
Release 2 Change Order Requirements – 043/430/98

The following change orders are included in Release 2 and are documented in detail below:

ILL 3 - NPA-NXX Filter enhancements

ILL 75 - Validate Due Date is > than the NPA-NXX effect date upon Pending Version Creation

ILL 79 - Notification Recovery

ILL 131 - Creation of old SV for Every Change

NANC 35 - ContactPagerPin

NANC 48 - Multiple Service Provider Ids per SOA Association

NANC 68 - Mass Update Requirements Modification

NANC 77 - Time Range ASN.1 definition

NANC 83 - NPAC Time Synchronization

NANC 108- IIS Discrepancy with R5-26

NANC 114-Download subscription-version-id-optional

NANC 131- LRN- DownloadData Modification

NANC 138-Defintion of Cause Code Values-REVISITED

NANC 139-Network Data Download to SOA

NANC 146-SP Contact Data Handling

NANC 148-LNP Type in SV Object Creation Notification

~~NANC 149 - Use of time in due date - continued~~

NANC 151- TN addition to attribute value change notification

NANC 156-6.5.3.1 Flow Modification

NANC 160- Single TN in a Range Create

NANC 162- TN Attribute as GET-Replace

Note: Change Orders that have been clarifications to previously documented Release 2 change orders have been merged in this document as indicated in the table below and will not be referenced separately as release 2 requirements.

Requirement Retained	Requirement Merged and Removed
ILL 3	NANC 120, NANC 167, NANC 177
ILL 79	NANC 145, NANC 158, NANC 184, NANC 185, NANC 206
NANC 48	NANC 178
NANC 68	ILL 186
NANC 146	NANC 181

Change Order Number: ILL 3

IMPACT/CHANGE ASSESSMENT

FRS	IIS	ASN.1	GDMO	Perot	1	SOA Lockheed	LSMS
Y	Y	Y	Y	Y	Y	Y	Y

Enhancement to Screening of NPA-NXX broadcasts

This feature would enhance the requirements for the management of NPA-NXX (accepted) filters and allows NPA (accepted) filters in addition to the NPA-NXX (accepted) filters. In the current definition of filters the filters are exclusive. The revised definition would make filters inclusive.

The new header, text and requirements below should be added in section 3 prior to RR3-5 as section 3.6. The header that is currently 3.6 would become 3.7 and would be moved after RR3-9.

3.6 NPA and/or NPA-NXX (Accepted) Filter Functionality

The NPA and/or NPA-NXX (Accepted) Filter Functionality allows a service provider to specify which NPAs and/or NPA-NXXs for which they will accept downloads of subscription versions from the NPAC SMS. If a Local SMS removes a filter to accept an NPA-NXX for which they were previously receiving subscription version downloads then the Local SMS is responsible for removing subscription versions with this NPA-NXX from their database. Conversely, if a Local SMS creates a filter to accept an NPA-NXX that currently has ported subscription versions associated with it, then the Local SMS is responsible for downloading the subscription versions associated with this NPA-NXX in their database.

Note that per requirement R8-16.1, queries as a result of an audits will not be sent to a Local SMS system if they are not accepting downloads for subscription versions being audited.

Requirement 1 (FRS section 3) - Specification by NPAC SMS Service Provider ID for NPA AND/OR NPA-NXX Screening Data Management

The NPAC SMS shall identify the NPA AND/OR NPA-NXX Screening Data with a Service Provider using the Service Provider ID for NPA AND/OR NPA-NXX screening data management.

Requirement 2 (FRS section 3)- NPAC Personnel Addition of NPA AND/OR NPA-NXX Screening Data

NPAC SMS shall allow NPAC personnel for Service Provider to add to the list of NPAs and/or NPA-NXXs from which they will accept Local SMS subscription version download requests.

Requirement 3 (FRS section 3)- NPAC Personnel Deletion of NPA AND/OR NPA-NXX Screening Data

NPAC SMS shall allow NPAC personnel for Service Provider to delete in the list of NPAs and/or NPA-NXXs from which they will accept Local SMS subscription version download requests.

Requirement 4 (section 6 proprietary) - SOA to NPAC SMS Addition of NPA AND/OR NPA-NXX Screening Data for Service Provider

NPAC SMS shall support the addition of an NPA AND/OR NPA-NXX to the list of NPAs and/or NPA-NXXs from which a Service Provider will accept Local SMS subscription version download requests via a secure, NPAC SOA Low-tech Interface.

Requirement 5 (section 6 proprietary) - SOA to NPAC SMS Deletion of NPA AND/OR NPA-NXX Screening Data for Service Provider

NPAC SMS shall support the deletion of an NPA AND/OR NPA-NXX in the list of NPAs and/or NPA-NXXs from which a Service Provider will accept Local SMS subscription version download requests via a secure, NPAC SOA Low-tech Interface.

Requirement 6 (section 9) – NPAC Personnel NPA AND/OR NPA-NXX Screening List Report

NPAC SMS shall create a report for NPAC Personnel using the NPAC Administrative Interface that shows for any or all Service Providers the list of NPAs and/or NPA-NXXs from which they will accept Local SMS subscription version download requests.

Requirement 7 (section 9) - Service Provider NPA AND/OR NPA-NXX Screening List Report

NPAC SMS shall create a report using the NPAC SOA Low-tech Interface that shows for the requesting Service Provider the list of NPAs and/or NPA-NXXs from which they will accept Local SMS subscription version download requests.

Requirement 8 (section 3) – Service Provider NPA AND /OR NPA-NXX - No filters specified

NPAC SMS shall broadcast no data to a Service Provider Local SMS systems via the NPAC SMS to Local SMS interface if no NPA and/or NPA-NXX (accepted) filters have been specified.

Requirement 9 (section 3) – Service Provider NPA AND /OR NPA-NXX - Filter to receive all

NPAC SMS shall broadcast all data to a Service Provider Local SMS systems via the NPAC SMS to Local SMS interface if a filter specifying all NPAs should be broadcast.

Modifications to the existing requirements for filters would be as follows:

RR3-5 Create (Accepted) Filtered NPA and/or NPA-NXX for a Local SMS

NPAC SMS shall allow a Service Provider to create an (accepted) filtered NPA and/or NPA-NXX for a given Local SMS, via the NPAC SMS to Local SMS interface and the SOA to NPAC SMS interface, which results in the SMS broadcasting subscriptions with the (accepted) filtered NPA and/or NPA-NXX to the Local SMS.

