
  !;
```

-- XXX.0 LNP Subscription Version Range Status Attribute Value Change Information

```
subscriptionVersionRangeStatusAttributeValueChangeInfo ATTRIBUTE
  WITH ATTRIBUTE SYNTAX
    Attribute-ASN1Module.RangeStatusAttributeValueChangeInfo;
  MATCHES FOR EQUALITY;
  BEHAVIOUR subscriptionVersionRangeStatusAttributeValueChangeInfoBehavior;
  REGISTERED AS {LNP-OIDS.lnp-attribute XXX};
```

```
subscriptionVersionRangeStatusAttributeValueChangeInfoBehavior BEHAVIOUR
  DEFINED AS !
    This attribute is used to store the range status attribute value change
    information for subscription version range status attribute value
    change notifications in a log record.
  !;
```

-- XXX.0 LNP Subscription Version Range Attribute Value Change Information

```
subscriptionVersionRangeAttributeValueChangeInfo ATTRIBUTE
  WITH ATTRIBUTE SYNTAX Attribute-ASN1Module.RangeAttributeValueChangeInfo;
  MATCHES FOR EQUALITY;
  BEHAVIOUR subscriptionVersionRangeAttributeValueChangeInfoBehavior;
  REGISTERED AS {LNP-OIDS.lnp-attribute XXX};
```

```
subscriptionVersionRangeAttributeValueChangeInfoBehavior BEHAVIOUR
  DEFINED AS !
    This attribute is used to store the range attribute value change
    information for subscription version range attribute value change
    notifications in a log record.
  !;
```

-- XXX.0 LNP Subscription Version Object Creation Information

```
subscriptionVersionRangeObjectCreationInfo ATTRIBUTE
  WITH ATTRIBUTE SYNTAX Attribute-ASN1Module.RangeObjectCreationInfo;
  MATCHES FOR EQUALITY;
  BEHAVIOUR subscriptionVersionRangeObjectCreationInfoBehavior;
  REGISTERED AS {LNP-OIDS.lnp-attribute XXX};
```

```
subscriptionVersionRangeObjectCreationInfoBehavior BEHAVIOUR
  DEFINED AS !
    This attribute is used to store the range object creation
    information for subscription version object creation information
    in a log record.
!;

-- XXX.0 LNP Subscription Version Donor Disconnect Information

subscriptionVersionRangeDonorSP-CustomerDisconnectDateInfo ATTRIBUTE
  WITH ATTRIBUTE SYNTAX Attribute-ASN1Module.RangeDonorDisconnectInfo;
  MATCHES FOR EQUALITY;
  BEHAVIOUR subscriptionVersionRangeDonorSP-CustomerDisconnectDateInfoBehavior;
  REGISTERED AS {LNP-OIDS.lnp-attribute XXX};

subscriptionVersionRangeDonorSP-CustomerDisconnectDateInfoBehavior BEHAVIOUR
  DEFINED AS !
    This attribute is used to store the range donor disconnect
    information for subscription version donor disconnect information
    in a log record.
!;

-- XXX.0 LNP Subscription Version Cancellation Acknowledge Information

subscriptionVersionRangeCancellationAcknowledgeRequestInfo ATTRIBUTE
  WITH ATTRIBUTE SYNTAX Attribute-ASN1Module.RangeCancellationAcknowledgeInfo;
  MATCHES FOR EQUALITY;
  BEHAVIOUR subscriptionVersionRangeCancellationAcknowledgeRequestInfoBehavior;
  REGISTERED AS {LNP-OIDS.lnp-attribute XXX};

subscriptionVersionRangeCancellationAcknowledgeRequestInfoBehavior BEHAVIOUR
  DEFINED AS !
    This attribute is used to store the range cancellation acknowledge
    information for subscription version cancellation acknowledge information
    in a log record.
!;

-- XXX.0 LNP Subscription Version New SP Create Information

subscriptionVersionRangeNewSP-CreateRequestInfo ATTRIBUTE
  WITH ATTRIBUTE SYNTAX Attribute-ASN1Module.RangeNewSP-CreateInfo;
  MATCHES FOR EQUALITY;
  BEHAVIOUR subscriptionVersionRangeNewSP-CreateRequestInfoBehavior;
  REGISTERED AS {LNP-OIDS.lnp-attribute XXX};

subscriptionVersionRangeNewSP-CreateRequestInfoBehavior BEHAVIOUR
  DEFINED AS !
    This attribute is used to store the range new SP create
    information for subscription version new SP create information
    in a log record.
!;

