

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

Table of potential 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	Med-Low / N/A	4.83
NANC 219	NPAC Monitoring of Associations	Low	N/A / N/A	5.33
NANC 240	No SV Cancel on T2 Expiration	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
<del>NANC 299</del>	<del>NPAC Interface Heartbeat</del>	<del>Medium</del>	<del>N/A / N/A</del>	<del>9.58</del>
<del>NANC 301</del>	<del>NPAC Network Level Heartbeat</del>	<del>Low</del>	<del>Low / Low</del>	<del>NR</del>
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	N/A / 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 / N/A	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.

<b>Change Order Retained</b>	<b>Change Order Merged and Removed</b>
NANC 187	NANC 186
NANC 227	NANC 254
NANC 240	NANC 198

Change Orders rejected for Release 4.0.

<b>Change Order Number</b>	<b>Change Order Description</b>
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 193	TN Processing during NPAC SMS NPA Split Processing
NANC 204 & NANC 235	Inter-Service Provider Communication (Wireless)
<a href="#">NANC 299</a>	<a href="#">NPAC Interface Heartbeat</a>
<a href="#">NANC 301</a>	<a href="#">NPAC Network Level Heartbeat</a>

**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	Y		Med	Medium Low	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 [aan](#) 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 ~~ad hoc~~ [reporting the Excluded Service Provider Report](#).

~~CMA question: Should we just add this to the existing SV detail report(s)? Do we need another specific report for this activity?~~

Req 5 – Subscription Version Failed SP List – Excluded Service Provider ~~Log-Reporting~~ via OpGUI

NPAC SMS shall allow NPAC Personnel, via the NPAC Administrative Interface, to generate [the Excluded Service Provider Report](#) ~~ad-hoc reports~~ on Excluded Service Provider log data.

Req 6 – Subscription Version Failed SP List – Excluded Service Provider ~~Log-Reporting~~ Request  
NPAC SMS shall allow NPAC Personnel, via the NPAC Administrative Interface, to specify time range when generating [the Excluded Service Provider Report](#) ~~ad-hoc reports~~ on Excluded Service Provider log data.

Req 7 – Subscription Version Failed SP List – Excluded Service Provider ~~Log-Reporting~~ Request  
Sort Criteria

NPAC SMS shall use the following sort order when generating [the Excluded Service Provider Report](#) ~~ad-hoc reports~~ on Excluded Service Provider log data:

- 1 – [current SPID \(ascending\)](#)
- 2 – [TN date/time \(ascending\)](#)
- 3 – [date/timeTN \(earliest date/time to latest date/time\)](#)
- 4 – [excluded SPID \(ascending\)](#)
- 54 – [SV-ID \(ascending\)](#)

**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 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
```

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	IIS	GDMO	ASN.1	NPAC	SOA	LSMS
Y				Low		

**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 lost 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, ~~and result of request~~.

#### 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, ~~result of response~~, 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, ~~both~~ bind data, [recovery complete data](#) and abort data, to be available for ~~ad-hoc reporting~~ [the Association Log Report](#).

### Req 6 – Association Log Reporting via OpGUI

NPAC SMS shall allow NPAC Personnel, via the NPAC Administrative Interface, to generate [the Association Log Report](#) ~~ad-hoc reports~~ on association log data, for ~~both~~ bind data, [recovery complete data](#) and abort data.

Req 7 – Association Log Reporting Request

NPAC SMS shall allow NPAC Personnel, via the NPAC Administrative Interface, to specify time range when generating [the Association Log Report](#) ~~ad hoc reports~~ on association log data, ~~for~~ both bind data, [recovery complete data](#) and abort data.

Req 7.5 – Association [Log Reporting](#) Request Sort Criteria

NPAC SMS shall use sort criteria of SPID/alias for primary, and date/time as secondary when generating [the Association Log](#) ~~ad hoc reports on~~ [Report on](#) association log data, for ~~both~~ bind data, [recovery complete data](#) and abort data.

Req 8 – Association Log ~~Report~~ [Reporting](#) for Service Providers

NPAC SMS shall allow NPAC Personnel, via the NPAC Administrative Interface, to request [the Association Log](#) ~~an ad hoc report on~~ [Report on](#) association log data for ~~both~~ bind data, [recovery complete data](#) and abort data, for either a single Service Provider or all Service Providers.

Req 9 – Association Log [Reporting](#) for Service Providers without encoding of SPID

NPAC SMS shall be capable of generating [the Association Log](#) ~~ad hoc reports on~~ [Report on](#) association log data for ~~both~~ bind data, [recovery complete data](#) and abort data, that contain encoding of the SPID using an alias.

Req 10 – Association Log [Reporting](#) 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](#) ~~an ad hoc report on~~ [Report on](#) association log data for ~~both~~ bind data, [recovery complete data](#) and abort data, for only their own SPID.

Req 11 – Association Log [Reporting](#) in Detail or Summary Format

NPAC SMS shall allow [the Association Log](#) ~~the ad hoc reports of~~ [Report of](#) association log data for ~~both~~ 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 binds, recovery completes).

Req 12 – Association Log [Reporting](#) in Summary Format for Individual Service Provider

NPAC SMS shall allow NPAC Personnel, via the NPAC Administrative Interface, to request [the Association Log](#) ~~an ad hoc report on~~ [Report on](#) association log data for ~~both~~ bind data, [recovery complete data](#) and abort data, in summary format, and shall encode the SPID value for all other Service Providers.

**IIS:**

No change required.

**GDMO:**

No change required.

**ASN.1:**

No change required.

**M&P:**

~~Still need to flesh out M&P impacts. This is an NPAC operational issue.~~

~~Req 8, all is for NPAC or LLC personnel only, not for service provider.~~

~~Req 8, single is for an SP to contact NPAC and have them generate a rpt for them (like they can do on req 10).~~

~~Req 12, SP can request this report.~~

**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

**Functional Backwards Compatible:** NO

**IMPACT/CHANGE ASSESSMENT**

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

**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:**

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\*\*.](#)

**IIS:**

**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 *concurrence* ~~occurrence~~ from the new service provider SOA in “Service Provider Concurrence ~~Failure~~ Window” for the pending subscriptionVersionNPAC created by the old service provider SOA.
2. NPAC SMS notifies the old service provider that support the ~~object notification~~ according to their NPAC Customer No New SP Concurrence Notification Indicator in their service provider profile on the NPAC SMS, of the expiration of the final ~~concurrence timer 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 object~~ according to their NPAC Customer No New SP Concurrence Notification Indicator in their service provider profile on the NPAC SMS, of the expiration of the final ~~create window concurrence timer~~ 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.~~

~~H. 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 ~~concurrency~~ create window has expired  
for

concurrency 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 concurrency timers. Once the final ~~concurrency~~ 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-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-npa-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-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,
                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:**

[Update section that discusses the auto cancellation of the SV when nothing is received from the New SP.](#)

**Note:**

**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		

#### 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.

**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-OIDS.lnp-attribute 78};
```

```
subscriptionLIDB-DPC-Behavior BEHAVIOUR
  DEFINED AS !
```

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

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

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

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

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

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

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

!;

-- 79.0 LNP Subscription LIDB SSN

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

```
subscriptionLIDB-SSN-Behavior BEHAVIOUR
  DEFINED AS !
```

This attribute is used to specify the LIDB SSN value for the subscription version.

**The valid values on the NPAC SMS are 0-255.**

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

!;

-- 109.0 Subscription Version WSMSC Destination Point Code

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

```
subscriptionWSMSC-DPCBehavior BEHAVIOUR
  DEFINED AS !
```

This attribute is used to specify the subscription version WSMSC Destination Point Code.