RR3-6 Delete (Accepted) Filtered NPA and/or NPA-NXX for a Local SMS

NPAC SMS shall allow a Service Provider to delete an (accepted) filtered NPA and/or NPA-NXX for a given Local SMS, via the NPAC SMS to Local SMS interface and the SOA to NPAC SMS interface, which results in the SMS NOT broadcasting subscriptions with the previously (accepted) filtered NPA and/or NPA-NXX to the given Local SMS.

RR3-7 Query (Accepted) Filtered NPA and/or NPA-NXXs for a Local SMS

NPAC SMS shall allow a Service Provider to query (accepted) filtered NPA and/or NPA-NXXs for a given Local SMS via the NPAC SMS to Local SMS interface and the SOA to NPAC SMS interface.

RR3-8 NPA-NXX network data creation filtering

NPAC SMS shall filter NPA-NXX network data creation to a Service Provider LSMS or SOA system if an NPA and/or NPA-NXX filter is present for that NPA-NXX.

RR3-9 NPA-NXX First Usage Notification

NPAC SMS shall filter the first usage notification for a subscription version in an NPA-NXX to a Service Provider LSMS or SOA system if an NPA and/or NPA-NXX filter is present for that NPA-NXX.

Assumption 1 - Filter Deletion

NPAC SMS shall upon deletion of a filter for a Service Provider not delete any other defined filters for that Service Provider.

Assumption 2 - Overlapping (Accepted) Filter NPA and/or NPA-NXXs for a Local SMS

NPAC SMS will allow a Service Provider to input an overlapping (accepted) filtered NPA and/or NPA-NXX.

Assumption 3 – Overlapping (Accepted) Filter NPA and/or NPA-NXXs Precedence

NPAC SMS in the case of overlapping filters will use the superset of the filters defined.

Assumption 4 – Filtering of LRN information

NPAC SMS will not filter LRN information as a result of an NPA and or NPA/NXX filter.

Constraint 1 – Modify (Accepted) Filter NPA and/or NPA-NXXs for a Local SMS

NPAC SMS will not allow a Service Provider to modify an (accepted) filtered NPA and/or NPA-NXX.

GDMO

25.0 LNP Service Provider NPA-NXX Managed Object Class

```
lsmsFilterNPA-NXX MANAGED OBJECT CLASS
  DERIVED FROM "CCITT Rec. X.721 (1992) | ISO/IEC 10165-2 : 1992":top;
  CHARACTERIZED BY
    lsmsFilterNPA-NXX-Pkg;
  REGISTERED AS {LNP-OIDS.lnp-objectClass 25};

lsmsFilterNPA-NXX-Pkg PACKAGE
  BEHAVIOUR
    lsmsFilterNPA-NXX-Definition,
    lsmsFilterNPA-NXX-Behavior;
  ATTRIBUTES
    lsmsFilterNPA-NXX-ID GET,
    lsmsFilterValue GET;
  ;

lsmsFilterNPA-NXX-Definition BEHAVIOUR
  DEFINED AS !
    The lsmsFilterNPA-NXX class is the managed object
    used to identify the NPA-NXX values for which a service provider
    wants to be informed of for subscription version broadcasts.
  !;

lsmsFilterNPA-NXX-Behavior BEHAVIOUR
  DEFINED AS !
    NPAC SMS Managed Object used for the Local SMS to NPAC SMS interface
    and the NPAC SMS to SOA interface.

    All attributes are read only. Once created, the lsmsFilterNPA-NXX
    object can be deleted via the Local SMS or SOA interface. The
    lsmsFilterNPA-NXX-ID is specified by the NPAC SMS.

    The Local SMS or SOA can M-DELETE, M-CREATE and M-GET the
    lsmsFilterNPA-NXX objects on the NPAC SMS. (LSMS Network Data
    Association Function).

    The NPA and/or NPA-NXX Filter Functionality allows a service
    provider to specify which NPAs and/or NPA-NXXs for which they
    will accept downloads of subscription versions from the NPAC
```

SMS. If a Local SMS removes a filter to accept an NPA-NXX for which they were previously receiving subscription version downloads, then the Local SMS is responsible for removing subscription versions with this NPA-NXX from their database. Conversely, if a Local SMS creates a filter to accept an NPA-NXX that currently has ported subscription versions associated with it, then the Local SMS is responsible for downloading the subscription versions associated with this NPA-NXX into their database.

!;

102.0 LNP LSMS Filter Value

```

lsmsFilterValue ATTRIBUTE
  WITH ATTRIBUTE SYNTAX LNP-ASN1.LsmsFilterValue;
  MATCHES FOR EQUALITY;
  BEHAVIOUR lsmsFilterValueBehavior;
  REGISTERED AS {LNP-OIDS.lnp-attribute 102};

lsmsFilterValueBehavior BEHAVIOUR
  DEFINED AS !
  This attribute is used to specify a what data a service
  provider wants to download by NPA-NXX, NPA-NXX range, NPA, NPA range,
  or by specifying they want to receive all data.
!;
```

ASN.1

```

LsmsFilterValue ::= CHOICE {
  npa [0] NPA,
  npa-range [1] NPA-Range,
  npa-nxx [2] NPA-NXX,
  npa-nxx-range [3] NPA-NXX-Range,
  receive-all-data [4] NULL
}
```

Change Order Number: ILL 75

IMPACT/CHANGE ASSESSMENT

FRS	IIS	ASN.1	GDMO	Perot	2	SOA Lockheed	LSMS
Y				Y	Y		

Validate Due Date is > than the NPA-NXX effect date upon Pending Version Creation

A request has been made for additional requirements for due date validation upon pending version creation for an NPA-NXX that is not in effect. The due date would not be considered valid if it were not greater than the NPA-NXX effective date. This change would keep activation of a pending subscription version from occurring before the effective date of an NPA-NXX.

Requirement R5-18.4.2 – Create Subscription Version – Due Date Validation for NPA-NXX effective date

NPAC SMS shall verify that the due date is greater than the NPA-NXX effective date upon Subscription Version creation for an Inter-Service Provider Port.

