**Origination Date:** 09/03/15

**Originator:** iconectiv

### Change Order Number: NANC 472

**Description:** ASN.1 – Audit Discrepancy Report

**Functional Backwards Compatible:** Yes

**IMPACT/CHANGE ASSESSMENT**

|  |  |  |
| --- | --- | --- |
| DOC | FRS | IIS |
| Y | N |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| CMIP | GDMO | ASN.1 | **NPAC** | SOA | LSMS |
| N | Y | Y | N | N |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| XML | XIS | XSD | **NPAC** | SOA | LSMS |
| N | Y | Y | N | N |

**Business Need**

Audit Processing - the discrepancy report for CMIP (MismatchAttributes definition in ASN.1) indicates that the SV Type can be reported as discrepant. However, the ASN.1 definition for SVType does not support a "no-value-needed" choice, which means that the SV Type could not be reported as null in either NPAC/LSMS or non-null in the other system, even though SV Type, from an interface perspective, is optional for downloads. The same issue exists for the XML interface

**Description of Change:**

Modify SV Type to support a "no-value-needed" choice. This will be used in a scenario where an LSMS that supports SV Type does not return a value in response to an audit query. A correction for the SV Type value will be sent to the LSMS, and the notification to the auditing SOA will indicate that the LSMS sent back a NULL value for the SV Type attribute.

February 2019 LNPA TOSC call:

After further analysis of this change order, it was discovered that the XML interface would also have a similar impact that CMIP has, so this change order needs further updating.

March 2019 LNPA TOSC meeting:

Change order updated to include XML impacts.

Further analysis indicated FRS requirements were not previously identified, so they have been added. Since the issue is related to the SOA audit discrepancy reporting, instead of changes to the SV Type structure in the NPAC SMS, updates to requirements focus on the audit discrepancy reporting capability.

Support of a capability to report that an SV Type is not present in the LSMS in an audit discrepancy report sent to SOA may require changes for the SOA to handle the message, so this capability will be supported on an “opt-in” basis. If a SOA Service Provider does not support the capability, then the existing behavior for reporting the discrepancy shall be taken (the audit result is “failed due to discrepancies” if that is the only failure, but a discrepancy report is not sent to SOA). If the SOA Service Provider supports the new capability, then they will receive discrepancy information indicating that the SV Type was not present in the LSMS.

Note, since the NPAC supports an SV Type value on every SV record, there cannot be an audit discrepancy condition where the LSMS has a value for the SV Type on an SV or Block but the NPAC does not and there will be no need for the NPAC to modify an SV/Block record in the LSMS to null out the SV Type.

There will be no change to support the LSMS reporting in an SV or NPB query reply that it has a null value for the SV Type. If an LSMS does not have the SV Type populated on an SV or NPB, then a query reply for those records would not include an SV Type.

February 25, 2020 Informal LNP meeting:

Change order updated to include modifications to the ASN.1 to add tagging to the mismatch attributes for the SVType to make the implementation unambiguous.

October 2020 LNP Informal meeting:

Change order updated to include modifications to the FRS to R4.8 Service Provider Data Elements list for new NPAC Customer SOA No SV Type Audit Discrepancy Indicator tunable.

**FRS changes:**

Section 3.1, NPAC SMS Data Models

Add new attributes for the SV Type value of Null in an Audit Discrepancy. See below:

| **NPAC CUSTOMER DATA MODEL** |
| --- |
| **Attribute Name** | **Type (Size)**  | **Required** | **Description** |
| [snip] |  |  |  |
| NPAC Customer SOA No SV Type Audit Discrepancy Indicator | B | √ | A Boolean that indicates whether the NPAC Customer supports reporting no value for the SV Type attribute in an Audit Discrepancy report. The default value is False. |

Section 3.9, Service Provider Support Indicators

Req 1 Service Provider SOA No SV Type Audit Discrepancy Indicator

NPAC SMS shall provide a Service Provider SOA No SV Type Audit Discrepancy Indicator tunable parameter which defines whether a SOA supports receiving Audit Discrepancies from the NPAC SMS where the LSMS does not have a value for the SV Type populated for a subscription version or number pool block (so it shall not be reported in the Audit Discrepancy) but the NPAC SMS does have a value populated (the NPAC SMS value shall be reported in the Audit Discrepancy).

Req 2 Service Provider SOA No SV Type Audit Discrepancy Indicator Default

NPAC SMS shall default the Service Provider SOA No SV Type Audit Discrepancy Indicator tunable parameter to FALSE.