-- XXX.0 LNP Subscription Version Old SP Concurrence Information

subscriptionVersionRangeOldSP-ConcurrenceRequestInfo ATTRIBUTE
  WITH ATTRIBUTE SYNTAX Attribute-ASN1Module.RangeOldSP-ConcurrenceInfo;
```

```
MATCHES FOR EQUALITY;
BEHAVIOUR subscriptionVersionRangeOldSP-ConcurrenceRequestInfoBehavior;
REGISTERED AS {LNP-OIDS.lnp-attribute XXX};
```

```
subscriptionVersionRangeOldSP-ConcurrenceRequestInfoBehavior BEHAVIOUR
DEFINED AS !
    This attribute is used to store the range old SP concurrence
    information for subscription version old SP concurrence information
    in a log record.
!;
```

```
-- XXX.0 LNP Subscription Version Old SP Final Concurrence Window
    Expiration Information
```

```
subscriptionVersionRangeOldSPFinalConcurrenceWindowExpirationInfo ATTRIBUTE
WITH ATTRIBUTE SYNTAX Attribute-
    ASN1Module.RangeOldSPFinalConcurrenceWindowExpirationInfo;
MATCHES FOR EQUALITY;
BEHAVIOUR
    subscriptionVersionRangeOldSPFinalConcurrenceWindowExpirationInfoBehavior;
REGISTERED AS {LNP-OIDS.lnp-attribute XXX};
```

```
subscriptionVersionRangeOldSPFinalConcurrenceWindowExpirationInfoBehavior BEHAVIOUR
DEFINED AS !
    This attribute is used to store the range old SP final concurrence
    window expiration information for subscription version old SP final
    concurrence window expiration information
    in a log record.
!;
```

```
-- XXX.0 LNP Subscription Version Range Status Attribute Value Change Notification
```

```
subscriptionVersionRangeStatusAttributeValueChange NOTIFICATION
BEHAVIOUR subscriptionVersionRangeStatusAttributeValueChangeBehavior;
WITH INFORMATION SYNTAX LNP-ASN1.VersionRangeStatusAttributeValueChange
AND ATTRIBUTE IDS
    range-status-attribute-value-change-info
        subscriptionVersionRangeStatusAttributeValueChangeInfo,
        access-control accessControl;
REGISTERED AS {LNP-OIDS.lnp-notification XXX};
```

```
subscriptionVersionRangeStatusAttributeValueChangeBehavior BEHAVIOUR
DEFINED AS !
    This notification type is used to report changes to the
    subscriptionVersionStatus field for range operations.
    It uses the status attribute value change notification
    which is based on the attribute value change notification
    as defined in M.3100 with the addition of the list of failed
    service providers in cases where the version status is active,
    failed or partially failed and the
    subscriptionStatusChangeCauseCode if it is set.

    The service provider supports the notification if the
    Service Provider TN Range Notification Indicator
    is set on the NPAC SMS.
```

```
!;
```

-- XXX.0 LNP Subscription Version Range Attribute Value Change Notification

```
subscriptionVersionRangeAttributeValueChange NOTIFICATION
  BEHAVIOUR subscriptionVersionRangeAttributeValueChangeBehavior;
  WITH INFORMATION SYNTAX LNP-ASN1.VersionRangeAttributeValueChange
  AND ATTRIBUTE IDS
    range-attribute-value-change-info
      subscriptionVersionRangeAttributeValueChangeInfo,
    access-control accessControl;
  REGISTERED AS {LNP-OIDS.lnp-notification XXX};
```

```
subscriptionVersionRangeAttributeValueChangeBehavior BEHAVIOUR
  DEFINED AS !
  This notification type is used to report changes to the
  Attributes in the subscription versions for range operations.
  It uses the attribute value change notification
  which is based on the attribute value change notification
  as defined in M.3100.