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

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

The data is stored in BCD (e.g. a value of FFFFFFF 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 FFFFFFF 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 FFFFFFF 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:**

~~For mass update, both values will be required.~~

**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		

**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, or mass update, 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, or mass update, 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, or mass update, 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, or mass update, 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, or mass update, 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**.

Release 4.0 Potential Change Orders – for Feb LNPAWG discussion [\(updated from 2/9 con call\)](#)

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 Indicatorflag](#) 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 flag](#) 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 Indicatorflag](#) is set to TRUE.**

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

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

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

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

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

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

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

LRN data is associated with the New Service Provider.

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

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

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

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

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

!;

-- 16.0 LNP Service Provider Number Pool Block Create

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

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

!;

numberPoolBlock-CreateBehavior BEHAVIOUR

DEFINED AS !

Preconditions: This action is issued from an lnpSubscriptions object.

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

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

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

numberPoolBlockWSMSC-DPC  
numberPoolBlockWSMSC-SSN

**An SSN value of 0 (zero) must be present when its corresponding DPC value is populated, if the [corresponding SSN Edit Flag Indicatorflag](#) 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	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 2<sup>nd</sup> 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, at the time subscription data recovery is requested (**change to “completed”, revisit next week in SFO. At what point in time today does the NPAC update the FSPL for a recovery?**) by 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, at the time Number Pool Block data recovery is requested (**change to “completed”, revisit next week in SFO**) by 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 and sending 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				Medium		

**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).

**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 Missing Old or 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 either the new NPA-NXX or old NPA-NXX has not yet been opened for portability in the NPAC SMS.

Req 5 –

Deleted.

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 fields sent to the WEB bulletin board are:

- LERG version number
- LERG version date

### 3.5 NPA Splits Requirements

#### AN3-4.1 NPA Split Information Source

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

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

NPAC SMS shall verify that the new and the old NPA-NXX(s) involved in an NPA Split exist when ~~NPAC personnel enter the split information~~ *the NPA Split Load Flat File is processed.*

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

~~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

NPAC SMS shall verify that the new NPA-NXX(s) involved in an NPA Split has an effective date equal to the start date of permissive dialing when ~~NPAC personnel enter the NPA Split information~~ *the NPA Split Load Flat File is processed.*

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

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

#### Req 7 – [NPA Split – NPA Split Load Flat File Exception Report with Incorrect New NPA-NXX Effective Date](#)

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 has an effective date not equal to the start date of permissive dialing.

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

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

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

~~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

~~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

~~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

~~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 11 – [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:

No change required.

#### 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.

~~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:

~~This is an extension of NANC 219. Instead of utilizing an abort message, the NPAC SMS would utilize a heartbeat message on every association. If a response was not returned for any given heartbeat message, an alarm would be initiated for NPAC Personnel.~~

~~This change order is designed to establish the heartbeat process (which requires an interface change to both the NPAC and the SOA/LSMS). This process will allow two-way communication and allow either side to initiate the heartbeat message. The heartbeat process should be set up so that the functionality can be optionally set up per association.~~



~~The alarming process is the same as 219, such that an alarm would be initiated whenever heartbeat responses are not sent by the NPAC or SOA/LSMS. When these alarms occur, the NPAC Personnel would contact the affected Service Provider to work the problem and ensure the association is brought back up.~~

~~The current working assumption is that this heartbeat would be a new message, it would not have any access control, it would be at a low level in the protocol stack, this heartbeat would occur on the same port as the association, this message would only occur if no traffic was sent/received after a configurable period of time, and this heartbeat would be two-way to allow either side to initiate this message.~~

~~All parties still need to examine if there might be an issue with filtering in their firewalls.~~

~~The need for both a network level heartbeat and application level heartbeat still needs to be decided.~~

~~Jan 00 LNPAWG meeting, the group has not been able to determine the feasibility of implementing an application level heartbeat. It was agreed to put this change order on hold, pending the outcome of NANC 301 (NPAC TCP Level Heartbeat [transport layer]). The functionality documented in this change order needs further review before this change order can be considered “accepted and ready for selection into a release”.~~

### **Requirements:**

~~The backwards compatibility sunset period for the NPAC Customer SOA Heartbeat Indicator, and NPAC Customer LSMS Heartbeat 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 Heartbeat Indicator~~

~~NPAC SMS shall provide a mechanism to indicate whether a Service Provider supports receiving the heartbeat message, by sending this message to their SOA via the SOA to NPAC SMS Interface, using the Heartbeat Object.~~

#### ~~Req 2 – NPAC Customer SOA Heartbeat Indicator – Default~~

~~NPAC SMS shall default the SOA Heartbeat Indicator to **FALSE**.~~

#### ~~Req 3 – NPAC Customer SOA Heartbeat Indicator – Modification~~

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

#### ~~Req 4 – Heartbeat Information – Service Provider SOA Heartbeat Indicator Sending of Heartbeat Object~~

~~NPAC SMS shall send Heartbeat Information using the Heartbeat Object, via the SOA to NPAC SMS Interface, if the Service Provider's SOA Heartbeat indicator is **TRUE**.~~

~~Req 5 – Heartbeat Information – Service Provider SOA Heartbeat Indicator Suppression of Heartbeat Object~~

~~NPAC SMS shall suppress Heartbeat Information, via the SOA to NPAC SMS Interface, if the Service Provider's SOA Heartbeat indicator is **FALSE**.~~

~~Req 6 – NPAC Customer LSMS Heartbeat Indicator~~

~~NPAC SMS shall provide a mechanism to indicate whether a Service Provider supports receiving the heartbeat message, by sending this message to their Local SMS via the NPAC SMS to Local SMS Interface, using the Heartbeat Object.~~

~~Req 7 – NPAC Customer LSMS Heartbeat Indicator – Default~~

~~NPAC SMS shall default the LSMS Heartbeat Indicator to **FALSE**.~~

~~Req 8 – NPAC Customer LSMS Heartbeat Indicator – Modification~~

~~NPAC SMS shall allow NPAC Personnel, via the NPAC Administrative Interface, to modify the LSMS Heartbeat Indicator on the NPAC Customer record.~~

~~Req 9 – Heartbeat Information – Service Provider Local SMS Heartbeat Indicator Sending of Heartbeat Object~~

~~NPAC SMS shall send Heartbeat Information using the Heartbeat Object, via the NPAC SMS to Local SMS Interface, if the Service Provider's Local SMS Heartbeat indicator is **TRUE**.~~

~~Req 10 – Heartbeat Information – Service Provider Local SMS Heartbeat Indicator Suppression of Heartbeat Object~~

~~NPAC SMS shall suppress Heartbeat Information, via the NPAC SMS to Local SMS Interface, if the Service Provider's Local SMS Heartbeat indicator is **FALSE**.~~

~~Req 11 – Quiet Time for Heartbeat Interval – Tunable Parameter~~

~~NPAC SMS shall provide a Quiet Time for Heartbeat Interval tunable parameter which is defined as the maximum length of time between any two messages sent/received from a SOA or Local SMS, and the NPAC SMS.~~

~~Req 12 – Quiet Time for Heartbeat Interval – Tunable Parameter Default~~

~~NPAC SMS shall default the Quiet Time for Heartbeat Interval tunable parameter to fifteen (15) minutes.~~