Req 3 Service Provider SOA No SV Type Audit Discrepancy Indicator Modification

NPAC SMS shall allow NPAC Personnel, via the NPAC Administrative Interface, to modify the Service Provider SOA No SV Type Audit **Discrepancy** Indicator tunable parameter.

**Section 8, Audit Administration - Section 8.4, System Functionality**

[snip]

RR8-21 Audit for Support of SV Type

NPAC SMS shall audit the SV Type attribute as part of a full audit scope, only when a Service Provider’s LSMS supports SV Type. (previously NANC 399, Req 17)

**RR8-21.1 Null SV Type Audit Discrepancy Reporting**

NPAC SMS shall be able to detect and report a discrepancy where an LSMS supports the SV Type and does not have a value for the SV Type on an SV or Block and the NPAC SMS has a value for the SV Type as follows:

* If the Originating Service Provider SOA No SV Type Audit Discrepancy Indicator is set to FALSE, the NPAC SMS shall record that a discrepancy occurred due to mismatched attributes on the SV Type for this failure and shall report that the LSMS failed the audit as part of the Audit Results, but shall not report the audit discrepancy details for this failure to the SOA.
* If the Originating Service Provider SOA No SV Type Audit Discrepancy Indicator is set to TRUE, the NPAC SMS shall record that a discrepancy occurred due to mismatched attributes on the SV Type for this failure and shall report that the LSMS failed the audit as part of the Audit Results, and shall report the audit discrepancy details for this failure to the SOA. The audit discrepancy details reported shall indicate the NPAC SMS value for the SV Type and shall not contain the LSMS Value for the SV Type.

[snip]

R4‑8 Service Provider Data Elements

NPAC SMS shall require the following data if there is no existing Service Provider data: (reference NANC 399)

…..

74 NPAC Customer SOA No SV Type Audit Discrepancy Indicator

…..

[snip]

ASN.1:

MismatchAttributes ::= SEQUENCE {

 seq0 [0] SEQUENCE {

 lsms-subscriptionLRN LRN,

 npac-subscriptionLRN LRN

 } OPTIONAL,

 seq1 [1] SEQUENCE {

 lsms-subscriptionNewCurrentSP ServiceProvId,

 npac-subscriptionNewCurrentSP ServiceProvId

 } OPTIONAL,

[snip]

 seq17 [17] SEQUENCE {

 lsms-sv-type [0] SVType OPTIONAL, -- not sent if LSMS has no value

 npac-sv-type [1] SVType

 } OPTIONAL,

 seq18 [18] SEQUENCE {

 lsms-optional-data OptionalData,

 npac-optional-data OptionalData

 } OPTIONAL

}

**XML/XSD:**

**Long form**

[snip]

<xs:complexType name="AuditMismatchAttributes">

    <xs:sequence>

         <xs:element name="svb\_lrn" minOccurs="0">

              <xs:complexType>

                  <xs:sequence>

                      <xs:element name="audit\_discrepancy\_lsms" type="Lrn" nillable="true"/>

                      <xs:element name="audit\_discrepancy\_npac" type="Lrn" nillable="true"/>

                  </xs:sequence>

              </xs:complexType>

         </xs:element>

     [snip]

         <xs:element name="svb\_sv\_type" minOccurs="0">

             <xs:complexType>

                 <xs:sequence>

                       <xs:element name="audit\_discrepancy\_lsms" type="SVType" minOccurs="0"/>

                       <xs:element name="audit\_discrepancy\_npac" type="SVType"/>

                   </xs:sequence>

               </xs:complexType>

           </xs:element>

 [snip]

**Short form**

[snip]

<xs:complexType name="AuditMismatchAttributes">

    <xs:sequence>

         <xs:element name="SLRN" minOccurs="0">

              <xs:complexType>

                  <xs:sequence>

                      <xs:element name="ADLS" type="Lrn" nillable="true"/>

                      <xs:element name="ADNP" type="Lrn" nillable="true"/>

                  </xs:sequence>

              </xs:complexType>

         </xs:element>

     [snip]

         <xs:element name="SVTY" minOccurs="0">

             <xs:complexType>

                 <xs:sequence>

                       <xs:element name="ADLS" type="SVType" minOccurs="0"/>

                       <xs:element name="ASNP" type="SVType"/>

                   </xs:sequence>

               </xs:complexType>

           </xs:element>

 [snip]