

Future Release Change Orders

Updated On: 01/21/02

December 2001: During the December 2001 LNPA WG meeting it was decided to combine all non-implemented, accepted NPAC change orders that require software changes into one document called “Future Change Orders”. Thus, the change orders that were originally submitted to the LLC in the NPAC Release 4.0 package minus the three that were implemented as part of NPAC Release 3.1 (NANC 179, 240, and 294) and all other change orders are included in this document. In the January 2002 LNPA WG meeting the group will start reviewing the “business need” and “description of change” of all the change orders in this document so that the participating service providers will have a good understanding of what each change order is attempting to accomplish. The service providers will then go back to their organizations and rate each change order and bring that information back to the LNPA WG so the change orders can be prioritized.

Change Order List

Change Order #	Description	NPAC Effort	SOA/LSMS	Weighted Avg
LL 5	Round-Robin Broadcasts Across SOA/LSMS Associations	Low	Low-High / Low-High	
LL 130	Application Level Errors	High	High/High	
NANC 138	Definition of Cause Code	Low	Low / Low	
NANC 151	TN and Number Pool Block Addition to Notification	Low	Low / N/A	
NANC 169	Delta Download File Creation by Time Range for SVs	Med	N/A / Med-Low	
NANC 187	Linked Action Replies	Med	Med / Med	
NANC 191	DPC/SSN Value Edits	Low	N/A / N/A	
NANC 192	NPA Split NPAC SMS Load File	Med	N/A / N/A	
NANC 193	TN Processing during NPAC SMS NPA Split Processing	???	Low-Med / Low-Med	
NANC 200	Notification of NPA Splits	Med-Low	Med / Med	
NANC 217	Mass Update SPID	Med	Med-High / Med-High	
NANC 218	Conflict Timestamp Broadcast to SOA	Low	Low / N/A	
NANC 219	NPAC Monitoring of SOA/LSMS Associations	High	N/A / N/A	
NANC 227/254	Exclusion of Service Provider from an SV's Failed SP List	Med	N/A / Med-Low	
NANC 230	Donor SOA Port-To-Original of an Intra-Service Provider Port	Med	Med / N/A	
NANC 232	First Port Notification on Web BB	Low	N/A / N/A	
NANC 246	NPA-NXX Filters for Bulk Data Download SV Files	Low	N/A / N/A	
NANC 249	Modification of Dates for a Disconnect Pending SV	Low	Med / N/A	
NANC 285	SOA/LSMS Requested Subscription Version Query Max Size	Low	Med-High / Med-High	
NANC 287	ASN.1 Change for Required Field in VersionNewNPA-NXX and VersionNewNPA-NXX Recovery Notification	Low	Low / Low	
NANC 291	SSN Edits in the NPAC SMS	Low	N/A / N/A	
NANC 297	Sending SV Problem During Recovery	Med-Low	N/A / N/A	
NANC 299	NPAC Monitoring of SOA and LSMS Associations via Heartbeat			
NANC 300	Resend Exclusion for Number Pooling	Med	Med-Low / Med-Low	
NANC 301	NPAC Monitoring of SOA and LSMS Association via NPAC TCP Level Heartbeat (transport layer)	TBD	TBD / TBD	
NANC 311	Query Message of SP Association Status	Med	Med / ??N/A	
NANC 312	Different User Levels on the LTI	Med	N/A / N/A	
NANC 316	Change the NSAP Field Size Declaration in ASN.1 – ASN.1 Recompile			
NANC 319	NPAC Edit to Ensure NPA-NXX of LRN is in Same LATA as NPA-NXX of Ported TN	???	N/A / N/A	
NANC 321	Regional NPAC NPA Edit of Service Provider Network Data – NPA-NXX Data	???	N/A / N/A	
NANC 322	Clean Up of Failed SP List based on Service Provider BDD Response File	???	N/A / ???	
NANC 323	Partial Migration of a SPID via Mass Update	Med	Med-High / Med-High	

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Clarifications

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

Change Order Retained	Change Order Merged and Removed
NANC 169	NANC 246 (This change order was broken out into a separate change order during discussions at December 2000 meeting. See notes in the Change Order text.)
NANC 187	NANC 186
NANC 191	NANC 291
NANC 227	NANC 254
NANC 240	NANC 198

Rejections

Change Orders rejected/withdrawn.

Change Order Number	Change Order Description
ILL 23	Detailed Integrity Sample Results Report
NANC 87	RR5-39 Requirement Modification for Viewing of Cancelled SV
NANC 103	Increase of OSI Selector Size
NANC 122	Enhanced Key Expiration Strategy
NANC 147	Version ID Rollover Strategy (This change order is to remain on “open” list in the NANC Change Order Summary document.)
NANC 204 & NANC 235	Inter-Service Provider Communication (Wireless)
NANC 299	NPAC Monitoring of SOA and LSMS Associations via Heartbeat

NANC 307	Change BDD Format for NPA-NXX and NPA-NXX-X Files
NANC 310	Time Reference in the NPAC SMS
NANC 311	Query Message of SP Association Status

Origination Date: 10/15/96

Originator: AT&T

Change Order Number: ILL 5

Description: Round-Robin Broadcasts Across SOA/LSMS Associations

Cumulative SP Priority, Weighted Average:

Pure Backwards Compatible: YES (this is optional functionality for the LSMS)

IMPACT/CHANGE ASSESSMENT

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

Business Need:

Currently, most SOAs/LSMSs have one association to the NPAC SMS over which all interface traffic is sent and received. As performance increases over the interface, a SOA/LSMS may need to distribute their interface processing across multiple machines to gain additional memory, processor speed and stack resources. This change order would enable an SOA/LSMS to distribute their interface processing across multiple machines. This change order would also enable the NPAC SMS to accept multiple associations of the same function type from different NSAPs and distribute outbound traffic in a round robin algorithm across the multiple associations.

A benefit of allowing an SP to establish additional associations during heavy activity periods is that if one of the associations goes down, the other association still remains connected, thereby alleviating (in whole or in part) partial failures as a result of the downed association.

Description of Change:

The NPAC SMS would support additional LSMS associations and manage the distribution of transactions in a round robin algorithm across the associations. For example, due to performance conditions a Service Provider may want to start another LSMS association for network/subscription downloads. The NPAC SMS would accept the association, manage security, and distribute network/subscription PDUs across the 2 or more associations using the round robin algorithm (One unique PDU will be sent over one association only.)

Requirements:

Req 1 Multiple Associations of the Same Association Function From different NSAPs

NPAC SMS shall accept multiple associations of the same association function from different Service Provider NSAPs.

Req 2 Security Management of Multiple Associations of the Same Association Function

NPAC SMS shall manage security for multiple associations of the same association function from different Service Provider NSAPs.

Note to Service Providers: Each association with the same association function from different Service Provider NSAPs would need to associate using the same security key.

Req 3 Distribution of PDUs across Multiple Associations of the Same Association Function

NPAC SMS shall distribute transactions for a particular Service Provider across multiple associations of the same association function (when they exist) in a round robin algorithm.

Note: The round robin algorithm means that one unique PDU will be sent over one association only.

Req 4 Treatment of Multiple Associations of the Same Association Function during Congestion

NPAC SMS shall treat multiple associations of the same association function for a particular Service Provider as independent physical CMIP connections for congestion management.

Req 5 Treatment of Multiple Associations of the Same Association Function during Recovery

NPAC SMS shall treat multiple associations of the same association function for a particular Service Provider as one logical CMIP connection for recovery.

Req 6 Treatment of Multiple Associations when there is an Intersection of Association Function

NPAC SMS shall, in the case of an intersection of the association functions on multiple associations for a particular Service Provider, distribute transactions in a round robin algorithm.

Note: This requirement may be impacted by the implementation of NANC 219.

IIS

Add to the end of Chapter 5:

5.5 Round-Robin Broadcast Across SOA/LSMS Associations

A SOA or LSMS system may connect to the NPAC SMS with multiple associations (different NSAPs) which have the same association function(s) set. The NPAC SMS will distribute transactions across the associations in a round robin algorithm.

The NPAC SMS will treat multiple associations of the same association function for a particular SOA or LSMS system as one logical CMIP connection for recovery.

GDMO

No Change Required

ASN.1

No Change Required

M&P

TBD

Origination Date: 1/6/1997

Originator: AT&T

Change Order Number: ILL 130

Description: Application Level Errors

Cumulative SP Priority, Weighted Average:

Pure Backwards Compatible: NO

Functional Backwards Compatible: YES with sunset

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).

January 2000: During the 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.

With ILL 130:

When the NPAC SMS experiences an application level error when processing any of the actions defined in the GDMO/ASN.1, a processing failure 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

February 2000: The group discussed on the 2/9/00 conference call that a flash cut has a high degree of risk, so we should be looking at another option. During the February LNPA WG meeting, it was discussed and agreed that a backwards compatible approach was needed. The current approach is to create duplicate “sister” ACTIONS that will return the error text string to the requesting SP. A sunset period will allow SPs time to upgrade their systems. At the end of the sunset period, the original ACTIONS will be removed, and the new ACTIONS (with the error text string) will be the only method of sending the requested ACTIONS to the NPAC SMS.

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

Requirements:

Req 1 – NPAC SMS Application Level Errors

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

Req 2 – NPAC SMS Application Level Errors Details

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

IIS:

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

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

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

GDMO:

-- xx.0 LNP Download Action With Error Text

```
lnpDownloadWithErrorText ACTION
  BEHAVIOUR
    lnpDownloadWithErrorTextDefinition,
    lnpDownloadWithErrorTextBehavior;
  MODE CONFIRMED;
  WITH INFORMATION SYNTAX LNP-ASN1.DownloadAction;
  WITH REPLY SYNTAX LNP-ASN1.DownloadReplyWithErrorText;
  REGISTERED AS {LNP-OIDS.lnp-action xx};
```

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

```
lnpDownloadWithErrorTextBehavior BEHAVIOUR
  DEFINED AS !
    See lnpDownload ACTION for behaviour definition.

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

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

```
lnpRecoveryCompleteWithErrorText ACTION
  BEHAVIOUR
    lnpRecoveryCompleteWithErrorTextDefinition,
    lnpRecoveryCompleteWithErrorTextBehavior;
  MODE CONFIRMED;
  WITH INFORMATION SYNTAX LNP-ASN1.RecoveryCompleteAction;
  WITH REPLY SYNTAX LNP-ASN1.RecoveryCompleteReplyWithErrorText;
  REGISTERED AS {LNP-OIDS.lnp-action xx};
```

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

```
lnpRecoveryCompleteWithErrorTextBehavior BEHAVIOUR
  DEFINED AS !
    See lnpRecoveryComplete ACTION for behaviour definition.

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

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

```
subscriptionVersionActivateWithErrorText ACTION
  BEHAVIOUR
    subscriptionVersionActivateWithErrorTextDefinition,
    subscriptionVersionActivateWithErrorTextBehavior;
  MODE CONFIRMED;
  WITH INFORMATION SYNTAX LNP-ASN1.ActivateAction;
  WITH REPLY SYNTAX LNP-ASN1.ActivateReplyWithErrorText;
  REGISTERED AS {LNP-OIDS.lnp-action xx};
```

```
subscriptionVersionActivateWithErrorTextWithErrorTextDefinition BEHAVIOUR
  DEFINED AS !
```

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

!;

```
subscriptionVersionActivateWithErrorTextBehavior BEHAVIOUR
  DEFINED AS !
```

See subscriptionVersionActivate ACTION for behaviour definition.

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

!;

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

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

```
subscriptionVersionCancelWithErrorTextWithErrorTextDefinition BEHAVIOUR
  DEFINED AS !
```

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

!;

```
subscriptionVersionCancelWithErrorTextBehavior BEHAVIOUR
  DEFINED AS !
```

See subscriptionVersionCancel ACTION for behaviour definition.

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

!;

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

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

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

!;

```
subscriptionVersionDisconnectWithErrorTextBehavior BEHAVIOUR
  DEFINED AS !
    See subscriptionVersionDisconnect ACTION for behaviour definition.
```

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

!;

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

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

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

!;

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

In addition to the existing subscriptionVersionModify ACTION behaviour, this action's reply contains an optional error text

```
    string to be returned if the action is not successful.
!;

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

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

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

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

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

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

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

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

subscriptionVersionRemoveFromConflictWithErrorTextBehavior BEHAVIOUR
  DEFINED AS !
```


See [subscriptionVersionRemoveFromConflict ACTION](#) for behaviour definition.

In addition to the existing [subscriptionVersionRemoveFromConflict ACTION](#) behaviour, this action's reply contains an optional error text string to be returned if the action is not successful.

!;

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

subscriptionVersionNewSP-CreateWithErrorText ACTION

BEHAVIOUR

subscriptionVersionNewSP-CreateWithErrorTextDefinition,
subscriptionVersionNewSP-CreateWithErrorTextBehavior;

MODE CONFIRMED;

WITH INFORMATION SYNTAX LNP-ASN1.NewSP-CreateAction;

WITH REPLY SYNTAX LNP-ASN1.NewSP-CreateReplyWithErrorText;

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

subscriptionVersionNewSP-CreateWithErrorTextDefinition BEHAVIOUR

DEFINED AS !

The [subscriptionVersionNewSP-CreateWithErrorText](#) action is the action that is used via the SOA to NPAC SMS interface by the new service provider to create a new [subscriptionVersionNPAC](#).

!;

subscriptionVersionNewSP-CreateWithErrorTextBehavior BEHAVIOUR

See [subscriptionVersionNewSP-Create ACTION](#) for behaviour definition.

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

!;

-- xx.0 LNP Old Service Provider Cancellation Acknowledge Request

-- With Error Text

subscriptionVersionOldSP-CancellationAcknowledgeWithErrorText ACTION

BEHAVIOUR

subscriptionVersionOldSP-CancellationAcknowledgeWithErrorTextDefinition,
subscriptionVersionOldSP-CancellationAcknowledgeWithErrorTextBehavior;

MODE CONFIRMED;

WITH INFORMATION SYNTAX LNP-ASN1.CancellationAcknowledgeAction;

WITH REPLY SYNTAX LNP-ASN1.CancellationAcknowledgeReplyWithErrorText;

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

subscriptionVersionOldSP-CancellationAcknowledgeWithErrorTextDefinition BEHAVIOUR

DEFINED AS !

The [subscriptionVersionOldSP-CancellationAcknowledgeWithErrorText](#) action is the action that is used via the SOA to NPAC SMS interface by the old service provider to acknowledge cancellation of a [subscriptionVersionNPAC](#) with a status of cancel-pending.

!;

subscriptionVersionOldSP-CancellationAcknowledgeWithErrorTextBehavior BEHAVIOUR
DEFINED AS !

See subscriptionVersionOldSP-CancellationAcknowledge ACTION
for behaviour definition.

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

!;

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

subscriptionVersionOldSP-CreateWithErrorText ACTION
BEHAVIOUR

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

subscriptionVersionOldSP-CreateWithErrorTextDefinition BEHAVIOUR
DEFINED AS !

The subscriptionVersionOldSP-CreateWithErrorText action is the action
that is
used via the SOA to NPAC SMS interface by the
old service provider to create a new subscriptionVersionNPAC.

!;

subscriptionVersionOldSP-CreateWithErrorTextBehavior BEHAVIOUR
DEFINED AS !

See subscriptionVersionOldSP-Create ACTION for behaviour definition.

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

!;

-- xx.0 Notification Recovery Action With Error Text

lnpNotificationRecoveryWithErrorText ACTION
BEHAVIOUR

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

lnpNotificationRecoveryWithErrorTextDefinition BEHAVIOUR
DEFINED AS !

The lnpNotificationRecoveryWithErrorText action is the action
that can be

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

!;

lnpNotificationRecoveryWithErrorTextBehavior BEHAVIOUR

DEFINED AS !

See lnpNotificationRecovery ACTION for behaviour definition.

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

!;

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

numberPoolBlock-CreateWithErrorText ACTION

BEHAVIOUR

numberPoolBlock-CreateWithErrorTextDefinition,
numberPoolBlock-CreateWithErrorTextBehavior;

MODE CONFIRMED;

WITH INFORMATION SYNTAX LNP-ASN1.NumberPoolBlock-CreateAction;

WITH REPLY SYNTAX LNP-ASN1.NumberPoolBlock-CreateReplyWithErrorText;

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

numberPoolBlock-CreateWithErrorTextDefinition BEHAVIOUR

DEFINED AS !

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

!;

numberPoolBlock-CreateWithErrorTextBehavior BEHAVIOUR

DEFINED AS !

See numberPoolBlock-Create ACTION for behaviour definition.

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

!;

ASN.1:

ActivateReplyWithErrorText ::= SubscriptionVersionActionReplyWithErrorText

CancellationAcknowledgeReplyWithErrorText ::=
SubscriptionVersionActionReplyWithErrorText

CancelReplyWithErrorText ::= SubscriptionVersionActionReplyWithErrorText

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

```

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

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

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

        lsms [1] SET OF SEQUENCE {
            managedObjectClass ObjectClass,
            managedObjectInstance ObjectInstance,
            notification CHOICE {
                subscription-version-new-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
    }
}
} OPTIONAL,
error-text [1] GraphicString255 OPTIONAL
}

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

NumberPoolBlock-CreateReply ::= SEQUENCE {
    block-id [0] BlockId,
    status [1] ENUMERATED {
        success (0),
        failed (1),
        soa-not-authorized (2),
        no-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,
    error-text [3] GraphicString255 OPTIONAL
}

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

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

RemoveFromConflictReplyWithErrorText ::=
    SubscriptionVersionActionReplyWithErrorText

SubscriptionVersionActionReply ::= ENUMERATED { -- to be removed in release x.0
    success (0),
    failed (1),
    soa-not-authorized (2),

```

```
no-version-found (3),
invalid-data-values (4),
version-create-already-exists (5)
}

SubscriptionVersionActionReplyWithErrorText ::= SEQUENCE {
    status-code SubscriptionVersionStatus,
    error-text [1] GraphicString255 OPTIONAL -- present if status not success
}
SubscriptionVersionActionStatus ::= ENUMERATED {
    success (0),
    failed (1),
    soa-not-authorized (2),
    no-version-found (3),
    invalid-data-values (4),
    version-create-already-exists (5)
}
```

M&P:

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

Origination Date: 8/11/1997

Originator: CMA

Change Order Number: NANC 138

Description: Definition of Cause Code

Cumulative SP Priority, Weighted Average:

Pure Backwards Compatible: YES

IMPACT/CHANGE ASSESSMENT

FRS	IIS	GDMO	ASN.1	NPAC	SOA	LSMS
Y	N			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 as follows:

The values less than 50 were reserved for NPAC SMS 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
--------------------------	-------	--	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

IIS:

No change required.

GDMO:

No change required.

ASN.1:

No change required.

M&P:

No change required.

Origination Date: 9/4/97

Originator: Bellcore

Change Order Number: NANC 151

Description: TN and Number Pool Block Addition to Notifications

Cumulative SP Priority, Weighted Average:

Pure Backwards Compatible: NO

Functional Backwards Compatible: YES with Sunset

IMPACT/CHANGE ASSESSMENT

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

Business Need:

This change order saves research time for SOA operational staff when they receive a notification for a subscription version that has inadvertently been removed from their local database or was never received. Currently, only the NPAC subscription version id (SVID) is included in the notification message. If the SOA missed the subscription version create message (“object creation”, which includes both TN and SVID), any subsequent notification that the NPAC sends cannot be associated with the TN, since those subsequent notifications currently do not include the TN.

Description of Change:

It has been requested that the TN for the subscription version be added to all notifications that currently contain SVID but not TN from the NPAC SMS. It is possible for a SOA in a disconnect or modify-active situation, to not have the SV record in their database. Therefore, when the attribute/status change notification comes from the NPAC SMS, there is no way to correlate its version id with the TN on the disconnect or modify request in SOA.

This would be a deviation from the standard since the TN would not have been an attribute that was changed.

Additionally, the same type of change should be done for Number Pool Block (i.e., add the NPA-NXX-X to all notifications that currently contain Block-ID but not NPA-NXX-X).

Requirements:

Req 1 Subscription Version Status Attribute Value Change – Send TN

NPAC SMS shall send the Subscription Version TN when sending a Subscription Version Status Attribute Value Change notification.

Req 2 Subscription Version Attribute Value Change – Send TN

NPAC SMS shall send the Subscription Version TN when sending a Subscription Version Attribute Value Change notification.

Req 3 Number Pool Block Status Attribute Value Change – Send NPA-NXX-X

NPAC SMS shall send the Number Pool Block NPA-NXX-X when sending a Number Pool Block Status Attribute Value Change notification.

Req 4 Number Pool Block Attribute Value Change – Send NPA-NXX-X

NPAC SMS shall send the Number Pool Block NPA-NXX-X when sending a Number Pool Block Attribute Value Change notification.

Req 5 Subscription Version TN Attribute Flag Indicator

NPAC SMS shall provide a Subscription Version TN Attribute Flag Indicator, which is defined as an indicator on whether or not the Service Provider supports receipt of the Subscription Version TN attribute in a Subscription Version Status Attribute Value Change notification.

Req 6 Modification of Subscription Version TN Attribute Flag Indicator

NPAC SMS shall allow the NPAC Personnel, via the NPAC Administrative Interface, to modify the Subscription Version TN Attribute Flag Indicator.

Req 7 Subscription Version TN Attribute Flag Indicator Default Value

NPAC SMS shall default the Subscription Version TN Attribute Flag Indicator to **TRUE**.

Req 8 Number Pool Block NPA-NXX-X Attribute Flag Indicator

NPAC SMS shall provide a Number Pool Block NPA-NXX-X Attribute Flag Indicator, which is defined as an indicator on whether or not the Service Provider supports receipt of the Number Pool Block NPA-NXX-X attribute in a Number Pool Block Status Attribute Value Change notification.

Req 9 Modification of Number Pool Block NPA-NXX-X Attribute Flag Indicator

NPAC SMS shall allow the NPAC Personnel, via the NPAC Administrative Interface, to modify the Number Pool Block NPA-NXX-X Attribute Flag Indicator.

Req 10 Number Pool Block NPA-NXX-X Attribute Flag Indicator Default Value

NPAC SMS shall default the Number Pool Block NPA-NXX-X Attribute flag Indicator to **TRUE**.

Action for CMA: Before next requirements review need to add existing requirements that need modification.

IIS

No Changes Required

GDMO

```
-- 11.0 LNP Subscription Version Status Attribute Value Change Notification
subscriptionVersionStatusAttributeValueChange NOTIFICATION
  BEHAVIOUR subscriptionVersionStatusAttributeValueChangeBehavior;
  WITH INFORMATION SYNTAX LNP-ASN1.VersionStatusAttributeValueChange
  AND ATTRIBUTE IDS
    value-change-info subscriptionVersionAttributeValueChangeInfo,
    failed-service-provs subscriptionFailed-SP-List,
    status-change-cause-code subscriptionStatusChangeCauseCode,
    subscription-tn subscriptionTN,
    access-control accessControl;
  REGISTERED AS {LNP-OIDS.lnp-notification 11};
subscriptionVersionStatusAttributeValueChangeBehavior BEHAVIOUR
DEFINED AS !
```

This notification type is used to report changes to the subscriptionVersionStatus field. It is identical to an attribute value change notification as defined in M.3100 except for the addition of the list of failed service providers in cases where the version status is active, failed or partial failure and the subscriptionStatusChangeCauseCode if it is set.

Failed lists will also be potentially sent for subscription versions with statuses of active, failed, partial failure, and old.

If the service provider's <> indicator is set in their service provider profile, the subscriptionTN is provided.

!;

```
-- 13.0 LNP Number Pool Block Status Attribute Value Change Notification
numberPoolBlockStatusAttributeValueChange NOTIFICATION
  BEHAVIOUR numberPoolBlockStatusAttributeValueChangeBehavior;
  WITH INFORMATION SYNTAX
  LNP-ASN1.NumberPoolBlockStatusAttributeValueChange
  AND ATTRIBUTE IDS
    value-change-info subscriptionVersionAttributeValueChangeInfo,
    failed-service-provs numberPoolBlockFailed-SP-List,
    access-control accessControl,
    npa-nxx-x numberPoolBlockNPA-NXX-X;
```

REGISTERED AS {LNP-OIDS.lnp-notification 13};
 numberPoolBlockStatusAttributeValueChangeBehavior BEHAVIOUR
 DEFINED AS !

This notification is used to report changes to the numberPoolBlockStatus field. It is identical to an attribute value change notification as defined in M.3100 except for the addition of the list of failed service providers.

The failed service provider list reflects the EDR service providers who failed to receive the number pool block and any non-EDR service provider who failed to receive the corresponding subscription versions of LNP type equal to 'pool'.

Failed lists will be potentially sent for number pool blocks with statuses of active, failed, partial failure and old. This notification will be sent to the SOAs when the numberPoolBlockSOA-Origination is true for the number pool block object.

If the service provider's <> indicator is set in their service provider profile, the numberPoolBlockNPA-NXX-X is provided.

!;

ASN.1

```
NumberPoolBlockStatusAttributeValueChange ::= SEQUENCE {
    value-change-info [0] AttributeValueChangeInfo,
    failed-service-provs [1] Failed-SP-List OPTIONAL,
    access-control [2] LnpAccessControl,
    block-mpa-nxx-x [3] NPA-NXX-X OPTIONAL
}
```

```
VersionStatusAttributeValueChange ::= SEQUENCE {
    value-change-info [0] AttributeValueChangeInfo,
    failed-service-provs [1] Failed-SP-List OPTIONAL,
    subscription-status-change-cause-code [2] SubscriptionStatusChangeCauseCode
    OPTIONAL,
    access-control [3] LnpAccessControl ,
    subscription-tn [4] PhoneNumber OPTIONAL
}
```

M&P

Yes (Will need procedure for setting flags)

To modify the “**Subscription Version TN Attribute**” parameter in a Service Provider Profile the following steps must be followed:

1. Service Provider Personnel will contact NPAC Personnel with a request to modify their “Subscription Version TN Attribute” Parameter. Valid values for this parameter are “True” or “False”. The value is automatically defaulted to “True” indicating the Service Provider supports the Subscription Version TN Attribute parameter. If the Service Provider requests a parameter that falls outside the valid range, the request will be denied.
2. NPAC Personnel shall validate the caller’s name and authorization code against a list of authorized Service Provider Personnel. If the caller cannot be validated the request is denied. If the caller is validated the request is processed.
3. NPAC Personnel, using the NPAC Administrative Interface, shall navigate to the appropriate Service Provider profile and set the Subscription Version TN Attribute indicator to the value requested by the Service Provider. The NPAC SMS will generate a confirmation message to the screen indicating the change has been made successfully.

To modify the “**Number Pool Block NPA-NXX-X Attribute**” parameter in a Service Provider Profile the following steps must be followed:

1. Service Provider Personnel will contact NPAC Personnel with a request to modify their “Number Pool Block NPA-NXX-X Attribute” Parameter. Valid values for this parameter are “True” or “False”. The value is automatically defaulted to “True” indicating the Service Provider supports the Number Pool Block NPA-NXX-X Attribute parameter. If the Service Provider requests a parameter that falls outside the valid range, the request will be denied.
2. NPAC Personnel shall validate the caller’s name and authorization code against a list of authorized Service Provider Personnel. If the caller cannot be validated the request is denied. If the caller is validated the request is processed.
3. NPAC Personnel, using the NPAC Administrative Interface, shall navigate to the appropriate Service Provider profile and set the Number Pool Block NPA-NXX-X Attribute indicator to the value requested by the Service Provider. The NPAC SMS will generate a confirmation message to the screen indicating the change has been made successfully.