Requirement RR5-6.4.2 Create “Intra-Service Provider Port” Subscription Version – Due Date Validation for NPA-NXX effective date

NPAC SMS shall verify that the due date is greater than the NPA-NXX effective date upon Subscription Version creation for an Intra-Service Provider port.

Change Order Number: ILL 79

IMPACT/CHANGE ASSESSMENT

FRS	IIS	ASN.1	GDMO	Perot	3	SOA Lockheed	LSMS
Y	Y	Y	Y	Y	Y	Y	Y

Notification Recovery

Recovery of notifications is not possible in the current implementation of the IIS. There are several notifications that should be recoverable due to the fact that the notification information can not be recovered by other means. The notification recovery action reply does not use a linked reply.

Requirement 1 (Section 6) – Notification Recovery

NPAC SMS shall support recovery of all CMIP notifications defined in the IIS that are emitted over the NPAC SMS to Local SMS and SOA to NPAC SMS interfaces. Examples of notifications to be recovered include:

- 0subscriptionVersionNewNPA-NXX
- 1subscriptionVersionDonorSP-CustomerDisconnectDate
- 2subscriptionVersionAudit-DiscrepancyRpt
- 3subscriptionAuditResults
- 4InpNPAC-SMS-Operational-Information
- 5subscriptionVersionNewSP-CreateRequest (time sensitive T1 New SP)
- 6subscriptionVersionOld-SP-ConcurrenceRequest (time sensitive T1 Old SP)
- 7subscriptionVersionOldSPFinalWindowExpiration (time sensitive T2 Old SP)
- 8subscriptionVersionStatusAttributeValueChange
- 9attributeValueChange

10objectCreation
11objectDeletion

For a complete list of notifications reference the IIS.

Requirement 2 (Section 6) – Notification Recovery – Order of Recovery

NPAC SMS shall recover all notifications, failed or successful, in time sequence order when notification recovery is requested by the SOA or LSMS.

Requirement 3 (Section 6) – Notification Recovery – Time Range Limit

NPAC SMS shall use the Maximum Download Duration Tunable to limit the time range requested in a notification recovery request.

Requirement 4 (Section 6) – Notification Recovery – SOA and LSMS Independence

NPAC SMS shall support the recovery of notifications for the SOA and LSMS as independent requests.

Requirement 5 (Section 6) – Notification Recovery – SOA Notifications

NPAC SMS shall allow the SOA to only recover SOA notifications.

Requirement 6 (Section 6) – Notification Recovery – LSMS Notifications

NPAC SMS shall allow the LSMS to only recover LSMS notifications.

GDMO

-- 15.0 Notification Recovery Action

```
lnpNotificationRecovery ACTION
  BEHAVIOUR
    lnpNotificationRecoveryDefinition,
    lnpNotificationRecoveryBehavior;
  MODE CONFIRMED;
  WITH INFORMATION SYNTAX LNP-ASN1.NetworkNotificationRecoveryAction;
  WITH REPLY SYNTAX LNP-ASN1.NetworkNotificationRecoveryReply;
  REGISTERED AS {LNP-OIDS.lnp-action 15};

lnpNotificationRecoveryDefinition BEHAVIOUR
  DEFINED AS !
    The lnpNotificationRecovery action is the action that can be
    used by the SOA or LSMS to recover notification information that
    cannot be recovered by other means.
  !;

lnpNotificationRecoveryBehavior BEHAVIOUR
  DEFINED AS !
    Preconditions: This action is issued from an lnpNPAC-SMS object
    from a SOA or LSMS that specified the recovery mode flag in the access
    control as true at association establishment.

    Postconditions: After this action has been executed by the SOA or LSMS
```

specifying recovery, the NPAC SMS will forward the notifications that occurred in the time range specified for the requesting system (SOA or LSMS).

Data to be downloaded can be specified by a time range. Time range requests will be limited to a tunable range specified in the NPAC SMS. All data in the download time period, regardless of the amount of data, will be downloaded.

!;

The lnpNPAC-SMS object will be modified as follows to add the package for the action:

```
lnpNPAC-SMS MANAGED OBJECT CLASS
  DERIVED FROM "CCITT Rec. X.721 (1992) | ISO/IEC 10165-2 : 1992":top;
  CHARACTERIZED BY
    lnpNPAC-SMS-Pkg,
    lnpRecoveryCompletePkg,
    lnpNotificationRecoveryPkg;
  REGISTERED AS {LNP-OIDS.lnp-objectClass 12};
```

-- 27.0 LNP Notification Recovery Package

```
lnpNotificationRecoveryPkg PACKAGE
  BEHAVIOUR lnpNotificationRecoveryPkgBehavior;
  ACTIONS
    lnpNotificationRecovery;
  REGISTERED AS {LNP-OIDS.lnp-package 1};
```

```
lnpNotificationRecoveryPkgBehavior BEHAVIOUR
  DEFINED AS !
    This package provides for conditionally including the
    lnpNotificationRecovery action.
  !;
```

ASN.1

NetworkNotificationRecoveryAction ::= TimeRange

NOTE: SPID may need to be specified for the recovery action due to on implementation of NANC 48.

```
NetworkNotificationRecoveryReply ::= SEQUENCE {
  status ENUMERATED {
    success (0),
    failed (1),
    time-range-invalid (2),
    criteria-to-large (3),
    no-data-selected (4)
  },
  system-choice CHOICE {
    lsms SET OF SEQUENCE {
      CHOICE {
        subscription-version-new-npa-nxx [1] VersionNewNPA-NXX OPTIONAL,
        lnp-mpac-sms-operational-information [2]
          NPAC-SMS-Operational-Information OPTIONAL
      }
    }
    soa SET OF SEQUENCE {
      CHOICE {
        subscription-version-new-npa-nxx [1] VersionNewNPA-NXX OPTIONAL,
```

```

    subscription-version-donor-sp-customer-disconnect-date [2]
        VersionCustomerDisconnectDate-OPTIONAL,
    subscription-version-audit-discrepancy-report [3]
        AuditDiscrepancyRpt-OPTIONAL,
    subscription-audit-results [4] AuditResults-OPTIONAL,
    lnp-npac-sms-operational-information [5]
        NPAC-SMS-Operational-Information-OPTIONAL,
    subscription-version-new-sp-create-request [6]
        VersionNewSP-CreateRequest-OPTIONAL,
    subscription-version-old-sp-concurrence-request [7]
        VersionOldSP-ConcurrenceRequest-OPTIONAL,
    subscription-version-old-sp-final-window-expiration [8]
        VersionOldSPFinalConcurrenceWindowExpiration OPTIONAL,
    subscription-version-cancellation-acknowledge-request [9]
        VersionCancellationAcknowledgeRequest-OPTIONAL,
    subscription-version-status-attribute-value-change [10]
        VersionStatusAttributeValueChange-OPTIONAL,
    attribute-value-change [11] AttributeValueChangeInfo-OPTIONAL,
    object-creation [12] ObjectInfo-OPTIONAL,
    object-deletion [13] ObjectInfo OPTIONAL
}
}
} OPTIONAL
}

```

NOTE: ObjectInfo must be imported from DMI in the ASN.1 as was done with AttributeValueChangeInfo.