  The service provider supports the notification if the
  Service Provider TN Range Notification Indicator
  is set on the NPAC SMS.
  !;
```

-- XXX.0 LNP Subscription Version Range Object Creation Notification

```
subscriptionVersionRangeObjectCreation NOTIFICATION
  BEHAVIOUR subscriptionVersionRangeObjectCreationBehavior;
  WITH INFORMATION SYNTAX LNP-ASN1.VersionRangeObjectCreation
  AND ATTRIBUTE IDS
    range-object-creation-info
      subscriptionVersionRangeObjectInfo,
    access-control accessControl;
  REGISTERED AS {LNP-OIDS.lnp-notification XXX};
```

```
subscriptionVersionRangeObjectCreationBehavior BEHAVIOUR
  DEFINED AS !
  This notification type is used to report creation of
  subscription versions for range operations.
  It uses the object creation notification
  as defined in M.3100.

  The service provider supports the notification if the
  Service Provider TN Range Notification Indicator
  is set on the NPAC SMS.
  !;
```

-- XXX.0 LNP Subscription Version Range Donor Disconnect Notification

```
subscriptionVersionRangeDonorSP-CustomerDisconnectDate NOTIFICATION
  BEHAVIOUR subscriptionVersionRangeDonorSP-CustomerDisconnectDateBehavior;
  WITH INFORMATION SYNTAX LNP-ASN1.VersionRangeDonorSP-CustomerDisconnectDate
  AND ATTRIBUTE IDS
    range-donor-disconnect-info
      subscriptionVersionRangeDonorSP-CustomerDisconnectDateInfo,
```

```
access-control accessControl;  
REGISTERED AS {LNP-OIDS.lnp-notification XXX};
```

```
subscriptionVersionRangeDonorSP-CustomerDisconnectDateBehavior BEHAVIOUR  
DEFINED AS !
```

```
This notification informs the donor service provider SOA  
that a range of subscription versions are being disconnected.  
The TN, the version id, customer disconnect date and  
effective release date (optional) values are sent.
```

```
The service provider supports the notification if the  
Service Provider TN Range Notification Indicator is set on the NPAC SMS.
```

```
!;
```

```
-- XXX.0 LNP Subscription Version Range Cancellation Acknowledge Notification
```

```
subscriptionVersionRangeCancellationAcknowledgeRequest NOTIFICATION  
BEHAVIOUR subscriptionVersionRangeCancellationAcknowledgeRequestBehavior;  
WITH INFORMATION SYNTAX LNP-ASN1.VersionRangeCancellationAcknowledgeRequest  
AND ATTRIBUTE IDS
```

```
range-cancellation-acknowledge-info  
subscriptionVersionRangeCancellationAcknowledgeRequestInfo,  
access-control accessControl;
```

```
REGISTERED AS {LNP-OIDS.lnp-notification XXX};
```

```
subscriptionVersionRangeCancellationAcknowledgeRequestBehavior BEHAVIOUR  
DEFINED AS !
```

```
This notification requests that a service provider send  
a cancellation acknowledgement for a range of subscription  
versions. The TNs and version ids are sent.
```

```
The service provider supports the notification if the  
Service Provider TN Range Notification Indicator is set on the NPAC SMS.
```

```
!;
```

```
-- XXX.0 LNP Subscription Version Range New SP Create Notification
```

```
subscriptionVersionRangeNewSP-CreateRequest NOTIFICATION  
BEHAVIOUR subscriptionVersionRangeNewSP-CreateRequestBehavior;  
WITH INFORMATION SYNTAX LNP-ASN1.VersionRangeNewSP-CreateRequest  
AND ATTRIBUTE IDS
```

```
range-new-sp-create-info  
subscriptionVersionRangeNewSP-CreateRequestInfo,  
access-control accessControl;
```

```
REGISTERED AS {LNP-OIDS.lnp-notification XXX};
```

```
subscriptionVersionRangeNewSP-CreateRequestBehavior BEHAVIOUR  
DEFINED AS !
```

```
This notification requests that a new service provider send  
a create request for a range of subscription versions for which  
concurrency for porting the number has not been received.  
The TNs, the version ids and the old service provider id,  
authorization flag and authorization timestamp values are sent.  
If the new service provider supports timer type, it will be sent.  
If the new service provider supports business type, it will be sent.
```

```
The service provider supports the notification if the
```

Service Provider TN Range Notification Indicator is set on the NPAC SMS.
!;

-- XXX.0 LNP Subscription Version Range Old SP Concurrency Notification

