

Origination Date: 01/13/05

Originator: VeriSign

Change Order Number: NANC 401

Description: Separate LSMS Association for OptionalData Fields

Cumulative SP Priority, Weighted Average: N/A

Functionally Backwards Compatible: Yes

IMPACT/CHANGE ASSESSMENT

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

[Redlines listed in this document based on discussion during the Feb and Mar '05 LNPAWG meetings.](#)

Business Need:

During the discussion of NANC 399 and NANC 400 (SV Type and OptionalData Fields) at the January 2005 LNPAWG meeting, a concern was raised that provisioning of this new optional data was an issue. It was stated that it could be handled in two different ways:

- LSMS – Use the current mechanism whereby the NPAC broadcasts porting information to the LSMS, and the LSMS determines which downstream system needs to provision this information. ~~For example, a wireline ported number would be provisioned on the circuit-switched network, whereas a VOIP ported number would be provisioned on a soft switch in the IP network.~~
- NPAC – Use a new mechanism whereby the NPAC allows separate LSMS associations that are divided between their respective downstream systems that will provision this information. The current mechanism will still be maintained for backwards compatibility. The separate associations will be accomplished by using separate/different SPID values. Potentially, two new Managed Objects will be added to accommodate the new optional data (one for SV, one for NPB). For example, SP1 uses association1 for information pertaining to ports in the circuit-switched network, and association2 for ports in the IP network. The NPAC would broadcast data to ~~either~~ association1, or association2, or both association1 and association2, depending on the SV Type. For SP2 that continues to use the current mechanism, the NPAC would continue to broadcast all SV data on their single LSMS association.

By providing this new mechanism, the NPAC provides flexibility for Service Providers to implement a provisioning function of ported SV data that supports both traditional circuit-switched networks and the new IP networks.

Description of Change:

This change order would modify the NPAC to support a separate LSMS association, using a different SPID, for the data in the NPB/SV OptionalData fields. The NPAC would manage the distribution of LSMS broadcasts such that LSMSs that support this new optional data feature would have NPB/SV porting data broadcast down the appropriate LSMS association, and LSMSs that use the current

mechanism would continue to have all NPB/SV porting data broadcast down their single LSMS association.

Two options were discussed, regarding the filtering of the downloads to the 2nd LSMS association:

1. The NPAC would broadcast all data to association-2, and the LSMS would decide whether or not to store the data.
 - a. This functionality would be supported under NANC 399/NANC 400.
 - b. NPAC audits may need a change.
 - i. If LSMS stores all data, no NPAC change required.
 - ii. If LSMS only stores OptionalData, and does not support audits, no NPAC change required.
 - iii. If LSMS only stores OptionalData, and wants to support audits, then NPAC would need to ignore their discrepancy for conventional port data.
 - c. NPAC functionality for modify-active, mass update, and disconnect, no NPAC change required.
2. The NPAC would use a new NPB object and new SV object to transmit data between the NPAC and association2. This will be used for porting data for the NPB/SV OptionalData fields.
 - a. Two new objects required to support this functionality.
 - b. NPAC audits will need a change.
 - i. NPAC must audit based on type of association.
 - ii. NPAC must handle discrepant data for data that the LSMS is not supporting, and therefore, not consider it discrepant.
 - c. NPAC functionality for modify-active, mass update, and disconnect, will need a change. Must send the correct object to the applicable LSMS.

Major points/processing flow/high-level requirements:

1. The NPAC broadcasts NPB/SV porting data to all LSMSs, which in turn provision elements in their respective Service Provider's networks. In order to accommodate NPB/SV OptionalData fields introduced by NANC 399 and NANC 400, Service Providers may institute separate provisioning flows. Individual Service Providers may decide to implement these separate flows through the use of separate LSMS associations with the NPAC.
 - a. Conventional NPB/SV porting data would continue to be broadcast on the current LSMS association.
 - b. In order to meet some Service Provider's provision needs, an LSMS will be allowed to establish a dedicated LSMS association for data associated with NPB/SV OptionalData fields. This will be accomplished by using a different SPID than the one used for conventional porting data (1a above). There are two options for receiving the OptionalData fields.
 - i. The data for this second association will use existing objects (SV object which will include subscription OptionalData fields, NPB object which will include pooled block OptionalData fields).
 - ii. The data for this second association will use new objects (SVOptionalData object for subscription OptionalData fields, NPBOptionalData object for pooled block OptionalData fields).
2. A new SP specific tunable, Channel for LSMS Unbundled Enhancement (CLUE), will indicate whether or not an LSMS **ONLY** supports receiving ~~conventional NPB/SV porting messages on one LSMS association and data for NPB/SV the new OptionalData fields object on a separate LSMS association.~~ One new object will contain SV data, the second one will contain NPB data.
3. CLUE (when value set to TRUE) will be used to allow a Service Provider, by using a different SPID value, to establish an LSMS association specifically for data associated with ~~NPB/SV the new OptionalData fields objects.~~
4. LSMS function masks ~~will be do not require any changes to handle the LSMS conventional NPB/SV data versus the data associated with NPB/SV OptionalData fields, transmitting across their applicable LSMS associations.~~
5. NPAC processing in a CLUE environment. Applicable for Service Providers with CLUE set to TRUE.
 - a. When a Service Provider **does not support** CLUE with the NPAC:
 - i. The new OptionalData objects will be generated by the NPAC for downloading to the LSMS, based on the Service Provider profile settings.
 - ii. All LSMS traffic (network data, NPB data, SV data, notifications, NPB OptionalData, SV OptionalData) flows across the one LSMS association. Success/failure of the download is BAU.
 - iii. Priority and Type of message is BAU based on current functionality.