Origination Date: 5/23/97

Originator: Bellcore

Change Order Number: NANC 169

Description: Delta Download File Creation by Time Range for SVs

Cumulative SP Priority, Weighted Average:

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				Med	N/A	Med-Low

Business Need:

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

Description of Change:

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

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

Additional proposed changes to handle two issues, include:

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

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

Requirements:

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

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

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

NPAC SMS shall include the Requesting Service Provider, Active/Disconnect Pending/Partial Failure Subscription Versions Only or Latest View of Subscription Version Activity Choice, Time Range in GMT 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.

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

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

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

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

NPAC SMS shall use the Start and End Time Range entry fields to include Subscription Version data, based on the 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 8 Subscription Version Information Bulk Download File Creation – TN Range Fields

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

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

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

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

Such that a combination of:

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

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

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

Req 11 Subscription Version Information Bulk Data Download – Subscription Version Results Sort Order

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

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

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

Req 13 Subscription Version Information Bulk Data Download – EDR LSMSs

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

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

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

IIS

No Change Required

GDMO

No Change Required

ASN.1

No Change Required

M&P

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

Creating a Bulk Data Download File for Subscription Versions

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

1. Service Provider personnel will contact NPAC personnel with a request for a Bulk Data Download file for Subscription Version Information. Service Provider personnel are responsible for specifying the following information for the file:
 - Requesting Service Provider
 - Active, Disconnect Pending and Partial Failure Subscription Versions Only or Latest View of Subscription Version Activity
 - Time Range in GMT
 - TN Range

2. NPAC personnel will enter the requested information for the Bulk Data Download File for Subscription Version Information via the NPAC OP GUI. This file will be generated based on SPID. When this file is created it will automatically be placed in the correct directory for the respective Service Provider on the NPAC SMS server. NPAC personnel do not have to take further action to FTP the file to the SP's directory.

3. NPAC personnel will notify the requesting service provider when the file is ready to be FTP'd.

Origination Date: 1/7/1998
Originator: AT&T
Change Order Number: NANC 187
Description: Linked Action Replies
Cumulative SP Priority, Weighted Average:
Pure Backwards Compatible: NO
Functional Backwards Compatible: YES with sunset

IMPACT/CHANGE ASSESSMENT

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

Business Need:

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

Description of Change:

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

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

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

Requirements:

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

Req 1 – NPAC Customer SOA Linked Replies Indicator

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

Req 2 – NPAC Customer SOA Linked Replies Indicator – Default

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

Req 3 – NPAC Customer SOA Linked Replies Indicator – Modification

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

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

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

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

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

Req ~~14~~13 – Network Data Linked Replies Blocking Factor – Tunable Parameter Default

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

Req ~~15~~14 – Network Data Linked Replies Blocking Factor – Tunable Parameter Modification

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

Req ~~16~~15 – Linked Replies Information – Sending Linked Replies During Network Data Recovery to SOA

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

Req ~~17~~16 – Linked Replies Information – Sending Linked Replies During Network Data Recovery to Local SMS

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

Req ~~18-17~~ – Subscription Data Linked Replies Blocking Factor – Tunable Parameter

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

Req ~~19-18~~ – Subscription Data Linked Replies Blocking Factor – Tunable Parameter Default

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

Req ~~20-19~~ – Subscription Data Linked Replies Blocking Factor – Tunable Parameter Modification

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

Req ~~21-20~~ – Linked Replies Information – Sending Linked Replies During Subscription Data Recovery to Local SMS

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

Req ~~22-21~~ – Notification Data Linked Replies Blocking Factor – Tunable Parameter

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

Req ~~23-22~~ – Notification Data Linked Replies Blocking Factor – Tunable Parameter Default

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

Req ~~24-23~~ – Notification Data Linked Replies Blocking Factor – Tunable Parameter Modification

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

Req ~~25-24~~ – Linked Replies Information – Sending Linked Replies During Notification Data Recovery to SOA

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

Req ~~26-25~~ – Linked Replies Information – Sending Linked Replies During Notification Data Recovery to Local SMS

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

Req ~~27-26~~ – 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 ~~28-27~~ – 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 ~~29-28~~ – 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 ~~30-29~~ – Linked Replies Information – Network Data Recovery Maximum Size to SOA

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

Req ~~31-30~~ – Linked Replies Information – Network Data Recovery Maximum Size to Local SMS

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

Req ~~32-31~~ – 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 ~~33-32~~ – 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 ~~34-33~~ – 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 ~~35-34~~ – Linked Replies Information – Subscription Data Recovery Maximum Size to Local SMS

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

Req ~~36-35~~ – 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 ~~37-36~~ – 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 ~~38-37~~ – 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 ~~39-38~~ – Linked Replies Information – Notification Data Recovery Maximum Size to SOA

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

Req ~~40-39~~ – 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 `lnpDownload` action request for *network* data if the number of messages returned exceeds the "Network Data Linked Reply Blocking Factor" tunable but is less than the "Network Data Maximum 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 `lnpDownload` action request for *subscription* data if the number of objects returned exceeds the "Subscription Data Linked Reply Blocking Factor" tunable but is less than the "Subscription Data Maximum Recovered Objects" tunable. If the number of subscription data objects to be returned exceeds the "Subscription Data Maximum Recovered Objects" tunable, a "criteria-too-large" error will be returned to the requesting LSMS.

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

As an example, a Service Provider's SOA was down, and is now performing notification recovery. During the downtime, 90 notifications were issued. Assuming the Notification Blocking Factor is set to 50 notifications, the recovering SOA would receive data from the NPAC SMS in the form of three linked replies. The first reply would contain 50 notifications, the second reply would contain 40 notifications, and the third reply would be empty (this is an indication that the NPAC SMS is finished sending data for this recovery request).

Below are the tunables that specify the download size:

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

B.7 Local SMS and SOA Recovery

(add to end of existing text)

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

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

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

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

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

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

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

1. Non-EDR Local SMS sends the InpDownload M-ACTION to start network data download. In this case, the Local SMS specifies the start time and end time. There are criteria other than time which may be specified. If one of the following is selected (all-network-data, all NPA-NXX-X data, a range of NPA-NXX-X data, a single NPA-NXX-X), the NPAC SMS sends the serviceProvNPA-NXX-X updates (creates, modifies, deletes) if the Local SMS's "NPAC Customer LSMS NPA-NXX-X Indicator" in their service provider profile on the NPAC SMS states it supports the object.
2. *If the requested object(s) exist and the Local SMS Linked Replies Indicator is set to FALSE, the NPAC SMS responds to the M-ACTION with updates. If the requested object(s) exist and the Local SMS Linked Replies Indicator is set to TRUE, the NPAC SMS will respond with a single or linked M-ACTION reply (always followed by an empty reply). If no objects are found, the NPAC SMS will respond with two linked replies, first an M_ACTION reply (with no data) followed by an empty reply.*
3. Non-EDR Local SMS sends the InpDownload M-ACTION to start subscription data download. In this case, the Local SMS specifies the start time and end time. There are criteria other than time which may be specified.
4. *If the requested object(s) exist and the Local SMS Linked Replies Indicator is set to FALSE, the NPAC SMS responds to the M-ACTION with updates. If the requested object(s) exist and the Local SMS Linked Replies Indicator is set to TRUE, the NPAC SMS will respond with a single or linked M-ACTION reply (always followed by an empty reply). If no objects are found, the NPAC SMS will respond with two linked replies, first an M-ACTION reply (with no data) followed by an empty reply.* All creates, modifies and deletes are received, a single record for each subscription version. (i.e. no ranges). The Non-EDR Local SMS will receive all the activity on subscription versions with a LNP type of 'pool'.

5. If any corrections were issued to the resyncing Local SMS, the NPAC SMS will send the M-EVENT-REPORT to the old service provider SOA of the subscriptionVersionStatus change and a list of failed Local SMSs (minus the resyncing Local SMS that no longer contains a discrepancy).
 6. The old service provider SOA confirms the M-EVENT-REPORT.
 7. If any corrections were issued to the resyncing Local SMS, the NPAC SMS will send the M-EVENT-REPORT to the current service provider SOA of the status change and a list of failed Local SMSs (minus the resyncing Local SMS that no longer contains a discrepancy).
 8. The current service provider SOA confirms the M-EVENT-REPORT.
 9. If any corrections were issued to the resyncing Local SMS for subscription versions with LNP type equal to 'pool', the NPAC SMS will send the 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, lnpNotificationRecovery, to the NPAC SMS. The Non-EDR Local SMS specifies a time range.
 14. *If the requested notification(s) exist and the Local SMS Linked Replies Indicator is set to FALSE, the NPAC SMS responds to the M-ACTION with the notification updates that occurred within the given time range. If the requested notification(s) exist and the Local SMS Linked Replies Indicator is set to TRUE, the NPAC SMS will respond with a single or linked M-ACTION reply (always followed by an empty reply). If no notifications are found, the NPAC SMS will respond with two linked replies, first an M-ACTION reply (with no data) followed by an empty reply.*
 15. Non-EDR Local SMS sends M-ACTION, lnpRecoveryComplete, to set the resynchronization flag off.
 16. NPAC SMS replies to the M-ACTION.
- Normal processing resumes and any activity that the NPAC SMS had queued up during the recovery period will now be sent at the next scheduled retry interval.

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

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

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

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

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

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

1. EDR Local SMS sends InpDownload M-ACTION to start network data download. In this case, the Local SMS specifies the start time and end time. There are criteria other than time which may be specified. If one of the following is selected (all-network-data, all NPA-NXX-X data, a range of NPA-NXX-X data, a single NPA-NXX-X), the NPAC SMS sends the serviceProvNPA-NXX-X updates (creates, modifies, deletes) if the Local SMS's "NPAC Customer LSMS NPA-NXX-X Indicator" in their service provider profile on the NPAC SMS states it supports the object.
2. *If the requested object(s) exist and the Local SMS Linked Replies Indicator is set to FALSE, the NPAC SMS responds to M-ACTION with updates. If the requested object(s) exist and the Local SMS Linked Replies Indicator is set to TRUE, the NPAC SMS will respond with a single or linked M-ACTION reply (always followed by an empty reply). If no objects are found, the NPAC SMS will respond with two linked replies, first an M-ACTION reply (with no data) followed by an empty reply.*
3. EDR Local SMS sends the InpDownload M-ACTION to start subscription data download. In this case, the Local SMS specifies the start time and end time. There are criteria other than time which may be specified.
4. *If the requested object(s) exist and the Local SMS Linked Replies Indicator is set to FALSE, the NPAC SMS responds to M-ACTION with updates. If the requested object(s) exist and the Local SMS Linked Replies Indicator is set to TRUE, the NPAC SMS will respond with a single or linked M-ACTION reply (always followed by an empty reply). If no objects are found, the NPAC SMS will respond with two linked replies, first an M-ACTION reply (with no data) followed by an empty reply.* All creates, modifies and deletes are received, a single record for each subscription version. (i.e. no ranges) The EDR Local SMS will not receive any activity on subscription versions with LNP type of 'pool'.
5. If any corrections were issued to the resyncing Local SMS that involved the activation of a subscription version with the LNP type not equal to 'pool', the NPAC SMS will send the M-EVENT-REPORT to the old service provider SOA with the current subscriptionVersionStatus and a list of failed Local SMSs (minus the resyncing Local SMS that no longer contains a discrepancy).
6. The old service provider SOA confirms the M-EVENT-REPORT.
7. If any corrections were issued to the resyncing Local SMS that involved a subscription version with the LNP type not equal to 'pool', the NPAC SMS will send the M-EVENT-REPORT to the current service provider SOA

with the current subscriptionVersionStatus and a list of failed Local SMSs (minus the resyncing Local SMS that no longer contains a discrepancy).

8. The current service provider SOA confirms the M-EVENT-REPORT.
9. EDR Local SMS sends the InpDownload M-ACTION to start number pool block data download. The Local SMS specifies the start time.
10. NPAC SMS responds to M-ACTION with updates.
11. NPAC SMS sends the M-EVENT-REPORTs to the block holder SOAs for any number pool block with the SOA-Origination indicator set to true whose numberPoolBlockFailed-SP-List and possibly numberPoolBlockStatus were just updated due to the number pool block download.
12. Block holder SOA confirms to the M-EVENT-REPORT.
13. If deletes were sent for any number pool blocks that completed the broadcast of the M-DELETES of a number pool block and corresponding subscription versions, then the NPAC SMS will send to all other Local SMSs the M-DELETE for the serviceProvNPA-NXX-X object. The NPAC SMS will queue up the M-DELETE request for the recovering Local SMS and send it at the completion of recovery mode.
14. Local SMS responds the M-DELETE.
15. EDR Local SMS sends M-ACTION, InpNotificationRecovery, to the NPAC SMS. The EDR Local SMS specifies a time range.
16. *If the requested notification(s) exist and the Local SMS Linked Replies Indicator is set to FALSE, the NPAC SMS responds to the M-ACTION with the notification updates that occurred within the given time range. If the requested notification(s) exist and the Local SMS Linked Replies Indicator is set to TRUE, the NPAC SMS will respond with a single or linked M-ACTION reply (always followed by an empty reply). If no notifications are found, the NPAC SMS will respond with two linked replies, first an M-ACTION reply (with no data) followed by an empty reply.*
17. EDR Local SMS sends M-ACTION, InpRecoveryComplete, to set the resynchronization flag off.
18. NPAC SMS replies to the M-ACTION.

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

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

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

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

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

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

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

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


lnpDownloadDefinition BEHAVIOUR

DEFINED AS !

The lnpDownload action is the action that is used by the Local SMS and SOA to specify the objects to be downloaded from the NPAC SMS.

!;

lnpDownloadBehavior BEHAVIOUR

DEFINED AS !

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

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

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

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

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

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

...

-- 15.0 Notification Recovery Action

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

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

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

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

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

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

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

ASN.1:

No change required.

M&P:

No change required.

Origination Date: 1/19/1998

Originator: Ameritech

Change Order Number: NANC 191

Description: DPC/SSN Value Edits

Cumulative SP Priority, Weighted Average:

Pure Backwards Compatible: YES

IMPACT/CHANGE ASSESSMENT

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

Business Need:

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

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

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

Description of Change:

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

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

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

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

- 3-digit Network ID - valid range=001-255
- 3-digit Cluster ID - valid range=000-255
- 3-digit Member number - valid range=000-255
- Subsystem Number (SSN) is a separate three digit number with a valid range of 000-255.
- It does not make sense in the network to have a DPC without an SSN or vice versa.

Requirements:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Req 21 – DPC/SSN Edits – CLASS validation failure

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

Req 22 – DPC/SSN Edits – LIDB validation failure

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

Req 23 – DPC/SSN Edits – CNAM validation failure

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

Req 24 – DPC/SSN Edits – ISVM validation failure

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

Req 25 – DPC/SSN Edits – WSMSC validation failure

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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 LSMSSs. It contains the list of EDR and non-EDR service provider IDs who failed to successfully respond to the broadcasted data.

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

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

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

-- 63.0 LNP Subscription Version Class Destination Point Code

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

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

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

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

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

!;

-- 64.0 LNP Subscription Version Class SSN

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

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

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

!;

-- 65.0 LNP Subscription CNAM Destination Point Code

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

```
subscriptionCNAM-DPC-Behavior BEHAVIOUR
  DEFINED AS !
  This attribute is used to specify the CNAM Destination Point
```

value for the subscription version.

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

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

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

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

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

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

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 FFFFFFFF would be displayed as 255.255.255).

!;

-- 110.0 LNP Subscription Version WSMSC SSN

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

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

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

!;

-- 114.0 LNP Number Pool block Class Destination Point Code

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

numberPoolBlockCLASS-DPCBehavior BEHAVIOUR
DEFINED AS !

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

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

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

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

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

!;

-- 115.0 LNP Number Pool Block Class SSN

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

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

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

!;

-- 116.0 LNP Number Pool Block CNAM Destination Point Code

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

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

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

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

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

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

!;

-- 117.0 LNP Number Pool Block CNAM SSN

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

numberPoolBlockCNAM-SSN-Behavior BEHAVIOUR
DEFINED AS !
This attribute is used to specify the CNAM SSN
value for the numberPoolBlock. The valid values on the
NPAC SMS are 0-255.

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

!;

-- 123.0 LNP Number Pool Block ISVM Destination Point Code

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

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

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

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

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

!;

-- 124.0 LNP Number Pool Block ISVM SSN

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

numberPoolBlockISVM-SSN-Behavior BEHAVIOUR
DEFINED AS !
This attribute is used to specify the ISVM SSN

value for the numberPoolBlock. The valid values on the NPAC SMS are 0-255.

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

!;

-- 125.0 LNP Number Pool Block LIDB Destination Point Code

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

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

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

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

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

!;

-- 126.0 LNP Number Pool Block LIDB SSN

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

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

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

!;

-- 132.0 LNP Number Pool Block WSMSC Destination Point Code

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

```
BEHAVIOUR numberPoolBlockWSMSC-DPC-Behavior;  
REGISTERED AS {LNP-OIDS.lnp-attribute 132};
```

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

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

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

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

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

```
!;
```

```
-- 133.0 LNP Number Pool Block WSMSC SSN
```

```
numberPoolBlockWSMSC-SSN ATTRIBUTE  
WITH ATTRIBUTE SYNTAX LNP-ASN1.SSN;  
MATCHES FOR EQUALITY, ORDERING;  
BEHAVIOUR numberPoolBlockWSMSC-SSN-Behavior;  
REGISTERED AS {LNP-OIDS.lnp-attribute 133};
```

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

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

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

```
!;
```

```
-- 7.0 LNP Subscription Version Modify Action
```

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

```
subscriptionVersionModifyDefinition BEHAVIOUR  
DEFINED AS !
```

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

```
!;
```

```
subscriptionVersionModifyBehavior BEHAVIOUR
```

DEFINED AS !

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

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

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

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

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

subscriptionOldSP-DueDate
subscriptionOldSP-Authorization
subscriptionStatusChangeCauseCode

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

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

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

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

subscriptionWSMSC-DPC
subscriptionWSMSC-SSN

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

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

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

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

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

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

```
subscriptionWSMSC-DPC
subscriptionWSMSC-SSN
```

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

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

!;

-- 11.0 LNP New Service Provider Subscription Version Create

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

```
subscriptionVersionNewSP-CreateDefinition BEHAVIOUR
  DEFINED AS !
  The subscriptionVersionNewSP-Create action is the action that is
```

used via the SOA to NPAC SMS interface by the
new service provider to create a new subscriptionVersionNPAC.
!;

subscriptionVersionNewSP-CreateBehavior BEHAVIOUR
DEFINED AS !

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

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

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

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

subscriptionWSMSC-DPC
subscriptionWSMSC-SSN

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

subscriptionEndUserLocationValue
subscriptionEndUserLocationType
subscriptionBillingId

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

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

old service provider is required.

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

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

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

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

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

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

LRN data is associated with the New Service Provider.

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

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

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

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

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

!;

-- 16.0 LNP Service Provider Number Pool Block Create

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


numberPoolBlock-CreateDefinition BEHAVIOUR

DEFINED AS !

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

!;

numberPoolBlock-CreateBehavior BEHAVIOUR

DEFINED AS !

Preconditions: This action is issued from an lnpSubscriptions object.

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

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

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

numberPoolBlockWSMSC-DPC
numberPoolBlockWSMSC-SSN

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

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

The validations performed are as follows:

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

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

LRN data is associated with the Block Holder Service Provider.

The attributes are all valid and correctly formatted.

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

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

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

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

If the corresponding serviceProvNPA-NXX-X is not found, 'no-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:

TBD

Origination Date: 1/23/1998
Originator: NANC T&O
Change Order Number: NANC 192
Description: NPA Split NPAC SMS Load File
Cumulative SP Priority, Weighted Average:
Pure Backwards Compatible: YES

IMPACT/CHANGE ASSESSMENT

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

Business Need:

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

This Change Order would eliminate the current NPAC process of SP notification, prevent manual data entry, and establish the means for NPAC to use the industry standard data from the 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).

February 2000: During the LNPA-WG meeting the group discussed at a high level, the desired functionality of this change order.

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

updates.

2.) if no, check for the new NPA-NXX. If already exists, error. Otherwise, continue with the scheduling of the split.

- When scheduling split, auto generate the new NPA-NXX with the effective date the same as the PDP start date/time (example, date with 6:00am as time), and broadcast the new NPA-NXX (if new is already there, reject the split and log error).
- When adding an NPA-NXX to an existing split, whether or not the permissive dial period has already started for the NPA (with other NXXs), the NPAC SMS would add this to the existing split.
- When removing an NPA-NXX from an existing split, broadcast the delete of the NPA-NXX to all accepting SPs.
- When updating effective date of split, perform the following steps:
 - 1.) if a PDP start date is modified to a further out date, and no pending SVs for new NPA-NXX exist, NPAC changes date in split for PDP start date, but leave new NPA-NXX effective date alone.
 - 2.) If PDP start date is modified to a closer in date, delete the scheduled split data and log error (M&P then kicks in to have NPAC personnel to delete new NPA-NXX, then re-add new NPA-NXX with new closer in effective date). Once re-added, NPAC personnel initiate the re-processing of the split file that has the modified closer in effective date. If pending SVs exist, then log an error (and let the SP take care of it).
- NPAC needs to be able to reprocess a file, if any errors occurred, and shall not process any subsequent ones until the current one is fully successful.
- NPAC when activating an SV, check if part of split and if new NPA-NXX, then reject if before PDP start date.
- NPAC shall log an error if the split file says to modify the PDP start date and the split processing for that split has already occurred in the NPAC.

Requirements:

Req 1 – NPA Split – Load File from LERG Data

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

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

Req 2 – NPA Split – Load File from LERG Data During Housekeeping Process

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

Req 3 – NPA Split – Load File from LERG Data Processing Results

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

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

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

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

Req 5 – NPA Split – Load File from LERG Data, Verifying Old and New NPA-NXX

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

Req 5.16 – NPA Split – Load File from LERG Data, Pushing Out PDP Start Date

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

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

Req 5.27 – NPA Split – Load File from LERG Data, Pulling In PDP Start Date

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

Req 5.38 – NPA Split – Load File from LERG Data, Error Modifying PDP Start Date with Existing Subscription Versions

NPAC SMS shall process the NPA Split Load Flat File and for each NPA split that is already scheduled in the NPAC SMS, check for an effective date change in the new NPA-NXX where the PDP start date is modified, and if pending subscription versions exist in the new NPA-NXX, log an error.

Req 5.49 – NPA Split – Load File from LERG Data, Complete Processing of File

NPAC SMS shall process the NPA Split Load Flat File for each NPA split in the file, and shall NOT process any subsequent NPA Split Load Flat Files until the current file has been processed to completion.

Req 5.510 – NPA Split – Load File from LERG Data, Re-Processing of File

NPAC SMS shall be capable of re-processing the NPA Split Load Flat File in cases where the file was not completely processed due to NPA split processing errors.

Req 5.611 – NPA Split – Load File from LERG Data, Error Modifying PDP Start Date for NPA Split Already in Progress

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

Req 5.712 – NPA Split – Load File from LERG Data, Adding an NXX to an Existing Split

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

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

Req 6.13 – 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 7.14 – NPA Split – Load File from LERG Data Information on the Web

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

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

Req 7.515 – NPA Split – Subscription Version Activation Check

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

Modifications to Section 3.5 of the FRS NPA Splits Requirements

AN3-4.1 NPA Split Information Source

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

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

Deleted.

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

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

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

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

Deleted.

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

Deleted.

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

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

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

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

Req 8-16 – NPA Split – NPA Split Load Flat File Exception Report with New NPA-NXX Already Involved in NPA Split

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

RN3-4.15 NPA Split – Entering of Split Data

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

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

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

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

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

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

Req 9-17 – NPA Split – NPA Split Load Flat File Exception Report with Old NPA-NXX Already Involved in NPA Split

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

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

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

Req ~~10-18~~ – NPA Split – NPA Split Load Flat File Exception Report with Mismatched SPIDs for Old and New NPA-NXX

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

NPA-NXX-X Holder, NPA Splits

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

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

Req ~~12-19~~ – NPA Split – NPA Split Load Flat File Exception Report with Already Existing New NPA-NXX-X

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

IIS:

Flows B.8.2 and B.8.2.1, *NPA-NXX Split* will be updated from “Action is taken by the NPAC SMS personnel to create an NPA-NXX split.” to say, “NPAC SMS will create NPA-NXX split data based on information in the NPA Split Load Flat File from the LERG.” Also, “The NPA-NXX owner service provider first creates the new NPA-NXX.” will be updated say, “The NPAC SMS will automatically generate the new NPA-NXX based on information in the NPA Split Load Flat File from the LERG.”

GDMO:

No change required.

ASN.1:

No change required.

M&P:

1. SP can no longer contact NPAC personnel for entering/modifying/removing split information for them in the NPAC database.

2. NPAC personnel need to contact SP for NPA-NXXs on the NPA Split Load Flat File Exception Report.

Origination Date: 1/23/98

Originator: NANC T&O

Change Order Number: NANC 193

Description: TN Processing during NPAC SMS NPA Split Processing

Cumulative SP Priority, Weighted Average:

Pure Backwards Compatible: YES

IMPACT/CHANGE ASSESSMENT

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

Business Need:

Currently the NPAC SMS performs NPA Split processing at the start of the Permissive Dial Period (PDP), based on data input on the NPAC OpGUI. This processing only affects data at the NPAC since nothing is broadcast to Service Providers as a result of Split processing. The general understanding of all parties is that NPAC behavior would not change until the start of PDP (i.e., sending out the new NPA-NXX for requests using the old NPA-NXX).

However, since NPA Split processing could take a lengthy period of time to accomplish (in almost all instances thousands of SVs need to be updated), what is the expected NPAC behavior for Service Provider requests that are sent during this Split processing window of time (i.e., before the start of PDP)? Some of the NPAC responses may be processed and returned prior to the start of PDP, while others may be processed and returned shortly after the start of PDP (e.g., several seconds or a minute or more later). Additionally, on the Service Provider side, what is the expected behavior and response for audits that are sent to the LSMS during this NPA Split processing window of time? The same issue applies at the end of PDP.

With this change order, the behavior of the NPAC would be clearly defined for requests that are sent/received/processed/returned during the Split processing window immediately before/during/after the start of PDP and the end of PDP.

Description of Change:

There was group consensus that NPAC behavior would not change until the start of permissive dialing. An example would be an audit that occurred during split processing one-minute before the start of permissive dialing. The NPAC should act as if permissive dialing has not yet started for the audit initiated during split processing. The Split processing should have no effect on operations of the system.

A clarification requirement should be added as follows:

NPAC SMS shall process requests during split processing prior to the start of permissive dialing as if the split processing has not yet occurred.

Additional clarification requirement:

NPAC SMS shall in a download request made after permissive dialing start for subscription version data sent prior to permissive dialing start, return the new NPA-NXX for subscription versions involved in an NPA Split.

The following questions need to be answered by vendors:

- What will the SOA do if it sends an old NPA-NXX prior to PDP and the NPAC returns the new SV with the new NPA-NXX? What would happen for a create/audit/query?
- What will LSMS systems do if an audit is sent for new NPA prior to PDP?
- Are there LSMS that will not be able to handle audits on new NPA-NXX right at the start of PDP?
- How long does it take for NPAC/SOA/LSMS to split an NPA-NXX?
- What is the NPAC behavior for recovery spanning time before & after PDP?
- If NPAC splits starting at midnight and SOA sends new NPA-NXX for an NPA-NXX not in split what would happen?

