

Origination Date: 03/12/08

Originator: Sprint-Nextel

Change Order Number: NANC TBD

Description: URI Fields (SMS)

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

Business Need:

Short Messaging Service (SMS) Field:

SMS (texting) is a store and forward messaging service that allows SMS-compatible subscribers to send and receive short text messages. SMS subscribers are addressed via their 10-digit telephone number and an e-mail address. SMS is transported via IP by the originating network using URIs to indicate the network address or gateway SMSC of the terminating user. Historically SMS has been a feature for wireless users only, but today it is growing into a broadband wireline feature as a result of the growth of IP-based broadband networks.

SMS originating Carriers need to know if a terminating 10 digit TN is SMS capable (wireless or broadband) and if SMS capable the address of the SMSC. This allows a message to be efficiently transported between the originating and terminating carrier networks. Having a standardized central source to locate the TN/SMS mapping will eliminate attempts to deliver messages to non-SMS capable TNs and reduce customer complaints over dropped or missed messages that have not, nor could be delivered. The NPAC SMS URI parameter function would be analogous to the DPC/SSN gateway data in the NPAC; that is, the “URI” would merely identify the carrier gateway (SMSC) appropriate for sending/receiving an SMS message to a particular ported or pooled TN.

The availability of the SMS URI will allow originating carriers to recognize SMS capable TNs so that IP based carriers delivering service to traditionally “landline” numbers from wireless TNs can determine if the TN is SMS capable and use the URI for terminating network routing information. Increased usage and a high success rate on message delivery are the two primary benefits of this new NPAC feature.

Description of Change:

The NPAC/SMS will provide the ability to provision an SMS URI 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 field shall be added to the Bulk Data Download file, and be available to a Service Provider’s SOA/LSMS.

This field 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 future flexibility to add additional fields 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 field 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 field. This new field will cause changes to the NPAC CMIP interface, however they will be functionally backward compatible and optional by service provider.

Requirements:

Section 1.2, NPAC SMS Functional Overview

Add a new section that describes the functionality of the SMS URI (Uniform Resource Identifier) Field (Optional Data). See description of Change above.

Section 3.1, NPAC SMS Data Models

Add new attribute for the SMS URI (Uniform Resource Identifier) Field (Optional Data). See below:

NPAC CUSTOMER DATA MODEL			
Attribute Name	Type (Size)	Required	Description
[snip]			
NPAC Customer SOA SMS URI Indicator	B	√	A Boolean that indicates whether the NPAC Customer supports SMS URI information from the NPAC SMS to their SOA. The SMS URI is the network address to the Service Provider's gateway for short messaging service. The default value is False.
NPAC Customer LSMS SMS URI Indicator	B	√	A Boolean that indicates whether the NPAC Customer supports SMS URI information from the NPAC SMS to their LSMS. The SMS URI is the network address to the Service Provider's gateway for short messaging service. The default value is False.
[snip]			

Table 3-2 NPAC Customer Data Model

SUBSCRIPTION VERSION DATA MODEL			
Attribute Name	Type (Size)	Required	Description
[snip]			
SMS URI	C (255)		SMS URI for Subscription Version.

SUBSCRIPTION VERSION DATA MODEL			
Attribute Name	Type (Size)	Required	Description
			This field may only be specified if the service provider SOA supports SMS URI. The SMS URI is the network address to the Service Provider's gateway for short messaging service.
[snip]			

Table 3-6 Subscription Version Data Model

NUMBER POOLING BLOCK HODER INFORMATION DATA MODEL			
Attribute Name	Type (Size)	Required	Description
[snip]			
SMS URI	C (255)		SMS URI for Number Pool Block. This field may only be specified if the service provider SOA supports SMS URI. The SMS URI is the network address to the Service Provider's gateway for short messaging service.
[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, **SMS URI (if the requesting SOA supports SMS URI data)**, 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), **SMS URI (if the requesting SOA supports SMS URI data)**), 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:

- Subscriber data:
 - [snip]
 - **SMS URI (for Local SMSs that support SMS URI)**
 - [snip]
- Block Data
 - [snip]
 - **SMS URI, (for Local SMSs that support SMS)**
 - [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]

SMS URI (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]

SMS URI (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)), and SMS URI field (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 SMS URI Support Indicator

NPAC Customer LSMS SMS URI 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:

• [snip]

• SMS URI (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:

- [snip]
- SMS URI (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:

- [snip]
- SMS URI (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:

- [snip]
- SMS URI (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:

- [snip]
- SMS URI (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:

- [snip]
- SMS URI (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.

- [snip]
- SMS URI (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:

- [snip]
- SMS URI (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:

- [snip]
- SMS URI (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:

- [snip]
- SMS URI (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:

- [snip]
- SMS URI (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:

- [snip]
- SMS URI (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)

- [snip]
- SMS URI (Value set to same field as Block)

Req 1 – Service Provider SOA SMS URI Edit Flag Indicator

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

Req 2 – Service Provider SOA SMS URI Edit Flag Indicator Default

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

Req 3 – Service Provider SOA SMS URI Edit Flag Indicator Modification

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

Req 4 – Service Provider LSMS SMS URI Edit Flag Indicator

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

Req 5 – Service Provider LSMS SMS URI Edit Flag Indicator Default

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

Req 6 – Service Provider LSMS SMS URI Edit Flag Indicator Modification

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

Req 7 Activate Subscription Version - Send SMS URI to Local SMSs

NPAC SMS shall, for a Service Provider that supports SMS URI, send the SMS URI attribute 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 SMS URI to Local SMSs

NPAC SMS shall, for a Service Provider that supports SMS URI, send the SMS URI attribute for an activated Number Pool Block via the NPAC SMS to Local SMS Interface to the Local SMSs.

Req 9 Audit for Support of SMS URI

NPAC SMS shall audit the SMS URI attribute as part of a full audit scope, only when a Service Provider's LSMS supports SMS URI.

Appendix B – Glossary

URI – Uniform Resource Identifier

Appendix E – Bulk Data Download File Examples.

NOTE: If a Service Provider supports SMS URI, the format of the Bulk Data Download file will contain delimiters for the attribute.

EXPLANATION OF THE FIELDS IN THE SUBSCRIPTION DOWNLOAD FILE		
Field Number	Field Name	Value in Example
1	Version Id	0000000001
[snip]		
999	SMS URI	Not present if LSMS or SOA does not support the SMS URI 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	SMS URI	Not present if LSMS or SOA does not support the SMS URI 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 SMS URI Indicator” is set in the service provider’s profile on the NPAC SMS, the following attributes may optionally be included:

SMS URI

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]

SMS URI – 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]

SMS URI – if supported by the Service Provider SOA

Flow B.5.6 – Subscription Version Query

[snip]

The query return data includes:

[snip]

SMS URI – 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 NANC 399 and new NANC 428.

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema targetNamespace="urn:npac:lnp:opt-data:1.0" elementFormDefault="qualified"
attributeFormDefault="unqualified" xmlns:xs="http://www.w3.org/2001/XMLSchema"
xmlns="urn:npac:lnp:opt-data:1.0">
  <xs:simpleType name="SPID">
    <xs:restriction base="xs:string">
      <xs:length 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:sequence>
      <xs:element name="ALTSPID" type="SPID" nillable="true" minOccurs="0"/>
      <xs:element name="SMSURI" type="Generic-URI" nillable="true" minOccurs="0"/>
    </xs:sequence>
  </xs:complexType>
  <xs:element name="OptionalData" type="OptionalData"/>
</xs:schema>
```