Change Order Number: ILL 131

IMPACT/CHANGE ASSESSMENT

FRS	IIS	ASN.1	GDMO	Perot	4	SOA Lockheed	LSMS
Y				Y	N/A		

Creation of old Subscription Version for Every Active Version Change

The NPAC SMS should create an old Subscription Version for each change made to an active TN Subscription Version, regardless of how that change is made. That is, even for events such as an NPA split, an old SV should be created to preserve the Subscription Version containing the former NPA. Currently this change would effect mass updates, NPA splits, disconnect pending, and modifies of an active version. Requirements need to be clarified in the FRS to insure that this is clear.

Requirement 1 (section 3) - NPA Split -Creation of Old Subscription Version

NPAC SMS shall create an old Subscription Version with a new version id for an active Subscription Version involved in an NPA split at the start of permissive dialing for the old NPA.

Requirement 1.1 (section 5) - Modify Active Subscription Version - Old Subscription Version No Broadcast

NPAC SMS shall broadcast no data to the Local SMSs due to the creation of an old Subscription Version with a new version id for an NPA split.

Requirement 2 (section 3) - Mass Update - Creation of Old Subscription Version

NPAC SMS shall create an old Subscription Version with a new version id for an active Subscription Version involved in a mass update before applying changes.

Requirement 2.1 (section 3) - Mass Update - Old Subscription Version No Broadcast

NPAC SMS shall broadcast no data to the Local SMSs due to the creation of an old Subscription Version with a new version id for an active Subscription Version involved in a mass update before applying changes.

Requirement 3 (section 5) - Modify Active Subscription Version- Creation of Old Subscription Version

NPAC SMS shall create an old Subscription Version with a new version id for an active Subscription Version prior to modification.

Requirement 3.1 (section 5) - Modify Active Subscription Version- Old Subscription Version No Broadcast

NPAC SMS shall broadcast no data to the Local SMSs due to the creation of an old Subscription Version with a new version id for an active Subscription Version prior to modification.

Requirement 4 (section 5) – Disconnect Pending Subscription Version- Creation of Old Subscription Version

NPAC SMS shall create an old Subscription Version with a new version id for a disconnect-pending Subscription Version when the deferred disconnect request is received.

Requirement 4.1 (section 5) – Disconnect Pending Subscription Version- Old Subscription Version No Broadcast

NPAC SMS shall broadcast no data to the Local SMSs due to the creation of an old Subscription Version with a new version id for a disconnect-pending Subscription Version when the deferred disconnect request is received.

Change Order Number: NANC 35

IMPACT/CHANGE ASSESSMENT

FRS	IIS	ASN.1	GDMO	Perot	5	SOA	LSMS
		Y		Y	Y	Y	Y

ContactPagerPin ASN.1 Modification

In IIS 1.5 contactPagerPIN is a digit string without length. It has been requested that this be bound to the length of 10 as specified in the FRS.

ASN.1

```
AddressInformation ::= CHOICE {
  ContactInfo [0] SEQUENCE {
    line1 GraphicString40,
    line2 GraphicString40,
    city GraphicString20,
    state GraphicString(SIZE(2)),
    zip GraphicString(SIZE(9)),
    province GraphicString(SIZE(2)) OPTIONAL,
    country GraphicString20,
    contactPhone PhoneNumber,
    contact GraphicString40,
    contactFax PhoneNumber OPTIONAL,
    contactPager PhoneNumber OPTIONAL,
    contactPagerPIN DigitString(SIZE(1..10)) OPTIONAL,
    contactE-mail GraphicString60 OPTIONAL
  },
  no-value [1] NULL
}
```

Change Order Number: NANC 68

IMPACT/CHANGE ASSESSMENT

FRS	IIS	ASN.1	GDMO	Perot	6	SOA	LSMS
Y				Y	Y	Y	

Mass Update Requirements Modification

The current requirements R3-7.1 and R3-7.2 for Mass Update do not reflect the business need and should be replaced with the following:

R3-7.1 Select Subscription Versions mass changes for one or more Subscription Versions

NPAC SMS shall allow NPAC personnel to select Subscription Versions for mass update which match a user defined combination of any of the follow: TN, TN range, Service Provider ID, LRN, DPC values, SSN values, Billing ID, End User Location Type or End User Location Value.

R3-7.2 Administer Mass updated 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, or canceled) for LRN, DPC values, SSN values, Billing ID, End User Location Type or End User Location Value.

R3-7.3 Mass Update Selection Criteria

NPAC SMS shall require at least one selection criteria to be entered for a mass update.

R3-7.4 Mass Update Service Provider Id

NPAC SMS shall match the Service Provider Id entered as selection criteria with the New or current Service Provider Id in the Subscription Version.

For Mass Updates, versions that are in sending and partially failed download states should not prevent the whole mass update from proceeding. It has been requested that these versions be treated as exceptions and that the mass update be allowed to proceed for those versions that are currently in a sending or partially failed state in addition to those defined in the requirements.

This change is related to requirements R3-6, R3-7.1, and R3-7.2.

The exceptions should be printed in a report and in some manner be corrected via an operational Methods and Procedure process.

Requirement R3-7.5 - Mass Update Error Processing

NPAC SMS shall log an exception and proceed with Mass Update processing upon finding a subscription version in sending or partial failed status.

Requirement R3-7.6 – Mass Update Exception Report

NPAC SMS shall produce an exception report for NPAC Personnel that lists the Subscription Versions that were exceptions not processed during Mass Update processing. NPAC personnel for correction via an M&P process will use this report.