After reviewing the above questions. It was determined that the NPAC should act as if the split had not occurred during split processing prior to permissive dialing.

A matrix of answers received above has been created.

The table describes the behavior for the NPAC SMS as agreed upon for NPA Splits. Service Providers and SOA, LSMS and NPAC Vendors need to evaluate this and insure this is their understanding. We need to insure that this behavior is covered in the requirements and if it is not create requirements. We may want to consider adding this table to the FRS in addition to the existing requirements to provide an overview of the behavior.

Split Scenarios	Prior to PDP Start	During PDP	After PDP Completion
New NPA-NXX SV Create	<p>If a TN create is sent to the NPAC SMS with the new NPA for an NPA-NXX that is involved in a split prior to PDP, the NPAC SMS will:</p> <ul style="list-style-type: none"> Accept and process the new NPA-NXX port request, storing and returning the SV with the new NPA-NXX, as long as the due date is greater than or equal to the effective date of the NPA-NXX. 	<p>If a TN create is sent to the NPAC SMS with the new NPA for an NPA-NXX that is involved in a split during PDP, the NPAC SMS will:</p> <ul style="list-style-type: none"> Accept and process the new NPA-NXX port request, storing and returning the SV with the new NPA-NXX. 	<p>If a TN create is sent to the NPAC SMS with the new NPA for an NPA-NXX that is involved in a split after PDP completes, the NPAC SMS will:</p> <ul style="list-style-type: none"> Accept and process the request, storing and returning the SV with the new NPA-NXX.
Old NPA-NXX SV Create	<p>If a TN create is sent to the NPAC SMS with the old NPA for an NPA-NXX that is involved in a split prior to PDP, the NPAC SMS will:</p> <ul style="list-style-type: none"> Accept and process the port request, storing and returning the SV with the old NPA-NXX (normal processing). 	<p>If a TN create is sent to the NPAC SMS with the old NPA for an NPA-NXX that is involved in a split during PDP, the NPAC SMS will:</p> <ul style="list-style-type: none"> Accept and process the port request, storing the SV with the new NPA-NXX and sending the new NPA-NXX in SOA notification messages associated with the SV. 	<p>If a TN create is sent to the NPAC SMS with the old NPA for an NPA-NXX that is involved in a split after PDP completion, the NPAC SMS will:</p> <ul style="list-style-type: none"> Accept and process the old NPA-NXX port, storing and returning the SV with the old NPA-NXX, if the old NPA-NXX is still a valid NPA-NXX that is open for porting.
New NPA-NXX SV Activate, Modify, Modify-Pending, Conflict, Cancel, Disconnect	<p>If a TN request is sent to the NPAC SMS with the new NPA for an NPA-NXX that is involved in a split prior to PDP, the NPAC SMS will:</p> <p>Reject the activate, modify, modify-pending, conflict, cancel or disconnect request because the SV would not yet be associated with the new NPA-NXX if it was not created with the new NPA-NXX.</p> <p>If a modify, modify pending, conflict or cancel were sent for a pending TN in the new NPA-</p>	<p>If a TN request is sent to the NPAC SMS with the new NPA for an NPA-NXX that is involved in a split during PDP, the NPAC SMS will:</p> <p>Accept and process the request for the activate, modify, modify-pending, conflict, cancel or disconnect for the TN.</p>	<p>If a TN request is sent to the NPAC SMS with the new NPA for an NPA-NXX that is involved in a split after PDP completes, the NPAC SMS will:</p> <p>Accept and process the request for activate, modify, modify-pending, conflict, cancel or disconnect for the TN.</p>

Split Scenarios	Prior to PDP Start	During PDP	After PDP Completion
	<p>NXX it would be accepted and processed.</p> <p>An activate or a disconnect request for a TN in the new NPA-NXX would not be valid since that NPA-NXX would not yet be effective. The effective date of the new NPA-NXX must be the start of permissive dialing per the NPAC SMS requirements.</p>		
<p>Old NPA-NXX SV Activate, Modify, Modify-Pending, Conflict, Cancel, Disconnect</p>	<p>If a TN request is sent to the NPAC SMS with the old NPA for an NPA-NXX that is involved in a split prior to PDP, the NPAC SMS will:</p> <p>Accept and process the request for the activate, modify, modify-pending, conflict, cancel or disconnect for the TN.</p>	<p>If a TN request is sent to the NPAC SMS with the old NPA for an NPA-NXX that is involved in a split during PDP, the NPAC SMS will:</p> <p>Accept and process the request for the activate, modify, modify-pending, conflict, cancel or disconnect for the new TN.</p>	<p>If a TN request is sent to the NPAC SMS with the old NPA for an NPA-NXX that is involved in a split after PDP completion, the NPAC SMS will:</p> <p>The activate, modify, modify-pending, conflict, cancel or disconnect would be rejected unless there was a new pending/active port created in the old NPA-NXX after PDP completion.</p>
<p>New NPA-NXX Audit</p>	<p>If an audit request is sent to the NPAC SMS with the new NPA for an NPA-NXX that is involved in a split prior to PDP, the NPAC SMS will:</p> <p>Accept and process the audit request for the New NPA-NXX despite the fact that the NPA-NXX is not yet effective. Note: The NPAC SMS does not, and the LSMSs should not, have subscription versions for the new NPA-NXX.</p>	<p>If an audit request is sent to the NPAC SMS with the new NPA for an NPA-NXX that is involved in a split during PDP, the NPAC SMS will:</p> <p>Accept and process the audit request for the New NPA-NXX.</p>	<p>If an audit request is sent to the NPAC SMS with the new NPA for an NPA-NXX that is involved in a split after PDP completes, the NPAC SMS will:</p> <p>Accept and process the audit request for the New NPA-NXX.</p>
<p>Old NPA-NXX Audit</p>	<p>If an audit request is sent to the NPAC SMS with the old NPA for an NPA-NXX that is involved in a split prior to PDP, the NPAC SMS will:</p>	<p>If an audit request is sent to the NPAC SMS with the old NPA for an NPA-NXX that is involved in a split during PDP, the NPAC SMS will:</p>	<p>If an audit request is sent to the NPAC SMS with the old NPA for an NPA-NXX that is involved in a split after PDP completion, the NPAC SMS will:</p>

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Split Scenarios	Prior to PDP Start	During PDP	After PDP Completion
	Accept and process the audit request for the Old NPA-NXX.	Accept and process the audit request for the Old NPA-NXX.	Accept and process the audit request for the Old NPA-NXX if the Old NPA-NXX is still a valid NPA-NXX in the NPAC SMS. Otherwise the audit request would be rejected.
New NPA-NXX LSMS – Creates, Deletes, Modifies	The NPAC SMS will not send any creates, deletes, or modifies to the LSMS for the New NPA-NXX prior to PDP due to the fact that the New NPA-NXX effective date would not be greater than the start of PDP (per the requirements).	If a TN request is sent from the SOA for the New NPA-NXX that is involved in a split during PDP, the NPAC SMS will send the New NPA-NXX to the LSMS.	If a TN request is sent from the SOA for the New NPA-NXX that is involved in a split after PDP, the NPAC SMS will send the new NPA-NXX to the LSMS.
Old NPA – NXX LSMS – Creates, Deletes, Modifies	If a TN request is sent from the SOA for the Old NPA-NXX that is involved in a split prior to PDP, the NPAC SMS will send the old NPA-NXX.	If a TN request is sent from the SOA for the old NPA-NXX that is involved in a split during PDP, the NPAC SMS will always send the new NPA-NXX.	If a TN request is sent from the SOA for an Old NPA-NXX that is involved in a split after PDP, the NPAC SMS will send the Old NPA-NXX, provided that the Old NPA-NXX is still a valid NPA-NXX in the NPAC SMS. If the Old NPA-NXX is not valid, the request will be rejected.
New NPA-NXX LSMS Queries	If a TN query request is sent by the LSMS for the New NPA-NXX that is involved in a split prior to PDP, the NPAC SMS would always return no subscription versions. No subscription versions would be returned due to the fact that there would be no active subscription versions because the new NPA-NXX would not have reached its effective date.	If a TN request is sent from the LSMS for the New NPA-NXX that is involved in a split during PDP, the NPAC SMS will always return the subscription versions in the new NPA-NXX.	If a TN query request is sent from the LSMS for the New NPA-NXX that is involved in a split after PDP, the NPAC SMS will always return the subscription versions in the new NPA-NXX.
Old NPA – NXX LSMS Queries	If a TN query request is sent from the LSMS for an Old NPA-NXX that is involved in a split prior to PDP, the NPAC SMS will always return the subscription versions in the Old NPA-NXX.	If a TN query request is sent from the LSMS for an Old NPA-NXX that is involved in a split during PDP, the NPAC SMS will always return the subscription versions in the new NPA-NXX except in cases where the query spans multiple NPAs. In cases where a query spans multiple NPAs, the Old NPA-NXXs specified are not	If a TN query request is sent from the LSMS for the Old NPA-NXX that is involved in a split after PDP, the NPAC SMS will always return the subscription versions in the Old NPA-NXX if the Old NPA-NXX is still a valid NPA-NXX in the NPAC SMS. If the Old NPA-NXX is not valid, then the request will be

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Split Scenarios	Prior to PDP Start	During PDP	After PDP Completion
		converted to the new NPA-NXX.	rejected.

It was discussed that this clarification requirement would have to be implemented by SOA, LSMS, and NPAC vendors. This requirement would shorten the window when errors could occur for the change of an NPA. It was requested that we review and document on behavior in the following situations: When the NPAC receives a request sent before the split after the split start, how should it respond? Also when an SOA or LSMS receives a request sent before the split after the split start, how should it respond?

IIS flows for error scenarios will be created. If an activate using the new NPA-NXX is received by the NPAC SMS before PDP it will be rejected. If an SV using the old NPA-NXX is received after the end of PDP it will be treated as the old NPA-NXX if that NPA- NXX is still a valid portable NPA-NXX in the NPAC SMS, otherwise it will be rejected. Download requests after the start of PDP for information occurring before PDP should reflect the new NPA- NXX for subscription versions involved in a Port.

Requirements:

Req 1 Request Processing during Split Processing Prior to Permissive Dialing Period Start

NPAC SMS shall process requests during split processing prior to the start of the permissive dialing period as if the split processing has not yet occurred.

Req 2 Download Requests Made After Permissive Dialing Period Start for Subscription Version Data Sent Prior to Permissive Dialing Period Start

NPAC SMS shall, in a download request made after the start of the permissive dialing period, for subscription version data sent prior to permissive dialing start, return the new NPA-NXX for subscription versions involved in a NPA Split.

Subscription Version Processing Prior to Permissive Dialing Start

Req 3 Subscription Version Creates with the New NPA for an NPA-NXX that is Part of a NPA Split Prior to Permissive Dialing Period Start

NPAC SMS shall accept, process, store, and return a Subscription Version create request for a TN that contains the new NPA of an NPA-NXX that is part a NPA split prior to the start of the permissive dialing period as long as the due date is greater than or equal to the effective date of the NPA-NXX.

Req 4 Subscription Version Modify Pending with the New NPA for an NPA-NXX that is Part of a NPA Split Prior to Permissive Dialing Period Start

NPAC SMS shall reject a Subscription Version modify pending request for a TN that contains the new NPA of an NPA-NXX that is part a NPA split prior to the start of the permissive dialing period if the original create request was not made with the new NPA-NXX.

Req 5 Subscription Version Cancel with the New NPA for an NPA-NXX that is Part of a NPA Split Prior to Permissive Dialing Period Start

NPAC SMS shall reject a Subscription Version cancel request for a TN that contains the new NPA of an NPA-NXX that is part a NPA split prior to the start of the permissive dialing period if the original create request was not made with the new NPA-NXX.

Req 6 Subscription Version Activate with the Old NPA for an NPA-NXX that is Part of a NPA Split Prior to Permissive Dialing Period Start

NPAC SMS shall accept a Subscription Version activate request for a TN that contains the old NPA of an NPA-NXX that is part a NPA split prior to the start of the permissive dialing period if the original create request was made with the old NPA-NXX.

Req 7 Subscription Version Modify Activate with the Old NPA for an NPA-NXX that is Part of a NPA Split Prior to Permissive Dialing Period Start

NPAC SMS shall accept a Subscription Version modify activate request for a TN that contains the old NPA of an NPA-NXX that is part a NPA split prior to the start of the permissive dialing period if the original activate request was made with the old NPA-NXX.

Req 8 Subscription Version Modify Pending with the Old NPA for an NPA-NXX that is Part of a NPA Split Prior to Permissive Dialing Period Start

NPAC SMS shall accept a Subscription Version modify pending request for a TN that contains the old NPA of an NPA-NXX that is part a NPA split prior to the start of the permissive dialing period if the original create request was made with the old NPA-NXX.

Req 9 Subscription Version Cancel with the Old NPA for an NPA-NXX that is Part of a NPA Split Prior to Permissive Dialing Period Start

NPAC SMS shall accept a Subscription Version cancel request for a TN that contains the old NPA of an NPA-NXX that is part a NPA split prior to the start of the permissive dialing period if the original create request was made with the old NPA-NXX.

Req 10 Subscription Version Disconnect with the Old NPA for an NPA-NXX that is Part of a NPA Split Prior to Permissive Dialing Period Start

NPAC SMS shall accept a Subscription Version disconnect request for a TN that contains the old NPA of an NPA-NXX that is part a NPA split prior to the start of the permissive dialing period if the original activate request was made with the old NPA-NXX.

Subscription Version Processing After Permissive Dialing Completion

Req 11 Subscription Version Creates with the Old NPA for an NPA-NXX that is Part of a NPA Split After Permissive Dialing Period Completion

NPAC SMS shall accept, process, store, and return a Subscription Version create request for a TN that contains the old NPA of an NPA-NXX that was part a NPA split after the completion of the permissive dialing period as long as the old NPA-NXX is still a valid NPA-NXX that is open for porting.

Req 12 Subscription Version Activate with the Old NPA for an NPA-NXX that is Part of a NPA Split After Permissive Dialing Period Completion

NPAC SMS shall accept a Subscription Version activate request for a TN that contains the old NPA of an NPA-NXX that is part a NPA split after the completion of the permissive dialing period if the original create request was made with the old NPA-NXX.

Req 13 Subscription Version Modify Activate with the Old NPA for an NPA-NXX that is Part of a NPA Split After Permissive Dialing Period Completion

NPAC SMS shall accept a Subscription Version modify activate request for a TN that contains the old NPA of an NPA-NXX that is part a NPA split after the completion of the permissive dialing period if the original activate request was made with the old NPA-NXX.

Req 14 Subscription Version Modify Pending with the Old NPA for an NPA-NXX that is Part of a NPA Split After Permissive Dialing Period Completion

NPAC SMS shall accept a Subscription Version modify pending request for a TN that contains the old NPA of an NPA-NXX that is part a NPA split after the completion of the permissive dialing period if the original create request was made with the old NPA-NXX.

Req 15 Subscription Version Cancel with the Old NPA for an NPA-NXX that is Part of a NPA Split After Permissive Dialing Period Completion

NPAC SMS shall accept a Subscription Version cancel request for a TN that contains the old NPA of an NPA-NXX that is part a NPA split after the completion of the permissive dialing period if the original create request was made with the old NPA-NXX.

Req 16 Subscription Version Disconnect with the Old NPA for an NPA-NXX that is Part of a NPA Split After Permissive Dialing Period Completion

NPAC SMS shall accept a Subscription Version disconnect request for a TN that contains the old NPA of an NPA-NXX that is part a NPA split after the completion of the permissive dialing period if the original activate request was made with the old NPA-NXX.

Audits Prior to Permissive Dialing Period Start

Req 17 Audit Request for the New NPA-NXX Prior to Permissive Dialing Period Start

NPAC SMS shall accept and process an audit request for a new NPA-NXX that is part of a NPA Split prior to the start of the permissive dialing period.

Note: The NPAC SMS does not, and the LSMSs should not, have active subscription versions for the new NPA-NXX that is part of a NPA Split prior to start of the permissive dialing period.

Audits After Permissive Dialing Period Completion

Req 18 Audit Request for the Old NPA-NXX After Permissive Dialing Period Completion

NPAC SMS shall accept and process an audit request for an old NPA-NXX that is part of a NPA Split prior after the completion of the permissive dialing period if the old NPA-NXX is still a valid NPA-NXX in the NPAC SMS.

Queries Prior to Permissive Dialing Period Start

Req 19 Query Request Using the New NPA-NXX Prior to Permissive Dialing Period Start

NPAC SMS shall respond to an LSMS Subscription Version query using the new NPA-NXX that is part of a NPA Split prior to the start of the permissive dialing period with no subscription versions.

Note: No Subscription Versions would be returned due to the fact that there would be no active Subscription Versions because the new NPA-NXX effective date would not have been reached.

Queries After Permissive Dialing Period Completion

Req 20 Query Request Using the Old NPA-NXX After Permissive Dialing Period Completion

NPAC SMS shall respond to an LSMS Subscription Version query using the old NPA-NXX that is part of a NPA Split after the completion of the permissive dialing period with subscription versions in the old NPA-NXX if the old NPA-NXX is still a valid NPA-NXX in the NPAC SMS and active Subscription Versions exist for the old NPA-NXX.

Action Item for Service Providers:

Service Providers to discuss this change order internally and determine if they have experienced porting problems due to NPA Split processing, the consequence, how they resolved the problem, and how they would like to see this change order implemented (i.e. industry quiet period).

IIS

TBD

GDMO

TBD

ASN.1

TBD

M&P

TBD

Origination Date: 2/28/1998

Originator: AGCS

Change Order Number: NANC 200

Description: Notification of NPA Splits

Cumulative SP Priority, Weighted Average:

Pure Backwards Compatible: NO

Functional Backwards Compatible: YES (With or without sunset?)

IMPACT/CHANGE ASSESSMENT

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

Business Need:

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

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

Description of Change:

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

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

Requirements:

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

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

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

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

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

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

Req 4 – NPA Split – Filters for NPA Split Notification

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

Req 5 – NPAC Customer SOA NPA Split Notification Indicator

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

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

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

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

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

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

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

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

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

Req 10 – NPAC Customer LSMS NPA Split Notification Indicator

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

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

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

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

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

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

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

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

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

RR6-29 Notification Recovery

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

- subscriptionVersionNewNPA-NXX
- subscriptionVersionDonorSP-CustomerDisconnectDate
- subscriptionVersionAudit-DiscrepancyRpt
- subscriptionAuditResults
- InpNPAC-SMS-Operational-Information
- subscriptionVersionNewSP-CreateRequest (time sensitive T1 New SP)
- subscriptionVersionOld-SP-ConcurrenceRequest (time sensitive T1 Old SP)
- subscriptionVersionOldSPFinalWindowExpiration (time sensitive T2 Old SP)
- subscriptionVersionStatusAttributeValueChange
- numberPoolBlockStatusAttributeValueChange
- attributeValueChange

- objectCreation
- objectDeletion
- *InpNetworkNPA-SplitInformation (if supported by the recovering SP)*
- For a complete list of notifications reference the IIS.

IIS:

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

New flow is shown below:

B.4.5.x NPA Split Processing Notification

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

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

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

GDMO:

-- 11.0 LNP Network Managed Object Class

```

InpNetwork MANAGED OBJECT CLASS
  DERIVED FROM "CCITT Rec. X.721 (1992) | ISO/IEC 10165-2 : 1992":top;
  CHARACTERIZED BY
    InpNetworkPkg;
  CONDITIONAL PACKAGES
    InpDownloadPkg PRESENT IF
      !the object is instantiated on the NPAC SMS!;
```

lnpNetworkNPA-SplitInformationPkg 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".

 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 "deletel", an affected-NXX was removed from the NPA split.

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

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

!;

ASN.1:

```
DownloadReason ::= ENUMERATED {  
    new1 (0),  
    deletel(1),  
    modified (2),  
    audit-discrepancy (3),  
    start-pdp (4),  
    end-pdp (5)  
}  
  
lnpNetworkNPA-SplitInformation ::= SEQUENCE {  
    service-prov-id ServiceProvId,  
    new-mpa NPA,
```

```

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

InpNetworkNPA-SplitInformationRecovery ::= SEQUENCE {
    service-prov-id ServiceProvId,
    new-mpa MPA,
    old-mpa MPA,
    affected-nxx NXX,
    download-reason DownloadReason,
    mpac-completion-time GeneralizedTime
}

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

        lsms [1] SET OF SEQUENCE {
            managedObjectClass ObjectClass,
            managedObjectInstance ObjectInstance,
            notification CHOICE {
                subscription-version-new-mpa-nxx [1] VersionNewMPA-NXX-Recovery,
                inp-mpac-sms-operational-information [2]
                    NPAC-SMS-Operational-InformationRecovery
                inp-network-mpa-split-information [3]
                    InpNetworkMPA-SplitInformationRecovery
            }
        },
        soa [2] SET OF SEQUENCE {
            managedObjectClass ObjectClass,
            managedObjectInstance ObjectInstance,
            notification CHOICE {
                subscription-version-new-mpa-nxx [1] VersionNewMPA-NXX-Recovery,
                subscription-version-donor-sp-customer-disconnect-date [2]
                    VersionCustomerDisconnectDateRecovery,
                subscription-version-audit-discrepancy-report [3]
                    AuditDiscrepancyRptRecovery,
                subscription-audit-results [4] AuditResultsRecovery,
                inp-mpac-sms-operational-information [5]
                    NPAC-SMS-Operational-InformationRecovery,
                subscription-version-new-sp-create-request [6]
                    VersionNewSP-CreateRequestRecovery,
                subscription-version-old-sp-concurrence-request [7]
                    VersionOldSP-ConcurrenceRequestRecovery,
                subscription-version-old-sp-final-window-expiration [8]
                    VersionOldSPFinalConcurrenceWindowExpirationRecovery,
                subscription-version-cancellation-acknowledge-request [9]
                    VersionCancellationAcknowledgeRequestRecovery,

```

```
subscriptionVersionStatusAttributeValueChange [10]
    VersionStatusAttributeValueChangeRecovery,
attribute-value-change [11] AttributeValueChangeInfo,
object-creation [12] ObjectInfo,
object-deletion [13] ObjectInfo,
numberPoolBlockStatusAttributeValueChange [14]
    NumberPoolBlockStatusAttributeValueChangeRecovery,
lnp-network-mpa-split-information [15]
    lnpNetworkMPA-SplitInformationRecovery
    }
    }
} OPTIONAL
}
```

NXX ::= NumberString(SIZE(3))

M&P:

TBD

Origination Date: 5/22/1998
Originator: Sprint
Change Order Number: NANC 217
Description: Mass Update of SPID
Cumulative SP Priority, Weighted Average:
Functional Backwards Compatible: NO

IMPACT/CHANGE ASSESSMENT

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

Business Need:

Currently the NPAC does not have the ability to broadcast a mass update on SPID. SPs are experiencing the need to change the SPID on ported telephone numbers. Examples that cause this situation for SPs are mergers, service area trading, data system consolidations, etc. In order make SPID change for given ported telephone numbers, the current NPAC operation requires each involved active ported telephone numbers to be deleted, and each involved pending telephone numbers to be cancelled. During the transition period, call routing can be affected and customer service is impacted. Once these actions have been taken and the NPAC network data updated, the active and pending ported telephone numbers information must be re-created. This functionality causes the customer to be out of service during this process and also increase the porting traffic over the interface.

This Change Order would allow the NPAC to perform this functionality without affecting the customer while reducing porting traffic over the interface.

Description of Change:

It has been requested that Mass Update functionality be enhanced to allow SPID to be changed for all network data and subordinate subscription data. The current NPAC functionality allows mass updates to LRN, GTT data, and optional data (e.g., billing ID) for all active subscriptions currently serviced by that specific Service Provider, by NPA-NXX.

Having this functionality would facilitate a situation where one Service Provider (SP1) purchases/merges with another Service Provider (SP2), and all LNP data needs to be consolidated into a single SPID (on the NPAC).

Today, the NPAC requires all active subscriptions to be disconnected, and all pending subscriptions to be cancelled, by NPA-NXX for all NPA-NXXs owned by SP2. Next, SP2 would delete all LRNs, then delete all NPA-NXXs. SP1 would then have to add the NPA-NXXs and

LRNs that were just deleted by SP2. Finally, the pending and activated SVs would need to be “re-created” under the presumption that SP1 is now the code holder for the NPA-NXXs.

The proposed solution with this change order is the NPAC would perform all of this processing “under the sheets”, and not require SP1 and SP2 to perform all of these steps. The issue of notifications (whether to send or suppress) is NOT addressed at this point in time.

After further analysis it was determined that the current NPAC implementation includes 23 tables that contain a customer SPID. Each will have to be addressed (at a business level) to determine correct NPAC processing should the SPID be modified.

The other issues to determine include:

1. length of time to complete this update.
2. which notifications need to be sent out over the SOA interface, since we are modifying numerous objects.
3. what do we do with current Network and Subscription records (update them with new SPID; or create new ones for the new SPID, and move the previous ones to OLD).

After much discussion on the 7/8/98 telecon, it was decided that the scope of this change order is huge, and it’s frequency of use is undetermined at this point in time (speculation is relatively small).

Additionally, AT&T requested that all SPs look at the possibility of performing some type of database migration/conversion instead of having the NPAC perform all of the updates, then have to broadcast to all SPs. The database migration/conversion could potentially be accomplished by using a new NPAC “bulk download file” to update the local database.

The current position for this change order is to have a brief discussion at the Wed, 7/15 meeting in Chicago. The group will seek volunteers for a sub-committee to further analyze this change order in the context of how to accomplish a “merger” using today’s functionality, and investigate potential solutions using a “bulk download file” approach, and a full NPAC solution with notifications across the interface. Participants include, AT&T (Beth), Bellcore (John), ESI (Jim), GTE (Gene), MCI (Gustavo), PacBell (Jackie), and Sprint (Dave).

The subcommittee will also talk about the potential of a "partial cut" from one SPID to another (possibly do on a market by market basis, or NPA by NPA basis). During the 11/23/98 telecon, it was determined that Beth’s proposed short term solution would not be easy to accomplish. Details on the telecon will be available at the Dec LNPAWG meeting.

Dec LNPAWG (Atlanta), Mass update is the long term solution, but wanted to have short term solution. In the case of MCI and Brooks, they deleted the SVs, deleted the network data, then put it back out there under the new SPID.

What we looked at for an NPAC manual update, then produce BDD, would require code changes. Plus, BDD would be all records instead of just changed ones. Also, SVs would be modified instead of activated, so the current BDD by time range would NOT pick these up.

Current solution is customer impacting. Two long term options are the actual mass update of this change order, or having the NPAC internally update the SPID, then create appropriate BDD files that capture the changes within the time range.

Jan 00 LNPAWG meeting, the current processing approach is to have the NPAC perform this processing on the NPAC database, then when complete, create separate Bulk Data Download files for the different areas of data (i.e., NPA-NXX, LRN, NPA-NXX-X, Block, SV) that could then be used by each SOA/LSMS to update their local database. However, since this would require Service Providers to wait until the NPAC completed this processing, before they could update their own database, the new approach is for the NPAC to create Selection Input Criteria SPID Mass Update Request Files (SIC-SMURF) that could be used by the NPAC and all Service Providers as the input for everyone to update their own database. It was agreed that we no longer needed the results files.