~~Req 13 – Quiet Time for Heartbeat Interval – Tunable Parameter Modification~~

~~NPAC SMS shall allow NPAC Personnel, via the NPAC Administrative Interface, to modify the Quiet Time for Heartbeat Interval tunable parameter.~~

~~Req 14—~~

~~NPAC SMS shall send Heartbeat Information using the Heartbeat Object, via the SOA to NPAC SMS Interface, when the length of time that the NPAC SMS last received a message/response from a SOA, exceeds the Quiet Time for Heartbeat Interval tunable parameter value.~~

~~Req 15—~~

~~NPAC SMS shall send Heartbeat Information using the Heartbeat Object, via the NPAC SMS to Local SMS Interface, when the length of time that the NPAC SMS last received a message/response from a LSMS, exceeds the Quiet Time for Heartbeat Interval tunable parameter value.~~

~~Req 16—~~

~~NPAC SMS shall suppress sending Heartbeat Information, via the SOA to NPAC SMS Interface, when the NPAC SMS detects the SOA Association is currently not available.~~

~~Req 17—~~

~~NPAC SMS shall suppress sending Heartbeat Information, via the NPAC SMS to Local SMS Interface, when the NPAC SMS detects the LSMS Association is currently not available.~~

~~Req 18—~~

~~NPAC SMS shall apply Heartbeat Information processing in both normal mode and recovery mode, for both SOA and Local SMS.~~

~~Req 19— Lack of Response from Heartbeat Message—Tunable Parameter~~

~~NPAC SMS shall provide a Lack of Response from Heartbeat Message tunable parameter which is defined as the maximum length of time that a SOA or Local SMS has to respond back to the NPAC SMS, when a Heartbeat message request is sent to the SOA or Local SMS.~~

~~Req 20— Lack of Response from Heartbeat Message—Tunable Parameter Default~~

~~NPAC SMS shall default the Lack of Response from Heartbeat Message tunable parameter to five (5) minutes.~~

~~Req 21— Lack of Response from Heartbeat Message—Tunable Parameter Modification~~

~~NPAC SMS shall allow NPAC Personnel, via the NPAC Administrative Interface, to modify the Lack of Response from Heartbeat Message tunable parameter.~~

~~Req 22—~~

~~NPAC SMS shall generate a unique alarmable error message, when a SOA or Local SMS does not respond to a heartbeat message request from the NPAC SMS, or send any other message to the NPAC SMS, within the Lack of Response from Heartbeat Message tunable parameter value.~~

~~Req 23—~~

~~NPAC SMS shall allow another valid message from a SOA or Local SMS to be received by the NPAC SMS, after the NPAC SMS sends a Heartbeat message to a SOA or Local SMS.~~

~~Req 24—~~

~~NPAC SMS shall consider either a Heartbeat message response or another valid message from a SOA or Local SMS, as a valid response to the Heartbeat message sent by the NPAC SMS.~~

~~Req 25—~~

~~NPAC SMS shall be capable of responding to a Heartbeat message request from a SOA or Local SMS.~~

~~Req 26—~~

~~NPAC SMS shall log a Heartbeat message request to a SOA or Local SMS, followed by a Heartbeat message response failure or lack of response by capturing the following data: date, time, SPID, channel, reason.~~

~~Note: There is no need to log a Heartbeat message request followed by a successful Heartbeat message response.~~

~~Req 27—~~

~~NPAC SMS shall log a Heartbeat message request to a SOA or Local SMS, followed by a Heartbeat message response that arrives after the Lack of Response from Heartbeat Message tunable parameter value period of time by capturing the following data: date, time, SPID, channel, reason.~~

~~Req 28—~~

~~NPAC SMS shall log successful association bind requests from a SOA or Local SMS.~~

~~Req 29—~~

~~NPAC SMS shall be capable of storing Heartbeat message data that can be used to generate the Heartbeat Message Results Report.~~

~~Req 30—~~

~~NPAC SMS shall provide a Heartbeat Message Results Report that lists Heartbeat data logged by the NPAC SMS.~~

~~Req 31— Heartbeat Log Data Availability~~

~~NPAC SMS shall allow the heartbeat log data to be available for ad hoc reporting.~~

~~Req 32—Heartbeat Reporting via OpGUI~~

~~NPAC SMS shall allow NPAC Personnel, via the NPAC Administrative Interface, to generate ad-hoc reports on heartbeat log data.~~

~~Req 33—Heartbeat Reporting Request~~

~~NPAC SMS shall allow NPAC Personnel, via the NPAC Administrative Interface, to specify time range when generating ad-hoc reports on heartbeat log data.~~

~~Req 34—Heartbeat Reporting Request Sort Criteria~~

~~NPAC SMS shall use sort criteria of SPID/alias for primary, and date/time as secondary for Heartbeat reports.~~

~~Req 35—Heartbeat Reporting for Service Providers~~

~~NPAC SMS shall allow NPAC Personnel, via the NPAC Administrative Interface, to request an ad-hoc report on heartbeat information for either a single Service Provider or all Service Providers.~~

~~Req 36—Heartbeat Reporting for Service Providers without encoding of SPID~~

~~NPAC SMS shall be capable of generating ad-hoc reports on heartbeat information that contain encoding of the SPID using an alias.~~

~~Req 37—Heartbeat Reporting for Individual Service Provider via LTI~~

~~NPAC SMS shall allow Service Provider Personnel, via the NPAC SOA Low-tech Interface, to request an ad-hoc report on heartbeat information for only their own SPID.~~

~~Req 38—Heartbeat Reporting in Detail or Summary Format~~

~~NPAC SMS shall allow the ad-hoc reports of heartbeat information to be generated in either detail or summary format.~~

~~NOTE: Detail provides information on each logged heartbeat record. Summary provides a total number per SPID for each category of log reporting.~~

~~Req 39—Heartbeat Reporting in Summary Format for Individual Service Provider~~

~~NPAC SMS shall allow NPAC Personnel, via the NPAC Administrative Interface, to request an ad-hoc report on heartbeat information in summary format, and shall encode the SPID value for all other Service Providers.~~

~~Req 40—Lack of Response Counter—Tunable Parameter~~

~~NPAC SMS shall provide a Lack of Response Counter tunable parameter which is defined as the maximum number of times that a SOA or Local SMS is allowed to skip a return response from the NPAC SMS on a Heartbeat message request when sent to the SOA or Local SMS.~~

~~Req 41 – Lack of Response Counter – Tunable Parameter Default~~

~~NPAC SMS shall default the Lack of Response Counter tunable parameter to three (3) times.~~

~~Req 42 – Lack of Response Counter – Tunable Parameter Modification~~

~~NPAC SMS shall allow NPAC Personnel, via the NPAC Administrative Interface, to modify the Lack of Response Counter tunable parameter.~~

~~Req 43 –~~

~~NPAC SMS shall abort an association, when a SOA or Local SMS does not respond to a heartbeat message request from the NPAC SMS, a number of times equal to the Lack of Response Counter tunable parameter value.~~

Appendix C: System Tunables

<b>Tunable Name</b>	<b>Default Value</b>	<b>Units</b>	<b>Valid Range</b>
<b>Quiet Time for Heartbeat Interval</b>	15	Minutes	5-60
The maximum length of time in minutes between any two messages sent/received from a SOA or Local SMS, and the NPAC SMS.			
<b>Lack of Response from Heartbeat Message</b>	15	Minutes	5-60
The maximum length of time in minutes that a SOA or Local SMS has to respond back to the NPAC SMS, when a Heartbeat message request is sent to the SOA or Local SMS.			
<b>Lack of Response Counter</b>	3	Occurrences	1-10
The maximum number of times that a SOA or Local SMS can skip a response back to the NPAC SMS, when a Heartbeat message request is sent to the SOA or Local SMS, before the association will be aborted by the NPAC SMS.			

