Origination Date: 05/14 /09

Originator: LNPAWG

### Change Order Number: NANC TBD

### Description: Last Alternative SPID

### Cumulative SP Priority, Weighted Average: N/A

Functionally Backward Compatible: Yes

## IMPACT/CHANGE ASSESSMENT

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

**Business Need:**

The existing Alternative SPID parameter (within the OptionalData attribute) was introduced to allow Service Providers having a wholesale business relationship with subtending Service Providers, such as resellers or class 2 interconnected VoIP providers, to identify the subtending Service Provider. However, since the Alternative SPID was implemented, there have been occasions where the provider having the retail relationship with the end user must be identified in the Alternative SPID parameter. Because the subtending Service Provider having the wholesale business relationship with the network Service Provider, and the subtending Service Provider having the retail business relationship with the end user, may be different entities, there is a need to have the ability to separately identify two Alternative SPID values. This is true in the case of the iTRS service, where the move of an end user from one TRS provider to another is indicated by populating the new TRS provider's SPID in the Alternative SPID parameter.

**Description of Change:**

A Last Alternative SPID parameter will be added to the Optional Data field of the Subscription Version. The new parameter will represent the SPID of the Service Provider having the retail relationship with the end user. The current Alternative SPID will continue to represent the service provider having a wholesale relationship with the network Service Provider, as originally intended.

To maintain backward compatibility, the name and XML label of the original Alternative SPID will remain the same. The new, Last Alternative SPID will be labeled to make clear its use is to identify the subtending Service Provider having the retail relationship with the end user.

LABELS:

* Current parameter, Alternative SPID - "ALTSPID"
* New parameter, Last Alternative SPID - "LALTSPID"

The NPAC/SMS will provide the ability to provision a Last Alternative SPID for each SV and Pooled Block record.

This information will be provisioned by the SOA and broadcast to the LSMS upon activation of the SV or Pooled Block and upon modification for those SOA and LSMS associations optioned “on” to send and receive this data.

This parameter shall be added to the Bulk Data Download file, and be available to a Service Provider’s SOA/LSMS.

This parameter will be supported across the interface on an opt-in basis only and will be functionally backward compatible.

The OptionalData CMIP attribute will be populated with an XML string. The string is defined by the schema documented in the XML section below. XML is used to provide flexibility to add additional parameters to the SV records and Pool Block records when approved by the LLC.

**Major points/processing flow/high-level requirements:**

This change order proposes to add a new parameter (within the OptionalData attribute) to the subscription version and number pool block objects. Hence, the FRS, IIS, GDMO, and ASN.1 will need to reflect the addition of this new parameter. This new parameter will cause changes to the NPAC CMIP interface, however they will be functionally backward compatible and optional by Service Provider (separate indicators for SOA and LSMS).

**Best Practice discussion points:**

With this change order, a Best Practice should be added that addresses the situation where the first subtending Service Provider is the same as the last subtending Service Provider, as well as when they are different:

* The (existing) Alternative SPID is always populated when there is a subtending Service Provider serving the telephone number.
* The Last Alternative SPID is populated whenever the identity of the Service Provider with the retail relationship with the end-user is known.
* In the case where there is only one subtending Service Provider and that fact is known, then both Alternative SPID values are populated, with the same SPID value.

**Requirements:**

Section 1.2, NPAC SMS Functional Overview

Add a new section that describes the functionality of the Last Alternative SPID parameter (within the Optional Data attribute). See description of Change above.

Section 3.1, NPAC SMS Data Models

Add new parameter for the Last Alternative SPID parameter (within the Optional Data attribute). See below:

| **NPAC CUSTOMER DATA MODEL** | | | |
| --- | --- | --- | --- |
| **Attribute Name** | **Type (Size)** | **Required** | **Description** | |
| [snip] |  |  |  | |
| NPAC Customer SOA Last Alternative SPID Indicator | B | √ | A Boolean that indicates whether the NPAC Customer supports Last Alternative SPID information from the NPAC SMS to their SOA. The Last Alternative SPID is the SPID of the subtending Service Provider having the retail relationship with the end user.  The default value is False. | |
| NPAC Customer LSMS Last Alternative SPID Indicator | B | √ | A Boolean that indicates whether the NPAC Customer supports Last Alternative SPID information from the NPAC SMS to their LSMS. The Last Alternative SPID is the SPID of the subtending Service Provider having the retail relationship with the end user.  The default value is False. | |
| [snip] |  |  |  | |

Table 3-2 NPAC Customer Data Model

| **Subscription Version Data MODEL** | | | |
| --- | --- | --- | --- |
| **Attribute Name** | **Type (Size)** | **Required** | **Description** | |
| [snip] |  |  |  | |
| Last Alternative SPID | C (4) |  | Last Alternative SPID for Subscription Version.  This field may be specified only if the service provider SOA supports Last Alternative SPID. The Last Alternative SPID is the SPID of the subtending Service Provider having the retail relationship with the end user. | |
| [snip] |  |  |  | |