Requirements:

Req ~~0.11~~ – 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 ~~0.22~~ – 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 ~~1.3~~ – SPID Mass Update – NPAC SMS Processing of Requested Data

NPAC SMS shall provide a mechanism to mass update SPID information according to the requested selection input criteria, when changing from one SPID to another SPID in selected NPA-NXX, LRN, and NPA-NXX-X data, and subordinate Number Pool Block and Subscription Version data in the NPAC SMS.

Req ~~2.4~~ – SPID Mass Update – Suppression of Notifications

NPAC SMS shall suppress notifications to all Service Providers via the SOA to NPAC SMS Interface and NPAC SMS to Local Interface, when performing the SPID Mass Update Request Process.

Req ~~3.5~~ – 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 3.16 – SPID Mass Update – SIC-SMURF File Names

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

Req 3.27 – SPID Mass Update – SIC-SMURF File Formats

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

Req 3.38 – SPID Mass Update – SIC-SMURF NPA-NXX File Processing

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

Req 3.49 – SPID Mass Update – SIC-SMURF LRN File Processing

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

Req 3.510 – SPID Mass Update – SIC-SMURF NPA-NXX-X File Processing

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

~~**Req 4 – SPID Mass Update – Service Provider Active Indicator**~~

~~Deleted.~~

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

~~Deleted.~~

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

~~Deleted.~~

Req 7.11 – 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 8.12 – 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~~13 – SPID Mass Update – Creation of Number Pool Block for Old Service Provider

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

Req ~~13~~14 – 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~~15 – 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~~16 – 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~~17 – SPID Mass Update – Exclusion of Data During Recovery

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

IIS:

Appendix E

SIC-SMURF NPA-NXX Download File

The SIC-SMURF NPA-NXX download file is used as input to the SPID mass update process in the NPAC SMS and all SOAs/LSMSs, to convert NPA-NXX data from the Old SPID to the New SPID. This file contains individual fields that are pipe delimited, with a carriage return(`CR`) after each SIC-SMURF NPA-NXX record.

The file name for the SIC-SMURF NPA-NXX download file will be in the format:

SIC-SMURF-NPANXX.OldSPID.NewSPID.DD-MM-YYYYHH24MISS (The SIC-SMURF-NPANXX portion is the literal string "SIC-SMURF-NPANXX". The OldSPID is the four digit ID of the Old Service Provider. The NewSPID is the four digit ID of the New Service Provider.)

The SIC-SMURF NPA-NXX file given in the example would be named:

SIC-SMURF-NPANXX.0001.0002.10-13-1996081122

EXPLANATION OF THE FIELDS IN THE SIC-SMURF NPA-NXX DOWNLOAD FILE		
Field Number	Field Name	Value in Example
1	Old Service Provider Id	0001
2	New Service Provider Id	0002
3	NPA-NXX Value	312382

SIC-SMURF LRN Download File

The SIC-SMURF LRN download file is used as input to the SPID mass update process in the NPAC SMS and all SOAs/LSMSs, to convert LRN, Block (SOA/LSMS optional), Subscription Version, and scheduled event for Block (NPAC only) data from the Old SPID to the New SPID. This file contains individual fields that are pipe delimited, with a carriage return(`CR`) after each SIC-SMURF LRN record.

The file name for the SIC-SMURF LRN download file will be in the format:

SIC-SMURF-LRN.OldSPID.NewSPID.DD-MM-YYYYHH24MISS (The SIC-SMURF-LRN portion is the literal string "SIC-SMURF-LRN". The OldSPID is the four digit ID of the Old Service Provider. The NewSPID is the four digit ID of the New Service Provider.)

The SIC-SMURF-LRN file given in the example would be named:

SIC-SMURF-LRN.0001.0002.10-13-1996081122

EXPLANATION OF THE FIELDS IN THE SIC-SMURF LRN DOWNLOAD FILE

Field Number	Field Name	Value in Example
1	Old Service Provider Id	0001
2	New Service Provider Id	0002
3	LRN Value	3123820000

SIC-SMURF NPA-NXX-X Download File

The SIC-SMURF NPA-NXX-X download file is used as input to the SPID mass update process in the NPAC SMS and all SOAs/LSMSs, to convert NPA-NXX-X data (SOA/LSMS optional) from the Old SPID to the New SPID. This file contains individual fields that are pipe delimited, with a carriage return(**CR**) after each SIC-SMURF NPA-NXX-X record.

The file name for the SIC-SMURF NPA-NXX-X download file will be in the format:

SIC-SMURF-NPANXXX.OldSPID.NewSPID.DD-MM-YYYYHH24MISS (The SIC-SMURF-NPANXXX portion is the literal string "SIC-SMURF-NPANXXX". The OldSPID is the four digit ID of the Old Service Provider. The NewSPID is the four digit ID of the New Service Provider.)

The SIC-SMURF-NPA-NXX-X file given in the example would be named:

SIC-SMURF-NPANXXX.0001.0002.10-13-1996081122

EXPLANATION OF THE FIELDS IN THE SIC-SMURF NPA-NXX-X DOWNLOAD FILE

Field Number	Field Name	Value in Example
1	Old Service Provider Id	0001
2	New Service Provider Id	0002
3	NPA-NXX-X Value	3123820

GDMO:

No change required.

ASN.1:

No change required.

M&P:

Since the SPID Mass Update Request Process is very different from the existing M&P write-up for mass update, a new section will be created in chapter 8.

The SPID Mass Update Request Process must be flash cut on NPAC and all LSMSs during an agreed upon quiet period.

Need to define M&P steps. Use current mass update process as baseline, and add changes to reflect SPID Mass Update Request Process. Call NPAC personnel to give update info (both old and new SPs). This could be at as high a level of the Old SPID to the New SPID, Old SPID for these NPAs to the New SPID, or as low a level of the Old SPID for this NPA-NXX-X to the New SPID. NPAC personnel will enter this into the GUI and use this to generate the “abbreviated format” files (with summary records, like on board, SELECTION INPUT CRITERIA SPID MASS UPDATE REQUEST FILE – SIC-SMURF). These are moved to the FTP site, and are available to the SPs. The requesting SP verifies file, and authorizes the migration. The amount of time for the migration down time is agreed upon by NPAC and all SPs on a case-by-case basis. NPAC and all SPs start their own migration process.

Assumption is NPAC is down during this migration period.

The migration process for NPAC will create an old SV for the active ones in the old SP at the time of moving to the new.

Notes:

SPs need to look internally, if there might be a billing issue on the local side.

The NPAC billing information will not be changed for days prior to mass update of SPID.

Origination Date: 6/5/1998

Originator: Sprint

Change Order Number: NANC 218

Description: Conflict Timestamp Broadcast to SOA

Cumulative SP Priority, Weighted Average:

Pure Backwards Compatible: NO

Functional Backwards Compatible: YES

IMPACT/CHANGE ASSESSMENT

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

Business Need:

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

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

Description of Change:

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

Requirements:

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

IIS:

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

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

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

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

The old service provider can only update the following attributes:

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

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

The new service provider can only update the attributes:

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

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

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

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

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

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

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

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

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

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

The new service provider can only update the attributes:

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

2. The new or old service provider SOA will issue an M-SET request for the attributes to be updated in the subscriptionVersionNPAC object. The request will be validated for an authorized service provider and validation of the attributes and values.

3. The NPAC SMS will issue an M-SET response indicating success or failure and reasons for failure.

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

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

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

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

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

1. NPAC personnel or NPAC SMS take action to set the status of a subscription to “conflict.”
2. NPAC SMS issues M-SET request to update subscriptionVersionStatus to “conflict,” subscriptionConflictTimeStamp, and subscriptionModifiedTimeStamp in the subscriptionVersionNPAC object.
3. NPAC SMS issues an M-SET response. If the M-SET fails, processing for this scenario stops.
4. NPAC SMS issues an M-EVENT-REPORT subscriptionVersionStatusAttributeValueChange to old service provider SOA.
5. The old service provider SOA returns an M-EVENT-REPORT confirmation to the NPAC SMS.
6. NPAC SMS issues subscriptionVersionStatusAttributeValueChange for status to new service provider SOA.
7. The new service provider SOA returns an M-EVENT-REPORT confirmation to the NPAC SMS.
8. NPAC SMS sends a subscriptionVersionStatusAttributeValueChange to set the old service provider’s authorization to “FALSE”. *Since the subscriptionVersionStatus was set to conflict, include the subscriptionConflictTimeStamp attribute in the broadcast.*
9. The old service provider SOA returns an M-EVENT-REPORT confirmation to the NPAC SMS.
10. NPAC SMS sends an AttributeValueChange to set the new service provider authorization to “FALSE”. *Since the subscriptionVersionStatus was set to conflict, include the subscriptionConflictTimeStamp attribute in the broadcast.*

11. The new service provider SOA returns an M-EVENT-REPORT confirmation to the NPAC SMS.
12. Once the conflict is resolved, NPAC personnel take action to remove the subscriptionVersion from conflict.
13. NPAC SMS issues an M-SET request to update the subscriptionModifiedTimeStamp and the subscriptionVersionStatus to “pending.”
14. NPAC SMS issues an M-SET response. If the M-SET fails, processing for this scenario stops.
15. NPAC SMS issues subscriptionVersionStatusAttributeValueChange for the new status to the old service provider SOA.
16. The old service provider SOA returns an M-EVENT-REPORT confirmation to the NPAC SMS.
17. NPAC SMS issues subscriptionVersionStatusAttributeValueChange for the new status to the new service provider SOA.
18. The new service provider SOA returns an M-EVENT-REPORT confirmation to the NPAC SMS.
19. NPAC SMS sends a subscriptionVersionStatusAttributeValueChange to the old service provider’s indicating the authorization has been set to “TRUE”.
20. The old service provider SOA returns an M-EVENT-REPORT confirmation to the NPAC SMS.
21. NPAC SMS sends an AttributeValueChange to the new service provider indicating the authorization has been set to “TRUE”.
22. The new service provider SOA returns an M-EVENT-REPORT confirmation to the NPAC SMS.

B.5.5.3 SubscriptionVersion Conflict: No Conflict Resolution

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

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

1. NPAC personnel or NPAC SMS take action to set a subscriptionVersionStatus to “conflict.”
2. NPAC SMS issues an M-SET request to set the subscriptionVersionStatus to “conflict,” the subscriptionConflictTimeStamp, and the subscriptionModifiedTimeStamp in the subscriptionVersionNPAC object.
3. NPAC SMS responds to M-SET. If the M-SET fails, processing stops for this scenario until the M-SET completes successfully.
4. NPAC SMS issues subscriptionVersionStatusAttributeValueChange to old service provider SOA for the new “conflict” status.
5. The old service provider SOA returns an M-EVENT-REPORT confirmation to the NPAC SMS.
6. NPAC SMS issues subscriptionVersionStatusAttributeValueChange to new service provider SOA for the “conflict” status.
7. The new service provider SOA returns an M-EVENT-REPORT confirmation to the NPAC SMS.

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

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

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

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

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

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

The old service provider SOA specifies the following valid attributes:

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

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

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

GDMO:

No change required.

ASN.1:

No change required.

M&P:

No change required.

Origination Date: 6/5/1998

Originator: AT&T

Change Order Number: NANC 219

Description: NPAC Monitoring of SOA/LSMS Associations

Cumulative SP Priority, Weighted Average:

Pure Backwards Compatible: YES

IMPACT/CHANGE ASSESSMENT

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

Business Need:

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

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

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

Description of Change:

It has been requested that NPAC Monitoring of SOA and LSMS associations be put into the NPAC SMS at the application (CMIP) layer. The approach suggested by the requestor would be to alarm whenever aborts are received or sent by the NPAC. When these alarms occur then have

the NPAC Personnel contact the affected Service Provider (need M&Ps to document this contact procedure) to work to ensure the association is brought back up.

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

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

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

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

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

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

- Raw percentage availability
- Percent availability with adjustment for the NPAC unavailability
- “Appeal” percentage (Service Provider defined)

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

Requirements:

Association Monitoring & Logging

Req 1 – Association Monitoring

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

Req 2 – Detecting Association Aborts

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

Req 3 – Reporting Association Aborts

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

Req 4 – Logging Association Aborts Information

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

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

Req 4.55 – Logging Association Bind Information

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

Req 4.5.16 – Logging Association Bind NPAC SMS Response Information

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

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

Req 4.67 – Logging Recovery Complete Information

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

Req 5 – Deleted

Association Log Reports

Req 6.8 – Association Log Report via OpGUI

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

Req 7.9 – Association Log Report Request

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

Req 7.510 – Association Log Report Request Sort Criteria

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

Req 7.611 – Association Log Report Display

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

Req 7.712 – Display of System Status in the Association Log Report at Report Start Time

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

Req 7.813 – Display of System Status in the Association Log Report at Report End Time

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

Req 7.914 – Valid System Status Values for the Association Log Report

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

Req ~~8~~15 – Association Log Report for Service Providers

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

Req ~~9~~16 – Association Log Report Format and SPID Selection/Display

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

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

Req ~~10~~17 – Association Log Report for Individual Service Provider via LTI

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

Req ~~11~~18 – Association Log Report in Detail or Summary Format

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

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

Req ~~12~~19 – Association Log Report in Summary Format for Individual Service Provider

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

Individual LSMS Availability Report

Req ~~13~~20 – Individual LSMS Availability Report for LSMS Associations

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

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

Req ~~14~~21 – Relating of Multiple LSMS SPIDs to One Service Provider

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

Req ~~15~~22 – SPID Identifier for Service Providers with Multiple LSMS SPIDs

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

Req ~~16~~23 – Entry Mechanism for Relating Multiple LSMS SPIDs to One Service Provider

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

Req ~~17~~24 – Individual LSMS Availability Report for Service Providers with Multiple LSMS SPID Associations

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

Req ~~18~~25 – Individual LSMS Availability Report Frequency

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

Req ~~19~~26 – Entry Mechanism for Service Provider Maintenance Windows

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

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

Req ~~20~~27 – Modify Mechanism for Service Provider Maintenance Windows

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

Req ~~21~~28 – Delete Mechanism for Service Provider Maintenance Windows

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

Req ~~22-29~~ – Alarm if no Acknowledgement of Service Provider Maintenance Window

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

Req ~~23-30~~ – Entry Mechanism for NPAC SMS Down Time for the Region

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

Req ~~24-31~~ – Entry Mechanism for NPAC SMS Down Time Affecting a Specific Service Provider

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

Req ~~25-32~~ – Modify Mechanism for NPAC SMS Down Time

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

Req ~~26-33~~ – Delete Mechanism for NPAC SMS Down Time

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

Req ~~27-34~~ – Individual LSMS Availability Report Contents

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

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

7. Association Log Report Detail for the LSMS for the report month by SPID

Example report:

Individual LSMS Availability Report for September

Service Provider Id 1234

Section 1:

Input Parameters:

Service Provider: abcd

Service Provider Maintenance Windows: 09/03/00 6:00 – 18:00
09/10/00 6:00 – 12:00
09/17/00 6:00 – 12:00
09/24/00 6:00 – 12:00

NPAC Downtime Outside of Service Provider Maintenance Windows: 09/15/00 16:00 – 18:00
09/25/00 1:00 – 2:00
09/20/00 8:00 – 8:20

Section 2:

LSMS RAW PERCENT AVAILABILITY = 99.90 %

Section 3:

CALCULATIONS

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

Total minutes of Service Provider Maintenance Windows in September = 1,800 minutes
(12 hrs * 60 min * 1 day) + (6 hrs * 60 min * 3 days)

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

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

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

•
•
•

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

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

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

Section 4

LSMS NPAC ADJUSTED PERCENTAGE AVAILABILITY = 99.90 %

Section 5:

CALCULATIONS

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

Total minutes of Service Provider Maintenance Windows in September = 1,800 minutes
(12 hrs * 60 min * 1 day) + (6 hrs * 60 min * 3 days)

Total minutes of Downtime for NPAC SMS outside of Service Provider Maintenance Windows:
= 200 minutes

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

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

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

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

Section 6:

Association Log Report – Summary

System Type	SPID	Total Down Time
LSMS	1234	41 minutes

Section 7:

Association Log Report – Detail

LSMS

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

Req ~~28-35~~ – “Raw” Percentage LSMS Availability Data Logging

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

Req ~~29-36~~ – Adjusted Percentage LSMS Availability Data Logging

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

Req ~~30-37~~ – Maintenance of Data for Multiple LSMS SPIDs Reported as a Composite that become Independent LSMS SPIDs

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

Note: Historical data will not be recalculated.

Req ~~31-38~~ – Maintenance of Data for Multiple LSMS SPIDs Reported Independently that become a Composite

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

Note: Historical data will not be recalculated.

Req ~~32-39~~ – Individual LSMS Availability Report Distribution

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

Calculations to be used for the Individual LSMS Percent Availability

Req ~~33-40~~ – Calculation of Total Minutes in the Month

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

Req ~~34-41~~ – Calculation of Total Minutes of Service Provider Maintenance Window in the Month

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

Y_1 = length of extended maintenance window

Z_1 = number of extended maintenance window days per month (first Sunday only at present time)

Y_2 = length of normal scheduled maintenance window

Z_2 = number of normal scheduled maintenance window days per month (number of Sundays in month minus number of extended maintenance Sundays)

Req 35-42 – Calculation of Maximum Minutes Available for Porting in the Month.

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

Req 36-43 – Calculation of Total Minutes of LSMS Down Time for each LSMS

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

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

Req 37-44 – Calculation of LSMS Availability Time

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

Req 38-45 – LSMS Unavailability Time

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

Req 39-46 – Calculation of Down Time for Service Providers with multiple LSMS SPID Associations

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

Req 40-47 – Calculation of Total Minutes of Availability Time

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

Req 41-48 – Calculation of “Raw” Percentage for Individual LSMS Availability

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

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

Example of the Monthly Analysis:

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

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

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

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

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

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

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

Req 42-49 – Calculation of Total Minutes of NPAC SMS Down Time for the Region

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

Req 43-50 – Calculation of Percent Availability Adjusted for NPAC SMS Unavailability

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

Example of the Monthly Analysis:

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

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

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

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

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

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

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

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

Regional LSMS Availability Report

Req [44-51](#) – Regional LSMS Availability Report for Service Providers and LLCs

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

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

Req [45-52](#) – Regional LSMS Availability Report Frequency

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

Req [46-53](#) – Regional LSMS Availability Report Input Data

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

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

Req [47-54](#) – Entry Mechanism for Service Provider Appeal Data

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

Req [48-55](#) – Modify Mechanism for Service Provider Appeal Data

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

Req [49-56](#) – Delete Mechanism for Service Provider Appeal Data

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

Req [5057](#) – Regional LSMS Availability Report Content

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

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

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

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

Req [5158](#)– Regional LSMS Availability Report Delivery Format

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

Example Report:

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

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

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

Req [52-59](#)–Regional LSMS Availability Report Distribution

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

Tunables

Req [53-60](#)– LSMS Availability Report Tunable Parameter

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

Req [54-61](#)– LSMS Availability Report Tunable Parameter Usage

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

Req [55-62](#)– LSMS Availability Report Tunable Parameter Default

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

Req [56-63](#)– LSMS Availability Report Tunable Parameter Valid Values

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

Req [57-64](#)–LSMS Availability Data Storage Tunable Parameter

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

Req [58-65](#)–LSMS Availability Data Storage Tunable Parameter Default

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

Req [59-66](#)–LSMS Availability Data Storage Tunable Parameter Valid Values

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

IIS:

No change required.

GDMO:

No change required.

ASN.1:

No change required.

M&P:

TBD

Origination Date: 8/7/1998

Originator: LNPA WG

Change Order Number: NANC 227/254

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

Cumulative SP Priority, Weighted Average:

Functional Backwards Compatible: NO

IMPACT/CHANGE ASSESSMENT

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

Business Need:

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

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

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

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

Description of Change:

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

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

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

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

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

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

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

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

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

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

Requirements:

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

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

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

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

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

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

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

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

Req 5 – Subscription Version Failed SP List – Resend Excluded Service Provider Report by Current SPID via OpGUI

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

Req 6 – Subscription Version Failed SP List – Resend Excluded Service Provider Report by Current SPID Request

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

Req 7 – Subscription Version Failed SP List – Resend Excluded Service Provider Report by Current SPID Request Sort Criteria

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

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

Req 8 – Subscription Version Failed SP List – Resend Excluded Service Provider Report by Excluded SPID via OpGUI

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

Req 9 – Subscription Version Failed SP List – Resend Excluded Service Provider Report by Excluded SPID Request

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

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

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

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

IIS:

No change required.

GDMO:

```
-- 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, 'delete1' 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 both activities (all current attributes).

Origination Date: 8/12/1998

Originator: Sprint

Change Order Number: NANC 230

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

Cumulative SP Priority, Weighted Average:

Pure Backwards Compatible: NO

Functional Backwards Compatible: YES

IMPACT/CHANGE ASSESSMENT

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

Business Need:

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

Description of Change:

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

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

In this scenario, the SP should send an LISP PTO create and activate.

Requirements:

5.1.2.2.1.1 Subscription Version Creation – Inter-Service Provider Port

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

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

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

5.1.2.2.1.2 Subscription Version Creation - Intra-Service Provider Port

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

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

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

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

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

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

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

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

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

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

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

RR5-76 Create Intra- or Inter-Service Provider Port-to-Original Port – NPAC and SOA After NPA-NXX-X Creation

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

RR5-77 Create Intra- or Inter-Service Provider Port-to-Original Subscription Version – After Block Activation

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

IIS:

New flow is shown below:

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

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

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

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

- subscriptionTN or a valid subscriptionVersionTN-Range
- subscriptionNewCurrentSP
- subscriptionOldSP
- subscriptionNewSP-DueDate (seconds set to zeros)
- subscriptionPortingToOriginal-SPSwitch (set to TRUE)
- subscriptionLRN
- subscriptionCLASS-DPC
- subscriptionCLASS-SSN
- subscriptionLIDB-DPC
- subscriptionLIDB-SSN
- subscriptionCNAM-DPC
- subscriptionCNAM-SSN
- subscriptionISVM-DPC
- subscriptionISVM-SSN
- subscriptionLNPTType (set to LISP)

subscriptionWSMSC-DPC - if supported by the Service Provider SOA
subscriptionWSMSC-SSN - if supported by the Service Provider SOA

The subscriptionNewCurrentServiceProv must be equal to the subscriptionOldServiceProv.

The following attributes are optional:

subscriptionEndUserLocationValue
subscriptionEndUserLocationType
subscriptionBillingId

3. If the request is valid, the NPAC SMS will M-CREATE the subscriptionVersionNPAC object. The status will be set to “pending.” Also the subscriptionCreationTimeStamp, the subscriptionNewSP-AuthorizationTimeStamp, subscriptionOldSP-AuthorizationTimeStamp, and the subscriptionModifiedTimeStamp will be set.
4. NPAC SMS responds to M-CREATE.
5. NPAC SMS sends an action reply with success or failure and reasons for failure. If the action fails, no modifications are applied and processing stops for this scenario.
6. NPAC SMS notifies intra-service provider SOA of subscriptionVersionNPAC creation.
7. Service provider SOA sends M-EVENT-REPORT confirmation to NPAC SMS.

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

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

GDMO:

-- 11.0 LNP New Service Provider Subscription Version Create

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

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

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

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

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

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

subscriptionWSMSC-DPC
subscriptionWSMSC-SSN

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

subscriptionEndUserLocationValue
subscriptionEndUserLocationType
subscriptionBillingId

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

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

Postconditions: After this action has been executed, if

the data specified passes validation, a pending subscription version or range of subscription versions will exist in the NPAC SMS. These validations are done as follows:

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

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

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

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

LRN data is associated with the New Service Provider.

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

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

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

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

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

!;

ASN.1:

No change required.

M&P:

No change required.

Origination Date: 8/14/1998
Originator: MetroNet
Change Order Number: NANC 232
Description: Web Site for First Port Notifications
Cumulative SP Priority, Weighted Average:
Pure Backwards Compatible: YES

IMPACT/CHANGE ASSESSMENT

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

Business Need:

Currently first port notification information is a single event broadcast. SPs would like to see historical documentation of first ports available outside of SOA/LSMS/LTI interfaces. This change order would place "first port" notifications on the web, similar to the NPA-NXX openings that are on the web today.

Description of Change:

Currently all SOAs and LSMSs receive "first port" notifications. A request has been submitted to provide this information on the NPAC Web Site.

The current process does NOT send this information to the LTI user (unlike SPs that have a CMIP-based SOA), but requires the LTI user to "query" the NPAC for notifications contained in the NPAC notification log (for that specific SP). The user may also generate an NPAC report of all notifications for that SP.

The desire is to have these "first port" notifications on the web, similar to the NPA-NXX openings that are on the web today.

NOTE: This change order is similar to the existing requirements, R3-10 and R3-11 (Web bulletin board updates of NPA-NXXs and LRNs).

Jan 00 LNPAWG meeting, the group discussed the need to have the data displayed in the report format versus the current web format with the addition of the first port indicator. The final description of this change order is now, "post the NPA-NXX report on the web on a weekly basis".

Requirements:

RR3-10 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: 12/13/00

Originator: LNPA WG

Change Order Number: NANC 246

Description: NPA-NXX Filters for Bulk Data Download SV Files

Cumulative SP Priority, Weighted Average:

Pure Backwards Compatible: YES

IMPACT/CHANGE ASSESSMENT

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

Business Need:

During discussion of change order NANC 169 at the December 2000 LNPA WG it was decided to break change order NANC 246 out into a separate change order again and use it to apply filters to the Bulk Data Download file. Filters are applied to the Delta Bulk Data Download files in NANC 169.

Description of Change:

It has been requested that requirements be added to the FRS to allow for filters to be applied to the Bulk Data Download files. This would ensure that the BDD file would not contain SVs for NPA-NXXs that had the Service Provider filtered.

Requirements:

Req 1 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.

IIS

No Change Required

GDMO

No Change Required

ASN.1

No Change Required

M&P

TBD (Currently the M&Ps do not address use of filters in BDDs)

Origination Date: 12/9/1998

Originator: Sprint

Change Order Number: NANC 249

Description: Modification of Dates for a Disconnect Pending SV

Cumulative SP Priority, Weighted Average:

Pure Backwards Compatible: NO

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

IMPACT/CHANGE ASSESSMENT

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

Business Need:

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

Description of Change:

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

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

Requirements:

R5-25 Modify Subscription Version - Invalid Version Status Notification

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

Req 1 Modify Disconnect Pending Subscription Version - Input Data

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

- Customer Disconnect Date
- Effective Release Date

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

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

- Customer Disconnect Date
- Effective Release Date

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

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

Req 3 Modify Disconnect Pending Subscription Version - Version Identification

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

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

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

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

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

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

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

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

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

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

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

Note: If changing the Customer Disconnect Date, the date must be populated. If not changing the date, assume the date stays with the previous value.

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

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

IIS:

New flow is shown below:

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

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

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

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

The current service provider can only modify the following attributes:

subscriptionCustomerDisconnectDate
subscriptionEffectiveReleaseDate

2. Current service provider SOA issues M-ACTION ModifySubscriptionVersion to the NPAC SMS lnpSubscriptions object to update the disconnect pending version. The NPAC SMS validates the data.
3. If the M-ACTION data validates, NPAC SMS issues M-SET to the subscriptionVersionNPAC. The subscriptionModifiedTimeStamp is set, and any other modified attributes are updated.
4. NPAC SMS issues M-SET response indicating success or failure.
5. NPAC SMS replies to the M-ACTION with success or failure and reasons for failure to the service provider SOA. If the action fails, no modifications are applied and processing stops. Failure reasons include accessDenied (not the current service provider) and invalidArgumentValue (validation problems).

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

GDMO:

-- 7.0 LNP Subscription Version Modify Action

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

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

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

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

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

Service Providers can modify attributes associated with active,

pending, **disconnect-pending** or conflict subscription versions.

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

subscriptionOldSP-DueDate
subscriptionOldSP-Authorization
subscriptionStatusChangeCauseCode

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

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

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

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

subscriptionWSMSC-DPC
subscriptionWSMSC-SSN

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

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

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

subscriptionLRN
subscriptionCLASS-DPC
subscriptionCLASS-SSN
subscriptionLIDB-DPC
subscriptionLIDB-SSN
subscriptionCNAM-DPC
subscriptionCNAM-SSN
subscriptionISVM-DPC
subscriptionISVM-SSN

subscriptionEndUserLocationValue
subscriptionEndUserLocationType
subscriptionBillingId

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

subscriptionWSMSC-DPC
subscriptionWSMSC-SSN

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

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

**subscriptionCustomerDisconnectDate
subscriptionEffectiveReleaseDate**

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

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

!;

ASN.1:

```
subscriptionModifyData ::= SEQUENCE {  
    subscription-lrn [0] LRN OPTIONAL,  
    subscription-new-sp-due-date [1] GeneralizedTime OPTIONAL,  
    subscription-old-sp-due-date [2] GeneralizedTime OPTIONAL,  
    subscription-old-sp-authorization [3] ServiceProvAuthorization OPTIONAL,  
    subscription-class-dpc [4] EXPLICIT DPC OPTIONAL,  
    subscription-class-ssn [5] EXPLICIT SSN OPTIONAL,  
    subscription-lidb-dpc [6] EXPLICIT DPC OPTIONAL,  
}
```

subscription-lidb-ssn [7] EXPLICIT SSN OPTIONAL,
 subscription-isvm-dpc [8] EXPLICIT DPC OPTIONAL,
 subscription-isvm-ssn [9] EXPLICIT SSN OPTIONAL,
 subscription-cnam-dpc [10] EXPLICIT DPC OPTIONAL,
 subscription-cnam-ssn [11] EXPLICIT SSN OPTIONAL,
 subscription-end-user-location-value [12] EndUserLocationValue OPTIONAL,
 subscription-end-user-location-type [13] EndUserLocationType OPTIONAL,
 subscription-billing-id [14] BillingId OPTIONAL,
 subscription-status-change-cause-code [15]
 SubscriptionStatusChangeCauseCode OPTIONAL,
 subscription-wsmc-dpc [16] EXPLICIT DPC OPTIONAL,
 subscription-wsmc-ssn [17] EXPLICIT SSN OPTIONAL,
subscription-customer-disconnect-date [18] GeneralizedTime OPTIONAL,
subscription-effective-release-date [19] GeneralizedTime OPTIONAL
 }

SubscriptionModifyInvalidData ::= CHOICE {
 subscription-lrn [0] EXPLICIT LRN,
 subscription-new-sp-due-date [1] EXPLICIT GeneralizedTime,
 subscription-old-sp-due-date [2] EXPLICIT GeneralizedTime,
 subscription-old-sp-authorization [3] EXPLICIT ServiceProvAuthorization,
 subscription-class-dpc [4] EXPLICIT DPC,
 subscription-class-ssn [5] EXPLICIT SSN,
 subscription-lidb-dpc [6] EXPLICIT DPC,
 subscription-lidb-ssn [7] EXPLICIT SSN,
 subscription-isvm-dpc [8] EXPLICIT DPC,
 subscription-isvm-ssn [9] EXPLICIT SSN,
 subscription-cnam-dpc [10] EXPLICIT DPC,
 subscription-cnam-ssn [11] EXPLICIT SSN,
 subscription-end-user-location-value [12] EXPLICIT EndUserLocationValue,
 subscription-end-user-location-type [13] EXPLICIT EndUserLocationType,
 subscription-billing-id [14] EXPLICIT BillingId,
 subscription-status-change-cause-code [15]

EXPLICIT SubscriptionStatusChangeCauseCode,
subscription-wsmc-dpc [16] EXPLICIT DPC,
subscription-wsmc-ssn [17] EXPLICIT SSN,
subscription-customer-disconnect-date [18] GeneralizedTime OPTIONAL,
subscription-effective-release-date [19] GeneralizedTime OPTIONAL
}

M&P:

No change required.

Origination Date: 5/12/1998

Originator: LNPAWG

Change Order Number: NANC 285

Description: SOA/LSMS Requested Subscription Version Query Max Size

Cumulative SP Priority, Weighted Average:

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	Med-High	Med-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: 5/27/1999

Originator: AT&T

Change Order Number: NANC 287

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

Cumulative SP Priority, Weighted Average:

Pure Backwards Compatible: NO

Functional Backwards Compatible: YES (With or without sunset?)

IMPACT/CHANGE ASSESSMENT

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

Business Need:

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

Description of Change:

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

Requirements:

No change required.

IIS:

No change required.

GDMO:

No change required.

ASN.1:

See below.

Current asn.1:

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

Proposed:

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

Current asn.1:

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

Proposed:

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

M&P:

No change required.

Origination Date: 7/7/1999

Change Order Number: NANC 291

Description: SSN Edits in the NPAC SMS

Cumulative SP Priority, Weighted Average:

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

IMPACT/CHANGE ASSESSMENT

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

Business Need:

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

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

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

Description of Change:

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

Description of Issue:

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

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

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

Proposed Change Order:

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

Requirements:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Req 17 – DPC/SSN Edits – LIDB SSN Edit Flag Indicator Default

NPAC SMS shall default the LIDB SSN Edit Flag Indicator to **TRUE**.

Req 18 – DPC/SSN Edits – CNAM SSN Edit Flag Indicator Default

NPAC SMS shall default the CNAM SSN Edit Flag Indicator to **TRUE**.

Req 19 – DPC/SSN Edits – ISVM SSN Edit Flag Indicator Default

NPAC SMS shall default the ISVM SSN Edit Flag Indicator to **TRUE**.

Req 20 – DPC/SSN Edits – WSMSC SSN Edit Flag Indicator Default

NPAC SMS shall default the WSMSC SSN Edit Flag Indicator to **TRUE**.

IIS:

No change required.

GDMO:

-- 21.0 LNP NPAC Subscription Version Managed Object Class

subscriptionVersionNPAC MANAGED OBJECT CLASS

...

subscriptionVersionNPAC-Behavior BEHAVIOUR
DEFINED AS !

...

When the subscription version is created, the subscriptionBusinessType is set according to the business days and hours selection of the old and new service providers.

When the subscription version is created, modified, or mass updated and contains a DPC value, the corresponding SSN value must be set to 0 (zero).

The Service Provider SOA can M-GET and M-SET subscriptionVersionNPAC objects via the SOA to NPAC SMS interface (SOA Management Association Function). Rules for M-SET are described below.

-- 30.0 Number Pool Block NPAC Data Managed Object Class

--

numberPoolBlockNPAC MANAGED OBJECT CLASS

...

numberPoolBlockNPAC-Behavior BEHAVIOUR
DEFINED AS !

...

The numberPoolBlockFailed-SP-List is set when a failure occurs in sending to the LSMSs. It contains the list of EDR and non-EDR service provider IDs who failed to successfully respond to the broadcasted data.

When the numberPoolBlock is created, modified, or mass updated and contains a DPC value, the corresponding SSN value must be set to 0 (zero).

Service providers can M-GET any numberPoolBlockNPAC object from the LSMS and SOA.

-- 63.0 LNP Subscription Version Class Destination Point Code

subscriptionCLASS-DPC ATTRIBUTE

WITH ATTRIBUTE SYNTAX LNP-ASN1.DPC;
MATCHES FOR EQUALITY, ORDERING;


```
BEHAVIOUR subscriptionCLASS-DPCBehavior;  
REGISTERED AS {LNP-OIDS.lnp-attribute 63};
```

```
subscriptionCLASS-DPCBehavior BEHAVIOUR  
DEFINED AS !
```

```
    This attribute is used to specify the subscription version  
    CLASS Destination Point Code.
```

```
    If the subscriptionCLASS-DPC attribute is provided, the  
    subscriptionCLASS-SSN attribute must be 0 (zero).
```

```
    The data is stored in BCD (e.g. a value of 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.
```

```
    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 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.
```

```
    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 FFFFFFF would be  
    displayed as 255.255.255).
```

```
!;
```

```
-- 77.0 LNP Subscription ISVM SSN
```

```
subscriptionISVM-SSN ATTRIBUTE  
    WITH ATTRIBUTE SYNTAX LNP-ASN1.SSN;  
    MATCHES FOR EQUALITY, ORDERING;  
    BEHAVIOUR subscriptionISVM-SSN-Behavior;  
    REGISTERED AS {LNP-OIDS.lnp-attribute 77};
```

```
subscriptionISVM-SSN-Behavior BEHAVIOUR  
DEFINED AS !
```

```
    This attribute is used to specify the ISVM SSN  
    value for the subscription version.
```

```
    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 FFFFFFF 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 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.

    If the subscriptionWSMSC-SSN attribute is provided, the
    value must be 0 (zero).

!;

-- 114.0 LNP Number Pool block Class Destination Point Code

numberPoolBlockCLASS-DPC ATTRIBUTE
  WITH ATTRIBUTE SYNTAX LNP-ASN1.DPC;
  MATCHES FOR EQUALITY, ORDERING;
  BEHAVIOUR numberPoolBlockCLASS-DPCBehavior;
  REGISTERED AS {LNP-OIDS.lnp-attribute 114};

numberPoolBlockCLASS-DPCBehavior BEHAVIOUR
  DEFINED AS !
    This attribute is used to specify the numberPoolBlock
    CLASS Destination Point Code.

    If the numberPoolBlockCLASS-DPC attribute is provided, the
    numberPoolBlockCLASS-SSN attribute must be 0 (zero).

    The data is stored in BCD (e.g. a value of FFFFFFFF would be displayed
    as 255.255.255). The valid octet values on the NPAC SMS are 000-255.

!;

-- 115.0 LNP Number Pool Block Class SSN

numberPoolBlockCLASS-SSN ATTRIBUTE
  WITH ATTRIBUTE SYNTAX LNP-ASN1.SSN;
  MATCHES FOR EQUALITY, ORDERING;
  BEHAVIOUR numberPoolBlockCLASS-SSN-Behavior;
  REGISTERED AS {LNP-OIDS.lnp-attribute 115};

numberPoolBlockCLASS-SSN-Behavior BEHAVIOUR
  DEFINED AS !
    This attribute is used to specify the numberPoolBlock
    CLASS SSN. The valid values on the NPAC SMS are 0-255.

    If the numberPoolBlockCLASS-SSN attribute is provided, the
    value must be 0 (zero).

!;

-- 116.0 LNP Number Pool Block CNAM Destination Point Code

numberPoolBlockCNAM-DPC ATTRIBUTE
  WITH ATTRIBUTE SYNTAX LNP-ASN1.DPC;
  MATCHES FOR EQUALITY, ORDERING;
  BEHAVIOUR numberPoolBlockCNAM-DPC-Behavior;
  REGISTERED AS {LNP-OIDS.lnp-attribute 116};
```

numberPoolBlockCNAM-DPC-Behavior BEHAVIOUR

DEFINED AS !

This attribute is used to specify the CNAM Destination Point Code for the numberPoolBlock.

If the numberPoolBlockCNAM-DPC attribute is provided, the numberPoolBlockCNAM-SSN attribute must be 0 (zero).

The data is stored in BCD (e.g. a value of FFFFFFFF would be displayed as 255.255.255). ~~The valid octet values on the NPAC SMS are 000-255.~~

!;

-- 117.0 LNP Number Pool Block CNAM SSN

numberPoolBlockCNAM-SSN ATTRIBUTE

WITH ATTRIBUTE SYNTAX LNP-ASN1.SSN;
MATCHES FOR EQUALITY, ORDERING;
BEHAVIOUR numberPoolBlockCNAM-SSN-Behavior;
REGISTERED AS {LNP-OIDS.lnp-attribute 117};

numberPoolBlockCNAM-SSN-Behavior BEHAVIOUR

DEFINED AS !

This attribute is used to specify the CNAM SSN value for the numberPoolBlock. The valid values on the NPAC SMS are 0-255.

If the numberPoolBlockCNAM-SSN attribute is provided, the value must be 0 (zero).

!;

-- 123.0 LNP Number Pool Block ISVM Destination Point Code

numberPoolBlockISVM-DPC ATTRIBUTE

WITH ATTRIBUTE SYNTAX LNP-ASN1.DPC;
MATCHES FOR EQUALITY, ORDERING;
BEHAVIOUR numberPoolBlockISVM-DPC-Behavior;
REGISTERED AS {LNP-OIDS.lnp-attribute 123};

numberPoolBlockISVM-DPC-Behavior BEHAVIOUR

DEFINED AS !

This attribute is used to specify the ISVM Destination Point Code for the numberPoolBlock.

If the numberPoolBlockISVM-DPC attribute is provided, the numberPoolBlockISVM-SSN attribute must be 0 (zero).

The data is stored in BCD (e.g. a value of FFFFFFFF would be displayed as 255.255.255). ~~The valid octet values on the NPAC SMS are 000-255.~~

!;

-- 124.0 LNP Number Pool Block ISVM SSN

numberPoolBlockISVM-SSN ATTRIBUTE

WITH ATTRIBUTE SYNTAX LNP-ASN1.SSN;
MATCHES FOR EQUALITY, ORDERING;
BEHAVIOUR numberPoolBlockISVM-SSN-Behavior;

REGISTERED AS {LNP-OIDS.lnp-attribute 124};

numberPoolBlockISVM-SSN-Behavior BEHAVIOUR

DEFINED AS !

This attribute is used to specify the ISVM SSN value for the numberPoolBlock. The valid values on the NPAC SMS are 0-255.

If the numberPoolBlockISVM-SSN attribute is provided, the value must be 0 (zero).

!;

-- 125.0 LNP Number Pool Block LIDB Destination Point Code

numberPoolBlockLIDB-DPC ATTRIBUTE

WITH ATTRIBUTE SYNTAX LNP-ASN1.DPC;
MATCHES FOR EQUALITY, ORDERING;
BEHAVIOUR numberPoolBlockLIDB-DPC-Behavior;
REGISTERED AS {LNP-OIDS.lnp-attribute 125};

numberPoolBlockLIDB-DPC-Behavior BEHAVIOUR

DEFINED AS !

This attribute is used to specify the LIDB Destination Point Code for the numberPoolBlock.

If the numberPoolBlockLIDB-DPC attribute is provided, the numberPoolBlockLIDB-SSN attribute must be 0 (zero).

The data is stored in BCD (e.g. a value of FFFFFFFF would be displayed as 255.255.255). ~~The valid octet on the NPAC SMS are 000-255.~~

!;

-- 126.0 LNP Number Pool Block LIDB SSN

numberPoolBlockLIDB-SSN ATTRIBUTE

WITH ATTRIBUTE SYNTAX LNP-ASN1.SSN;
MATCHES FOR EQUALITY, ORDERING;
BEHAVIOUR numberPoolBlockLIDB-SSN-Behavior;
REGISTERED AS {LNP-OIDS.lnp-attribute 126};

numberPoolBlockLIDB-SSN-Behavior BEHAVIOUR

DEFINED AS !

This attribute is used to specify the LIDB SSN value for the numberPoolBlock. The valid values on the NPAC SMS are 0-255.

If the numberPoolBlockLIDB-SSN attribute is provided, the value must be 0 (zero).

!;

-- 132.0 LNP Number Pool Block WSMSC Destination Point Code

numberPoolBlockWSMSC-DPC ATTRIBUTE

WITH ATTRIBUTE SYNTAX LNP-ASN1.DPC;
MATCHES FOR EQUALITY, ORDERING;

```
BEHAVIOUR numberPoolBlockWSMSC-DPC-Behavior;  
REGISTERED AS {LNP-OIDS.lnp-attribute 132};
```

```
numberPoolBlockWSMSC-DPC-Behavior BEHAVIOUR  
DEFINED AS !
```

This attribute is used to specify the WSMSC Destination Point Code for the numberPoolBlock.

If the numberPoolBlockWSMSC-DPC attribute is provided, the numberPoolBlockWSMSC-SSN attribute must be 0 (zero).

The data is stored in BCD (e.g. a value of FFFFFFFF would be displayed as 255.255.255). ~~The valid octet on the NPAC SMS are 000-255.~~

```
!;
```

```
-- 133.0 LNP Number Pool Block WSMSC SSN
```

```
numberPoolBlockWSMSC-SSN ATTRIBUTE  
WITH ATTRIBUTE SYNTAX LNP-ASN1.SSN;  
MATCHES FOR EQUALITY, ORDERING;  
BEHAVIOUR numberPoolBlockWSMSC-SSN-Behavior;  
REGISTERED AS {LNP-OIDS.lnp-attribute 133};
```

```
numberPoolBlockWSMSC-SSN-Behavior BEHAVIOUR  
DEFINED AS !
```

This attribute is used to specify the WSMSC SSN value for the numberPoolBlock. The valid values on the NPAC SMS are 0-255.

If the numberPoolBlockWSMSC-SSN attribute is provided, the value must be 0 (zero).

```
!;
```

```
!;
```

```
-- 7.0 LNP Subscription Version Modify Action
```

```
subscriptionVersionModify ACTION  
BEHAVIOUR  
subscriptionVersionModifyDefinition,  
subscriptionVersionModifyBehavior;  
MODE CONFIRMED;  
WITH INFORMATION SYNTAX LNP-ASN1.ModifyAction;  
WITH REPLY SYNTAX LNP-ASN1.ModifyReply;  
REGISTERED AS {LNP-OIDS.lnp-action 7};
```

```
subscriptionVersionModifyDefinition BEHAVIOUR  
DEFINED AS !
```

The subscriptionVersionModify action is the action that can be used by the SOA to modify a subscription version via the SOA to NPAC SMS interface.

```
!;
```

```
subscriptionVersionModifyBehavior BEHAVIOUR  
DEFINED AS !
```

Preconditions: This action is issued from an lnpSubscriptions object specifying the object to be modified by specifying

the subscriptionVersionId or by specifying the subscriptionTN or a range of TNs (where the stop TN in the range is greater than the start TN) and the status of the subscription version. All attribute values to be modified shall also be specified.

Postconditions: The NPAC SMS has modified the subscription version. An error will be returned to the service provider if there is no version that is modifiable or if the modification fails due to authorization of the service provider or data validation.

Subscription versions with subscriptionLNPTType equal to 'pool' cannot be specified in the action.

Service Providers can modify attributes associated with active, pending or conflict subscription versions.

Old service providers can only modify the following attributes for pending or conflict subscription versions:

subscriptionOldSP-DueDate
subscriptionOldSP-Authorization
subscriptionStatusChangeCauseCode

The subscriptionStatusChangeCauseCode is an optional field and is only specified if the subscriptionOldSP-Authorization is false.

New service providers can only modify the following attributes for pending or conflict subscription versions:

subscriptionLRN
subscriptionNewSP-DueDate
subscriptionCLASS-DPC
subscriptionCLASS-SSN
subscriptionLIDB-DPC
subscriptionLIDB-SSN
subscriptionCNAM-DPC
subscriptionCNAM-SSN
subscriptionISVM-DPC
subscriptionISVM-SSN
subscriptionEndUserLocationValue
subscriptionEndUserLocationType
subscriptionBillingId

New service providers may specify modified valid values for the following attributes, when the service provider's "SOA WSMSC DPC SSN Data" indicator is TRUE, and may NOT specify these values when the indicator is set to FALSE:

subscriptionWSMSC-DPC
subscriptionWSMSC-SSN

An SSN value of 0 (zero) must be present when its corresponding DPC value is populated, if the corresponding SSN Edit Flag Indicator is set to TRUE.

Validation will be done for both old and new service provider data that is specified for pending or conflict

subscription versions.

If validation fails no changes will be made and an error will be returned. If validation passes, the version will be modified and remain in a pending or active state.

New service providers can only modify the following attributes for active subscription versions:

subscriptionLRN
subscriptionCLASS-DPC
subscriptionCLASS-SSN
subscriptionLIDB-DPC
subscriptionLIDB-SSN
subscriptionCNAM-DPC
subscriptionCNAM-SSN
subscriptionISVM-DPC
subscriptionISVM-SSN
subscriptionEndUserLocationValue
subscriptionEndUserLocationType
subscriptionBillingId

New service providers may specify modified valid values for the following attributes, when the service provider's "SOA WSMSC DPC SSN Data" indicator is TRUE, and may NOT specify these values when the indicator is set to FALSE:

subscriptionWSMSC-DPC
subscriptionWSMSC-SSN

An SSN value of 0 (zero) must be present when its corresponding DPC value is populated, if the corresponding SSN Edit Flag Indicator is set to TRUE.

If the data specified passes validation, the modified version is immediately broadcast. The modified subscription version will have a status of sending and broadcasts will begin. If validation fails, no changes will be made and an error will be returned in the action reply.

!;

-- 11.0 LNP New Service Provider Subscription Version Create

```
subscriptionVersionNewSP-Create ACTION
  BEHAVIOUR
    subscriptionVersionNewSP-CreateDefinition,
    subscriptionVersionNewSP-CreateBehavior;
  MODE CONFIRMED;
  WITH INFORMATION SYNTAX LNP-ASN1.NewSP-CreateAction;
  WITH REPLY SYNTAX LNP-ASN1.NewSP-CreateReply;
  REGISTERED AS {LNP-OIDS.lnp-action 11};
```

```
subscriptionVersionNewSP-CreateDefinition BEHAVIOUR
  DEFINED AS !
    The subscriptionVersionNewSP-Create action is the action that is
    used via the SOA to NPAC SMS interface by the
```

new service provider to create a new subscriptionVersionNPAC.
!;

subscriptionVersionNewSP-CreateBehavior BEHAVIOUR
DEFINED AS !

Preconditions: This action is issued from an lnpSubscriptions object. Creates can be performed provided there is only one currently active subscription or no subscription version in the NPAC; otherwise an action failure will be returned.

The new service provider must specify valid values for the following attributes:

subscriptionTN or a valid subscriptionVersionTN-Range
subscriptionLRN
subscriptionNewCurrentSP
subscriptionOldSP
subscriptionNewSP-DueDate
subscriptionCLASS-DPC
subscriptionCLASS-SSN
subscriptionLIDB-DPC
subscriptionLIDB-SSN
subscriptionCNAM-DPC
subscriptionCNAM-SSN
subscriptionISVM-DPC
subscriptionISVM-SSN
subscriptionLNPTtype
subscriptionPortingToOriginal-SPSwitch

The new service provider must specify valid values for the following attributes, when the service provider's "SOA WSMSC DPC SSN Data" indicator is TRUE, and must NOT specify these values when the indicator is set to FALSE:

subscriptionWSMSC-DPC
subscriptionWSMSC-SSN

The new service provider may specify valid values for the following attributes:

subscriptionEndUserLocationValue
subscriptionEndUserLocationType
subscriptionBillingId

An SSN value of 0 (zero) must be present when its corresponding DPC value is populated, if the corresponding SSN Edit Flag Indicator is set to TRUE.

subscriptionPortingToOriginal-SPSwitch can only be specified as TRUE for a TN that is currently ported and is being ported back to the original service provider. If the value of subscriptionPortingToOriginal-SPSwitch is TRUE, the LRN and GTT data should be specified as NULL. If the variable is TRUE, when the activate occurs for the subscription version, the Local SMSs will receive a request to delete the old subscription version routing data in their networks. They will not receive any new network routing data for the subscription. Concurrence from the

old service provider is required.

If the port of the subscription version is an intra-service provider port, the new service provider can use the subscriptionVersionNewSP-Create action specifying the old service provider equal to the new service provider. In this case, the old service provider create action is not required.

Postconditions: After this action has been executed, if the data specified passes validation, a pending subscription version or range of subscription versions will exist in the NPAC SMS. These validations are done as follows:

subscriptionTN or range of TNs are valid in a range open for porting by the new service provider. TN ranges must be specified where the stop TN in the range is greater than the start TN.

subscriptionLNPTtype is specified to be "LSPP" or "LISP".

subscriptionNewSP-DueDate is a future date. If not specified, the time defaults to 00:00.00.

Old and New SP are valid service providers in the NPAC SMS.

LRN data is associated with the New Service Provider.

If a pre-existing version exists, validation will be done to insure that the new service provider previously specified is the same as the executor of the action.

If the validations succeed and the subscription version does not currently exist, a new subscription version will be created with a status of pending.

If the validations succeed and a pending subscription version exists, the new service provider create information will be applied to the existing pending subscription version.

If the validations fail, a new subscription version will not be created if one does not exist. If one already existed, it will be retained.

The action success or failure and reasons for failure will be returned in the action reply.

!;

-- 16.0 LNP Service Provider Number Pool Block Create