**HS:**

New flows are shown below:

B.8.4.1 – Service Provider SOA to NPAC SMS Heartbeat Request

This scenario shows a heartbeat request from a Service Provider SOA to the NPAC SMS.

SOA	NPAC SMS	Local SMS	
-----	----------	-----------	--

SOA takes action			1
→ M-GET InpNetwork			2
← M-GET Response			3

1. Action is taken by current service provider SOA to send a heartbeat request to the NPAC SMS.
2. Service provider SOA issues M-GET to the NPAC SMS for the InpNetwork object with **NO** access control attached.
3. NPAC SMS replies to the M-GET InpNetwork.

#### B.8.4.2 NPAC SMS to Service Provider SOA Heartbeat Request

This scenario shows a heartbeat request from the NPAC SMS to a Service Provider SOA.

SOA	NPAC SMS	Local SMS	
	NPAC takes action		1
← M-GET InpNetwork			2
→ M-GET Response			3

1. Action is taken by NPAC SMS to send a heartbeat request to the Service Provider SOA.
2. NPAC SMS issues M-GET to the Service Provider SOA for the InpNetwork object with **NO** access control attached.
3. Service Provider SOA replies to the M-GET InpNetwork.

#### B.8.4.3 Service Provider Local SMS to NPAC SMS Heartbeat Request

This scenario shows a heartbeat request from a Service Provider Local SMS to the NPAC SMS.

SOA	NPAC SMS	Local SMS	
		Local SMS takes action	1
		← M-GET InpNetwork	2
		→ M-GET Response	3

1. Action is taken by current service provider Local SMS to send a heartbeat request to the NPAC SMS.
2. Service provider Local SMS issues M-GET to the NPAC SMS for the InpNetwork object with **NO** access control attached.
3. NPAC SMS replies to the M-GET InpNetwork.

#### B.8.4.4 NPAC SMS to Service Provider Local SMS Heartbeat Request

This scenario shows a heartbeat request from the NPAC SMS to a Service Provider Local SMS.

SOA	NPAC SMS	Local SMS	
-----	----------	-----------	--

	NPAC takes action		1
		→ M-GET lnpNetwork	2
		← M-GET Response	3

1. Action is taken by NPAC SMS to send a heartbeat request to the Service Provider SOA.
2. NPAC SMS issues M-GET to the Service Provider Local SMS for the lnpNetwork object with **NO** access-control attached.
3. Service Provider Local SMS replies to the M-GET lnpNetwork.

**GDMO:**

~~11.0 LNP Network Managed Object Class~~

~~lnpNetwork MANAGED OBJECT CLASS~~

~~DERIVED FROM "CCITT Rec. X.721 (1992) | ISO/IEC 10165-2 : 1992":top;~~  
~~CHARACTERIZED BY~~  
~~lnpNetworkPkg;~~  
~~CONDITIONAL PACKAGES~~  
~~lnpDownloadPkg PRESENT IF~~  
~~!the object is instantiated on the NPAC SMS!;~~  
~~REGISTERED AS (LNP OIDS.lnp objectClass 11);~~

~~lnpNetworkPkg PACKAGE~~

~~BEHAVIOUR~~  
~~lnpNetworkDefinition;~~  
~~lnpNetworkBehavior;~~  
~~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". **If a Local SMS, SOA or the NPAC SMS implements a heartbeat message to ascertain the status of an association, an M-GET of the lnpNetwork object is to be used with NO access control.**~~

~~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.~~

~~!;~~

**ASN.1:**

TBD.

**M&P:**

req-19 value should always be less than 11.

**Notes:**

~~Jim looked into TCP/IP heartbeat. Current version of stack does not support this, but did recently get patch for command line parm on OTS9000 stack to support network level heartbeat that rides over TCP (however not tested by Jim yet). Ride on same port.~~

~~Due to the potential that the network level heartbeat may work, and is much less intrusive than the app level heartbeat, everyone wants to look into the network possibility more, and put this on hold.~~

~~Create new change order to do network level heartbeat.~~

**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:**

[N/A. Removed from R4 consideration.](#)

[Same as NANC 299.](#)

**Description of Change:**

[Same as NANC 299, but using a TCP level heartbeat \(transport layer\) 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 Timer. Since no data flows across an idle TCP connection \(i.e., between the two TCP modules\), the Keepalive Timer can be used to poll the other end of an idle connection to make sure the connection is still available. This will also alleviate any situations of a half-open connection, since the Keepalive feature will detect this.](#)

[In the discussed configuration, the NPAC SMS will serve as the server side, and the local system \(SOA or LSMS\) will serve as the client side. This is due to the fact that the NPAC SMS is required to enable the Keepalive feature \(which is done from the server side of a connection\). The Keepalive feature can also be implemented from the local system side. However, for this change order, it is only be required from the NPAC SMS side.](#)

[Optionally \(and recommended\), the Service Provider can implement the Keepalive Timer to perform the same function, and ensure an available connection. If only the NPAC SMS were to implement the Keepalive Timer it is possible to run into the situation where the local side did not detect the lost connection \(and therefore did not try and re-associate\), whereas if the local system does implement the Keepalive Timer, they would detect the lost 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 longer if the local side has not implemented the Keepalive Timer \(since they must rely on NPAC Personnel contacting them because of the](#)

~~aborted association, rather than their own system recognizing the abort and initiating a new bind request to the NPAC SMS on their own).~~

~~By default (NOTE: LNPA-WG needs to discuss the actual value), the Keepalive Timer is set to 2 hours. If there is no activity on a given connection for 2 hours, the NPAC SMS will send a probe segment to the local system. Four different scenarios can occur at this point: the local system is still there and responds, the local system has crashed, the local system has crashed and rebooted, or the local system is currently unreachable. Only in the first scenario will normal processing continue. In the other three scenarios, the connection will be terminated.~~

~~Additionally, the NPAC SMS needs to provide logging functionality (which is documented in change order NANC 219). This is accomplished via an expired Keepalive Timer which in turn generates an aborted association. Since a lost 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 implement the TCP Keepalive Timer to all local system CMIP connections.~~

~~Jan 00, Jim loaded the TCP Keepalive Timer and loaded it into a test box at ESI. He worked with Beth (on actual testing). The TCP level heartbeat worked fine one-way (from NPAC to local system). Beth is planning on loading the heartbeat on the local system and test the other way as well. This functionality meets our needs for keepalive functionality.~~

**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 Timer.~~

**HS:**

~~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

**Functional Backwards Compatible:** NO

#### IMPACT/CHANGE ASSESSMENT

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

#### Business Need:

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

#### Description of Change:

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

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

#### Requirements:

##### 5.1.2.2.1.1 Subscription Version Creation – Inter-Service Provider Port

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

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

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

- Ported Telephone Number(s) - this entry can be a single TN or a continuous range of TNs that identifies a subscription or a group of Subscription Versions that share the same attributes.
- Due Date - date on which transfer of service from old facilities-based Service Provider to new facilities-based Service Provider is initially planned to occur.
- New Facilities-based Service Provider ID - the identifier of the new facilities-based Service Provider.
- Old Facilities-based Service Provider ID - the identifier of the old facilities-based Service Provider.
- Porting to original - flag indicating whether or not this is a “porting to original” port. This flag must be set to “TRUE” for “*Inter-Service Provider* porting to original” ports, *and set to FALSE for other Inter-Service Provider ports.*