Table 3‑6 Subscription Version Data Model

| **number pooling block hoder information Data MODEL** | | | |
| --- | --- | --- | --- |
| **Attribute Name** | **Type (Size)** | **Required** | **Description** | |
| [snip] |  |  |  | |
| Last Alternative SPID | C (4) |  | Last Alternative SPID for Number Pool Block.  This field may be specified only if the service provider SOA supports Last Alternative SPID. The Last Alternative SPID is the SPID of the subtending Service Provider having the retail relationship with the end user. | |
| [snip] |  |  |  | |

Table 3‑8 Number Pooling Block Holder Information Data Model

R3-7.2 Administer Mass update on one or more selected Subscription Versions

NPAC SMS shall allow NPAC personnel to specify a mass update action to be applied against all Subscription Versions selected (except for Subscription Versions with a status of old, partial failure, sending, disconnect pending or canceled) for LRN, DPC values, SSN values, SV Type, Alternative SPID, Last Alternative SPID, Billing ID, End User Location Type or End User Location Value.

RR3-210 Block Holder Information Mass Update – Update Fields

NPAC SMS shall allow NPAC Personnel, via a mass update, to update the block holder default routing information (LRN, DPC(s), and SSN(s)) SV Type, Alternative SPID, and Last Alternative SPID, for a 1K Block as stored in the NPAC SMS. (Previously B-762)

R3‑8 Off-line batch updates for Local SMS Disaster Recovery

NPAC SMS shall support an off‑line batch download (via 4mm DAT tape and FTP file download) to mass update Local SMSs with Subscription Versions, NPA-NXX-X Information, Number Pool Block and Service Provider Network data.

The contents of the batch download are:

1. Subscriber data:
2. [snip]
3. Last Alternative SPID (for Local SMSs that support Last Alternative SPID)
4. [snip]
5. Block Data
6. [snip]
7. Last Alternative SPID (for Local SMSs that support Last Alternative SPID)
8. [snip]

RR3-79.1 Number Pool NPA-NXX-X Holder Information – Routing Data Field Level Validation

NPAC SMS shall perform field-level data validations to ensure that the value formats for the following input data, are valid according to the formats specified in the Block Data Model upon Block creation scheduling for a Number Pool, or when re-scheduling a Block Create Event: (Previously N-75.1).

[snip]

Last Alternative SPID (if supported by the Block Holder SOA)

RR3-149 Addition of Number Pooling Block Holder Information – Field-level Data Validation

NPAC SMS shall perform field-level data validations to ensure that the value formats for the following input data, is valid according to the formats specified in the Subscription Version Data Model upon Block creation for a Number Pool: (Previously B-250)

[snip]

Last Alternative SPID (if supported by the Block Holder SOA)

RR3-157 Modification of Number Pooling Block Holder Information – Routing Data

NPAC SMS shall allow NPAC personnel, Service Provider via the SOA to NPAC SMS Interface, or Service Provider via the NPAC SOA Low-tech Interface, to modify the block holder default routing information (LRN, DPC(s), and SSN(s)), Number Pool Block SV Type (if support by the Block Holder SOA), ~~and~~ Number Pool Block Alternative SPID (if support by the Block Holder SOA), and Last Alternative SPID (if supported by the Block Holder SOA), for a 1K Block as stored in the NPAC SMS. (Previously B-320)

R4-8 Service Provider Data Elements

NPAC SMS shall require the following data if there is no existing Service Provider data:

[snip]

NPAC Customer SOA Last Alternative SPID Support Indicator

NPAC Customer LSMS Last Alternative SPID Support Indicator

R5‑16 Create Subscription Version - New Service Provider Optional input data

NPAC SMS shall accept the following optional fields from NPAC personnel or the new Service Provider upon Subscription Version creation for an Inter-Service Provider port:

1. [snip]
2. Last Alternative SPID (if supported by the Service Provider SOA)

R5‑18.1 Create 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 Inter-Service Provider port:

1. [snip]
2. Last Alternative SPID (if supported by the Service Provider SOA)

RR5-5 Create “Intra-Service Provider Port” Subscription Version - Current Service Provider Optional Input Data

NPAC SMS shall accept the following optional fields from the NPAC personnel or the Current Service Provider upon a Subscription Version Creation for an Intra-Service Provider port:

1. [snip]
2. Last Alternative SPID (if supported by the Service Provider SOA)

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:

1. [snip]
2. Last Alternative SPID (if supported by the Service Provider SOA)

R5‑27.1 Modify Subscription Version - New Service Provider Data Values

NPAC SMS shall allow the following data to be modified in a pending or conflict Subscription Version for an Inter-Service Provider or Intra-Service Provider port by the new/current Service Provider or NPAC personnel:

1. [snip]
2. Last Alternative SPID (if supported by the Service Provider SOA)

R5‑28 Modify Subscription Version - New Service Provider Optional input data.