```
numberPoolBlock-Create ACTION
  BEHAVIOUR
    numberPoolBlock-CreateDefinition,
    numberPoolBlock-CreateBehavior;
  MODE CONFIRMED;
  WITH INFORMATION SYNTAX LNP-ASN1.NumberPoolBlock-CreateAction;
  WITH REPLY SYNTAX LNP-ASN1.NumberPoolBlock-CreateReply;
  REGISTERED AS {LNP-OIDS.lnp-action 16};
```

numberPoolBlock-CreateDefinition BEHAVIOUR

DEFINED AS !

The numberPoolBlock-Create action is the action that is used on the NPAC SMS via the SOA to NPAC SMS interface by the block holder SOA to create a new numberPoolBlockNPAC.

!;

numberPoolBlock-CreateBehavior BEHAVIOUR

DEFINED AS !

Preconditions: This action is issued from an lnpSubscriptions object.

The service provider block holder must specify valid values for the following attributes:

numberPoolBlockNPA-NXX-X
numberPoolBlockHolderSPID
numberPoolBlockLRN
numberPoolBlockCLASS-DPC
numberPoolBlockCLASS-SSN
numberPoolBlockLIDB-DPC
numberPoolBlockLIDB-SSN
numberPoolBlockCNAM-DPC
numberPoolBlockCNAM-SSN
numberPoolBlockISVM-DPC
numberPoolBlockISVM-SSN

If the SOA WSMSC DPC SSN Data Indicator is set in the service provider's profile, the following attributes must be provided:

numberPoolBlockWSMSC-DPC
numberPoolBlockWSMSC-SSN

An SSN value of 0 (zero) must be present when its corresponding DPC value is populated, if the corresponding SSN Edit Flag Indicator is set to TRUE.

Postconditions: After this action has been executed, if the data specified passes validation, a number pool block with a status of 'sending' will exist on the NPAC SMS.

The validations performed are as follows:

The serviceProvNPA-NXX-X object exists and the current date and time are greater than or equal to the effective date of the serviceProvNPA-NXX-X object.

The requesting service provider is the block holder and service provider ID on the serviceProvNPA-NXX-X object.

LRN data is associated with the Block Holder Service Provider.

The attributes are all valid and correctly formatted.

If the validations succeed, a new number pool block and corresponding subscription versions will be created with a status of 'sending'. The NPAC SMS sends the object creation notification for the

number pool block.

If the validations fail, no new number pool block or subscription versions will be created. If a number pool block already existed, it will be retained.

The action success or failure and reasons for failure will be returned in the action reply.

If the requesting SOA is not the owner of the serviceProvNPA-NXX-X, 'soa-not-authorized' will be selected in the error reply.

If the corresponding serviceProvNPA-NXX-X is not found, 'no-mpa-nxx-x-found' will be selected in the error reply.

If one of the attribute values is in error, 'invalid-data-values' will be selected in the error reply and the block-invalid-values will be present.

If the number pool block object already exists, 'number-pool-block-already-exists' will be selected in the error reply.

If the request is sent prior to the effective date, 'prior-to-effective-date' will be selected in the error reply.

If the request is sent and any subscription version objects exist within the TN range with a status of pending, conflict, cancel-pending or failed ("pending-like") and no active subscription version for that TN exists, 'invalid-subscription-versions' will be selected in the error reply.

!;

ASN.1:

No change required.

M&P:

No change required.

Notes:

1. Operational impacts must be socialized to individual SPs. This includes, changing these values on all Blocks and SVs prior to the release, so that activity after the release will not run into the problem of not being able to perform the requested change because other data within that Block or SV must now meet the edits imposed by this change order. Because of this, all Service Providers may need to talk to other Service Providers that have arrangements to recognize final GTT data.

2. Also appropriate Canadian GTT values should be set to FALSE. This needs to be performed during conversion weekend, after the new software is installed and prior to the NPAC SMS accepting associations in the Canadian region.
3. Several Service Providers have requested that NPAC send out an informational e-mail broadcast when they announce the upcoming weekend downtime for NPAC to install the software for this release, to inform SPs about the problem if they have not cleaned up all their DPC/SSNs.

Origination Date: 9/15/1999

Originator: Sprint

Change Order Number: NANC 297

Description: Sending SV Problem During Recovery

Cumulative SP Priority, Weighted Average:

Pure Backwards Compatible: YES

IMPACT/CHANGE ASSESSMENT

FRS	IIS	GDMO	ASN.1	NPAC	SOA	LSMS
Y		Y		Med-Low	N/A	N/A

Business Need:

The current NPAC SMS implementation for LSMS recovery does not support the recovery of SVs with a status of sending. Therefore, at the completion of SV recovery processing, an SP is not guaranteed to have recovered all missed/failed SVs and has to request the NPAC Personnel to resend all missed/failed SVs. This change order will result in an LSMS recovering all missed/failed SVs, an operational cost savings, and database integrity between the NPAC SMS and LSMS.

Description of Change:

If an LSMS is down during the broadcast, and the NPAC SMS has sent out the final retry, the LSMS will not be able to recover this broadcast (either in recovery or once recovery is complete and normal processing continues).

It was discussed that the way to ensure the recovering LSMS gets the sending SVs, is to include any of these SVs. By including these, along with the appropriate download reason, the LSMS would be able to recover sending SVs.

An SP could have a problem if the SV is sent twice (once for the recovery, and once at the next retry attempt). This is why the 2nd requirement (remove from failed list) was added to this change order.

Requirements:

Req 1 – Subscription Data Recovery – Statuses of Subscription Versions Recovered

NPAC SMS shall include Subscription Versions with a status of active, partial failure, and sending, at the time subscription data recovery is requested by the Local SMS.

Req 2 – Subscription Data Recovery – Removal of Service Provider from Failed SP List of Subscription Versions Recovered

NPAC SMS shall remove a Service Provider from the Failed SP List of a Subscription Version with a status of sending, even if there are additional retry attempts, after the subscription data recovery response has been sent to the Local SMS of that Service Provider.

Req 3 – Subscription Data Recovery – Suppression of Broadcast of Subscription Versions Recovered

NPAC SMS shall ensure that the download of subscription data that was in a sending status at the start of the Subscription Data recovery process, even if there are additional retry attempts, is not sent to the Service Provider at the completion of recovery that included subscription data to the Local SMS.

Req 4 – Number Pool Block Data Recovery – Statuses of Number Pool Blocks Recovered

NPAC SMS shall include Number Pool Blocks with a status of active, partial failure, and sending, at the time Number Pool Block data recovery is requested by the Local SMS.

Req 5 – Number Pool Block Data Recovery – Removal of Service Provider from Failed SP List of Number Pool Blocks Recovered

NPAC SMS shall remove a Service Provider from the Failed SP List of a Number Pool Block with a status of sending, even if there are additional retry attempts, after the Number Pool Block data recovery response has been sent to the Local SMS of that Service Provider.

Req 6 – Number Pool Block Data Recovery – Suppression of Broadcast of Number Pool Blocks Recovered

NPAC SMS shall ensure that the download of Number Pool Block data that was in a sending status at the start of the Number Pool Block Data recovery process, even if there are additional retry attempts, is not sent to the Service Provider at the completion of recovery that included Number Pool Block data to the Local SMS.

IIS:

No change required.

GDMO:

-- 1.0 LNP Download Action

```
lnpDownload ACTION
  BEHAVIOUR
    lnpDownloadDefinition,
    lnpDownloadBehavior;
  MODE CONFIRMED;
```



```
WITH INFORMATION SYNTAX LNP-ASN1.DownloadAction;  
WITH REPLY SYNTAX LNP-ASN1.DownloadReply;  
REGISTERED AS {LNP-OIDS.lnp-action 1};
```

lnpDownloadDefinition BEHAVIOUR

```
DEFINED AS !  
    The lnpDownload action is the action that is used by the Local SMS  
    and SOA to specify the objects to be downloaded from the NPAC SMS.  
!;
```

lnpDownloadBehavior BEHAVIOUR

```
DEFINED AS !  
    Preconditions: This action is issued from an lnpSubscriptions  
    or an lnpNetwork object and all objects to be downloaded  
    are specified in the action request.  
  
    Postconditions: After this action has been executed by the Local  
    SMS or SOA specifying which objects to download, the NPAC SMS will  
    determine which objects satisfy the download request and return  
    them in the download action reply. Creation, deletion, and  
    modification information will be included in the reply. All data  
    for objects that have been modified is downloaded not just the  
    information that was modified.
```

Subscription versions and number pool blocks with a status of active and partial-failure will be recovered. Also Subscription versions and number pool blocks with a status of sending at the start of the recovery process will be recovered.

```
!;
```

ASN.1:

No change required.

M&P:

No change required.

Origination Date: 7/7/1999

Change Order Number: NANC 291

Description: SSN Edits in the NPAC SMS

Cumulative SP Priority, Weighted Average:

Pure Backwards Compatible: YES (however, operational impacts to SPs)

IMPACT/CHANGE ASSESSMENT

FRS	IIS	GDMO	ASN.1	NPAC	SOA	LSMS
Y		Y		Low	N/A	N/A

Business Need:

The current environment allows the new SP to send up final Global Title Translation data. This final GTT data is broadcasted by NPAC to all applicable subtending SPs in the Region. This has resulted in service-affecting TCAP routing errors for subtending SPs who do not have route sets built based on final GTT to the new SP, causing trouble-shooting expense and re-broadcast of the data to modify the DPCs to non-final GTT. This issue is addressed by NANC 291.

In addition, invalid GTT data (e.g. a DPC with no SSN, a DPC with Network ID set to 000, etc.) contained within the new SP CREATE has also resulted in TCAP routing errors when broadcasted to subtending SPs. This issue is addressed by NANC 191.

These two Change Orders will ensure that GTT data is formatted consistent with SS7 signaling standards and contains only non-final DPCs in accordance with recommendations documented in T1S1.6 standards for Local Number Portability. This will mitigate the trouble-shooting and NPAC broadcast expense due to incorrect or invalid GTT data.

Description of Change:

The NPAC SMS should edit and prevent a new Service Provider CREATE message from specifying final Global Title Translations for CLASS, LIDB, CNAM, ISVM MWI, and WSMSC.

Description of Issue:

There have been instances when the new Service Provider, upon sending the new SP CREATE message to NPAC, has provided final Global Title Translation data for the Destination Point Codes and Subsystem Numbers for CLASS, LIDB, CNAM, and/or ISVM MWI. This final GTT data is broadcasted by NPAC to all applicable subtending service providers in the Region. This has resulted in TCAP routing errors for subtending service providers who do not have route sets built based on final GTT to the new SP.

Some SPs using final, but not sure how much of a problem this is creating. In all cases discussed, led to new SP changing SSN to gateway value instead of final value.

All SPs need to figure out if there is a requirement to broadcast final GTT instead of gateway, and if so, their willingness to change this approach. SPs will need to substitute final in their own network. SPs should understand that if no arrangement is set up between the providers, then routing errors (to the new SP's customer) will occur. This affect creates, modifies, and mass update functionality.

Proposed Change Order:

Implement an edit in NPAC that will reject a new SP CREATE message if the message contains a Destination Point Code with a non-zero (000) Subsystem Number for CLASS, LIDB, CNAM, ISVM MWI, or Wireless Short Message Service. This edit shall be settable (active or inactive) on a service and Regional NPAC combination basis (i.e., there will be five settable edits per region). It shall apply to that specific service's DPCs associated with ported and pooled DNs. For 1K block pooling, the NPAC SMS will reject creation of block data containing a non-zero Subsystem Number, whether by NPAC personnel or via the new SP's SOA, if the edit is active for that specific service.

Requirements:

The backwards compatibility sunset period for the CLASS SSN Edit Flag Indicator, LIDB SSN Edit Flag Indicator, CNAM SSN Edit Flag Indicator, ISVM SSN Edit Flag Indicator, and WSMSC SSN Edit Flag Indicator, is two major NPAC SMS Releases (i.e., if implemented in R4, it is only guaranteed to be available through R5, and may be unavailable starting with R6).

Req 1 – DPC/SSN Edits – CLASS SSN Edit Flag Indicator

NPAC SMS shall provide a CLASS SSN Edit Flag Indicator, which is defined as an indicator on whether or not CLASS DPC/SSN consistency edits will be enforced by the NPAC SMS, upon Subscription Version or Number Pool Block Creation, Modification, or mass update.

Req 2 – DPC/SSN Edits – LIDB SSN Edit Flag Indicator

NPAC SMS shall provide a LIDB SSN Edit Flag Indicator, which is defined as an indicator on whether or not LIDB DPC/SSN consistency edits will be enforced by the NPAC SMS, upon Subscription Version or Number Pool Block Creation, Modification, or mass update.

Req 3 – DPC/SSN Edits – CNAM SSN Edit Flag Indicator

NPAC SMS shall provide a CNAM SSN Edit Flag Indicator, which is defined as an indicator on whether or not CNAM DPC/SSN consistency edits will be enforced by the NPAC SMS, upon Subscription Version or Number Pool Block Creation, Modification, or mass update.

Req 4 – DPC/SSN Edits – ISVM SSN Edit Flag Indicator

NPAC SMS shall provide a ISVM SSN Edit Flag Indicator, which is defined as an indicator on whether or not ISVM DPC/SSN consistency edits will be enforced by the NPAC SMS, upon Subscription Version or Number Pool Block Creation, Modification, or mass update.

Req 5 – DPC/SSN Edits – WSMSC SSN Edit Flag Indicator

NPAC SMS shall provide a WSMSC SSN Edit Flag Indicator, which is defined as an indicator on whether or not WSMSC DPC/SSN consistency edits will be enforced by the NPAC SMS, upon Subscription Version or Number Pool Block Creation, Modification, or mass update.

Req 6 – DPC/SSN Edits – CLASS SSN Rejection for Non-Zero Value

NPAC SMS shall, based on the CLASS SSN Edit Flag Indicator for CLASS service when the value is TRUE, reject a Subscription Version or Number Pool Block Creation, Modification of any data, or mass update of any data, when the CLASS Destination Point Code (DPC) for that specific service contains a value (network 001-255, cluster 000-255, member 000-255), and the corresponding CLASS Sub-System Number (SSN) is not a zero (000) value.

Req 7 – DPC/SSN Edits – LIDB SSN Rejection for Non-Zero Value

NPAC SMS shall, based on the LIDB SSN Edit Flag Indicator for LIDB service when the value is TRUE, reject a Subscription Version or Number Pool Block Creation, Modification of any data, or mass update of any data, when the LIDB Destination Point Code (DPC) for that specific service contains a value (network 001-255, cluster 000-255, member 000-255), and the corresponding LIDB Sub-System Number (SSN) is not a zero (000) value.

Req 8 – DPC/SSN Edits – CNAM SSN Rejection for Non-Zero Value

NPAC SMS shall, based on the CNAM SSN Edit Flag Indicator for CNAM service when the value is TRUE, reject a Subscription Version or Number Pool Block Creation, Modification of any data, or mass update of any data, when the CNAM Destination Point Code (DPC) for that specific service contains a value (network 001-255, cluster 000-255, member 000-255), and the corresponding CNAM Sub-System Number (SSN) is not a zero (000) value.

Req 9 – DPC/SSN Edits – ISVM SSN Rejection for Non-Zero Value

NPAC SMS shall, based on the ISVM SSN Edit Flag Indicator for ISVM service when the value is TRUE, reject a Subscription Version or Number Pool Block Creation, Modification of any data, or mass update of any data, when the ISVM Destination Point Code (DPC) for that specific service contains a value (network 001-255, cluster 000-255, member 000-255), and the corresponding ISVM Sub-System Number (SSN) is not a zero (000) value.

Req 10 – DPC/SSN Edits – WSMSC SSN Rejection for Non-Zero Value

NPAC SMS shall, based on the WSMSC SSN Edit Flag Indicator for WSMSC service when the value is TRUE, reject a Subscription Version or Number Pool Block Creation, Modification of any data, or mass update of any data, when the WSMSC Destination Point Code (DPC) for that specific service contains a value (network 001-255, cluster 000-255, member 000-255), and the corresponding WSMSC Sub-System Number (SSN) is not a zero (000) value.

Req 11 – DPC/SSN Edits – CLASS SSN Edit Flag Indicator – OpGUI Modification

NPAC SMS shall allow the NPAC Personnel, via the NPAC Administrative Interface, to modify the CLASS SSN Edit Flag Indicator.

Req 12 – DPC/SSN Edits – LIDB SSN Edit Flag Indicator – OpGUI Modification

NPAC SMS shall allow the NPAC Personnel, via the NPAC Administrative Interface, to modify the LIDB SSN Edit Flag Indicator.

Req 13 – DPC/SSN Edits – CNAM SSN Edit Flag Indicator – OpGUI Modification

NPAC SMS shall allow the NPAC Personnel, via the NPAC Administrative Interface, to modify the CNAM SSN Edit Flag Indicator.

Req 14 – DPC/SSN Edits – ISVM SSN Edit Flag Indicator – OpGUI Modification

NPAC SMS shall allow the NPAC Personnel, via the NPAC Administrative Interface, to modify the ISVM SSN Edit Flag Indicator.

Req 15 – DPC/SSN Edits – WSMSC SSN Edit Flag Indicator – OpGUI Modification

NPAC SMS shall allow the NPAC Personnel, via the NPAC Administrative Interface, to modify the WSMSC SSN Edit Flag Indicator.

Req 16 – DPC/SSN Edits – CLASS SSN Edit Flag Indicator Default

NPAC SMS shall default the CLASS SSN Edit Flag Indicator to **TRUE**.

Req 17 – DPC/SSN Edits – LIDB SSN Edit Flag Indicator Default

NPAC SMS shall default the LIDB SSN Edit Flag Indicator to **TRUE**.

Req 18 – DPC/SSN Edits – CNAM SSN Edit Flag Indicator Default

NPAC SMS shall default the CNAM SSN Edit Flag Indicator to **TRUE**.

Req 19 – DPC/SSN Edits – ISVM SSN Edit Flag Indicator Default

NPAC SMS shall default the ISVM SSN Edit Flag Indicator to **TRUE**.

Req 20 – DPC/SSN Edits – WSMSC SSN Edit Flag Indicator Default

NPAC SMS shall default the WSMSC SSN Edit Flag Indicator to **TRUE**.

IIS:

No change required.

GDMO:

-- 21.0 LNP NPAC Subscription Version Managed Object Class

subscriptionVersionNPAC MANAGED OBJECT CLASS

...

subscriptionVersionNPAC-Behavior BEHAVIOUR
DEFINED AS !

...

When the subscription version is created, the subscriptionBusinessType is set according to the business days and hours selection of the old and new service providers.

When the subscription version is created, modified, or mass updated and contains a DPC value, the corresponding SSN value must be set to 0 (zero).

The Service Provider SOA can M-GET and M-SET subscriptionVersionNPAC objects via the SOA to NPAC SMS interface (SOA Management Association Function). Rules for M-SET are described below.

-- 30.0 Number Pool Block NPAC Data Managed Object Class

--

numberPoolBlockNPAC MANAGED OBJECT CLASS

...

numberPoolBlockNPAC-Behavior BEHAVIOUR
DEFINED AS !

...

The numberPoolBlockFailed-SP-List is set when a failure occurs in sending to the LSMSs. It contains the list of EDR and non-EDR service provider IDs who failed to successfully respond to the broadcasted data.

When the numberPoolBlock is created, modified, or mass updated and contains a DPC value, the corresponding SSN value must be set to 0 (zero).

Service providers can M-GET any numberPoolBlockNPAC object from the LSMS and SOA.

-- 63.0 LNP Subscription Version Class Destination Point Code

subscriptionCLASS-DPC ATTRIBUTE

WITH ATTRIBUTE SYNTAX LNP-ASN1.DPC;
MATCHES FOR EQUALITY, ORDERING;

```
BEHAVIOUR subscriptionCLASS-DPCBehavior;  
REGISTERED AS {LNP-OIDS.lnp-attribute 63};
```

```
subscriptionCLASS-DPCBehavior BEHAVIOUR  
DEFINED AS !
```

```
    This attribute is used to specify the subscription version  
    CLASS Destination Point Code.
```

```
    If the subscriptionCLASS-DPC attribute is provided, the  
    subscriptionCLASS-SSN attribute must be 0 (zero).
```

```
    The data is stored in BCD (e.g. a value of 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.
```

```
    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 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.

**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 FFFFFFF would be
displayed as 255.255.255).

!;

-- 77.0 LNP Subscription ISVM SSN

subscriptionISVM-SSN ATTRIBUTE
WITH ATTRIBUTE SYNTAX LNP-ASN1.SSN;
MATCHES FOR EQUALITY, ORDERING;
BEHAVIOUR subscriptionISVM-SSN-Behavior;
REGISTERED AS {LNP-OIDS.lnp-attribute 77};

subscriptionISVM-SSN-Behavior BEHAVIOUR
DEFINED AS !

This attribute is used to specify the ISVM SSN
value for the subscription version.

**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 FFFFFFF 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 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.

    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 FFFFFFF would be displayed as 255.255.255). ~~The valid octet on the NPAC SMS are 000-255.~~

```
!;
```

```
-- 133.0 LNP Number Pool Block WSMSC SSN
```

```
numberPoolBlockWSMSC-SSN ATTRIBUTE  
WITH ATTRIBUTE SYNTAX LNP-ASN1.SSN;  
MATCHES FOR EQUALITY, ORDERING;  
BEHAVIOUR numberPoolBlockWSMSC-SSN-Behavior;  
REGISTERED AS {LNP-OIDS.lnp-attribute 133};
```

```
numberPoolBlockWSMSC-SSN-Behavior BEHAVIOUR  
DEFINED AS !
```

This attribute is used to specify the WSMSC SSN value for the numberPoolBlock. The valid values on the NPAC SMS are 0-255.

If the numberPoolBlockWSMSC-SSN attribute is provided, the value must be 0 (zero).

```
!;
```

```
!;
```

```
-- 7.0 LNP Subscription Version Modify Action
```

```
subscriptionVersionModify ACTION  
BEHAVIOUR  
subscriptionVersionModifyDefinition,  
subscriptionVersionModifyBehavior;  
MODE CONFIRMED;  
WITH INFORMATION SYNTAX LNP-ASN1.ModifyAction;  
WITH REPLY SYNTAX LNP-ASN1.ModifyReply;  
REGISTERED AS {LNP-OIDS.lnp-action 7};
```

```
subscriptionVersionModifyDefinition BEHAVIOUR  
DEFINED AS !
```

The subscriptionVersionModify action is the action that can be used by the SOA to modify a subscription version via the SOA to NPAC SMS interface.

```
!;
```

```
subscriptionVersionModifyBehavior BEHAVIOUR  
DEFINED AS !
```

Preconditions: This action is issued from an lnpSubscriptions object specifying the object to be modified by specifying

the subscriptionVersionId or by specifying the subscriptionTN or a range of TNs (where the stop TN in the range is greater than the start TN) and the status of the subscription version. All attribute values to be modified shall also be specified.

Postconditions: The NPAC SMS has modified the subscription version. An error will be returned to the service provider if there is no version that is modifiable or if the modification fails due to authorization of the service provider or data validation.

Subscription versions with subscriptionLNPTType equal to 'pool' cannot be specified in the action.

Service Providers can modify attributes associated with active, pending or conflict subscription versions.

Old service providers can only modify the following attributes for pending or conflict subscription versions:

subscriptionOldSP-DueDate
subscriptionOldSP-Authorization
subscriptionStatusChangeCauseCode

The subscriptionStatusChangeCauseCode is an optional field and is only specified if the subscriptionOldSP-Authorization is false.

New service providers can only modify the following attributes for pending or conflict subscription versions:

subscriptionLRN
subscriptionNewSP-DueDate
subscriptionCLASS-DPC
subscriptionCLASS-SSN
subscriptionLIDB-DPC
subscriptionLIDB-SSN
subscriptionCNAM-DPC
subscriptionCNAM-SSN
subscriptionISVM-DPC
subscriptionISVM-SSN
subscriptionEndUserLocationValue
subscriptionEndUserLocationType
subscriptionBillingId

New service providers may specify modified valid values for the following attributes, when the service provider's "SOA WSMSC DPC SSN Data" indicator is TRUE, and may NOT specify these values when the indicator is set to FALSE:

subscriptionWSMSC-DPC
subscriptionWSMSC-SSN

An SSN value of 0 (zero) must be present when its corresponding DPC value is populated, if the corresponding SSN Edit Flag Indicator is set to TRUE.

Validation will be done for both old and new service provider data that is specified for pending or conflict

subscription versions.

If validation fails no changes will be made and an error will be returned. If validation passes, the version will be modified and remain in a pending or active state.

New service providers can only modify the following attributes for active subscription versions:

subscriptionLRN
subscriptionCLASS-DPC
subscriptionCLASS-SSN
subscriptionLIDB-DPC
subscriptionLIDB-SSN
subscriptionCNAM-DPC
subscriptionCNAM-SSN
subscriptionISVM-DPC
subscriptionISVM-SSN
subscriptionEndUserLocationValue
subscriptionEndUserLocationType
subscriptionBillingId

New service providers may specify modified valid values for the following attributes, when the service provider's "SOA WSMSC DPC SSN Data" indicator is TRUE, and may NOT specify these values when the indicator is set to FALSE:

subscriptionWSMSC-DPC
subscriptionWSMSC-SSN

An SSN value of 0 (zero) must be present when its corresponding DPC value is populated, if the corresponding SSN Edit Flag Indicator is set to TRUE.

If the data specified passes validation, the modified version is immediately broadcast. The modified subscription version will have a status of sending and broadcasts will begin. If validation fails, no changes will be made and an error will be returned in the action reply.

!;

-- 11.0 LNP New Service Provider Subscription Version Create

```
subscriptionVersionNewSP-Create ACTION
  BEHAVIOUR
    subscriptionVersionNewSP-CreateDefinition,
    subscriptionVersionNewSP-CreateBehavior;
  MODE CONFIRMED;
  WITH INFORMATION SYNTAX LNP-ASN1.NewSP-CreateAction;
  WITH REPLY SYNTAX LNP-ASN1.NewSP-CreateReply;
  REGISTERED AS {LNP-OIDS.lnp-action 11};
```

```
subscriptionVersionNewSP-CreateDefinition BEHAVIOUR
  DEFINED AS !
    The subscriptionVersionNewSP-Create action is the action that is
    used via the SOA to NPAC SMS interface by the
```

new service provider to create a new subscriptionVersionNPAC.
!;

subscriptionVersionNewSP-CreateBehavior BEHAVIOUR
DEFINED AS !

Preconditions: This action is issued from an lnpSubscriptions object. Creates can be performed provided there is only one currently active subscription or no subscription version in the NPAC; otherwise an action failure will be returned.

The new service provider must specify valid values for the following attributes:

subscriptionTN or a valid subscriptionVersionTN-Range
subscriptionLRN
subscriptionNewCurrentSP
subscriptionOldSP
subscriptionNewSP-DueDate
subscriptionCLASS-DPC
subscriptionCLASS-SSN
subscriptionLIDB-DPC
subscriptionLIDB-SSN
subscriptionCNAM-DPC
subscriptionCNAM-SSN
subscriptionISVM-DPC
subscriptionISVM-SSN
subscriptionLNPTtype
subscriptionPortingToOriginal-SPSwitch

The new service provider must specify valid values for the following attributes, when the service provider's "SOA WSMSC DPC SSN Data" indicator is TRUE, and must NOT specify these values when the indicator is set to FALSE:

subscriptionWSMSC-DPC
subscriptionWSMSC-SSN

The new service provider may specify valid values for the following attributes:

subscriptionEndUserLocationValue
subscriptionEndUserLocationType
subscriptionBillingId

An SSN value of 0 (zero) must be present when its corresponding DPC value is populated, if the corresponding SSN Edit Flag Indicator is set to TRUE.

subscriptionPortingToOriginal-SPSwitch can only be specified as TRUE for a TN that is currently ported and is being ported back to the original service provider. If the value of subscriptionPortingToOriginal-SPSwitch is TRUE, the LRN and GTT data should be specified as NULL. If the variable is TRUE, when the activate occurs for the subscription version, the Local SMSs will receive a request to delete the old subscription version routing data in their networks. They will not receive any new network routing data for the subscription. Concurrence from the

old service provider is required.

If the port of the subscription version is an intra-service provider port, the new service provider can use the subscriptionVersionNewSP-Create action specifying the old service provider equal to the new service provider. In this case, the old service provider create action is not required.

Postconditions: After this action has been executed, if the data specified passes validation, a pending subscription version or range of subscription versions will exist in the NPAC SMS. These validations are done as follows:

subscriptionTN or range of TNs are valid in a range open for porting by the new service provider. TN ranges must be specified where the stop TN in the range is greater than the start TN.

subscriptionLNPTtype is specified to be "LSPP" or "LISP".

subscriptionNewSP-DueDate is a future date. If not specified, the time defaults to 00:00.00.

Old and New SP are valid service providers in the NPAC SMS.

LRN data is associated with the New Service Provider.

If a pre-existing version exists, validation will be done to insure that the new service provider previously specified is the same as the executor of the action.

If the validations succeed and the subscription version does not currently exist, a new subscription version will be created with a status of pending.

If the validations succeed and a pending subscription version exists, the new service provider create information will be applied to the existing pending subscription version.

If the validations fail, a new subscription version will not be created if one does not exist. If one already existed, it will be retained.

The action success or failure and reasons for failure will be returned in the action reply.

!;

-- 16.0 LNP Service Provider Number Pool Block Create

```
numberPoolBlock-Create ACTION
  BEHAVIOUR
    numberPoolBlock-CreateDefinition,
    numberPoolBlock-CreateBehavior;
  MODE CONFIRMED;
  WITH INFORMATION SYNTAX LNP-ASN1.NumberPoolBlock-CreateAction;
  WITH REPLY SYNTAX LNP-ASN1.NumberPoolBlock-CreateReply;
  REGISTERED AS {LNP-OIDS.lnp-action 16};
```

numberPoolBlock-CreateDefinition BEHAVIOUR

DEFINED AS !

