NANC 400

**URI Fields**

**Origination Date :**01/05/2005

**Originator:**Neustar

**Description:**

**Voice URI Field**

No solution currently exists to address the issue of industry-wide distribution of IP end-point addressing information for IP-based Voice service.  No solution addresses portability of such service.  A call originating from one provider’s IP service typically has no information as to whether the dialed TN’s service is IP-based or not, nor what its address is, forcing the use of the PSTN as an intermediary between IP networks.  This need not be the case.  Look up databases are not the issue, as many methods of looking up the data exist.  Typically, VoIP providers have their own intra-network look up capability in order to terminate calls.  The issue lies in the availability of a sharing and distribution mechanism for TN-level routing information between all interested service providers.  The provisioning and distributing of routing information is the precise charter of the NPAC for all ported and pooled TNs.

It so happens that today, the vast majority of TNs using IP-based Voice service involve an NPAC transaction (existing TNs migrating to VoIP are ported, new assignments are typically taken from a pooled block).  The ability for IP-based SPs to share routing data associated with a ported or pooled TN surely will be desired (it is on the “to do” list of IP-groups within many SPs offering or planning to offer VoIP service).  The addition of a Voice URI and the various URIs below, because the URIs are merely addressing information, is directly analogous to adding DPC and SSN information to ported and pooled TNs.  The addition of the URI fields described in this change order is unlikely to cause additional NPAC activates, because the fields are intended for numbers that would be ported or pooled anyway.  This is therefore the most cost effective method of provisioning IP look up engines (in whatever flavor they happen to take) with URI information relating to a ported or pooled TN.

The addition of these URI fields to the NPAC also benefits the industry in that it inherently coordinates and synchronizes the update of the SS7-based number portability look up databases with that of the IP-based look up databases.  Should the updates not be synchronized, service could be affected for an indeterminate amount of time.

**Multimedia Media Messaging Service (MMS), Push to Talk Over Cellular (PoC) & Presence URI Fields:**

There is a need to enable the ability for SPs and Clearinghouses to look up routing information for IP-based services associated with ported and pooled numbers.  Since default CO code level data does not apply for these TNs, query engines need to be provisioned with a portability and pooling correction.  The addition of these three fields will satisfy this need and enable both individual SPs, as well as Service Bureaus, to automatically update their look up engines with the new routing data.  As indicated above, these IP-service routing fields are in fact directly analogous to the existing SS7-based DPC/SSN routing fields already supported by NPAC (i.e. – ISVM, LIDB, WSMSC, etc.).

**Description of Change:**

The NPAC/SMS will provide the ability to provision Voice, MMS, PoC and Presence URIs 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.

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

These fields 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 new fields to the subscription version and number pool block objects.  Hence, the FRS, IIS, GDMO, and ASN.1 will need to reflect the addition of these fields.  These new fields will cause changes to the NPAC CMIP interface, however they will be functionally backward compatible and optional by service provider.

Meaning any service provider (facility-based or otherwise) providing voice service over IP.

**Requirements:**

Section 1.2, NPAC SMS Functional Overview

Add a new section that describes the functionality of the Voice/MMS/PoC/Presence URI (Uniform Resource Identifier) Fields (Optional Data).  See description of Change above.

Section 3.1, NPAC SMS Data Models

Add new attribute for the Voice/MMS/PoC/Presence URI (Uniform Resource Identifier) Fields (Optional Data).  See below:

|  |  |
| --- | --- |
| **NPAC CUSTOMER DATA MODEL** |   |
| **Attribute Name** | **Type (Size)** | **Required** | **Description** |
| NPAC Customer SOA Voice URI Indicator | B | Y | A Boolean that indicates whether the NPAC Customer supports Voice URI information from the NPAC SMS to their SOA.  The Voice URI is the network address to the Service Provider’s gateway for voice service.The default value is False. |
| NPAC Customer LSMS Voice URI Indicator | B | Y | A Boolean that indicates whether the NPAC Customer supports Voice URI information from the NPAC SMS to their LSMS.  The Voice URI is the network address to the Service Provider’s gateway for voice service.The default value is False. |
| NPAC Customer SOA MMS URI Indicator | B | Y | A Boolean that indicates whether the NPAC Customer supports MMS URI information from the NPAC SMS to their SOA.  The MMS URI is the network address to the Service Provider’s gateway for multi-media messaging service.The default value is False. |
| NPAC Customer LSMS MMS URI Indicator | B | Y | A Boolean that indicates whether the NPAC Customer supports MMS URI information from the NPAC SMS to their LSMS.  The MMS URI is the network address to the Service Provider’s gateway for multi-media messaging service.The default value is False. |
| NPAC Customer SOA PoC URI Indicator | B | Y | A Boolean that indicates whether the NPAC Customer supports PoC URI information from the NPAC SMS to their SOA.  The PoC URI is the network address to the Service Provider’s gateway for Push-To-Talk over Cellular service.The default value is False. |
| NPAC Customer LSMS PoC URI Indicator | B | Y | A Boolean that indicates whether the NPAC Customer supports PoC URI information from the NPAC SMS to their LSMS.  The PoC URI is the network address to the Service Provider’s gateway for Push-To-Talk over Cellular service.The default value is False. |
| NPAC Customer SOA Presence URI Indicator | B | Y | A Boolean that indicates whether the NPAC Customer supports Presence URI information from the NPAC SMS to their SOA.  The Presence URI is the network address to the Service Provider’s gateway for IMS service (IP Multimedia Subsystem), an interactive session of real-time communication-centric services.The default value is False. |
| NPAC Customer LSMS Presence URI Indicator | B | Y | A Boolean that indicates whether the NPAC Customer supports Presence URI information from the NPAC SMS to their LSMS.  The Presence URI is the network address to the Service Provider’s gateway for IMS service (IP Multimedia Subsystem), an interactive session of real-time communication-centric services.The default value is False. |
|   |   |   |   |
|   |   |   |   |   |