NPAC SMS shall accept the following optional fields from the NPAC personnel or the new Service Provider upon modification of a pending or conflict Subscription version:

1. [snip]
2. Last Alternative SPID (if supported by the Service Provider SOA)

R5‑29.1 Modify 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.

1. [snip]
2. Last Alternative SPID (if supported by the Service Provider SOA)

R5‑36 Modify Active Subscription Version - Input Data

NPAC SMS shall allow the following data to be modified for an active Subscription Version:

1. [snip]
2. Last Alternative SPID (if supported by the Service Provider SOA)

R5‑37 Active Subscription Version - New Service Provider Optional input data.

NPAC SMS shall accept the following optional fields from the new Service Provider or NPAC personnel for an active Subscription Version to be modified:

1. [snip]
2. Last Alternative SPID (if supported by the Service Provider SOA)

R5‑38.1 Modify Active 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 an active version:

1. [snip]
2. Last Alternative SPID (if supported by the Service Provider SOA)

R5-74.3 Query Subscription Version - Output Data

NPAC SMS shall return the following output data for a Subscription Version query request initiated by NPAC personnel or a SOA to NPAC SMS interface user:

1. [snip]
2. Last Alternative SPID (if supported by the Service Provider SOA)

R5-74.4 Query Subscription Version - Output Data

NPAC SMS shall return the following output data for a Subscription Version query request initiated over the NPAC SMS to Local SMS interface:

1. [snip]
2. Last Alternative SPID (if supported by the Service Provider LSMS)

RR5-91 Addition of Number Pooling Subscription Version Information – Create “Pooled Number” Subscription Version

NPAC SMS shall automatically populate the following data upon Subscription Version creation for a Pooled Number port: (Previously SV-20)

1. [snip]
2. Last Alternative SPID (Value set to same field as Block)

Req 1 – Service Provider SOA Last Alternative SPID Edit Flag Indicator

NPAC SMS shall provide a Service Provider SOA Last Alternative SPID Edit Flag Indicator tunable parameter which defines whether a SOA supports Last Alternative SPID.

Req 2 – Service Provider SOA Last Alternative SPID Edit Flag Indicator Default

NPAC SMS shall default the Service Provider SOA Last Alternative SPID Edit Flag Indicator tunable parameter to FALSE.

Req 3 – Service Provider SOA Last Alternative SPID Edit Flag Indicator Modification

NPAC SMS shall allow NPAC Personnel, via the NPAC Administrative Interface, to modify the Service Provider SOA Last Alternative SPID Edit Flag Indicator tunable parameter.

Req 4 – Service Provider LSMS Last Alternative SPID Edit Flag Indicator

NPAC SMS shall provide a Service Provider LSMS Last Alternative SPID Edit Flag Indicator tunable parameter which defines whether an LSMS supports Last Alternative SPID.

Req 5 – Service Provider LSMS Last Alternative SPID Edit Flag Indicator Default

NPAC SMS shall default the Service Provider LSMS Last Alternative SPID Edit Flag Indicator tunable parameter to FALSE.

Req 6 – Service Provider LSMS Last Alternative SPID Edit Flag Indicator Modification

NPAC SMS shall allow NPAC Personnel, via the NPAC Administrative Interface, to modify the Service Provider LSMS Last Alternative SPID Edit Flag Indicator tunable parameter.

Req 7 Activate Subscription Version - Send Last Alternative SPID to Local SMSs

NPAC SMS shall, for a Service Provider that supports Last Alternative SPID, send the Last Alternative SPID parameter for an activated Inter or Intra-Service Provider Subscription Version port via the NPAC SMS to Local SMS Interface to the Local SMSs.

Req 8 Activate Number Pool Block - Send Last Alternative SPID to Local SMSs

NPAC SMS shall, for a Service Provider that supports Last Alternative SPID, send the Last Alternative SPID parameter for an activated Number Pool Block via the NPAC SMS to Local SMS Interface to the Local SMSs.

Req 9 Audit for Support of Last Alternative SPID

NPAC SMS shall audit the Last Alternative SPID parameter as part of a full audit scope, only when a Service Provider’s LSMS supports Last Alternative SPID.