- iv. LSMS Recovery is ~~BAU based on current functionality.~~
 - v. An NPB/SV Query is ~~BAU based on current functionality.~~
 - vi. If the Service Provider has enabled OptionalData fields in their NPAC Profile, these attributes will be broadcast across the one LSMS association.
- b. When a Service Provider **does support** CLUE with the NPAC:
- i. The new OptionalData objects WILL be generated by the NPAC for downloading to the LSMS. The actual data will be based on which OptionalData fields are enabled in their NPAC Profile.
 - ii. The NPAC sends LSMS data based on current functionality mask.
 - iii. LSMS associates to the NPAC with the existing functionality mask (“Association2”, which is the only association from the second SPID). Only applicable traffic (network data, notifications, the new NPBOptionalData object, the new SVOptionalData object) flows across “Association2”. Success/failure of the download is BAU.
 - 1. ~~In instances where only one LSMS association is available, the NPAC sends only applicable LSMS traffic (network data, NPB data, SV data, notifications) across the one LSMS association. However, they are added to the failed list even if the first download is successful, because the other LSMS association is not available at that time.~~
 - 2. ~~In instances where a separate LSMS notification has been established, the NPAC splits the data based on functionality mask. The **standard configuration** includes, all conventional LSMS traffic (network data, NPB data, SV data, notifications) across the one LSMS association, and only OptionalData LSMS traffic (NPB OptionalData, SV OptionalData) across the other LSMS association dedicated to data associated with SV OptionalData fields.~~
 - iv. LSMS Recovery is based on the functionality supported by that binding association, as described in 5-b-iii, above.
 - 1. ~~The current LSMS association will be used for network data recovery, NPB data, SV data, and notifications.~~
 - 2. ~~The new LSMS association will be used for NPB OptionalData and SV OptionalData.~~
 - v. Queries will change based on the functionality supported by that binding association, as described in 5-b-iii, above.
 - 1. ~~The current LSMS association will send back NPB/SV data for conventional ports.~~
 - 2. ~~The new LSMS association will send back NPB/SV data for OptionalData ports.~~
6. NPAC processing will change to accommodate audits. The NPAC will use a combination of the Service Provider profile settings, plus the CLUE indicator to determine if the new

OptionalData objects are involved. Each LSMS will need to respond back to the NPAC query request, based on current data. The NPAC will consolidate-process the ~~two~~ responses, compare to the NPAC data, and send any updates if needed. In the case of a CLUE LSMS, conventional porting data is not expected, so no discrepancies will be reported back to the requesting SOA.

7. If an LSMS indicates that it supports ~~CLUE~~the new association, but they don't change any of their SP Profile flags and therefore don't support any OptionalData fields, it becomes a dark association for NPB/SV data, because no downloads are generated nor sent to that new association.

Open Issues:

1. ~~Since NPB/SV broadcasts are sent to both associations, what should the failedList reflect if one was successful and one failed (e.g., a partial, partial-failure)? If both associations use the same SPID value, then how do we differentiate between a partial, partial-failure versus a full, partial-failure?~~Not an issue when there are separate associations using different SPIDs. Each association and their response/lack of response, is managed independent of one another.
2. Audit complexity is increased because the NPAC must initiate one type of query to the conventional LSMS (association1), and a different type of query to the OptionalData LSMS (association2).~~The results need to be combined to compare to the NPAC, then separated again if there is a discrepancy that needs to be corrected. How should this be reported back to the auditing SOA (e.g., a 1/2 discrepant LSMS)?~~ Added complexity because two objects now represent the same SV/NPB.
3. ~~Modify-Active and Mass Updates are similarly impacted by increased complexity. Should this process be changed, or should all mods contain all data, and let the LSMS select out the appropriate data?~~ Not an issue when there are separate associations using different SPIDs.
4. Should we create a new version of the NPB and SV BDD files to accommodate the difference between conventional porting data and OptionalData porting data?
5. Adding new Managed Objects requires much greater development and testing time on both the NPAC and the LSMS.

Requirements:

TBD

IIS:

TBD

GDMO:

TBD

ASN.1:

TBD