```
subscriptionVersionRangeOldSP-ConcurrencyRequest NOTIFICATION
  BEHAVIOUR subscriptionVersionRangeOldSP-ConcurrencyRequestBehavior;
  WITH INFORMATION SYNTAX LNP-ASN1.VersionRangeOldSP-ConcurrencyRequest
  AND ATTRIBUTE IDS
    range-old-sp-concurrency-info
      subscriptionVersionRangeOldSP-ConcurrencyRequestInfo,
      access-control accessControl;
  REGISTERED AS {LNP-OIDS.lnp-notification XXX};
```

subscriptionVersionRangeOldSP-ConcurrencyRequestBehavior BEHAVIOUR
DEFINED AS !

This notification requests that a old service provider send a create request for a range of subscription versions for which concurrency for porting the number has not been received. The TNs, the version ids, and the new service provider id, authorization flag and creation timestamp values are sent. If the old service provider supports timer type, it will be sent. If the old service provider supports business type, it will be sent.

The service provider supports the notification if the Service Provider TN Range Notification Indicator is set on the NPAC SMS.

!;

-- XXX.0 LNP Subscription Version Range Old SP Final Concurrency Window Expiration Notification

```
SubscriptionVersionRangeOldSPFinalConcurrencyWindowExpiration NOTIFICATION
  BEHAVIOUR
    subscriptionVersionRangeOldSPFinalConcurrencyWindowExpirationBehavior;
  WITH INFORMATION SYNTAX LNP-
  ASN1.VersionRangeOldSPFinalConcurrencyWindowExpiration
  AND ATTRIBUTE IDS
    range-old-sp-final concurrency-window-expiration-info
      subscriptionVersionRangeOldSPFinalConcurrencyWindowExpirationInfo,
      access-control accessControl;
  REGISTERED AS {LNP-OIDS.lnp-notification XXX};
```

subscriptionVersionRangeOldSPFinalConcurrencyWindowExpirationBehavior BEHAVIOUR
DEFINED AS !

This notification will be sent by the NPAC SMS upon expiration of the Final Concurrency Timer to the old service provider via the SOA to NPAC SMS interface to inform them of the timer expiration for a range of TNs. If the old service provider supports timer type, it will be sent. If the old service provider supports business type, it will be sent.

The service provider supports the notification if the Service Provider TN Range Notification Indicator is set on the NPAC SMS.

!;

ASN.1:

Import Clause Modification:

-- DMI

```
AttributeValueChangeInfo, ObjectInfo
    FROM Notification-ASN1Module {joint-iso-ccitt ms(9) smi(3) part2(2)
        asn1Module(2) 2};
```

```
NetworkNotificationRecoveryReply ::= SEQUENCE {
    status ENUMERATED {
        success (0),
        failed (1),
        time-range-invalid (2),
        criteria-to-large (3),
        no-data-selected (4)
    },
    system-choice CHOICE {

        lsms [1] SET OF SEQUENCE {
            managedObjectClass ObjectClass,
            managedObjectInstance ObjectInstance,
            notification CHOICE {
                subscription-version-new-mpa-nxx [1]
                    VersionNewMPA-NXX-Recovery,
                lnp-mpac-sms-operational-information [2]
                    MPAC-SMS-Operational-InformationRecovery
            }
        },
        soa [2] SET OF SEQUENCE {
            managedObjectClass ObjectClass,
            managedObjectInstance ObjectInstance,
            notification CHOICE {
                subscription-version-new-mpa-nxx [1]
                    VersionNewMPA-NXX-Recovery,
                subscription-version-donor-sp-customer-disconnect-date [2]
                    VersionCustomerDisconnectDateRecovery,
                subscription-version-audit-discrepancy-report [3]
                    AuditDiscrepancyRptRecovery,
                subscription-audit-results [4] AuditResultsRecovery,
                lnp-mpac-sms-operational-information [5]
                    MPAC-SMS-Operational-InformationRecovery,
                subscription-version-new-sp-create-request [6]
                    VersionNewSP-CreateRequestRecovery,
                subscription-version-old-sp-concurrence-request [7]
                    VersionOldSP-ConcurrenceRequestRecovery,
                subscription-version-old-sp-final-window-expiration [8]
                    VersionOldSPFinalConcurrenceWindowExpirationRecovery,
                subscription-version-cancellation-acknowledge-request [9]
                    VersionCancellationAcknowledgeRequestRecovery,
                subscriptionVersionStatusAttributeValueChange [10]
                    VersionStatusAttributeValueChangeRecovery,
                attribute-value-change [11] AttributeValueChangeInfo,
                object-creation [12] ObjectInfo,
                object-deletion [13] ObjectInfo,
                numberPoolBlockStatusAttributeValueChange [14]
```