Change Order Number: NANC 77 (Recompile)

IMPACT/CHANGE ASSESSMENT

FRS	IIS	ASN.1	GDMO	Perot	7	SOA	LSMS
		Y		Y	Y	Y	Y

TimeRange ASN.1 Definition

The startTime and stopTime of TimeRange are defined as OPTIONAL. Since all requests involving TimeRange will include startTime and stopTime, the OPTIONAL is not needed and should be removed. The tagging remains to support backward compatibility.

ASN.1

```
TimeRange ::= SEQUENCE {  
    startTime [0] GeneralizedTime,  
    stopTime [1] GeneralizedTime  
}
```

Change Order Number: NANC 83

IMPACT/CHANGE ASSESSMENT

FRS	IIS	ASN.1	GDMO	Perot	8	SOA	LSMS
Y				Y		Lockheed	

Time Synchronization – Perot Only (Already Documented in 2.X)

A requirement has been added to the FRS to require that the NPAC SMS systems use NTP to synchronize from a Stratum 1 host. This would insure that all NPAC SMS vendors are synchronized on their times. The requirement would be as follows:

NPAC Clock Synchronization

NPAC SMS shall synchronize its system clock using NTP to a Stratum 1 host

Change Order Number: NANC 108 (Recompile)

IMPACT/CHANGE ASSESSMENT

FRS	IIS	ASN.1	GDMO	Perot	9	SOA	LSMS
		Y		Y	Y	Y	

IIS Discrepancy with R5-26

Requirement R5-26 in the FRS 1.2 states that the status is required for the modification of a subscription version. The IIS has this field as optional. A change should be made to the IIS ASN.1 for ModifyAction to remove OPTIONAL tag on the version-status field.

ASN.1

```

ModifyAction ::= SEQUENCE {
    subscription-version-action [0] EXPLICIT SubscriptionVersionAction,
    version-status [1] VersionStatus,
    data-to-modify [2] SubscriptionModifyData
}

```

Change Order Number: NANC 114 (Recompile)

IMPACT/CHANGE ASSESSMENT

FRS	IIS	ASN.1	GDMO	Perot		10.SOA Lockheed	LSMS
		Y		Y	Y	Y	

Download subscription-version-id optional

The "subscription-version-id" is defined as optional in the IIS in the SubscriptionDownloadData but it should be required. The OPTIONAL tag should be removed. ~~The tagging should also be removed from the ASN.1.~~

ASN.1

```

SubscriptionDownloadData ::= SET OF SEQUENCE {
    subscription-version-id [0] SubscriptionVersionId,
    subscription-version-tn [1] PhoneNumber OPTIONAL,
    subscription-data SubscriptionData
}

```

Change Order Number: NANC 131 (Recompile)

IMPACT/CHANGE ASSESSMENT

FRS	IIS	ASN.1	GDMO	Perot		11.SOA Lockheed	LSMS
		Y		Y	Y	Y	Y

LRN-DownloadData Modification

In LRN-DownloadData the LRN Value should be optional. Due to the fact that when we try to delete LRN or NPA-NXX sent in the download data, we get sent only the ID and the DownloadReason not the LRN value. Note that the NPA-NXX value is optional in the NPA-NXX –DownloadData in delete cases and should be consistent with the LRN-DownloadData.

ASN.1

```

LRN-DownloadData ::= SET OF SEQUENCE {
  Service-prov-lrn-id LRN-ID,
  Service-prov-lrn-value LRN OPTIONAL,
  service-prov-download-reason DownloadReason,
  service-prov-lrn-creation-timestamp GeneralizedTime OPTIONAL
}

```

Change Order Number: NANC 138_

IMPACT/CHANGE ASSESSMENT

FRS	IIS	ASN.1	GDMO	Perot		12.SOA Lockheed	LSMS
Y				Y	Y	Y	

Definition of Cause Code Values - REVISITED

In table 0-1 Subscription Version Data Model in the FRS the following cause code is defined: NPAC SMS Automatic Conflict from Cancellation. However, in the FRS there was no value defined and no requirement to set this cause code. The table will be changed as follows:

The values less than 50 were reserved for NPAC SMS internal use.

Other defined values are:

- 0 – NULL (DO NOT MODIFY)
- 2 - NPAC automatic Conflict from Cancellation
- 1 - NPAC automatic cancellation
- 50 - LSR Not Received
- 51 - FOC Not Issued
- 52 - Due Date Mismatch
- 53 - Vacant Number Port
- 54 - General Conflict

Flows in Appendix A will be updated to reflect the setting of this cause code.

Requirements for the cause code addition would be as follows:

RR5-36 should be renumbered to RR5-36.2

RR5-36.1 Cancel Subscription Version – Cause Code for New SP Timer Expiration

NPAC SMS shall set the cause code to “NPAC SMS Automatic Conflict from Cancellation” after setting the Subscription Version status to conflict from cancel-pending when the new Service Provider has not acknowledged cancellation after the Cancellation-Final Concurrence Window.

Change Order Number: NANC 139

IMPACT/CHANGE ASSESSMENT

FRS	IIS	ASN.1	GDMO	Perot		13.SOA Lockheed	LSMS
Y	Y	Y		Y	Y	Y	

Network Data Download to SOA

A request has been made to allow network data downloads (M-CREATE, M-DELETE, and M-SET) to be sent to and if applicable instantiated on the SOA in addition to the LSMS (i.e. Service Provider, LRN and NPA-NXX information). This functionality would be implemented such that a service provider could specify to the NPAC whether they want to receive data on the LSMS only, the SOA only, or both LSMS and SOA..

The SOA systems will have to put in place recovery for network data if they support network data. It will now be possible for the SOA to come up in recovery mode and request network data download if desired. Flows to show recovery by the SOA are being created.

Flows for the IIS are also being modified to show the creation/deletion of the service provider, LRN, and NPA-NXX data to the SOA.

Requirement R3-9 will be modified to address SOA systems.

R3-9 NPAC SMS download of network data to the Local SMS and SOA

NPAC SMS shall be able to communicate creation or deletion of NPA-NXX data and LRN data for a Service Provider to Local SMSs and SOAs.