Table 3-2 NPAC Customer Data Model

|  |  |
| --- | --- |
| **Subscription Version Data MODEL** |   |
| **Attribute Name** | **Type (Size)** | **Required** | **Description** |
| Voice URI | C (255) |   | Voice URI for Subscription Version.This field may only be specified if the service provider SOA supports Voice URI.  The Voice URI is the network address to the Service Provider’s gateway for voice service. |
| MMS URI | C (255) |   | MMS URI for Subscription Version.This field may only be specified if the service provider SOA supports MMS URI.  The MMS URI is the network address to the Service Provider’s gateway for multi-media messaging service. |
| PoC URI | C (255) |   | PoC URI for Subscription Version.This field may only be specified if the service provider SOA supports PoC URI.  The PoC URI is the network address to the Service Provider’s gateway for Push-To-Talk over Cellular service. |
| Presence URI | C (255) |   | Presence URI for Subscription Version.This field may only be specified if the service provider SOA supports Presence URI.  The Presence URI is the network address to the Service Provider’s gateway for IMS service (IP Multimedia Subsystem), an interactive session of real-time communication-centric services. |
|   |   |   |   |
|   |   |   |   |   |

Table 3‑6 Subscription Version Data Model

|  |  |
| --- | --- |
| **number pooling block hoder information Data MODEL** |   |
| **Attribute Name** | **Type (Size)** | **Required** | **Description** |
| Voice URI | C (255) |   | Voice URI for Number Pool Block.This field may only be specified if the service provider SOA supports Voice URI.  The Voice URI is the network address to the Service Provider’s gateway for voice service. |
| MMS URI | C (255) |   | MMS URI for Number Pool Block.This field may only be specified if the service provider SOA supports MMS URI.  The MMS URI is the network address to the Service Provider’s gateway for multi-media messaging service. |
| PoC URI | C (255) |   | PoC URI for Number Pool Block.This field may only be specified if the service provider SOA supports PoC URI.  The PoC URI is the network address to the Service Provider’s gateway for Push-To-Talk over Cellular service. |
| Presence URI | C (255) |   | Presence URI for Number Pool Block.This field may only be specified if the service provider SOA supports Presence URI.  The Presence URI is the network address to the Service Provider’s gateway for IMS service (IP Multimedia Subsystem), an interactive session of real-time communication-centric services. |
|   |   |   |   |

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, Voice URI (if the requesting SOA supports Voice URI data), MMS URI (if the requesting SOA supports MMS URI data), PoC URI (if the requesting SOA supports PoC URI data), Presence URI (if the requesting SOA supports Presence 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), Voice URI (if the requesting SOA supports Voice URI data), MMS URI (if the requesting SOA supports MMS URI data), PoC URI (if the requesting SOA supports PoC URI data), Presence URI (if the requesting SOA supports Presence 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:

-  Voice URI (for Local SMSs that support Voice URI data)

-  MMS URI (for Local SMSs that support MMS URI)

-  PoC URI (for Local SMSs that support PoC URI)

-  Presence URI (for Local SMSs that support Presence URI data)

* Block Data

-  Voice URI (for Local SMSs that support Voice URI data)

-  MMS URI, (for Local SMSs that support MMS)

-  PoC URI, (for Local SMSs that support PoC URI data)

-  Presence URI (for Local SMSs that support Presence URI data)

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).