```

        NumberPoolBlockStatusAttributeValueChangeRecovery,
versionRangeAttributeValueChangeRecovery [15]
        VersionRangeAttributeValueChangeRecovery,
versionRangeObjectCreationRecovery [16]
        VersionRangeObjectCreationRecovery,
versionRangeStatusAttributeValueChangeRecovery [17]
        VersionRangeStatusAttributeValueChangeRecovery
versionRangeDonorSP-CustomerDisconnectDateRecovery [18]
        VersionRangeDonorSP-CustomerDisconnectDateRecovery
versionRangeCancellationAcknowledgeRequestRecovery [19]
        VersionRangeCancellationAcknowledgeRequestRecovery
versionRangeNewSP-CreateRequestRecovery [20]
        VersionRangeNewSP-CreateRequestRecovery
versionRangeOldSP-ConcurrenceRequestRecovery [21]
        VersionRangeOldSP-ConcurrenceRequestRecovery
versionRangeOldSPFinalConcurrenceWindowExpirationRecovery [22]
        VersionRangeOldSPFinalConcurrenceWindowExpirationRecovery
    }
}
} OPTIONAL
}

```

New ASN.1:

```

RangeStatusAttributeValueChangeInfo ::= SEQUENCE {
    version-id [0] SET OF LnpKey,
    value-change-info [1] AttributeValueChangeInfo,
    failed-service-provs [2] Failed-SP-List OPTIONAL,
    subscription-status-change-cause-code [3]
SubscriptionStatusChangeCauseCode
    OPTIONAL
}

RangeAttributeValueChangeInfo ::= SEQUENCE {
    version-id SET OF LnpKey,
    value-change-info AttributeValueChangeInf
}

RangeObjectCreationInfo ::= SEQUENCE {
    tn-version-id SET OF TN-VersionId,
    object-info SET OF ObjectInfo
}

RangeDonorSP-CustomerDisconnectDateInfo ::= SEQUENCE {
    version-id [0] SET OF LnpKey,
    customer-disconnect-date [1] GeneralizedTime,
    effective-release-date [2] GeneralizedTime OPTIONAL
}

RangeCancellationAcknowledgeRequest ::= SET OF
VersionCancellationAcknowledgeRequest

RangeNewSP-CreateRequest ::= SEQUENCE {
    tn-version-id SET OF TN-VersionId,
    version-id SET OF LnpKey,
    service-prov-id ServiceProvId,
    service-prov-due-date GeneralizedTime,

```

```
    service-prov-authorization-creation-time-stamp GeneralizedTime,
    service-prov-old-authorization ServiceProvAuthorization,
    subscription-status-change-cause-code SubscriptionStatusChangeCauseCode,
    subscription-timer-type [0] Integer OPTIONAL,
    subscription-business-type [1] Integer OPTIONAL
}

RangeOldSP-ConcurrenceRequest ::= SEQUENCE {
    tn-version-id SET OF TN-VersionID,
    version-id SET OF LnpKey,
    service-prov-id ServiceProvId,
    service-prov-due-date GeneralizedTime,
    service-prov-authorization-creation-time-stamp GeneralizedTime,
    subscription-timer-type [0] Integer OPTIONAL,
    subscription-business-type [1] Integer OPTIONAL
}

RangeOldSPFinalConcurrenceWindowExpiration ::= SEQUENCE {
    tn-version-id SET OF TN-VersionID,
    version-id SET OF LnpKey,
    subscription-timer-type [0] Integer OPTIONAL,
    subscription-business-type [1] Integer OPTIONAL
}

VersionRangeAttributeValueChange ::= SEQUENCE {
    range-attribute-value-change RangeAttributeValueChangeInfo,
    access-control LnpAccessControl
}

VersionRangeAttributeValueChangeRecovery = RangeAttributeValueChangeInfo

VersionRangeObjectCreation ::= SEQUENCE {
    range-object-creation RangeObjectCreationInfo,
    access-control LnpAccessControl
}

VersionRangeObjectCreationRecovery ::= RangeObjectCreationInfo

VersionRangeStatusAttributeValueChange ::= SEQUENCE {
    Range-status-attribute-value-changes RangeStatusAttributeValueChangeInfo,
    access-control LnpAccessControl
}