The contents of the network download are:

- ?1 Network data:
 - 12NPAC Customer ID
 - 13NPAC Customer Name
- ?2 NPA-NXX-Download Data:
 - 14NPA-NXX ID
 - 15NPA-NXX Value
 - 16Effective TimeStamp
 - 17Download Reason
- ?3 LRN-Download Data:
 - 18LRN ID
 - 19LRN Value
 - Download Reason

The ASN.1 will be modified to allow the data download functional unit to be specified:

```
SoaUnits ::= SEQUENCE {
    soaMgmt [0] NULL OPTIONAL,
    networkDataMgmt [1] NULL OPTIONAL,
    dataDownload [2] NULL OPTIONAL
}
```

Change Order Number: NANC 146

IMPACT/CHANGE ASSESSMENT

FRS	IIS	ASN.1	GDMO	Perot		14.SOA Lockheed	LSMS
		Y		Y	Y	Y	Y

SP Contact Data Handling

Currently there is no way to delete or blank out Service Provider contact data in the profile. A SOA vendor must specify all contact data to add or remove contact data information. The attributes do not have a NULL or absent setting. The ASN.1 should be changed for the address information to be a choice of the address information or NULL.

ASN.1

```
AddressInformation ::= CHOICE {  
    ContactInfo [0] SEQUENCE {  
        line1 GraphicString40,  
        line2 GraphicString40,  
        city GraphicString20,  
        state GraphicString(SIZE(2)),  
        zip GraphicString(SIZE(9)),  
        province GraphicString(SIZE(2)) OPTIONAL,  
        country GraphicString20,  
        contactPhone PhoneNumber,  
        contact GraphicString40,  
        contactFax PhoneNumber OPTIONAL,  
        contactPager PhoneNumber OPTIONAL,  
        contactPagerPIN DigitString(SIZE(1..10)) OPTIONAL,  
        contactE-mail GraphicString60 OPTIONAL  
    },  
    no-value [1] NULL  
}
```

Change Order Number: NANC 148

IMPACT/CHANGE ASSESSMENT

FRS	IIS	ASN.1	GDMO	Perot		15.SOA Lockheed	LSMS
			Y	Y	Y	Y	

LNPTType in SV Object Creation Notification

It has been requested that "LNP Type" be added to the subscription version object create notifications. The addition of the LNP Type to the object creation notifications will be documented in the GDMO behavior for the subscriptionVersionNPAC as follows:

When object creation notifications are emitted the LNP Type for the subscription version will be included in the notification.

Change Order Number: NANC 149

IMPACT/CHANGE ASSESSMENT

Use of time in due date continued — Lockheed Only (Already Documented in 1.0)

~~It has been determined that the Lockheed System uses the time if specified in the Due Date where the Perot system normalizes the time to 00:00:00.0 when the time is specified. It has been requested that the Lockheed implementation be changed to normalize the time.~~

~~The following IIS references to time would have to change:~~

~~The Old and New Service Provider Due Dates would have the following GDMO sentence "If not specified, the time defaults to 00:00:00." with "The time will be set to 00:00:0 regardless of what is specified."~~

Change Order Number: NANC 151

IMPACT/CHANGE ASSESSMENT

FRS	IIS	ASN.1	GDMO	Perot		16.SOA Lockheed	LSMS
	Y		Y	Y	Y	Y	

TN addition to attribute value change notification

It has been requested that the TN for the subscription version to be added to the attribute value and status change notifications from NPAC. It is possible for a SOA in a disconnect or modify-active situation, to not have the SV record in their database. Therefore, when the attribute/status change notification comes from NPAC, there is no way to correlate its version id with the TN on the disconnect or modify request in SOA. The addition of the TN to the attribution value and status change notifications will be documented in the GDMO behavior for the subscriptionVersionNPAC as follows:

When attribute value and status change notifications are emitted the TN for the subscription version will be included in the notification.

Change Order Number: NANC 156

IMPACT/CHANGE ASSESSMENT

FRS	IIS	ASN.1	GDMO	Perot	17.SOA Lockheed	LSMS
	Y			Y	N/A	

6.5.3.1 Flow Modification

IIS 1.5 flow 6.5.3.1 needs to be updated to comply with the FRS. Requirements RR5-30 and RR5-31 state that the SP-CancellationTS will not be updated unless the SV cancellation acknowledgment is received from the corresponding SOA.

Flow 6.5.3.1 will be modified so that step j and k come after step l.

No impact to SOA vendors this change order.

Change Order Number: NANC 160

IMPACT/CHANGE ASSESSMENT

FRS	IIS	ASN.1	GDMO	Perot	18.SOA Lockheed	LSMS
	Y		Y	Y	N/A	Y

Single TN in a Range Create

Subscription version creates on a single TN with a TN range where the starting TN equals the ending TN should not be specified as a range. The IIS GDMO text will be updated to indicate this restriction on all range operations.

Change Order Number: NANC 162 (Recompile)

IMPACT/CHANGE ASSESSMENT

FRS	IIS	ASN.1	GDMO	Perot		19.SOA Lockheed	LSMS
			Y	Y	Y	Y	Y

TN- Attribute as GET-Replace

The TN attribute in the SV should be read only. Due to historical reasons the attribute was get replace due to different implementation discussed for NPA splits. This is a recompile change only.

GDMO

```
-- 20.0 LNP subscription Version Managed Object Class
```

```
subscriptionVersion MANAGED OBJECT CLASS
  DERIVED FROM "CCITT Rec. X.721 (1992) | ISO/IEC 10165-2 : 1992":top;
  CHARACTERIZED BY
    subscriptionVersionPkg;
  REGISTERED AS {LNP-OIDS.lnp-objectClass 20};
```

```
subscriptionVersionPkg PACKAGE
  BEHAVIOUR
    subscriptionVersionDefinition,
    subscriptionVersionBehavior;
  ATTRIBUTES
    subscriptionVersionId GET,
    subscriptionTN GET,
    subscriptionLRN GET-REPLACE,
    subscriptionNewCurrentSP GET-REPLACE,
    subscriptionActivationTimeStamp GET-REPLACE,
    subscriptionCLASS-DPC GET-REPLACE,
    subscriptionCLASS-SSN GET-REPLACE,
    subscriptionLIDB-DPC GET-REPLACE,
    subscriptionLIDB-SSN GET-REPLACE,
    subscriptionCNAM-DPC GET-REPLACE,
    subscriptionCNAM-SSN GET-REPLACE,
    subscriptionISVM-DPC GET-REPLACE,
    subscriptionISVM-SSN GET-REPLACE,
    subscriptionEndUserLocationValue GET-REPLACE,
    subscriptionEndUserLocationType GET-REPLACE,
    subscriptionBillingId GET-REPLACE,
    subscriptionLNPTType GET-REPLACE,
    subscriptionDownloadReason GET-REPLACE;
;
```