-  Voice URI (if supported by the Block Holder SOA)

-  MMS URI (if supported by the Block Holder SOA)

-  PoC URI (if supported by the Block Holder SOA)

-  Voice URI, MMS URI, PoC URI, Presence 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)

-  Voice URI (if supported by the Block Holder SOA)

-  MMS URI (if supported by the Block Holder SOA)

-  PoC URI (if supported by the Block Holder SOA)

-  Presence 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 Voice URI/MMS URI/PoC URI/Presence URI fields (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:

* NPAC Customer SOA Voice URI Indicator
* NPAC Customer LSMS Voice URI Indicator
* NPAC Customer SOA MMS URI Support Indicator
* NPAC Customer LSMS MMS URI Support Indicator
* NPAC Customer SOA PoC URI Support Indicator
* NPAC Customer LSMS PoC URI Support Indicator
* NPAC Customer SOA Presence URI Support Indicator
* NPAC Customer LSMS Presence 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:

* Voice URI (if supported by the Service Provider SOA)
* MMS URI (if supported by the Service Provider SOA)
* PoC URI (if supported by the Service Provider SOA)
* Presence 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:

* Voice URI (if supported by the Service Provider SOA)
* MMS URI (if supported by the Service Provider SOA)
* PoC URI (if supported by the Service Provider SOA)
* Presence 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:

* Voice URI (if supported by the Service Provider SOA)
* MMS URI (if supported by the Service Provider SOA)
* PoC URI (if supported by the Service Provider SOA)
* Presence 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:

* Voice URI (if supported by the Service Provider SOA)
* MMS URI (if supported by the Service Provider SOA)
* PoC URI (if supported by the Service Provider SOA)
* Presence 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:

* Voice URI (if supported by the Service Provider SOA)
* MMS URI (if supported by the Service Provider SOA)
* PoC URI (if supported by the Service Provider SOA)
* Presence 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:

* Voice URI (if supported by the Service Provider SOA)
* MMS URI (if supported by the Service Provider SOA)
* PoC URI (if supported by the Service Provider SOA)
* Presence 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.

* Voice URI (if supported by the Service Provider SOA)
* MMS URI (if supported by the Service Provider SOA)
* PoC URI (if supported by the Service Provider SOA)
* Presence 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:

* Voice URI (if supported by the Service Provider SOA)
* MMS URI (if supported by the Service Provider SOA)
* PoC URI (if supported by the Service Provider SOA)
* Presence 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:

* Voice URI (if supported by the Service Provider SOA)
* MMS URI (if supported by the Service Provider SOA)
* PoC URI (if supported by the Service Provider SOA)
* Presence 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:

* Voice URI (if supported by the Service Provider SOA)
* MMS URI (if supported by the Service Provider SOA)
* PoC URI (if supported by the Service Provider SOA)
* Presence 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:

* Voice URI (if supported by the Service Provider SOA)
* MMS URI (if supported by the Service Provider SOA)
* PoC URI (if supported by the Service Provider SOA)
* Presence 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:

* Voice URI (if supported by the Service Provider LSMS)
* MMS URI (if supported by the Service Provider LSMS)
* PoC URI (if supported by the Service Provider LSMS)
* Presence 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)

* Voice URI (Value set to same field as Block)
* MMS URI (Value set to same field as Block)
* PoC URI (Value set to same field as Block)
* Presence URI (Value set to same field as Block)

Req 1 – Service Provider SOA Voice URI Edit Flag Indicator

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

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

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

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

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

Req 4 – Service Provider LSMS Voice URI Edit Flag Indicator

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

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

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

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

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

Req 1.1 through 6.1 same as Req 1 through 6.  Replace “Voice URI” with “MMS URI”.

Req 1.2 through 6.2 same as Req 1 through 6.  Replace “Voice URI” with “PoC URI”.

Req 1.3 through 6.3 same as Req 1 through 6.  Replace “Voice URI” with “Presence URI”.

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

NPAC SMS shall, for a Service Provider that supports Voice URI, send the Voice 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 7.1 same as Req 7.  Replace “Voice URI” with “MMS URI”.

Req 7.2 same as Req 7.  Replace “Voice URI” with “PoC URI”.

Req 7.3 same as Req 7.  Replace “Voice URI” with “Presence URI”.

Req 8  Activate Number Pool Block - Send Voice URI to Local SMSs

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

Req 8.1 same as Req 8.  Replace “Voice URI” with “MMS URI”.

Req 8.2 same as Req 8.  Replace “Voice URI” with “PoC URI”.

Req 8.3 same as Req 8.  Replace “Voice URI” with “Presence URI”.

Req 9  Audit for Support of Voice URI

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

Req 9.1 same as Req 9.  Replace “Voice URI” with “MMS URI”.

Req 9.2 same as Req 9.  Replace “Voice URI” with “PoC URI”.

Req 9.3 same as Req 9.  Replace “Voice URI” with “Presence URI”.

Several Service Providers requested that NANC 400 be broken up into four separate and distinct change orders, one for each URI Type.  These four will be 429, 430, 431, and 432.

**Final Resolution:**

Implemented

US: Not implemented.  Apr 2007, broken out into four separate change orders, NANC 429, 430, 431, 432

CA: NPAC Point Release 3.3.2.1

**Related Release:**

US: Not implemented. Apr 2007, broken out into four separate change orders, NANC 429, 430, 431, 432

CA: NPAC Point Release 3.3.2.1

**Status:** Implemented