VersionRangeStatusAttributeValueChangeRecovery ::= RangeStatusAttributeValueChangeInfo

VersionRangeDonorSP-CustomerDisconnectDate ::= SEQUENCE {
    Range-donor-disconnect RangeDonorSP-CustomerDisconnectDateInfo,
    access-control LnpAccessControl
}

VersionRangeDonorSP-CustomerDisconnectDateRecovery ::= RangeDonorSP-
CustomerDisconnectDateInfo

VersionRangeCancellationAcknowledgeRequest ::= SEQUENCE {
    tn-version-id SET OF TN-VersionID,
    version-id SET OF LnpKey,
    access-control LnpAccessControl
}
```

}

VersionRangeCancellationAcknowledgeRequestRecovery ::= RangeCancellationAcknowledgeRequestInfo

VersionRangeNewSP-CreateRequest ::= SEQUENCE {
 Range-new-sp-create RangeNewSP-CreateRequestInfo,
 access-control LnpAccessControl
}

VersionRangeNewSP-CreateRequestRecovery ::= RangeNewSP-CreateRequestInfo

VersionRangeOldSP-ConcurrenceRequest ::= SEQUENCE {
 Range-donor-disconnect RangeOldSP-ConcurrenceRequestInfo,
 access-control LnpAccessControl
}

VersionRangeOldSP-ConcurrenceRequestRecovery ::= RangeOldSP-ConcurrenceRequestInfo

VersionRangeOldSPFinalConcurrenceWindowExpiration ::= SEQUENCE {
 Range-donor-disconnect RangeOldSPFinalConcurrenceWindowExpirationInfo,
 access-control LnpAccessControl
}

VersionRangeOldSPFinalConcurrenceWindowExpirationRecovery ::= RangeOldSPFinalConcurrenceWindowExpirationInfo

M&P:

No change required.

Origination Date: 8/14/1998

Change Order Number: NANC 232

Description: Web Site for first port notifications

Cumulative SP Priority, Weighted Average: 14.92

Pure Backwards Compatible: YES

IMPACT/CHANGE ASSESSMENT

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

Business Need:

Currently first port notification information is a single event broadcast. SPs would like to see historical documentation of first ports available outside of SOA/LSMS/LTI interfaces. This change order would place "first port" notifications on the web, similar to the NPA-NXX openings that are on the web today.

Description of Change:

Currently all SOAs and LSMSs receive "first port" notifications. A request has been submitted to provide this information on the NPAC Web Site.

The current process does NOT send this information to the LTI user (unlike SPs that have a CMIP-based SOA), but requires the LTI user to "query" the NPAC for notifications contained in the NPAC notification log (for that specific SP). The user may also generate an NPAC report of all notifications for that SP.

The desire is to have these "first port" notifications on the web, similar to the NPA-NXX openings that are on the web today.

NOTE: This change order is similar to the existing requirements, R3-10 and R3-11 (Web bulletin board updates of NPA-NXXs and LRNs).

Jan 00 LNPAWG meeting, the group discussed the need to have the data displayed in the report format versus the current web format with the addition of the first port indicator. The final description of this change order is now, "post the NPA-NXX report on the web on a weekly basis".

Requirements:

R3-10 NPAC SMS notification of NPA-NXX availability to the Service Providers

NPAC SMS shall inform all Service Providers about the availability of the NPA-NXXs for porting via the NPAC SMS to Local SMS and SOA to NPAC SMS interfaces or the Web bulletin board. The NPA-NXX data fields sent via the NPAC SMS to Local SMS and SOA to NPAC SMS interfaces interface are:

- NPAC Customer ID
- NPAC Customer Name
- NPA-NXX ID
- NPA -NXX Value
- Effective Date
- Download Reason

The NPA-NXX data fields sent to the WEB bulletin board are:

- NPAC Customer ID
- NPAC Customer Name
- NPA-NXX Value
- Effective Date *when in the future*
- *First Port Indicator via the First Port Date (most likely will be set at a later date than the NPA-NXX opening)*

Req 1 NPAC SMS Display of NPA-NXX Information on the Web

NPAC SMS shall display the NPA-NXX information on the web bulletin board described in RR3-10, in the same format as the “Open NPA-NXXs List” Report that is available for NPAC Personnel using the NPAC Administrative Interface and Service Provider Personnel using the NPAC SOA Low-tech Interface.

IIS:

No change required.

GDMO:

No change required.

ASN.1:

No change required.

M&P:

No change required.