Change Order Number: NANC 48

IMPACT/CHANGE ASSESSMENT

FRS	IIS	ASN.1	GDMO	Perot		20.SOA Lockheed	LSMS
Y				Y	Y		

Multiple Service Provider Ids per SOA Association

Some Service Providers within the Local Number Portability (LNP) environment have a need for SOA functionality that would allow:

- A single service provider to serve multiple LEC or CLEC entities over the same association between the SOA and the Regional NPAC.
- Entities may be from within the same Service Providers' company or another Service Provider that has contracted the SOA's service (service bureau).
- Each entity will have its own SPID.
- Each record, sent to the NPAC by the SOA, will contain the SPID for that record.
- The records containing one entity SPID may be interleaved with records containing a different entity SPID.
- Because the SOA services multiple independent entities, the records coming from a single SOA may be the Old Service Provider on a record and the New Service Provider on that same record. But the Old and the New Service Providers will be distinguished by separate and independent SPID's.

- Regional NPAC responsibility:

- The Regional NPAC must be able to recognize the multiple SPID's from the same association and treat them as they would records coming from separate service providers.
- All record transactions, updates, alerts, etc., must be returned to the correct service provider even when they originate on a single Association.
- The Regional NPAC shall provide billing and reporting on a per SP basis as is done today even though a service provider may provide service for multiple SPIDs.

SOA responsibility:

- The service provider will be responsible for the separation and security of the Service Provider records it manages.
- The service provider must be able to manage the receipt of all transactions, updates, alerts, etc., coming from the Regional NPAC to the SOA for the service providers it serves.
- The service provider must insure that the correct SPID is placed on the record before it is transmitted to the NPAC SMS from the SOA.
-

Option selected - Same Service Provider Data over an Association

Change the NPAC SMS such that a SOA can make one association to act on behalf of a list of pre-approved service providers. One key list would be used for the SOA.

The following requirements would have to be implemented on the NPAC SMS:

The following table would need to be documented in section 3.1.2 NPAC Customer Data:

NPAC CUSTOMER ASSOCIATED SERVICE PROVIDER DATA MODEL			
Attribute Name	Type (Size)	Required	Description
Primary NPAC Customer ID	C (4)	√	An alphanumeric code which uniquely identifies an NPAC Customer that will act as a primary SPID
Associated NPAC Customer ID	C (4)	√	An alphanumeric code that uniquely identifies an NPAC Customer that will act as a SPID associated with a primary SPID.

Requirement 1 Addition of NPAC Customer Associated Service Provider Information

NPAC SMS shall allow NPAC personnel to store a primary service provider id with the associated service provider id that it will service.

Requirement 2 Deletion of NPAC Customer Associated Service Provider Information

NPAC SMS shall allow NPAC personnel to delete an associated service provider id that is serviced by a primary service provider id.

Requirement 3 NPAC Customer Associated Service Provider Information – SPID validation

NPAC SMS shall validate that the primary and associated service provider ids specified in the of NPAC Customer Associated Service Provider Information are valid service provider ids defined in the NPAC SMS.

Requirement 4 NPAC Customer Associated Service Provider Information – Associated SPID

NPAC SMS shall validate that the associated service provider id is not already specified as a primary or associated service provider id in the NPAC Customer Associated Service Provider Information.

Assumption 1 – Associated Service Provider Multiple Service Provider Ids

Associated service providers using services from another primary service provider must use another service provider id if they choose to interact with the NPAC independently from the primary service provider.

Requirement 5 NPAC Customer Associated Service Provider Information – Validation Error

NPAC SMS shall report an error to the user and reject the addition of NPAC Customer Associated Service Provider Information if validation errors occur.

Requirement 6 NPAC Deletion of Service Provider Validation

NPAC SMS shall prevent a service provider from being deleted in the NPAC SMS if it exists in the NPAC Customer Associated Service Provider Information as a primary or associated service provider id.

Requirement 7 – Association Rejection for Associated Service Provider Id

NPAC SMS shall reject any SOA to NPAC SMS association attempt by a Service Provider Id that is a service provider associated with the primary Service Provider Id in the NPAC Customer Associated Service Provider Information.

Requirement 8 – Associated Service Provider Id Use over a Primary Service Provider Id Association

NPAC SMS shall support the specification of an associated service provider id in the access control field over a SOA to NPAC SMS association for the primary service provider provided the associated service provider id is defined in the NPAC Associated Service Provider Information for the primary service provider id.

Requirement 9 - Validation of Old and New/Current for Associated Service Provider Id

NPAC SMS shall validate the old and new/current service provider id for a message sent over the SOA to NPAC SMS association for the primary association as is done today using the service provider id specified in the access control for the message.

Requirement 10 - Use of Primary Service Provider Key List

NPAC SMS shall accept and send keys from the key lists associated with the primary service provider for all SOA to NPAC SMS messages sent over the association for the primary service provider.

Requirements 11 - Notifications for Associated Service Providers

NPAC SMS shall send all SOA notifications for an associated Service Provider over the SOA to NPAC SMS interface association for the primary service provider.

Constraint 1 – Associated Service Provider Notification Aggregation

NPAC SMS aggregation of all messages over the SOA to NPAC SMS interface for primary and associated service provider ids will not be supported by the NPAC SMS.

Requirements 12 - Filters for Associated Service Providers

NPAC SMS shall apply NPA and/or NPA-NXX (accepted) filters for the associated Service Provider Id before sending them over the SOA to NPAC SMS interface association for the primary service provider.

Requirement 13 – Associated Service Provider and Primary Service Provider messages

NPAC SMS shall support messages containing primary and associated service provider ids that are interleaved over the SOA to NPAC SMS interface association for the primary service provider.

Requirement 14 – Recovery for an Associated Service Provider

NPAC SMS shall support the recovery of network data or notifications for an associated Service Provider over a SOA to NPAC SMS association in recovery mode for a primary service provider.