#### 5.1.2.2.1.2 Subscription Version Creation - Intra-Service Provider Port

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

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

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

- LNP Type - port type, this field must be set to “LISP” for Intra-Service Provider ports.
- Ported Telephone Number(s) - this entry can be a single TN or a continuous range of TNs that identifies a subscription or group of Subscription Versions that share the same attributes.
- Due Date - date on which Intra-Service Provider port is planned to occur.
- New facilities-based Service Provider ID - current Service Provider within which the Intra-Service Provider port will occur.
- Old facilities-based Service Provider ID - current Service Provider within which the Intra-Service Provider port will occur.
- Location Routing Number (LRN) - identifier of the ported-to switch
- Class DPC

- Class SSN
- LIDB DPC
- LIDB SSN
- CNAM DPC
- CNAM SSN
- ISVM DPC
- ISVM SSN
- WSMSC DPC (if supported by the Service Provider SOA)
- WSMSC SSN (if supported by the Service Provider SOA)
- *Porting to Original – flag indicating whether or not this is a “porting to original” port. This flag must be set to FALSE for this type of Intra-Service Provider port.*

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

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

- Local Number Portability Type - Port Type. This field must be set to “LISP” for “*Intra-Service Provider* porting to original” ports.
- Ported Telephone Number(s) - this entry can be a single TN or a continuous range of TNs that identifies a subscription or a group of Subscription Versions that share the same attributes.
- Due Date - date on which Intra-Service Provider port is planned to occur.
- New Facilities-based Service Provider ID – current Service Provider within which the Intra-Service Provider port will occur.
- Old Facilities-based Service Provider ID – current Service Provider within which the Intra-Service Provider port will occur.
- Porting to original - flag indicating whether or not this is a “porting to original” port. This flag must be set to “TRUE” for “Intra-Service Provider porting to original” ports, and set to “FALSE” for other Intra-Service Provider ports.

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

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

- LNP Type
- Ported TN(s)
- Current Service Provider Due Date
- Old Service Provider ID
- New Service Provider ID
- LRN
- Class DPC
- Class SSN
- LIDB DPC
- LIDB SSN
- CNAM DPC
- CNAM SSN
- ISVM DPC
- ISVM SSN
- WSMSC DPC (if supported by the Service Provider SOA)
- WSMSC SSN (if supported by the Service Provider SOA)
- *Porting to Original*
- Billing Service Provider ID
- End-User Location - Value
- End-User Location - Type

RR5-76 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 a Subscription Version Create message only.](#) – (~~Previously SV-180~~)

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. ~~(Previously SV-190)~~

~~R5-71.6 — Cancel Subscription Version- Set Pending subscription version to Cancel Pending Status Intra- or Inter-Service Provider port~~

~~NPAC SMS shall set the subscription version status to Cancel Pending upon receiving a cancellation from either the Old or New Service Provider for a subscription version with a pending status (both Service Providers have done a create) for an Inter-Service Provider *port* or Intra-Service Provider Port to original port.~~

**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~~ 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 value of ~~subscriptionPortingToOriginal-SPSwitch~~ variable 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

**Functional Backwards Compatible:** NO

**IMPACT/CHANGE ASSESSMENT**

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

**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, ~~or a null value~~ 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
← <del>M-EVENT-REPORT AVC</del>			6
→ <del>M-EVENT-REPORT Confirm</del>			7

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).
6. ~~NPAC SMS sends M-EVENT-REPORT to the current provider of the subscriptionVersion attribute update.~~
7. ~~Service provider SOA issues M-EVENT-REPORT confirmation.~~

If the newly modified ERD is the current date or a previous date, the NPAC will follow the “immediate disconnect” flow ([6B.5.4.1](#)). Otherwise, it will follow the future dated ERD flow ([6B.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.

~~For the modification of an active subscription version where 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:**

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		

**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 (2<sup>nd</sup> 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 (2<sup>nd</sup> 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 Deleted.](#)

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**.

**IIS:**

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
    InpNetworkName GET;
  ;

```

```

InpNetworkDefinition 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-mpa serviceProvOldNPA-Value,  
    new-mpa serviceProvNewNPA-Value,  
    affected-nxx serviceProvNXX-Value,  
    download-reason serviceProvDownloadReason,  
    npac-completion-time serviceProvNPAC-CompletionTimeStamp,  
    access-control accessControl;  
  REGISTERED AS {LNP-OIDS.lnp-notification XXX};
```

```
lnpNetworkNPA-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 "delete1", 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),
    delete1 (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 NPA,
    old-mpa NPA,
    affected-nxx NXX,
    download-reason DownloadReason,
    npac-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]
                    MPAC-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-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,
                lnp-network-mpa-split-information [15]
                    lnpNetworkMPA-SplitInformationRecovery
            }
        }
    } OPTIONAL
}

```

**NXX ::= NumberString(SIZE(3))**

**M&P:**

~~Update where it says “nothing sent to SPs for split”.~~

**Origination Date:** 1/6/1997

**Change Order Number:** ILL 130

**Description:** Application Level Errors

**Cumulative SP Priority, Weighted Average:** 10.83

**Functional Backwards Compatible:** NO

**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
```

**Requirements:**

Req 1 –

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

## IIS:

(New text is shown at the end of section 5.3.3.2)

### 5.3.3 Error Handling

#### 5.3.3.1 NPAC SMS Error Handling

The NPAC SMS will issue errors to the Local SMS and SOA interfaces based upon the definitions and mappings in Appendix A. The NPAC SMS expects the SOA and Local SMS to support the same error definitions when both issuing and receiving error responses for the operations each interface supports.

The NPAC SMS will attempt to interpret an error returned from a SOA or Local SMS. The NPAC SMS will log the error. If the request is not resent and the error response was returned from a Local SMS and related to a subscription version broadcast (M-CREATE or Create Action, M-DELETE, M-SET), a broadcast failure will be noted for the service provider on the subscription version. If a service provider does not have an active Local SMS association at the time of a broadcast, the broadcast will be automatically failed for the service provider.

The Local SMS and SOA are expected to recover themselves with the NPAC SMS when their association is reestablished. Thus it is the responsibility of the Local SMS and SOA to request the necessary data to rectify the failed transmission of M-EVENT-REPORTs, network data updates and non-broadcast oriented subscription version updates.

If the NPAC SMS sends a request to a Local SMS or SOA and receives no response from the CMISE service within the tunable period, the NPAC SMS will resend the message according to the tunable retry periods for the specific message type. If a response is received after the timeout period, it will be discarded. If the NPAC SMS receives no response, the NPAC SMS will assume the association is down and abort the connection. The Local SMS and SOA systems should assume the same behavior with the NPAC SMS.

#### 5.3.3.2 Processing Failure Error

In addition to the standard CMIP error reporting mechanisms, the following attribute will be passed in the SpecificErrorInfo structure on CMIP errors that return a PROCESSING FAILURE error. This structure will be used to detail errors not covered by the standard CMIP error codes.