**Appendix E – Bulk Data Download File Examples.**

NOTE: If a Service Provider supports Last Alternative SPID, the format of the Bulk Data Download file will contain delimiters for the parameter.

| **Explanation of the fields in the subscription download file** | | |
| --- | --- | --- |
| **Field Number** | **Field Name** | **Value in Example** |
| 1 | Version Id | 0000000001 |
| [snip] |  |  |
| 999 | Last Alternative SPID | Not present if LSMS or SOA does not support the Last Alternative SPID as shown in this example. If it were present the value would be as defined in the SV Data Model. |
|  |  |  |

Table E- 1 -- Explanation of the Fields in The Subscription Download File

| **Explanation of the fields in the Block download file** | | |
| --- | --- | --- |
| **Field Number** | **Field Name** | **Value in Example** |
| 1 | Block Id | 1 |
| [snip] |  |  |
| 999 | Last Alternative SPID | Not present if LSMS or SOA does not support the Last Alternative SPID as shown in this example. If it were present the value would be as defined in the SV Data Model. |
|  |  |  |

Table E- 6 -- Explanation of the Fields in The Subscription Download File

# IIS

Addition to the current IIS flow descriptions that relate to SV and NPB attributes.

Flow B.4.4.1 – Number Pool Block Create/Activate by SOA

Flow B.4.4.2 – Number Pool Block Create by NPAC SMS

Flow B.4.4.12 – Number Pool Block Modify by NPAC SMS

Flow B.4.4.13 – Number Pool Block Modify by Block Holder SOA

If the “SOA Supports Last Alternative SPID Indicator” is set in the service provider’s profile on the NPAC SMS, the following parameter may optionally be included:

Last Alternative SPID

Flow B.5.1.2 – Subscription Version Create by the Initial SOA (New Service Provider)

Flow B.5.1.3 – Subscription Version Create by Second SOA (New Service Provider)

Flow B.5.1.11 – Subscription Version Create for Intra-Service Provider Port

[snip]

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

[snip]

Last Alternative SPID – if supported by the Service Provider SOA

Flow B.5.2.1 – Subscription Version Modify Active Version Using M-ACTION by a Service Provider SOA

Flow B.5.2.3 – Subscription Version Modify Prior to Activate Using M-ACTION

Flow B.5.2.4 – Subscription Version Modify Prior to Activate Using M-SET

[snip]

The current service provider can only modify the following attributes:

[snip]

Last Alternative SPID – if supported by the Service Provider SOA

Flow B.5.6 – Subscription Version Query

[snip]

The query return data includes:

[snip]

Last Alternative SPID – if supported by the Service Provider (SOA, LSMS)

**GDMO:**

No Change Required.

**ASN.1:**

No Change Required.

**XML:**

Note – the XML shown below is existing US XML (XML-US-2009-05.doc) and new NANC TBD.

<?xml version="1.0" encoding="UTF-8"?>

<xs:schema xmlns:xs="<http://www.w3.org/2001/XMLSchema>" elementFormDefault="qualified" attributeFormDefault="unqualified">

<!-- Basic Data Types -->

<xs:simpleType name="NumberString">

<xs:restriction base="xs:string">

<xs:pattern value="[0-9]{0,}"/>

</xs:restriction>

</xs:simpleType>

<xs:simpleType name="SPID">

<xs:restriction base="xs:string">

<xs:length value="4"/>

</xs:restriction>

</xs:simpleType>

<!-- Second Level Data Types -->

<xs:simpleType name="EULV\_DATATYPE">

<xs:restriction base="NumberString">

<xs:minLength value="1"/>

<xs:maxLength value="12"/>

</xs:restriction>

</xs:simpleType>

<xs:simpleType name="EULT\_DATATYPE">

<xs:restriction base="NumberString">

<xs:length value="2"/>

</xs:restriction>

</xs:simpleType>

<xs:simpleType name="BID\_DATATYPE">

<xs:restriction base="xs:string">

<xs:minLength value="1"/>

<xs:maxLength value="4"/>

</xs:restriction>

</xs:simpleType>

<xs:simpleType name="Generic-URI">

<xs:restriction base="xs:string">

<xs:minLength value="1"/>

<xs:maxLength value="255"/>

</xs:restriction>

</xs:simpleType>

<xs:complexType name="OptionalData">

<xs:all>

<xs:element name="ALTSPID" type="SPID" nillable="true" minOccurs="0"/>

<xs:element name="ALTEULV" type="EULV\_DATATYPE" nillable="true" minOccurs="0"/>

<xs:element name="ALTEULT" type="EULT\_DATATYPE" nillable="true" minOccurs="0"/>

<xs:element name="ALTBID" type="BID\_DATATYPE" nillable="true" minOccurs="0"/>

<xs:element name="VOICEURI" type="Generic-URI" nillable="true" minOccurs="0"/>

<xs:element name="MMSURI" type="Generic-URI" nillable="true" minOccurs="0"/>

<xs:element name="SMSURI" type="Generic-URI" nillable="true" minOccurs="0"/>

<xs:element name="LALTSPID" type="SPID" nillable="true" minOccurs="0"/>

</xs:all>

</xs:complexType>

<xs:element name="OptionalData" type="OptionalData"/>

</xs:schema>