The numberPoolBlock-Create action is the action that is used on the NPAC SMS via the SOA to NPAC SMS interface by the block holder SOA to create a new numberPoolBlockNPAC.

!;

numberPoolBlock-CreateBehavior BEHAVIOUR

DEFINED AS !

Preconditions: This action is issued from an lnpSubscriptions object.

The service provider block holder must specify valid values for the following attributes:

numberPoolBlockNPA-NXX-X
numberPoolBlockHolderSPID
numberPoolBlockLRN
numberPoolBlockCLASS-DPC
numberPoolBlockCLASS-SSN
numberPoolBlockLIDB-DPC
numberPoolBlockLIDB-SSN
numberPoolBlockCNAM-DPC
numberPoolBlockCNAM-SSN
numberPoolBlockISVM-DPC
numberPoolBlockISVM-SSN

If the SOA WSMSC DPC SSN Data Indicator is set in the service provider's profile, the following attributes must be provided:

numberPoolBlockWSMSC-DPC
numberPoolBlockWSMSC-SSN

An SSN value of 0 (zero) must be present when its corresponding DPC value is populated, if the corresponding SSN Edit Flag Indicator is set to TRUE.

Postconditions: After this action has been executed, if the data specified passes validation, a number pool block with a status of 'sending' will exist on the NPAC SMS.

The validations performed are as follows:

The serviceProvNPA-NXX-X object exists and the current date and time are greater than or equal to the effective date of the serviceProvNPA-NXX-X object.

The requesting service provider is the block holder and service provider ID on the serviceProvNPA-NXX-X object.

LRN data is associated with the Block Holder Service Provider.

The attributes are all valid and correctly formatted.

If the validations succeed, a new number pool block and corresponding subscription versions will be created with a status of 'sending'. The NPAC SMS sends the object creation notification for the

number pool block.

If the validations fail, no new number pool block or subscription versions will be created. If a number pool block already existed, it will be retained.

The action success or failure and reasons for failure will be returned in the action reply.

If the requesting SOA is not the owner of the serviceProvNPA-NXX-X, 'soa-not-authorized' will be selected in the error reply.

If the corresponding serviceProvNPA-NXX-X is not found, 'no-mpa-nxx-x-found' will be selected in the error reply.

If one of the attribute values is in error, 'invalid-data-values' will be selected in the error reply and the block-invalid-values will be present.

If the number pool block object already exists, 'number-pool-block-already-exists' will be selected in the error reply.

If the request is sent prior to the effective date, 'prior-to-effective-date' will be selected in the error reply.

If the request is sent and any subscription version objects exist within the TN range with a status of pending, conflict, cancel-pending or failed ("pending-like") and no active subscription version for that TN exists, 'invalid-subscription-versions' will be selected in the error reply.

!;

ASN.1:

No change required.

M&P:

No change required.

Notes:

4. 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.

5. 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.
6. 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: 9/15/99

Originator: LNPA WG

Change Order Number: NANC 299

Description: NPAC Monitoring of SOA and LSMS Associations via Heartbeat

Cumulative SP Priority, Weighted Average:

Pure Backwards Compatible:

IMPACT/CHANGE ASSESSMENT

FRS	IIS	GDMO	ASN.1	NPAC	SOA	LSMS
Y		Y				

This is an extension of NANC 219 and NANC 301. Instead of utilizing a TCP Heartbeat and an abort message, the NPAC SMS would utilize an application level heartbeat message on every association. If a response was not returned for any given application level heartbeat message, an alarm would be initiated for NPAC Personnel.

July 2000 meeting – LNPA WG consensus is that they do not want to cancel this change order but move it back to an accepted change order for a future release. Metrics and reports that will be provided after R4.0 will give more information to determine whether or not this change order is needed.

Requirements:

TBD

IIS:

TBD

GDMO:

TBD

ASN.1

TBD

M&P

TBD

Origination Date: 12/6/99

Originator: LNPA WG

Change Order Number: NANC 300

Description: Resend Exclusion for Number Pooling

Cumulative SP Priority, Weighted Average:

Functional Backwards Compatible: NO

IMPACT/CHANGE ASSESSMENT

FRS	IIS	GDMO	ASN.1	NPAC	SOA	LSMS
Y	Y	Y		Med	Med-Low	Med-Low

Business Need:

When information about ported (or pooled) numbers is broadcast, no changes in this information can be subsequently broadcast until all service providers' LSMSs have acknowledged successful receipt of the original broadcast. That is, no changes can be made to SVs in a "partial failure" condition. This limitation is being corrected for ported telephone numbers in NPAC Release 4.0. However, a ported pooled thousands block remains subject to this restriction. Change Order NANC 300, proposed for NPAC release 5.0, effectively removes the restriction and allows changes to be made to ported pooled thousands blocks in a partial failure condition.

The business need for this change is the need to promptly correct erroneous NPAC broadcast information about ported pooled blocks. For example, there may be an error in the LRN associated with the pooled thousands block; this would render the block's thousand numbers unusable until the correct LRN information could be modified and broadcast by NPAC. This is less serious a problem than the inability to change an existing ported customer's SV, at least if the error is discovered before numbers from the pooled block are assigned to end-users. However, even if no numbers are yet assigned to end-users, it is important to be able to correct errors promptly rather than being held hostage to a particular service provider's inability to receive or acknowledge broadcasts when the original pooled block broadcast was made. An LSMS can be off line for days during which time no numbers from the block could be used. INC guidelines state that the pooled numbers can be used the following day, which would make it imperative that the block be able to be modified.

An additional need for this change order is contaminated working numbers missed by the code holder at the time of block donation, that need to be intra-service provider ported for a Number Pool Block, that contains a Partial Failure status (which currently cannot be performed until the Number Pool Block is Active).

A process is available that could be implemented by NPAC personnel for such situations – using NPA-NXX filters – but the process is risky and very likely to cause greater problems. A higher definition filter therefore is necessary to avoid the problems introduced by use of existing NPA-NXX filter. The 10-digit filter provided in release 4.0 is not feasible for addressing the problem

of pooled thousands blocks. Hence this change order which proposes a 7-digit (NPA-NXX-X) filter.

Description of Change:

This is an extension of NANC 227. During the Dec 99 LNPA-WG meeting, it was proposed to remove Number Pooling functionality from NANC 227, and create a new change order for this functionality. This functionality was removed from NANC 227 because it was too much for Release 4.0.

The NPAC SMS currently rejects a request to "modify active" or "disconnect" a Number Pool Block or SVs of LNP type POOL that has a partial failure status. Nothing can be done to the Block/SV until the discrepant LSMS(s) come back on line, and either recover the broadcast, or accept a re-send from the NPAC SMS.

Similar to NANC 227 for non-pooled SVs, the NPAC should provide a mechanism that allows activity (modify, disconnect, subsequent port) on the Block/SV, regardless of the Failed SP List. This will be done via the resend exclusion functionality (defined in NANC 227), which is a mechanism that allows a Service Provider to be removed from a 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

May 00: using the resend exclusion functionality eliminates the need to update the above four requirements. Other requirements will need to be written to define the functionality.

Requirements:

Req 1 Number Pool Block 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 Number Pool Block Failed SP List when resending a number pool block and the associated subscription version(s) of LNP type POOL, and not broadcast to the Service Provider that is excluded.

Req 2 Number Pool Block Failed SP List – Logging of an Excluded Service Provider

NPAC SMS shall log the following information when a Service Provider is excluded from the Failed SP List based on a request by NPAC Personnel via the NPAC Administrative Interface: date, time, excluded SPID, Blockholder SPID, NPA-NXX-X, Number Pool Block ID.

Req 3 Number Pool Block Failed SP List – Recovery of Excluded Service Provider Subscription Versions

NPAC SMS shall, for a recovery of number pool block 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 Number Pool Block or its associated pool-type subscription versions with all current attributes, even though the Service Provider is no longer on the Failed SP List.

Req 4 Number Pool Block Failed SP List – Excluded Service Provider Log Data Availability for the Excluded Service Provider Report

NPAC SMS shall allow the Excluded Service Provider log data to be available for the Excluded Service Provider Report.

Req 5 Number Pool Block Failed SP List –Resend Excluded Service Provider Report by Current SPID/Blockholder SPID via OpGUI

NPAC SMS shall allow NPAC Personnel, via the NPAC Administrative Interface, to generate the Resend Excluded Service Provider Report by Current SPID/Blockholder SPID on Excluded Service Provider log data.

Req 6 Number Pool Block Failed SP List – Resend Excluded Service Provider Report Request by Current SPID/Blockholder SPID

NPAC SMS shall allow NPAC Personnel, via the NPAC Administrative Interface, to specify time range and Current SPID/Blockholder SPID option (of either an individual SPID or all SPIDs) when generating the Resend Excluded Service Provider Report by Current SPID/Blockholder SPID on Excluded Service Provider log data.

Req 7 Number Pool Block Failed SP List – Resend Excluded Service Provider Report by Current SPID/Blockholder SPID Request Sort Criteria

NPAC SMS shall use the following sort order when generating the Resend Excluded Service Provider Report by Current SPID/Blockholder SPID on Excluded Service Provider log data:

1. Current SPID/Blockholder SPID (ascending)
2. TN/NPA-NXX-X (ascending)
3. date/time (earliest date/time to latest date/time)
4. excluded SPID (ascending)
5. SVID/Number Pool Block -ID (ascending)

Req 8 Number Pool Block Failed SP List –Resend Excluded Service Provider Report by Excluded SPID via OpGUI

NPAC SMS shall allow NPAC Personnel, via the NPAC Administrative Interface, to generate the Resend Excluded Service Provider Report by Excluded SPID on Excluded Service Provider log data.

Req 9 Number Pool Block Failed SP List – Resend Excluded Service Provider Report by Excluded SPID Request

NPAC SMS shall allow NPAC Personnel, via the NPAC Administrative Interface, to specify time range and excluded SPID option (of either an individual SPID or all SPIDs) when generating the Resend Excluded Service Provider Report by Excluded SPID on Excluded Service Provider log data.

Req 10 Number Pool Block Failed SP List –Resend Excluded Service Provider Report by Excluded SPID Request Sort Criteria

NPAC SMS shall use the following sort order when generating the Excluded Service Provider Report on Excluded Service Provider log data:

6. excluded SPID (ascending)
7. TN/NPA-NXX-X (ascending)
8. date/time (earliest date/time to latest date/time)
9. Current SPID/Blockholder SPID (ascending)
10. SVID/Number Pool Block -ID (ascending)

Note: The TN and SVID attributes were added to requirements 7 & 10 in this change order because of the corresponding change order (NANC 227/254) for SVs in Release 4.0.

IIS

No change required.

GDMO

-- 30.0 Number Pool Block NPAC Data Managed Object Class

numberPoolBlockNPAC MANAGED OBJECT CLASS

...

numberPoolBlockNPAC-Behavior BEHAVIOUR
DEFINED AS !

...

Insert at the end of the section:

If NPAC Personnel via the NPAC Administrative Interface, exclude a Service Provider from the numberPoolBlockFailed-SP-List, the list of Service Providers will not accurately reflect those Local SMSs

that successfully processed this number pool block.

...

-- 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 **or number pool block** data during recovery, where more than one activity occurred for a given subscription version **or number pool block** 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 **or number pool block**. 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 **or number pool block** for which it did not receive the initial M-CREATE, the download reason is set to 'modified' for this subscription version **or number pool block** object.

...
!;

ASN.1

No change required

M&P

No change required

Note from CMA: This change order was originally included in the Release 4.0 package but was implemented in Release 2.0.2. Should be removed from this package and moved to the appropriate section of the Implemented Change Orders document.

Origination Date: 1/12/2000

Originator: LNPA WG

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:

Pure Backwards Compatible: YES

IMPACT/CHANGE ASSESSMENT

FRS	IIS	GDMO	ASN.1	NPAC	SOA	LSMS
Y	Y			TBD	TBD	TBD

Business Need:

In today’s operating environment, the NPAC doesn’t know if an SP’s SOA/LSMS association is available to receive downloads and other messages unless there is a failure to respond to an NPAC message. There are a number of reasons that may cause the SOA/LSMS association to be unavailable ranging from the transmission facility going down to software application problems.

If an association is unavailable when a download to activate a ported number is sent, partial failures will occur. Partial failures indicate that one or more SPs did not update their routing tables, and many calls intended for the ported customer will fail.

There are often long periods of time when there are no messages being sent across a given NPAC – SOA/LSMS association. Therefore, there is no way to know if the association is working. This change order would establish a periodic “heart-beat” monitor to determine the status of the SOA/LSMS.

This change order will facilitate monitoring SOA/LSMS availability and will minimize partial failure situations, thereby saving resolution time and improving customer service.

Description of Change:

Same as NANC 299, but using the TCP Keepalive feature (transport layer) instead of an application level heartbeat.

The requested functionality of this change order “*NPAC Monitoring of SOA and LSMS Associations via Heartbeat*” can be accomplished using the TCP Keepalive feature. Since no data flows across an idle TCP connection (i.e., between the two TCP modules), the TCP

Keepalive feature can be used to poll the other end of an idle connection to make sure the connection is still available (active). This will also alleviate any situations of a half-open connection.

With this change order, the NPAC SMS is being required to enable the TCP Keepalive feature. The NPAC SMS will serve as the server side, and the local system (SOA or LSMS) will serve as the client side. Optionally (but recommended), the Service Provider can enable the TCP Keepalive feature to ensure an active connection. If only the NPAC SMS were to enable the TCP Keepalive feature, a situation exists where the local side may not detect an inactive connection (and therefore not try to re-associate). If the local system does enable the TCP Keepalive feature, they would also detect an inactive connection (and accordingly attempt to re-associate with a new bind request). In this example, the length of time that the Service Provider is un-available will be greater if the local side has not enabled the TCP Keepalive feature since they are relying on NPAC Personnel to contact them about an aborted association (rather than having their own system recognize the abort and initiate a new bind request to the NPAC SMS).

Utilizing the TCP Keepalive feature of the HP-UX OTS stack software (otsadm) involves starting the stack software with the -K option. With this feature enabled, all subsequent TCP connections initiated from OTS/RFC1006 will have the TCP_KEEPALIVE option set, which allows TCP to inform OTS/RFC1006 of lower layer failures. With the TCP Keepalive feature turned on, the OTS stack software uses the tcp_keepstart, tcp_keepfreq, and tcp_keepstop system tunables to execute the keep-alive message. The tcp_keepstart tunable is the number of seconds that a TCP connection can be idle before keep-alive packets will be sent attempting to solicit a response. When a packet is received, keep-alive packets are not longer sent unless the connection is idle again for this period of time. The tcp_keepfreq tunable is the interval in seconds at which keep-alive packets will be sent on a TCP connection once they have been started. The receipt of a packet will stop the sending of keep-alive packets. The tcp_keepstop tunable is the number of seconds keep-alive packets will be sent on a TCP connection without the receipt of a packet after which the connection will be dropped and an abort message sent up the stack to the application. The setting of these tunables apply across a machine for all TCP connections.

The values of the tcp_keepstart, tcp_keepfreq, and tcp_keepstop must be determined by the LNPA-WG. The default values are tcp_keepstart=7200 secs, tcp_keepfreq=75 secs, and tcp_keepstop=600 secs. In order to detect an inactive associations as soon as possible, the following values have been suggested based on current testing efforts: tcp_keepstart=60 secs, tcp_keepfreq=60 secs, and tcp_keepstop=60 secs.

Additionally, the NPAC SMS needs to provide logging functionality (which is documented in change order NANC 219). This is accomplished by enabling the TCP Keepalive feature of the OTS stack software such that it recognizes an inactive association and issues an abort to the application for a given association. Since an inactive connection will appear as a stack abort to the server (in this case the NPAC SMS), logging will be done as an abort from a client (in this case the local system).

In summary, the requested change is for the NPAC SMS to enable the TCP Keepalive feature on all TCP connections initiated from OTS/RFC1006.

The TCP Keepalive feature was introduced to the HP OTS stack software in November 1999 (patch PHNE_17376). Jan 00, Jim loaded the stack patch on a test box at ESI. He worked with Beth to test the patch. The TCP level heartbeat worked fine one-way (from NPAC to local system

not supporting the patch). Beth is planning on loading the patch on her local system and testing the other way as well. It is believed that enabling the TCP Keepalive will solve many of the association control problems that have experienced in the production environment.

Feb 00, LNPA-WG meeting, the group proposes that we have a con call to discuss this further. The desire is to have this functionality implemented prior to R4.

Requirements:

Req 1 – NPAC SMS Monitoring of SOA and Local SMS Connections via a TCP Level Heartbeat

The NPAC SMS shall be capable of supporting a TCP Level Heartbeat via the TCP Keepalive Feature.

IIS:

No change required.

GDMO:

No change required.

ASN.1:

No change required.

M&P:

No change required.

Origination Date: 6/5/00

Change Order Number: NANC 311

Description: Query Message of SP Association Status

Cumulative SP Priority, Weighted Average:

Pure Backwards Compatible: YES

IMPACT/CHANGE ASSESSMENT

FRS	IIS	GDMO	ASN.1	NPAC	SOA	LSMS
Y				Med	Med	N/A **

**** If anything but an SV Query to the LSMS is implemented it maybe an enhancement for the LSMS and thus not backwards compatible. Example: Supporting a NPA-NXX query from NPAC is not required LSMS functionality.**

Business Need:

Currently the NPAC does not provide any mechanism that allows a Service Provider to check all of the other Service Providers LSMS Associations prior to activating a Subscription Version(s). By providing the New Service Provider (NSP) with the status of all LSMS associations, the NSP would have an additional decision point when performing large ports and allow the two SPs involved in a port to be proactive instead of reactive. If it was known in advance that an SP association(s) was unavailable, the porting activity could be placed on-hold until the association(s) is restored. This would improve the reliability of the porting activities, and help prevent lengthy recovery processes and procedures to complete a port that encountered problems. This would also reduce the instances where provisioning errors occur, and the NSP is unable to quickly correct them because the ported SV(s) is in a Partial Failure status.

Description of Change:

Provide information of the current service status (TBD) for all LSMS associations in each NPAC region. This query would be initiated by SOAs only. This would be an enhancement to NANC 219 and 301 (Association Monitoring) which both will be fully deployed in NPAC SMS Release 4.0.

Jun 00 : at the suggestion of the CMA, the group discussion migrated away from a dynamically updated web site, to a query message that could be used by the soon-to-be-activating Service Provider, to determine if all associations are available. This new query would be a CMIP message (M-ACTION) that would allow a query on an NPA-NXX, where the NPAC SMS would take into account all filters for that given NPA-NXX, and return a list of all SPIDs that are currently not available that should be available (i.e., the New SP is expecting an empty unavailable SP List).

NOTE: Removed from Release 5.0 package during discussions at the December 2000 meeting. See NANC Change Order Summary document and LNPA WG December Meeting Minutes for details.

Requirements:

Req 1 SOA Query for LSMS Association Status

NPAC SMS shall allow a Service Provider, via the SOA to NPAC SMS Interface, to query for Service Provider LSMS association status.

Req 2 SOA Query LSMS Association Status - NPA-NXX Required

NPAC SMS shall require a valid NPA-NXX to be provided by the SOA when sending a LSMS Association Status query

Req 3 SOA Query LSMS Association Status - Invalid NPA-NXX Error

NPAC SMS shall respond to the Service Provider SOA with an “Invalid NPA-NXX” error, if the NPA-NXX value is not in the NPAC SMS database.

Req 4 SOA Query LSMS -NPAC SMS Queries LSMSs

NPAC SMS shall, upon receipt of a valid SOA Query Associated LSMS message, query the LSMSs for the specified NPA-NXX object.

Note to CMA: Revise this requirement to reflect what NPAC does when it receives the message (do this after next review and determination if the SOA Query will remain an NPA-NXX object query).

Req 5 SOA Query LSMS - LSMS Filtered NPA-NXX Supported

NPAC SMS shall apply the LSMS Filtered NPA-NXX information when determining which LSMS to query for the NPA-NXX object.

Question: What happens if an LSMS has the network data download indicator turned off either in the Service Provider profile (meaning they don't get NPA-NXX data) or via functional units but they are receiving SV updates?

Req 6 SOA Query LSMS - NPAC SMS Responds to SOA

NPAC SMS shall, upon receipt of a response from all LSMSs and/or the expiration of the retry/timeout interval, assemble a list of those LSMSs who did not respond to the query and return that list to the requesting SOA, via the SOA to NPAC SMS interface.

Question: What happens if an LSMS responds with an error? Do we treat them as down and filter them out? – See notes under “Action items for CMA”.

Note to CMA: Address info going back to SOA once exact type of SOA query has been decided.

Action item for CMA:

Why did we migrate away from the web page?

There may have been other reasons, but this is what the CMA has been able to determine: Web access is open to a much larger group than the providers with CMIP connections in a given region. If the web provides a direct query to the database then it would be possible for web users to request this information very frequently taking away from the porting potential of the system. Secondly, it was the understanding that the business need for NANC311 was to provide a mechanism to determine if an activate download would be successful. To determine if all providers that are accepting downloads are associated filters must be applied and this would be difficult to do on the web.

If we continue to go with the SOA query, do we need some requirement that defines an object that can be sent over the interface(LSMS Association Object) The query will need to be an M_ACTION since the SOA will be sending an NPA-NXX in the query.

Do not need to define a new object but would need a new M-ACTION. See info that has been added to GDMO and ASN.1 sections.

If we go with the NPA-NXX data in the query, should we have another option on the query to NOT use NPA-NXX so that we could just get straight association results without consideration of the Filter.

Suggest we consider using a SV Query instead of a NPA-NXX Query. It wouldn't matter if the subscription version exists or not, just that the LSMS responded to the query. This solution would prove that the association was alive and would accomplish several things –

LSMS associations that don't accept network data downloads (they don't support the functionality and/or have the network data download indicator turned off in their Service Provider Profile) but do accept subscription version downloads would be included in the query.

Shouldn't require any LSMS enhancements, thus it would be backwards compatible

IIS

TBD

GDMO

Note: Currently defined to be part of the InpSubscriptions object. Can be moved.

GDMO

-- 14.0 LNP Subscriptions Managed Object Class

```
InpSubscriptions MANAGED OBJECT CLASS
  DERIVED FROM "CCITT Rec. X.721 (1992) | ISO/IEC 10165-2 : 1992":top;
  CHARACTERIZED BY
    InpSubscriptionsPkg,
    subscriptionVersionLocalSMS-CreatePkg;
  CONDITIONAL PACKAGES
    InpDownloadPkg PRESENT IF
      !the object is instantiated on the NPAC SMS!,
    numberPoolBlock-CreatePkg PRESENT IF
      !the object is instantiated on the NPAC SMS!,
    subscriptionVersionLSMS-AssociationPkg PRESENT IF
      !the object is instantiated on the NPAC SMS!
  REGISTERED AS {LNP-OIDS.Inp-objectClass 14};
```

```
...
InpSubscriptionsBehavior BEHAVIOUR
  DEFINED AS !
...

```

The subscriptionVersionLSMS-AssociationPkg will only be used for a InpSubscriptions object instantiated on the NPAC SMS. This package is used for determining the associated LSMSs prior to a broadcast to the LSMSs.

...

-- XX.0 LNP LSMS Association Create Package

subscriptionVersionLSMS-AssociationPkg PACKAGE

BEHAVIOUR subscriptionVersionLSMS-AssociationPkgBehavior;

ACTIONS

subscriptionVersionLSMS-Association;

REGISTERED AS {LNP-OIDS.lnp-package XX};

subscriptionVersionLSMS-AssociationPkgBehavior BEHAVIOUR

DEFINED AS !

**This package provides for conditionally including the
subscriptionVersionLSMS-Association action.**

!;

-- XX.0 LNP Subscription Version LSMS Association Action

subscriptionVersionLSMS-Association ACTION

BEHAVIOUR

SubscriptionVersionLSMS-AssociationDefinition,

SubscriptionVersionLSMS-AssociationBehavior;

MODE CONFIRMED;

WITH INFORMATION SYNTAX LNP-ASN1.LSMS-AssociationAction;

WITH REPLY SYNTAX LNP-ASN1.LSMS-AssociationReply;

REGISTERED AS {LNP-OIDS.lnp-action 11};

SubscriptionVersionLSMS-AssociationDefinition BEHAVIOUR

DEFINED AS !

**The subscriptionVersionLSMS-Association action is the action that is
used via the SOA to NPAC SMS interface by a
service provider to determine the associated LSMS service providers.**

!;

subscriptionVersionLSMS-AssociationBehavior BEHAVIOUR

DEFINED AS !

**Preconditions: This action is issued from an lnpSubscriptions
object. The action performs ...**

The data in the request...

The data in the response...

ASN.1

Note: Area affected indicated below. Details to be filled in once requirements are better defined.

LSMS-AssociationAction ::= SEQUENCE {
 ...
}

LSMS-AssociationReply ::= SEQUENCE {
 ...
}

M&P

TBD

Origination Date: 6/14/00

Originator: Nextlink

Change Order Number: NANC 312

Description: Different User Levels on the LTI

Cumulative SP Priority, Weighted Average:

Pure Backwards Compatible: YES

IMPACT/CHANGE ASSESSMENT

FRS	IIS	GDMO	ASN.1	NPAC	SOA	LSMS
Y				Med	N/A	N/A

Business Need:

Currently the NPAC Low-Tech Interface (LTI) does not provide any mechanism that allows a Service Provider to have different user levels for access to the LTI features. The problem is for access to the reports option on the LTI. By limiting the access based on user level, a Service Provider can control the number of users that have access to this chargeable event.

Description of Change:

Provide two user security levels for the LTI. One would have access to the reports option, and the second would not have this access. All other access would be identical for the two user levels.

Requirements:

Req 1 Two User Security Levels for the LTI

NPAC SMS shall provide two user security levels for the LTI.

Req 2 Normal User Security Level for the LTI

NPAC SMS shall allow LTI users with the normal user security level access to all LTI functionality.

Req 3 Restricted User Security Level for the LTI

NPAC SMS shall only allow LTI users with normal user security level access to the reports functionality.

IIS

No Change Required

GDMO

No Change Required

ASN.1

No Change Required

M&P

Need to modify Section 4.4.1.

4.4.1 To Request a Logon ID:

1) Customer calls 888-NPAC-HEL(P). A USA will tell customer to e-mail him/her with the following information:

- a) How many cards they are requesting
- b) The name of the user of the SecureID Card
- c) The names of the users to be added to the GUI
- d) *The security level of the users (access to all LTI functionality or restricted access (no access to reports functionality))***
- e) The **username** (up to 8 characters) of each person to be added (ex. joeuser)
- f) The **password** (at least 6, but not more than 8 characters with at least one number (ex. chitown1))
- g) The region(s) they want to be added to.
- h) The name, address, and phone number of the contact of where the SecureIDs are to be sent

NOTE: Customers are charged a one-time access fee of \$1000 for EACH logon they request (a SecurID card is given with the logon ID request). The customer is NOT paying for the SecurID card, they are paying for the GUI logonID.

Origination Date: 8/16/00

Originator: LNPA WG

Change Order Number: NANC 316

Description: Change the NSAP Field Size Declaration in ASN.1 – ASN.1 Recompile

This change order is a recompile of the ASN.1 only.

As described in change order NANC 315 (FRS Document Only Change – NSAP Field Size) that was incorporated in FRS Release 3.0.2, the NSAP field currently uses only 12 of the 20 octets declared as the field size. The other 8 are for a port number but this is not currently used. The ASN.1 should be updated to be a field of size 12 octets. This would eliminate the need for the NPAC software to truncate the data sent by the SOAs and LSMs.