##### **GDMO Definition**

```
lnpSpecificInfo ATTRIBUTE
    WITH ATTRIBUTE SYNTAX LNP-ASN1.LnpSpecificInfo;
    MATCHES FOR EQUALITY;
    BEHAVIOUR lnpSpecificInfoBehavior;
    REGISTERED AS {lnp-attribute 8};
```

```
lnpSpecificInfoBehavior BEHAVIOUR
```

```
    DEFINED AS !
```

```
        This attribute is used to return more detailed
        error text information upon a CMIP Processing
        Failure error.
```

```
!;
```

##### **ASN.1 Definition**

```
LnpSpecificInfo ::= GraphicString(SIZE(1..256))
```

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
```



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

Managed Object Class	CMIP Error	Message Text	Additional Information
lnpSubscription	duplicateObject Instance		
lnpSubscription	processingFailure	101-A subscription version must be in a pending status to be activated.	

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

**GDMO:**

For the following actions:

- subscriptionVersionActivate
- subscriptionVersionCancel
- subscriptionVersionDisconnect
- subscriptionVersionModify
- subscriptionVersionNewSP-CancellationAcknowledge
- subscriptionVersionRemoveFromConflict
- subscriptionVersionNewSP-Create
- subscriptionVersionOldSP-CancellationAcknowledge
- subscriptionVersionOldSP-Create
- numberPoolBlock-Create
- lnpDownload
- lnpRecoveryComplete
- lnpNotificationRecovery
- subscriptionVersionLocalSMS-Create

Add the following behavior text:

For all application errors resulting from a SOA/LSMS action request (see above action list), the NPAC SMS will return a CMIP Processing Failure Error containing the "application level error text" in the LnpSpecificInfo structure instead of returning the appropriate action reply defined in the LNP ASN.1.

**ASN.1:**

**Updated the following structures:**

ActivateReply ::= **NULL**

CancellationAcknowledgeReply ::= **NULL**

CancelReply ::= **NULL**

DisconnectReply ::= **SET OF SubscriptionVersionId**

```
DownloadReply ::= CHOICE {  
    no-data [0] NULL,  
    subscriber-data [1] SubscriptionDownloadData,  
    network-data [2] NetworkDownloadData,  
    block-data [3] BlockDownloadData  
}
```

ModifyReply ::= **NULL**

```
NetworkNotificationRecoveryReply ::= CHOICE {  
    no-data [0] NULL,  
    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  
    }  
  
NewSP-CreateReply ::= NULL  
  
NumberPoolBlock-CreateReply ::= BlockId  
  
OldSP-CreateReply ::= NULL  
  
RecoveryCompleteReply ::= CHOICE {  
    no-data [0] NULL,  
    data [1] SEQUENCE { -- remove as this has never been used?  
        subscriber-data [1] SubscriptionDownloadData OPTIONAL,  
        network-data [2] NetworkDownloadData OPTIONAL,  
        block-data [3] BlockDownloadData OPTIONAL  
    }  
}  
  
-- (If removed, RecoveryCompleteReply ::= NULL )  
  
RemoveFromConflictReply ::= NULL
```

### Removed the following structures:

```
NewSP-CreateInvalidData  
NumberPoolBlock-CreateInvalidData  
OldSP-CreateInvalidData  
SubscriptionModifyInvalidData  
SubscriptionVersionActionReply
```

### Diff Format (for review purposes only)

“<” is the old ASN.1.

“>” is the Ill 130 ASN.1.

```
88c88  
< ActivateReply ::= SubscriptionVersionActionReply  
---  
> ActivateReply ::= NULL  
231c231  
< CancellationAcknowledgeReply ::= SubscriptionVersionActionReply  
---  
> ActivateReply ::= NULL  
235c235  
< CancelReply ::= SubscriptionVersionActionReply  
---  
> CancelReply ::= NULL  
251,254c251  
< DisconnectReply ::= SEQUENCE {  
<     status SubscriptionVersionActionReply,  
<     version-id SET OF SubscriptionVersionId OPTIONAL  
< }  
---
```

```
> DisconnectReply ::= SET OF SubscriptionVersionId
269,281c266,270
< DownloadReply ::= SEQUENCE {
<   status ENUMERATED {
<     success (0),
<     failed (1),
<     time-range-invalid (2),
<     criteria-to-large (3),
<     no-data-selected (4)
<   },
<   downloaddata CHOICE {
<     subscriber-data [0] SubscriptionDownloadData,
<     network-data [1] NetworkDownloadData,
<     block-data [2] BlockDownloadData
<   } OPTIONAL
---
> DownloadReply ::= CHOICE {
>   no-data [0] NULL,
>   subscriber-data [1] SubscriptionDownloadData,
>   network-data [2] NetworkDownloadData,
>   block-data [3] BlockDownloadData
507,510c496
< ModifyReply ::= SEQUENCE {
<   status SubscriptionVersionActionReply,
<   invalid-data SubscriptionModifyInvalidData OPTIONAL
< }
---
> ModifyReply ::= NULL
556,562c542,551
< NetworkNotificationRecoveryReply ::= SEQUENCE {
<   status ENUMERATED {
<     success (0),
<     failed (1),
<     time-range-invalid (2),
<     criteria-to-large (3),
<     no-data-selected (4)
---
> NetworkNotificationRecoveryReply ::= CHOICE {
>   no-data [0] NULL,
>   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
>     }
564,602c553,579
<   system-choice 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-npa-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
<         }
---
>     soa [2] SET OF SEQUENCE {
>         managedObjectClass ObjectClass,
>         managedObjectInstance ObjectInstance,
>         notification CHOICE {
>             subscription-version-new-npa-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
604c581
<     } OPTIONAL
---
>     }
637,640c614
< NewSP-CreateReply ::= SEQUENCE {
<     status [0] SubscriptionVersionActionReply,
<     invalid-data [1] NewSP-CreateInvalidData OPTIONAL
< }
---
> NewSP-CreateReply ::= NULL
642,666d615
< NewSP-CreateInvalidData ::= CHOICE {
<     subscription-version-tn [0] EXPLICIT PhoneNumber,
<     subscription-version-tn-range [1] EXPLICIT TN-Range,
<     subscription-lrn [2] EXPLICIT LRN,
<     subscription-new-current-sp [3] EXPLICIT ServiceProvId,
<     subscription-old-sp [4] EXPLICIT ServiceProvId,
<     subscription-new-sp-due-date [5] EXPLICIT GeneralizedTime,
<     subscription-class-dpc [6] EXPLICIT DPC,
<     subscription-class-ssn [7] EXPLICIT SSN,
<     subscription-lidb-dpc [8] EXPLICIT DPC,
<     subscription-lidb-ssn [9] EXPLICIT SSN,
<     subscription-isvm-dpc [10] EXPLICIT DPC,
<     subscription-isvm-ssn [11] EXPLICIT SSN,
<     subscription-cnam-dpc [12] EXPLICIT DPC,
<     subscription-cnam-ssn [13] EXPLICIT SSN,
<     subscription-end-user-location-value [14] EXPLICIT EndUserLocationValue,
<     subscription-end-user-location-type [15] EXPLICIT EndUserLocationType,
<     subscription-billing-id [16] EXPLICIT BillingId,
<     subscription-lnp-type [17] EXPLICIT LNPTType,
<     subscription-porting-to-original-sp-switch [18]
<         EXPLICIT SubscriptionPortingToOriginal-SPSwitch,
<     subscription-wsmc-dpc [19] EXPLICIT DPC,
<     subscription-wsmc-ssn [20] EXPLICIT SSN
< }
<
748,761c697
< NumberPoolBlock-CreateInvalidData ::= CHOICE {
<     block-npa-nxx-x [0] EXPLICIT NPA-NXX-X,
<     block-lrn [1] EXPLICIT LRN,
<     block-class-dpc [2] EXPLICIT DPC,
<     block-class-ssn [3] EXPLICIT SSN,
<     block-lidb-dpc [4] EXPLICIT DPC,
<     block-lidb-ssn [5] EXPLICIT SSN,
<     block-isvm-dpc [6] EXPLICIT DPC,
<     block-isvm-ssn [7] EXPLICIT SSN,
<     block-cnam-dpc [8] EXPLICIT DPC,
<     block-cnam-ssn [9] EXPLICIT SSN,
<     block-wsmc-dpc [10] EXPLICIT DPC,
<     block-wsmc-ssn [11] EXPLICIT SSN
< }
---
> NumberPoolBlock-CreateReply ::= BlockId
```