Origination Date: 1/23/1998

Change Order Number: NANC 193

Description: TN processing during NPAC SMS NPA Split Processing

Cumulative SP Priority, Weighted Average: 16.08

Pure Backwards Compatible: YES

IMPACT/CHANGE ASSESSMENT

FRS	IIS	GDMO	ASN.1	NPAC	SOA	LSMS
Y				High		

Business Need:

N/A. Removed from R4 consideration.

Origination Date: 5/27/1999

Change Order Number: NANC 287

Description: ASN.1 Change for required field in VersionNewNPA-NXX and VersionNewNPA-NXX-Recovery notification

Cumulative SP Priority, Weighted Average: 18.75

Pure Backwards Compatible: NO

Functional 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: 6/5/1998

Change Order Number: NANC 218

Description: Conflict Timestamp Broadcast to SOA

Cumulative SP Priority, Weighted Average: 18.83

Pure Backwards Compatible: NO

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 attribute ValueChange 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 attribute ValueChange 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: 10/15/1996

Change Order Number: ILL 23

Description: Detailed Integrity Sample Results Report

Cumulative SP Priority, Weighted Average: 19.75

Pure Backwards Compatible: YES

IMPACT/CHANGE ASSESSMENT

FRS	IIS	GDMO	ASN.1	NPAC	SOA	LSMS
Y				Low		

Business Need:

N/A. Removed from R4 consideration.

Origination Date: 8/11/1997

Change Order Number: NANC 138

Description: Definition of Cause Code

Cumulative SP Priority, Weighted Average: NR (Not Rated), but added because it was a small helpful change even though not rated. Agreed to be added by group. Initially graded as low priority, but should have been on medium priority list because of small effort.

Pure Backwards Compatible: YES

IMPACT/CHANGE ASSESSMENT

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

Business Need:

Currently the “NPAC SMS Automatic Conflict from Cancellation”, notification does not have a distinct Cause Code.

This Change Order will provide a notification with a Cause Code enabling the SP to take the proper action to minimize service interruption for the customer being ported.

Description of Change:

NANC 54 defined the cause code values and the FRS was to be updated. Due to an oversight this update was not made in the FRS. The change was going to be applied in FRS 1.4 and 2.2. However, a discrepancy as found. The defined values specified in NANC 54 were are as follows:

The values less than 50 were reserved for SMS NPAC internal use.

Other defined values are:

- 0 – NULL (DO NOT MODIFY)
- 1 - NPAC automatic cancellation
- 50 - LSR Not Received
- 51 - FOC Not Issued
- 52 - Due Date Mismatch
- 53 - Vacant Number Port
- 54 - General Conflict

In table in the FRS the following cause code is defined: NPAC SMS Automatic Conflict from Cancellation

There is no corresponding code defined in Change Order NANC 54. Is there a numeric value or is this cause code valid?

Requirements:

Requirements for the cause code addition would be as follows:

RR5-36 should be renumbered to RR5-36.2.

Req 1 (new number will be RR5-36.1) – Cancel Subscription Version – Cause Code for New SP Timer Expiration

NPAC SMS shall set the cause code to “NPAC SMS Automatic Conflict from Cancellation” after setting the Subscription Version status to conflict from cancel-pending when the new Service Provider has not acknowledged the cancellation and after the Cancellation-Final Concurrence Window has expired.

~~RR5-36~~ RR5-36.2 Cancel Subscription Version - Inform Service Providers of Conflict Status

NPAC SMS shall notify the old and new Service Providers upon setting a Subscription Version to conflict.

SV data model update:

Status Change Cause Code	N (2)		<p>Used to specify reason for conflict when old Service Provider Authorization is set to False, or to indicate NPAC SMS initiated cancellation. Valid values are:</p> <p>0 - No value 1 - NPAC SMS Automatic Cancellation 2 - <i>NPAC SMS Automatic Conflict from Cancellation</i> 50 - LSR Not Received 51 - FOC Not Issued 52 - Due Date Mismatch 53 - Vacant Number Port 54 – General Conflict</p>
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IIS:

No change required.

GDMO:

No change required.

ASN.1:

No change required.

M&P:

No change required.