ASN.1 Update:

```
OSI-Address ::= SEQUENCE {  
    nsap    OCTET STRING (SIZE (20012)),  
    tsap    OCTET STRING (SIZE (1..4)),  
    ssap    OCTET STRING (SIZE (1..4)),  
    psap    OCTET STRING (SIZE (1..4))  
}
```

Requirements:

No change required.

IIS:

No change required.

GDMO:

No change required.

M&P:

No change required.

Origination Date: 10/25/00

Originator: Verizon

Change Order Number: NANC 319

Description: NPAC Edit to Ensure NPA-NXX of LRN is in Same LATA as NPA-NXX of Ported TN

Cumulative SP Priority, Weighted Average:

Pure Backwards Compatible: YES

IMPACT/CHANGE ASSESSMENT

FRS	IIS	GDMO	ASN.1	NPAC	SOA	LSMS
Y				???	N/A	N/A

Business Need:

Local Number Portability (LNP) standards require that service providers assign at least one Location Routing Number (LRN) per switch per LATA that the switch serves. Post-query LNP call processing in the various switch types requires that the NPA-NXX of an LRN that is returned from the database must be in the same LATA as the NPA-NXX of the dialed number.

Currently, the NPAC does not perform any edits on a New Service Provider CREATE or MODIFY messages in order to ensure that the NPA-NXXs of both the LRN and the ported TN are in the same LATA.

When a call is placed to a ported TN associated with an LRN from an NPA-NXX in a different LATA, the call fails in the originating switch, resulting in a service-affecting condition that is predominantly identified only after customer complaints.

Description of Change:

This proposed Change Order is a request for an NPAC edit on New Service Provider CREATE and MODIFY messages that would reject any CREATE or MODIFY if the NPA-NXXs of the LRN and ported TN contained in the CREATE or MODIFY are not in the same LATA. This edit would eliminate this particular service-affecting condition as well as the expense of troubleshooting the cause and working with the New Service Provider to modify their LRN.

Currently the NPAC has no concept of a LATA. When a new NPA-NXX is opened the LERG assigns a LATA ID. An NPA can cross LATAs. Every NPA-NXX has a LATA association. It is a 3-digit number. There is one LRN per LATA but there can be multiple NPAs in a LATA and multiple LATAs in an NPA. This edit would ensure that the NPA-NXX of the TN and the NPA-NXX of the LRN is the same. LATAs can cross NPAC regions. The LERG would be the source

of the LATA information rather than the Service Providers. If there is no LATA in the LERG information for the NPA-NXX or the LRN then the NPAC would reject the create request. If there were a modification of an LRN to active SVS or in a Mass Update this edit would have to be applied. This would also apply to Pooled Blocks. LATA should not be criteria for Mass Update.

Requirements:

Req 1 LATA ID Information Source

NPAC SMS shall obtain LATA ID information from the LERG.

Req 2 Association of LATA ID with NPA-NXXs

NPAC SMS shall associate a LATA ID with each NPA-NXX in its database.

Req 3 Association of LATA ID with LRNs

NPAC SMS shall associate a LATA ID with each LRN in its database.

Req 4 LRN – LATA ID Relationship

NPAC SMS shall allow one LRN per LATA ID.

Req 5 NPA-NXX – LATA ID Relationship

NPAC SMS shall allow ??? NPA-NXXs per LATA ID.

Note: Is the LATA ID – NPA-NXX association a one to one relationship also?

Req 6 Validation of LATA ID for Subscription Version Creates

NPAC shall reject Subscription Version Create Requests if the NPA-NXX of the TN and the LRN have different LATA IDs.

Req 7 Validation of LATA ID for Subscription Version Modifies

NPAC shall reject Subscription Version Modify Requests if the NPA-NXX of the TN and the LRN have different LATA IDs.

Req 8 Validation of LATA ID for Number Pool Block Creates

NPAC shall reject Number Pool Block Create Requests if the NPA-NXX of the NPA-NXX-X and the LRN have different LATA IDs.

Req 9 Validation of LATA ID for Number Pool Block Modifies

NPAC shall reject Number Pool Block Modify Requests if the NPA-NXX of the NPA-NXX-X and the LRN have different LATA IDs.

IIS

No Change Required

GDMO

No Change Required

ASN.1

No Change Required

M&P

TBD

Origination Date: 12/13/00

Originator: WorldCom

Change Order Number: NANC 321

Description: Regional NPAC Edit of Service Provider Network Data – NPA-NXX Data

Cumulative SP Priority, Weighted Average:

Functional Backwards Compatible: Yes

IMPACT/CHANGE ASSESSMENT

FRS	IIS	GDMO	ASN.1	NPAC	SOA	LSMS
Yes				???	N/A	N/A

Business Need:

When a service provider submits a message to the NPAC in order to create a pending subscription version, the NPAC verifies that the old service provider identified in the message is the current service provider and that the number to be ported is from a portable NPA-NXX. If the telephone number already is a ported number, the NPAC will look at the active SV for that number to determine the identity of the current SP as shown in the active SV. If no active SV exists, then the number is not currently ported and the NPAC determines the current SP instead based on NPA-NXX ownership as shown in the NPAC's network data for each service provider. The NPAC also looks at the network data to confirm that the NPA-NXX has been identified as open to portability.

If a service provider has entered an NPA-NXX in its network data but has done it for its network data associated with the wrong region, then the correct NPAC region, when receiving create messages involving numbers in that NPA-NXX, will be unable to see that the TNs involve a portable NPA-NXX; in this case the create message will be rejected by NPAC. Furthermore, another service provider could erroneously enter the NPA-NXX in its network data for the correct NPAC region. Then the NPAC's portable NPA-NXX validation would pass, but the current service provider validation would fail. In either case the telephone number could not be ported until the service provider network data error were corrected.

It is important therefore to assure that service provider NPA-NXX network data be populated only in the proper NPAC region and to allow only the LERG-assignee to populate the data. The introduction of an NPA edit function, to validate that an NPA-NXX input is to network data associated with the NPAC region encompassing the involved NPA will effectively serve both functions. Such an edit function would not allow a service provider to put its NPA-NXX data in

the wrong NPAC region's database and it consequently would not allow the improper LERG-assignee entries to remain long undetected.

Description of Change:

Service Providers submit Network Data over their SOA interfaces. A provider is required to enter each portable NPA-NXX for which it is the LERG assignee. The NPAC uses this service provider network data to perform certain validation functions of subscription version data -- to confirm current SPID correct and that TN is from portable NXX -- and to determine TN ownership in snap-back situations.

Requirements:

Req 1 Valid NPAs for each NPAC Region

NPAC SMS shall establish a list of valid NPAs for each NPAC region using information obtained from the LERG.

Req 2 Maintaining List of Valid NPAs for Each NPAC Region

NPAC SMS shall maintain the list of valid NPAs for each NPAC region.

Req 3 Updating List of Valid NPAs for Each NPAC Region

NPAC SMS shall update the list of valid NPAs for each NPAC region using information obtained from the LERG.

Req 4 Rejection of NPA-NXXs that Do Not Belong to a Valid NPA for the NPAC Region

NPAC SMS shall reject a Service Provider request to open an NPA-NXX for portability if the associated NPA is not valid for the region.

Req 5 Regional NPAC NPA Edit Flag Indicator

NPAC SMS shall provide a Regional NPA Edit Flag Indicator, which is defined as an indicator on whether or not NPA edits will be enforced by the NPAC SMS for a particular NPAC Region.

Req 6 Regional NPAC NPA Edit Flag Indicator Modification

NPAC SMS shall provide a mechanism for NPAC Personnel to modify the Regional NPA Edit Flag Indicator.

Req 7 Regional NPAC NPA Edit Flag Indicator – Valid Values

NPAC SMS shall use TRUE or FALSE as valid values for the Regional NPA Edit Flag Indicator.

Req 8 Regional NPAC NPA Edit Flag Indicator – Default Value

NPAC SMS shall default the Regional NPA Edit Flag Indicator to **TRUE**.

IIS

No Change Required

GDMO

No Change Required

ASN.1

No Change Required

M&P

TBD

Origination Date: 12/13/00

Originator: LNPA WG

Change Order Number: NANC 322

Description: Clean Up of Failed SP Lists based on Service Provider BDD Response File

Cumulative SP Priority, Weighted Average:

Pure Backwards Compatible: YES

IMPACT/CHANGE ASSESSMENT

FRS	IIS	GDMO	ASN.1	NPAC	SOA	LSMS
Y				???	N/A	???

Business Need:

During discussion of change order NANC 169 at the December 2000 LNPA WG meeting it was decided to write a new change order to address the clean up of Failed SP Lists once a service provider received and processed a Bulk Data Download File or a Delta Bulk Data Download File and responded to the NPAC with its Service Provider BDD Response File.

Description of Change:

It has been requested that NPAC clean up Failed SP Lists using data received in the Service Provider BDD Response File resulting from the processing of a Bulk Data Download File or a Delta Bulk Data Download File.

Requirements:

Req 1 Processing of the Service Provider BDD Response File for Subscription Versions

NPAC SMS shall process the Service Provider BDD Response File, containing positive responses, received from a Service Provider’s ftp site as a result of the Service Provider receiving and processing a Bulk Data Download File or a Delta Bulk Data Download File for Subscription Versions.

Req 2 Processing of the Service Provider BDD Response File for Number Pooling Blocks

NPAC SMS shall process the Service Provider BDD Response File, containing positive responses, received from a Service Provider’s ftp site as a result of the Service Provider receiving and processing a Bulk Data Download File or a Delta Bulk Data Download File for Number Pooling Blocks.

Req 3 Removing a Service Provider from a Subscription Version Failed SP List

NPAC SMS shall remove a Service Provider from a Subscription Version Failed SP List based on the SVID contained in the Service Provider BDD Response File and the timestamp in the file name being greater than or equal to the broadcast timestamp.

Req 4 Removing a Service Provider from a Number Pooling Block Failed SP List

NPAC SMS shall remove a Service Provider from a Number Pooling Block Failed SP List based on the BlockID contained in the Service Provider BDD Response File and the timestamp in the file name being greater than or equal to the broadcast timestamp.

Req 5 Service Provider Not Found on the Failed SP List

NPAC SMS shall continue processing the Service Provider BDD Response File after finding that the SPID for one of the data items in the Service Provider BDD Response File does not match a SPID on the Failed SP List.

Req 6 Validation of SPID in the Service Provider BDD Response File Against SPID of the FTP Directory

NPAC SMS shall validate the SPID of the FTP directory against the SPID in the Service Provider BDD Response File it is retrieving.

Req 7 File Name Format for Service Provider BDD Response File

NPAC SMS shall require the file name format of the Service Provider BDD Response File to be the original BDD file name with a dash and the SPID appended at the end.

Example: Subscription Versions BDD File for SPID 4768

BDD File Name	NPANXX-NPANXX.DD-MM-YYYYHH24MISS
Service Provider BDD Response File Name	NPANXX-NPANXX.DD-MM-YYYYHH24MISS-4768

Note: We need to discuss what the Service Provider BDD Response File should look like (what data it should contain).

Contents of file (separate files for Subscription Versions and Number Pooling Blocks):

- Pipe delimited fields

- New line at end of each record
- First field SVID/BlockID

Add example files and table for Appendix E

NOTE TO CMA: After file definition is accepted construct a response file example that is the same format as the BDD file except that the first field is the SVID or the Block ID and anything beyond that is optional.

IIS

No Change Required

GDMO

No Change Required

ASN.1

No Change Required

M&P

TBD (need to cover how NPAC is notified that the SP BDD Response File has been placed in the ftp site; recommend that the response file not be generated by a SP who has processed a BDD file that contains the complete database dump)

Origination Date: 01/10/2001

Originator: LNPA WG

Change Order Number: NANC 323

Description: Partial Migration of a SPID via Mass Update

Cumulative SP Priority, Weighted Average:

Functional Backwards Compatible: NO

IMPACT/CHANGE ASSESSMENT

FRS	IIS	GDMO	ASN.1	NPAC	SOA	LSMS
Y	Y			Med	Med-High	Med-High

January 2001: After much discussion on the NANC 217 change order the LNPA WG decided that it would be best to have two change orders for updating of SPIDs. NANC 217 would be retained and used to cover the simple case where a SPID is being completely retired (merger or acquisition) and a new change order (NANC 323) created to cover the partial update of a SPID (parts of a company’s assets are transferred to another company). The majority of the information in the NANC 217 change order has been moved into this new change order. The ‘Business Need’ and ‘Description of Change’ that follows was copied directly from NANC 217 so that the history of the requested change would not be lost, however, this change order **will not** address the complete migration of one SPID to another. The complete migration of one SPID to another is covered in NANC 217.

Business Need:

Currently the NPAC does not have the ability to broadcast a mass update on SPID. SPs are experiencing the need to change the SPID on ported telephone numbers. Examples that cause this situation for SPs are mergers, service area trading, data system consolidations, etc. In order to make a SPID change for given ported telephone numbers, the current NPAC operation requires each involved active-like ported telephone numbers to be deleted, and each involved pending subscription to be cancelled resulting in a large coordination effort among service providers. Coordination with all service providers utilizing the NPA/NXX is required to facilitate the SPID change. During the transition period, call routing will be affected and customer service is impacted. Once these actions have been taken and the new network data updated at NPAC, the active-like and pending ported telephone numbers information must be re-created. This procedure causes the customer to be out of service during the process and also increase the porting traffic over the interface.

This Change Order would allow the NPAC to perform this functionality without affecting the customer while reducing porting traffic over the interface.

Description of Change:

It has been requested that Mass Update functionality be enhanced to allow SPID to be changed for all network data and subordinate subscription data. The current NPAC functionality allows mass updates to LRN, GTT data, and optional data (e.g., billing ID) for all active subscriptions currently serviced by that specific Service Provider, by NPA-NXX.

Having this functionality would facilitate a situation where one Service Provider (SP1) purchases/merges with another Service Provider (SP2), and all LNP data needs to be consolidated into a single SPID (on the NPAC) or separated into multiple SPIDs.

Today, the NPAC requires all active subscriptions to be disconnected, and all pending subscriptions to be cancelled, by NPA-NXX for all NPA-NXXs owned by or ported away from SP2. Next, SP2 would delete all LRNs, and then delete all NPA-NXXs. SP1 would then have to add the NPA-NXXs and LRNs that were just deleted by SP2. Finally, the pending and activated SVs would need to be “re-created” under the presumption that SP1 is now the code holder for the NPA-NXXs.

The proposed solution with this change order is the NPAC would perform all of this processing “under the sheets”, and not require SP1 and SP2 to perform all of these steps. The issue of notifications (whether to send or suppress) is NOT addressed at this point in time.

After further analysis it was determined that the current NPAC implementation includes 23 tables that contain a customer SPID. Each will have to be addressed (at a business level) to determine correct NPAC processing should the SPID be modified.

The other issues to determine include:

4. length of time to complete this update.
5. which notifications need to be sent out over the SOA interface, since we are modifying numerous objects.
6. what do we do with current Network and Subscription records (update them with new SPID; or create new ones for the new SPID, and move the previous ones to OLD).

After much discussion on the 7/8/98 telecon, it was decided that the scope of this change order is huge, and it's frequency of use is undetermined at this point in time (speculation is relatively small).

Additionally, AT&T requested that all SPs look at the possibility of performing some type of database migration/conversion instead of having the NPAC perform all of the updates, then have to broadcast to all SPs. The database migration/conversion could potentially be accomplished by using a new NPAC “bulk download file” to update the local database.

The current position for this change order is to have a brief discussion at the Wed, 7/15 meeting in Chicago. The group will seek volunteers for a sub-committee to further analyze this change order in the context of how to accomplish a “merger” using today's functionality, and investigate potential solutions using a “bulk download file” approach, and a full NPAC solution with notifications across the interface. Participants include, AT&T (Beth), Bellcore (John), ESI (Jim), GTE (Gene), MCI (Gustavo), PacBell (Jackie), and Sprint (Dave).

The subcommittee will also talk about the potential of a "partial cut" from one SPID to another (possibly do on a market by market basis, or NPA by NPA basis). During the 11/23/98 telecon, it

was determined that Beth's proposed short term solution would not be easy to accomplish. Details on the telecon will be available at the Dec LNPAWG meeting.

Dec LNPAWG (Atlanta), Mass update is the long term solution, but wanted to have short term solution. In the case of MCI and Brooks, they deleted the SVs, deleted the network data, then put it back out there under the new SPID.

What we looked at for an NPAC manual update, then produce BDD, would require code changes. Plus, BDD would be all records instead of just changed ones. Also, SVs would be modified instead of activated, so the current BDD by time range would NOT pick these up.

Current solution is customer impacting. Two long term options are the actual mass update of this change order, or having the NPAC internally update the SPID, then create appropriate BDD files that capture the changes within the time range.

Jan 00 LNPAWG meeting, the current processing approach is to have the NPAC perform this processing on the NPAC database, then when complete, create separate Bulk Data Download files for the different areas of data (i.e., NPA-NXX, LRN, NPA-NXX-X, Block, SV) that could then be used by each SOA/LSMS to update their local database. However, since this would require Service Providers to wait until the NPAC completed this processing, before they could update their own database, the new approach is for the NPAC to create Selection Input Criteria SPID Mass Update Request Files (SIC-SMURF) that could be used by the NPAC and all Service Providers as the input for everyone to update their own database. It was agreed that we no longer needed the results files.

December 00: Additional information was added to both the Business Need and Description of Change by Sprint to cover the situation of a single SPID being split into multiple SPIDs.

Requirements:

Req 1 SPID Mass Update – OpGUI Entry

NPAC SMS shall allow NPAC Personnel, via the NPAC SMS Administrative Interface, to enter selection input criteria (SPID, NPA-NXX, LRN, and/or NPA-NXX-X) for a partial SPID Mass Update Request Process.

Req 2 SPID Mass Update – Generation of SIC-SMURF Files

NPAC SMS shall provide a mechanism that generates Selection Input Criteria SPID Mass Update Request Files (SIC-SMURF) for SPID, NPA-NXX, LRN, and/or NPA-NXX-X upon completion of the entry of the selection input criteria in the NPAC SMS Administrative Interface, for a partial SPID Mass Update Request Process in the NPAC SMS.

Req 3 SPID Mass Update – NPAC SMS Processing of Requested Data

NPAC SMS shall provide a mechanism to mass update SPID information according to the requested selection input criteria, when changing from one SPID to another SPID in selected NPA-NXX, LRN, and NPA-NXX-X data, and subordinate Number Pool Block and Subscription Version data in the NPAC SMS.

Req 4 SPID Mass Update – Suppression of Notifications

NPAC SMS shall suppress notifications to all Service Providers via the SOA to NPAC SMS Interface and NPAC SMS to LSMS Interface, when performing the partial SPID Mass Update Request Process.

Req 5 SPID Mass Update – NPAC SMS Processing of Requested Data Based on Status

NPAC SMS shall only migrate existing NPA-NXX, LRN, and NPA-NXX-X data, as well as Number Pool Block and Subscription Version data that have ‘active-like’ or ‘pending-like’ statuses when performing the partial SPID Mass Update Request Process.

Notes:

- ‘Active-like’ Blocks or Subscription Versions are defined to be Blocks or Subscription Versions that contain a status of active, sending, partial failure, old with a Failed SP List, or disconnect pending.
- ‘Pending-like’ Blocks or Subscription Versions are defined to be Blocks or Subscription Versions that contain a status of pending, conflict, cancel-pending, or failed.
- “oldOld” history data containing a status of cancelled or old with an empty FailedSP-List will not be migrated.

Req 6 SPID Mass Update – SIC-SMURF File Names

NPAC SMS shall follow the SIC-SMURF file naming convention as described in Appendix E.

Req 7 SPID Mass Update – SIC-SMURF File Formats

NPAC SMS shall follow the SIC-SMURF file format as described in Appendix E.

Req 8 SPID Mass Update – SIC-SMURF NPA-NXX File Processing

NPAC SMS shall use the SIC-SMURF NPA-NXX file to update the SPID associated with NPA-NXXs in the NPAC SMS during the partial SPID Mass Update Request Process.

Req 9 SPID Mass Update – SIC-SMURF NPA-NXX File Processing

NPAC SMS shall update the old service provider SPID on ‘active-like’ subscription versions when the NPA-NXX codeholder SPID is the same as the old service provider SPID on the subscription version during the partial SPID Mass Update Request Process.

Note: Service Providers need to be aware that if they query the NPAC SMS and the old service provider SPID has been migrated they may get old service provider information that is incorrect.

Req 10 SPID Mass Update – SIC-SMURF LRN File Processing

NPAC SMS shall use the SIC-SMURF LRN file to update the SPID associated with LRNs in the NPAC SMS during the partial SPID Mass Update Request Process.

Req 11 SPID Mass Update – SIC-SMURF LRN File Processing

NPAC SMS shall update the blockholder SPID on Number Pool Blocks with the same SPID as its LRN that was updated during the partial SPID Mass Update Request Process.

Req 12 SPID Mass Update – SIC-SMURF-LRN File Processing

NPAC SMS shall update the new service provider SPID on subscription versions with the same SPID as its LRN that was updated during the partial SPID Mass Update Request Process.

Req 13 SPID Mass Update – SIC-SMURF NPA-NXX-X File Processing

NPAC SMS shall use the SIC-SMURF NPA-NXX-X file to update the SPID associated with NPA-NXX-Xs in the NPAC SMS during the partial SPID Mass Update Request Process.

Req 14 SPID Mass Update – Maximum Level of Granularity

NPAC SMS shall perform the partial SPID Mass Update Request Process at a maximum level of granularity of a single SPID.

Req 15 SPID Mass Update – Minimum Level of Granularity

NPAC SMS shall perform the partial SPID Mass Update Request Process at a minimum level of granularity of an NPA-NXX-X.

Req 16 SPID Mass Update – Creation of Number Pool Block for Old Service Provider

NPAC SMS shall create an old Number Pool Block with a new version id for the 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 partial SPID Mass Update Request Process.

Req 17 SPID Mass Update – Creation of Number Pool Block for Old Service Provider – No Broadcast

NPAC SMS shall broadcast no data to the SOAs and LSMs 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 partial SPID Mass Update Request Process.

Req 18 SPID Mass Update – Creation of Subscription Version for Old Service Provider

NPAC SMS shall create an old subscription version with a new version id for the 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 partial SPID Mass Update Request Process.

Req 19 SPID Mass Update – Creation of Subscription Version for Old Service Provider – No Broadcast

NPAC SMS shall broadcast no data to the SOAs and Local SMSs due to the creation of an old subscription version with a new version id for the 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 partial SPID Mass Update Request Process.

Req 20 SPID Mass Update – Exclusion of Data During Recovery

NPAC SMS shall exclude data in a recovery request for activity related to partial SPID Mass Update Request Process activity.

Req 21 Update of SPID on ‘pending-like’ Subscription Versions

NPAC SMS shall allow NPAC Personnel, via the NPAC SMS Administrative Interface, to update the Old Service Provider SPID on ‘pending-like’ subscription versions that have an active subscription version for the same TN.

Req 22 Update SPID on ‘pending-like’ Subscription Versions – 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 ‘pending-like’ status prior to the update of the subscription version with the new SPID.

Req 23 Update SPID on ‘pending-like’ Subscription Versions – Creation of Subscription Version for Old Service Provider – No Broadcast

NPAC SMS shall broadcast no data to the SOAs 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 ‘pending-like’ status prior to the update of the subscription version with the new SPID.

Req 24 Update SPID on Messages Queued for Recovery

NPAC SMS shall apply the SPID update to any messages that are in the queue for recovery.

Points to address during reviewing:

- Should the minimum level of granularity be NPA-NXX-X or TN (Req. 15)

- OLD SPID value will not be migrated on the active SVs but will be on pending SVs -- Still have the problem of updating the OLD SPID on the active SVs in the case of a port of a port.
- Process for SP notifying NPAC of SPID migration
- Process for NPAC notifying all SP in the effected regions of the SPID migration.

Appendix E

SIC-SMURF NPA-NXX Download File

The SIC-SMURF NPA-NXX download file is used as input to the SPID mass update process in the NPAC SMS and all SOAs/LSMSs, to convert NPA-NXX data from the Old SPID to the New SPID. This file contains individual fields that are pipe delimited, with a carriage return (CR) after each SIC-SMURF NPA-NXX record.

The file name for the SIC-SMURF NPA-NXX download file will be in the format:

SIC-SMURF-NPANXX.OldSPID.NewSPID.DD-MM-YYYYHH24MISS (The SIC-SMURF-NPANXX portion is the literal string "SIC-SMURF-NPANXX". The OldSPID is the four digit ID of the Old Service Provider. The NewSPID is the four digit ID of the New Service Provider.)

The SIC-SMURF NPA-NXX file given in the example would be named:

SIC-SMURF-NPANXX.0001.0002.10-13-1996081122

EXPLANATION OF THE FIELDS IN THE SIC-SMURF NPA-NXX DOWNLOAD FILE		
Field Number	Field Name	Value in Example
1	Old Service Provider Id	0001
2	New Service Provider Id	0002
3	NPA-NXX Value	312382

SIC-SMURF LRN Download File

The SIC-SMURF LRN download file is used as input to the SPID mass update process in the NPAC SMS and all SOAs/LSMSs, to convert LRN, Block (SOA/LSMS optional), Subscription Version, and scheduled event for Block (NPAC only) data from the Old SPID to the New SPID. This file contains individual fields that are pipe delimited, with a carriage return (CR) after each SIC-SMURF LRN record.

The file name for the SIC-SMURF LRN download file will be in the format:

SIC-SMURF-LRN.OldSPID.NewSPID.DD-MM-YYYYHH24MISS (The SIC-SMURF-LRN portion is the literal string "SIC-SMURF-LRN". The OldSPID is the four digit ID of the Old Service Provider. The NewSPID is the four digit ID of the New Service Provider.)

The SIC-SMURF-LRN file given in the example would be named:

SIC-SMURF-LRN.0001.0002.10-13-1996081122

EXPLANATION OF THE FIELDS IN THE SIC-SMURF LRN DOWNLOAD FILE

Field Number	Field Name	Value in Example
1	Old Service Provider Id	0001
2	New Service Provider Id	0002
3	LRN Value	3123820000

SIC-SMURF NPA-NXX-X Download File

The SIC-SMURF NPA-NXX-X download file is used as input to the SPID mass update process in the NPAC SMS and all SOAs/LSMSs, to convert NPA-NXX-X data (SOA/LSMS optional) from the Old SPID to the New SPID. This file contains individual fields that are pipe delimited, with a carriage return (CR) after each SIC-SMURF NPA-NXX-X record.

The file name for the SIC-SMURF NPA-NXX-X download file will be in the format:

SIC-SMURF-NPANXXX.OldSPID.NewSPID.DD-MM-YYYYHH24MISS (The SIC-SMURF-NPANXXX portion is the literal string "SIC-SMURF-NPANXXX". The OldSPID is the four digit ID of the Old Service Provider. The NewSPID is the four digit ID of the New Service Provider.)

The SIC-SMURF-NPA-NXX-X file given in the example would be named:

SIC-SMURF-NPANXXX.0001.0002.10-13-1996081122

EXPLANATION OF THE FIELDS IN THE SIC-SMURF NPA-NXX-X DOWNLOAD FILE

Field Number	Field Name	Value in Example
1	Old Service Provider Id	0001
2	New Service Provider Id	0002
3	NPA-NXX-X Value	3123820

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 LSMs 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.