```
763,777d698
< NumberPoolBlock-CreateReply ::= SEQUENCE {
<   block-id [0] BlockId,
<   status [1] ENUMERATED {
<     success (0),
<     failed (1),
<     soa-not-authorized (2),
<     no-npa-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
< }
<
807,810c728
< OldSP-CreateReply ::= SEQUENCE {
<   status SubscriptionVersionActionReply,
<   invalid-data OldSP-CreateInvalidData OPTIONAL
< }
---
> OldSP-CreateReply ::= NULL
812,823d729
< OldSP-CreateInvalidData ::= CHOICE {
<   subscription-version-tn [0] EXPLICIT PhoneNumber,
<   subscription-version-tn-range [1] EXPLICIT TN-Range,
<   subscription-new-current-sp [2] EXPLICIT ServiceProvId,
<   subscription-old-sp [3] EXPLICIT ServiceProvId,
<   subscription-old-sp-due-date [4] EXPLICIT GeneralizedTime,
<   subscription-old-sp-authorization [5] EXPLICIT ServiceProvAuthorization,
<   subscription-status-change-cause-code [6]
<     EXPLICIT SubscriptionStatusChangeCauseCode,
<   subscription-lnp-type [7] EXPLICIT LNPTType
< }
<
835,839c741,747
< RecoveryCompleteReply ::= SEQUENCE {
<   status ResultsStatus,
<   subscriber-data [1] SubscriptionDownloadData OPTIONAL,
<   network-data [2] NetworkDownloadData OPTIONAL,
<   block-data [3] BlockDownloadData OPTIONAL
---
> RecoveryCompleteReply ::= CHOICE {
>   no-data [0] NULL,
>   data [1] SEQUENCE { -- remove as this has never been used?
>     subscriber-data [1] SubscriptionDownloadData OPTIONAL,
>     network-data [2] NetworkDownloadData OPTIONAL,
>     block-data [3] BlockDownloadData OPTIONAL
>   }
844c752
< RemoveFromConflictReply ::= SubscriptionVersionActionReply
---
> RemoveFromConflictReply ::= NULL
924,945d831
< 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-wsmcsc-dpc [16] EXPLICIT DPC,
< subscription-wsmcsc-ssn [17] EXPLICIT SSN
< }
<
967,975d852
< }
<
< SubscriptionVersionActionReply ::= 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 LSMs 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 to 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 increases 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 ~~change~~[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](#) ~~change~~ 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](#) ~~change~~ NPA-NXX-Xs in the NPAC SMS during the SPID Mass Update Request Process.

Req 4 – [SPID Mass Update – Service Provider Active Indicator](#)

NPAC SMS shall provide a mechanism to indicate whether a Service Provider is active or inactive in the NPAC SMS.

Req 5 – [SPID Mass Update – Service Provider Active Indicator Default](#)

NPAC SMS shall default the Service Provider Active Indicator to **TRUE**.

Req 6 – [SPID Mass Update – Service Provider Active Indicator OpGUI Modification](#)

NPAC SMS shall allow NPAC Personnel, via the NPAC Administrative Interface, to modify the Service Provider Active Indicator on the NPAC Customer record.

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 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 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.

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

<b>EXPLANATION OF THE FIELDS IN THE SIC-SMURF NPA-NXX DOWNLOAD FILE</b>		
<b>Field Number</b>	<b>Field Name</b>	<b>Value in Example</b>
1	Old Service Provider Id	0001
2	New Service Provider Id	0002
<a href="#">43</a>	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

<b>EXPLANATION OF THE FIELDS IN THE SIC-SMURF LRN DOWNLOAD FILE</b>		
<b>Field Number</b>	<b>Field Name</b>	<b>Value in Example</b>
1	Old Service Provider Id	0001
2	New Service Provider Id	0002
<a href="#">34</a>	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(`\r`) 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**

<b>Field Number</b>	<b>Field Name</b>	<b>Value in Example</b>
1	Old Service Provider Id	0001
2	New Service Provider Id	0002
<a href="#">43</a>	NPA-NXX-X Value	3123820



**IIS:**

No change required.

**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:** NO

#### 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 an empty result.*

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 an empty result. All creates, modifies and deletes are received, a single record for each subscription version. (i.e. no ranges). The Non-EDR Local SMS will receive all the activity on subscription versions with a LNP type of 'pool'.*
5. If any corrections were issued to the resyncing Local SMS, the NPAC SMS will send the M-EVENT-REPORT to the old service provider SOA of the subscriptionVersionStatus change and a list of failed Local SMSs (minus the resyncing Local SMS that no longer contains a discrepancy).
6. The old service provider SOA confirms the M-EVENT-REPORT.
7. If any corrections were issued to the resyncing Local SMS, the NPAC SMS will send the M-EVENT-REPORT to the current service provider SOA of the status change and a list of failed Local SMSs (minus the resyncing Local SMS that no longer contains a discrepancy).
8. The current service provider SOA confirms the M-EVENT-REPORT.
9. If any corrections were issued to the resyncing Local SMS for subscription versions with LNP type equal to 'pool', the NPAC SMS will send the numberPoolBlockStatusAttributeValueChange to the current block holder SOA, if the numberPoolBlockSOA-Origination indicator is TRUE, with the current number pool block status and a list of failed Local SMSs (minus the resyncing Local SMS that no longer contains the discrepancy).
10. The block holder SOA confirms the M-EVENT-REPORT.
11. If deletes were sent for any subscription versions with LNP type equal to 'pool' that completed the broadcast of the M-DELETES for a number pool block and corresponding subscription versions, then the NPAC SMS will send to all other Local SMSs, who support the serviceProvNPA-NXX-X object, the M-DELETE for the serviceProvNPA-NXX-X object.
12. Local SMS responds to the M-DELETE.
13. Non-EDR Local SMS sends M-ACTION, InpNotificationRecovery, to the NPAC SMS. The Non-EDR Local SMS specifies a time range.
14. *If the requested notification(s) exist and the Local SMS Linked Replies Indicator is set to FALSE, the NPAC SMS responds to the M-ACTION with the notification updates that occurred within the given time range. If the requested notification(s) exist and the Local SMS Linked Replies Indicator is set to TRUE, the NPAC SMS will respond with a single or linked M-ACTION reply (always followed by an empty*

reply). If no notifications are found, the NPAC SMS will respond with an empty result.

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 an empty result.
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 an empty result. 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 an empty result.*
  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 an empty result.*
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 an empty result.*
5. SOA sends M-ACTION, InpRecoveryComplete, 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 equal to or 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. 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 equal to or 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  
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 ~~equal to or 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 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:

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

#### Description of Change:

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

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

Additional proposed changes to handle two issues, include:

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

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





**Requirements:**

**Appendix E: Download File Examples**

All fields within files discussed in the following section are variable length. The download reason in all download files is always set to new *when requesting data without a time range, or set to new/modify/delete depending on the specific activity when a time range is requested*. ASCII 13 is the value used as the value for carriage return (CR) in the download files.

