Origination Date: 11/20/2012

Originator: Verizon Wireless

### Change Order Number: 452

**Description:** Ethernet Connectivity to the NPAC

**Functional Backwards Compatible:** Yes

**IMPACT/CHANGE ASSESSMENT**

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

(NOTE: all references in this document to “T1” refers to a T1 Network Connection, not a T1 Timer in the NPAC)

**Business Need:**

Currently, the NPAC is configured to support dedicated circuits consisting of T1s or Fractional T1s. As implementations of Next-Generation Networks increase and the use of Ethernet connectivity expands, Service Providers are beginning to encounter situations where T1 or DS3 connections are not available and the only type of connection option is via Ethernet.

In order to support technological changes, NPAC connections need to support Ethernet in addition to current T1 technology.

**Description of Change:**

This change order is being created to analyze and document the feasibility and timing of adding Ethernet Connectivity support to the NPAC interfaces for SOA/LSMS.

The current NPAC Connectivity Requirements allow for the use of T1s or Fractional T1s.

With this change order, a Service Provider may choose to use an Ethernet Connection to communicate with the NPAC.

The analysis should consider:

* Performance of Ethernet connections
* Reliability of Ethernet connections
* Automatic fail-over of Ethernet connections
* Impacts to the Service Provider’s network and network equipment
* Impacts to the Service Provider’s SOAs and LSMSs
* Impacts to Neustar’s network and network equipment
* Impacts to the NPAC

**Requirements:**

FRS section 6.4.1 Protocol Requirements. Add Ethernet at Physical and possibly Data Link layer in R6-24. This would allow the Service Provider to have the option to connect via Ethernet and take advantage of the latest advances in IP technology.

R6-24 Interface protocol stack

Both of the NPAC SMS interfaces, as defined above, shall be implemented via the following protocol stack:

| **Interface Protocol Stack** | |
| --- | --- |
| Application | CMISE, ACSE, ROSE |
| Presentation | ANSI T1.224 |
| Session: | ANSI T1.224 |
| Transport: | TCP, RFC1006 |
| Network: | IP |
| Link | PPP, MAC, Frame Relay, ATM (IEEE 802.3) |
| Physical | DS1, DS-0 x n , V.34 |

Table 6‑1 Interface Protocol Stack

**IIS:**

A similar table in 2.2 OSI Protocol Support would be updated to include Ethernet.

**GDMO:**

No updates required.

**ASN.1:**

No updates required.