Note: Recovery of information for associated service providers is the responsibility of the primary service provider. The primary service provider must establish an association in recovery mode, send the recovery actions for each service provider id, primary and associated, and then as the primary SPID indicate recovery is complete.

Backward Compatibility

The following table indicates if a change order is Backward Compatible (BC) and gives further detail if the change order is not backwards compatible or if there is a question about backwards compatibility.

Change Order Description	BC?	Notes
ILL 3 – NPA-NXX Filter enhancements	N	The filter object attribute is changed in the GDMO so that the filters are inclusion rather than exclusion filters. Filters would have to be converted manually with support of the Service Providers when the new release is installed. SOA and LSMS vendors could not manage filters over the mechanized interface until they upgraded their systems to be compliant with this change order. NPAC personnel would have to manage filters on behalf of service providers whose products were not yet compliant.
ILL 75 – Validate Due Date is > than the NPA-NXX effect date upon Pending Version Creation	Y	NPAC SMS change only.
ILL 79 – Notification Recovery	Y	If a SOA or LSMS vendor did not implement this functionality then they would not be impacted.
ILL 131 - Creation of old SV for Every Change	Y	NPAC SMS change only.
NANC 35 – ContactPagerPin	Y	Recompile only. PIN field is restricted to 10 to comply with FRS. If the SOA and LSMS send a pin greater than 10 digits to the NPAC SMS today the message would be rejected with an error message. Therefore, all SOA/LSMS systems

		<p>do comply with this change already. The SOA/LSMS vendors may want to insure that their systems do not allow for PINs greater than 10 digits are not specified to prevent the message from being rejected with errors when communicating to the NPAC SMS in the future.</p> <p>Note: NANC 146 is related to this change order because it also effects contact data. NANC 146 is not backward compatible.</p>
NANC 48 – Multiple Service Provider Ids per SOA Association	Y	If a SOA or LSMS vendor did not implement this functionality then they would not be impacted. Further definition is needed.
NANC 68 – Mass Update Requirements Modification	Y	NPAC SMS change only.
NANC 77 – Time Range ASN.1 definition	Y	Recompile Only. If a SOA did not specify a TN range start or stop to the NPAC SMS today the message would be rejected with an error message. Therefore, all SOA systems do comply with this change already. The SOA vendors may want to insure that their systems do not allow for start or stop time to be optional to prevent the message from being rejected with errors when communicating to the NPAC SMS in the future.
NANC 83 - NPAC Time Synchronization	Y	M&P change.
NANC 108- IIS Discrepancy with R5-26	Y	Recompile Only. If a SOA did not specify a version status on a subscription version modify to the Lockheed NPAC SMS today the message would be rejected with an error message. Therefore, all SOA systems that communicate with the Lockheed system already comply with this change. The Perot NPAC SMS may not reject the message in some cases. The SOA vendors may want to insure that their systems do not version status to be optional on a subscription version modify to prevent the message from being rejected with errors

		when communicating to the NPAC SMS in the future.
NANC 114-Download subscription-version-id-optional	Y	Recompile Only. Both NPAC SMS systems send the subscription version id down to the LSMS's today due to the fact that it is the key to a subscription version. Therefore, all LSMS systems should comply with this change already.
NANC 131- LRN- DownloadData Modification	Y	Recompile Only. In the download data to the LSMS systems the LRN is value is currently sent in download data were the LRN is being deleted. The LRN id is the key and should only be sent as is done for the NPA-NXX's today. LSMS vendors should verify that the absence of the LRN value does not cause a problem. Lockheed does not send the LRN value today.
NANC 138-Defintion of Cause Code Values-REVISITED	Y	New integer value. The SOA systems may need to recognize the new integer value to display associated text. If a SOA can not recognize the new cause code an error message could be received by the SOA user. SOA vendors have given input that this change is not an issue and will not cause major problems in their products. SOA vendors should re-evaluate this change order to insure that is still the case in their product.
NANC139-Network Data Download to SOA	Y	If a SOA or LSMS vendor did not to implement this functionality then they will not be impacted.
NANC 146-SP Contact Data Handling	N	The ASN.1 for the address information has been modified. SOA and LSMS vendors could not manage service providers address information over the mechanized interface until they upgraded their systems to be compliant with this change order. NPAC personnel would have to manage address information on behalf of service providers whose products were not yet compliant or do not support this

		functionality.
NANC 148-LNP Type in SV Object Creation Notification	Y	The NPAC SMS will add an additional attribute to the object creation notification for the subscription version object on the NPAC SMS. This additional attribute due to the CMIP definition should not impact SOA vendors. This is due to the fact that they should not find the attribute unless they looked for it therefore not causing software problems. Need to determine if inclusion of this attribute affects SOA vendors. SOA vendors should verify their implementations to insure the addition of this attribute does not cause the notification to fail on the their system.
NANC 151- TN addition to attribute value change notification	Y	The NPAC SMS will add an additional attribute to the attribute value change notification for the subscription version object on the NPAC SMS. This additional attribute due to the CMIP definition should not impact SOA vendors. This is due to the fact that they should not find the attribute unless they looked for it therefore not causing software problems. SOA vendors should verify their implementations to insure the addition of this attribute does not cause the notification to fail on the their system. Need to determine if inclusion of this attribute affects SOA vendors.
NANC 156-6.5.3.1 Flow Modification	Y	NPAC SMS change only.
NANC 160- Single TN in a Range Create	Y	NPAC SMS change. SOA systems may need to make changes to their systems to comply if they currently function only in the Perot regions. If a SOA specifies a TN range start and stop TN that is the same today the Lockheed NPAC SMS would be rejected with an error message. Therefore, all SOA systems that communicate with the Lockheed system do comply with this change

		<p>already. The SOA/LSMS vendors may want to insure that their systems do not allow for the start and stop TN to be the same to prevent the message from being rejected with errors when communicating to the Perot NPAC SMS in the future.</p>
<p>NANC 162- TN Attribute as GET-Replace</p>	<p>Y</p>	<p>Recompile Only. If a SOA or LSMS tries to modify a TN in a subscription version on the NPAC SMS today the message would be rejected with an error message. Therefore, all SOA and LSMS systems do comply with this change already. The SOA and LSMS vendors may want to insure that their systems do not allow a user to attempt to modify a TN to prevent the message from being rejected with errors when communicating to the NPAC in the future. Service Providers will have to use user data in their SOA products to test this.</p>