**Subscription Download File Section**

For #1 (new words in *larger print italics*), in FRS Appendix E, Download File Examples.

Subscription versions in the download file are selected by an NPA-NXX begin and end range. The file name for the Subscriptions download file, *where a time range is NOT selected*, will be in the format:

NPANXX-NPANXX.DD-MM-YYYYHH24MISS

The NPANXX-NPANXX values map to the selection criteria and the time stamp maps to the current time (*Central Time - standard/daylight*).

The Subscriptions file given in the example would be named:

303123-303125.10-13-1996081122

*In the case where a time range is selected, the file name for the Subscriptions download file with a time range, will be in the format:*

*NPANXX-NPANXX.DD-MM-YYYYHH24MISS. DD-MM-YYYYHH24MISS. DD-MM-YYYYHH24MISS*

*The NPANXX-NPANXX values map to the selection criteria, the first time stamp maps to the current time (when the file is generated), the second time stamp maps to the start time range, and the third time stamp maps to the end time range. All three time stamps are represented in Central Time (standard/daylight), even though the Subscription Versions are stored in the NPAC in Greenwich Mean Time.*

*The Subscriptions file with a time range given in the example would be named:*

*303123-303125.10-13-1996081122.10-10-1996000000.10-12-1996115959*

Also for #1, no functional requirements or IIS flows are affected by this change.

For #2, new requirements are proposed (see below)

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

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

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

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

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

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

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

NPAC SMS shall use the *Active/Disconnect Pending/Partial Failure Subscription Versions Only* selection to only include Subscription Versions with a status of either Active, Disconnect Pending or Partial Failure in the Subscription Version Bulk Data Download file.

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

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

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

NPAC SMS shall use the Start Time Range entry field as an inclusive start range in Central Time (standard/daylight), and the End Time Range entry field as an inclusive ending range in Central Time (standard/daylight), for Subscription Version data that were broadcast during the specified Time Range.

Req 13 Subscription Version Information Bulk Download File Creation – Time Range Fields and SV Data Model

NPAC SMS shall use the Start and End Time Range entry fields to include Subscription Version data, based on the Activation Broadcast Time Stamp, Modify Broadcast Time Stamp, and Disconnect Broadcast Time Stamp, in the NPAC’s Subscription Version Data Model, when generating the file for the *Latest View of Subscription Version Activity* selection.

Req 7 Subscription Version Information Bulk Download File Creation – TN Range Fields

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

Req 8 Subscription Version Information Bulk Download File Creation – Selection Criteria Combinations

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

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

Such that a combination of:

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

Req 9 Subscription Version Information Bulk Data Download – Subscription Version Results

NPAC SMS shall provide a bulk data download file, based on the selection criteria, that contains all Subscription Versions in the NPAC SMS applicable to the requesting Service Provider based on the NPAC Customer LSMS EDR Indicator in the NPAC Customer record.

Note: If the EDR Indicator is True, Subscription Versions of LNP Type ‘POOL’ will NOT be included in the file. If the EDR Indicator is False, Subscription Versions of LNP Type ‘POOL’ will be included in the file.

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

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

Req 11 Subscription Version Information Bulk Data Download – Filters for Subscription Versions

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

Req 12 Subscription Version Information Bulk Data Download – FTP Sub-Directory

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

**IIS:**

No change required.

**GDMO:**

No change required.

**ASN.1:**

No change required.

**M&P:**

No change required.

**Origination Date:** 11/25/1997

**Change Order Number:** NANC 179

**Description:** TN Range Notifications

**Cumulative SP Priority, Weighted Average:** 14.42

**Functional Backwards Compatible:** NO

#### IMPACT/CHANGE ASSESSMENT

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

#### 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 TN's 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 \(1 set of info for the TN range, plus list of SV-ID\)](#)

The following functional operations would be affected for TN ranges:

- Old SP Range Creates
- New SP Range Creates

- Conflict
- Cancel
- Activate
- ~~Modify-Active~~
- Disconnect
- ~~Return to Donor Notifications~~

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.

**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!;

  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 ~~LSMS-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/~~LSMS~~ 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-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.

!;

-- 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 ~~LSMS~~-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/~~LSMS~~ 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.

!;

```
-- 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;
    ;

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

InpLogRangeAttributeValueChangeBehavior 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

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

InpLogRangeObjectCreationPkg PACKAGE
    BEHAVIOUR
        InpLogRangeObjectCreationDefinition,
        InpLogRangeObjectCreationBehavior;
    ATTRIBUTES
        subscriptionVersionRangeObjectInfo GET,
        accessControl GET;
    ;

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

InpLogRangeObjectCreationChangeBehavior 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

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

```
InpLogRangeStatusAttributeValueChangePkg PACKAGE
```

```
  BEHAVIOUR
```

```
    InpLogRangeStatusAttributeValueChangeDefinition,  
    InpLogRangeStatusAttributeValueChangeBehavior;
```

```
  ATTRIBUTES
```

```
    subscriptionVersionRangeStatusAttributeValueChangeInfo GET,  
    accessControl GET;
```

```
  ;
```

```
InpLogRangeStatusAttributeValueChangeDefinition BEHAVIOUR
```

```
  DEFINED AS !
```

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

```
  !;
```

```
InpLogRangeStatusAttributeValueChangeBehavior 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
```

```
InpLogRangeDonorSP-CustomerDisconnectDateRecord MANAGED OBJECT CLASS
```

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

```
1992":eventLogRecord;
```

```
  CHARACTERIZED BY
```

```
    InpLogRangeDonorSP-CustomerDisconnectDatePkg;
```

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

```
InpLogRangeDonorSP-CustomerDisconnectDatePkg PACKAGE
```

```
  BEHAVIOUR
```

```
    InpLogRangeDonorSP-CustomerDisconnectDateDefinition,
```

```
    InpLogRangeDonorSP-CustomerDisconnectDateBehavior;
```

```
  ATTRIBUTES
```

```
    subscriptionVersionRangeDonorSP-CustomerDisconnectDateInfo GET,
```

```
    accessControl GET;
```

```
  ;
```

```
InpLogRangeDonorSP-CustomerDisconnectDateDefinition BEHAVIOUR
```

```
  DEFINED AS !
```

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

```
  !;
```

```
InpLogRangeDonorSP-CustomerDisconnectDateBehavior BEHAVIOUR
```

```
  DEFINED AS !
```

```
    This log record can be used by any CME wanting to log the  
    subscriptionVersionRangeDonorSP-CustomerDisconnectDate 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 Change 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 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 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<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<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 ~~<indicator>~~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 type is used to report donor disconnects of
  subscription versions for range operations.
  It uses the donor disconnect 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.

!;

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
            }
        }
    }
}

```

```
    }  
  } 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  
}
```

```
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](#)

**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		

**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**

<b>FRS</b>	<b>IIS</b>	<b>GDMO</b>	<b>ASN.1</b>	<b>NPAC</b>	<b>SOA</b>	<b>LSMS</b>
			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-npa-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	

#### 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 Subscription-Version-Status 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 Subscription-Version-Status 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 [Subscription-Version-Status](#) 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 [Subscription-Version-Status](#) 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 [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 sends an AttributeValueChange to set the new service provider authorization to “FALSE”. *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. 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 [Subscription-Version-Status](#) 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 [Subscription-Version-Status](#) 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)		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:  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
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**IIS:**

No change required.

**GDMO:**

No change required.

**ASN.1:**

No change required.

**M&P:**

No change required.