

ICC NPAC/SMS RFP

Failure to direct your response to the address given above by the noted closing date may result in the disqualification of your proposal.

The package containing your proposal shall be marked "Sealed Proposal" with this RFP title and your company's name.

1.4.2 Closing Date

All proposals in response to this RFP shall be received **NO LATER THAN 12:00 Noon (Central Standard Time), March 18, 1996.**

1.4.3 Response Composition

You shall submit seven (7) sets (hard copy and diskette copy in IBM DOS format, Word 5.0/Excel 4.0) of copies of your proposal. Please mark all pages of one (1) paper copy "Master Copy". If discrepancies between copies and/or the diskette are found, the "Master Copy" will govern.

Your proposal shall be typed double spaced on 8-1/2" x 11" 3-hole punched paper with each volume beginning on a new page and separately tabbed.

You are requested not to make your proposal elaborate with respect to binding or presentation. A simple, straightforward, economically reproduced proposal is strongly recommended. Our proposal evaluation procedure places a higher premium on thoroughness of presentation, i.e., responsiveness, rather than on quantity of material included.

1.4.4 Questions or Requests for Additional Information

Submit your question(s) or request(s) for additional information in writing to the following facsimile number listed below no later than **February 22, 1996** prior to the closing date for this RFP.

847 248-3284
ATTN: M. Gary Berg

All questions and responses shall be promptly distributed to all recipients of this RFP. Please note that the identity of the requesting company shall be withheld. Telephone inquiries will not be accommodated.

1.4.5 Acceptance Period

Your proposal shall indicate that it is valid for a period of at least one hundred eighty (180) days from the closing date.

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1.4.6 Contract Award

The contracting entity or entities of the Selection Committee reserve the right:

- a) to reject any and all responses:
 - b) to conduct negotiations with more than one vendor simultaneously
 - c) to add, delete and/or change the terms of this RFP and to issue corrections and amendments to the RFP
 - d) to accept or reject, in whole or in part, any response without giving any reason for the decision
 - e) to enter into a contractual arrangement with any vendor and is not limited by any event associated with this RFP
 - f) to have any documents submitted by a vendor reviewed and evaluated by any individuals, including, independent consultants;
- and
- g) to cancel the RFP process without penalty at any time before a written contract is entered into.

1.4.7 No contractual obligations are assumed by issuing the RFP, receiving, accepting, and evaluating the vendor's response, and/or making a preliminary vendor selection.

1.4.8 The Selection Committee reserves the right to cancel any agreement if the services or facilities do not pass mutually agreeable acceptance tests. This will be done at no cost or obligation to the Selection Committee contracting entity or entities.

1.4.9 The Selection Committee contracting entity or entities reserve the right to negotiate all terms and conditions in order to enter into a formal agreement with the successful vendor. This document, the vendor's response, and full system documentation will form part of the agreement.

1.4.10 No publicity or news releases pertaining to this RFP, responses to this RFP, discussions of any kind regarding the RFP, or the award of any agreement related to the bid document may be released without the prior written approval of the Selection Committee.

1.4.11 All work and materials must comply with all federal and state law, municipal ordinances, regulations, and directions of inspectors appointed by proper authorities having jurisdiction.

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1.4.12 The vendor shall not assign, transfer, or sublet the RFP service agreement or any interest therein or any part thereof without prior written consent. All subcontractors must be identified and approved prior to disclosure of any information. If subcontracting is involved, the primary vendor shall be responsible for the workmanship, costs, etc. Incurred by the sub-contractor in the performance of their duties.

1.4.13 The vendor, by stating compliance to a requirement in this RFP, agrees that the vendor has read and understood the requirement and that compliance is complete and deliverable at no additional cost unless otherwise noted.

1.4.14 This RFP may include unintended errors, omissions, and/or deficiencies. Therefore, the accuracy and completeness of this document and related documents are not guaranteed. In the event that such errors, omissions, and/or deficiencies are discovered by the vendor, the vendor shall notify the Selection Committee in writing within 48 hours.

The vendor is expected to examine the specifications and instructions carefully. Calculation errors shall be the vendor's risk. In the event of a vendor's error in price, time or calculations, quoted items shall prevail.

1.5 Additional Contractual Terms and Conditions

This section identifies contractual terms and conditions that the contracting entity intends to incorporate into the Agreement. The following list is in addition to the terms and conditions specified in the RFP.

1. Conformity with Law

Vendor shall comply with all applicable FCC rules and federal, state, and local statutes, regulations and case law.

2. Indemnification

Vendor shall provide indemnification with regard to damage, death, or personal injury due to vendor's acts or omissions.

3. Trademarks and Publicity

Vendors shall have no rights to use names or trademarks.

4. Confidentiality

Vendor shall not disclose confidential information.

5. Termination

The Agreement shall establish the right of termination without liability if vendor substantially defaults in performing obligations.

6. Limitation of Liability

Except specifically provided in the Agreement, there shall be no liability for vendor's damages.

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7. Taxes

Vendors shall file all tax returns required by law to be filed by vendor: vendor shall provide access to relevant documents for tax audits.

8. Insurance

Vendor shall maintain worker's compensation insurance, employer's liability insurance, comprehensive general liability insurance, and motor vehicle insurance.

9. Authority

Vendor shall represent and warrant that vendor has approval and authority to execute the Agreement.

10. Mechanic's Lien

Vendor shall perform services free of mechanic's lien or other liens.

1.6 Preparation of Proposal Response

1.6.1 Content Structure

You are responsible for any and all costs incurred in the preparation of your response to this RFP. Your proposal shall consist of the following separate Tabs:

Tab 1 Proposal Summary

Tab 2 Functional and Technical Requirements

Tab 3 Cost and Price

DO NOT INCLUDE COST OR PRICE FIGURES ANYWHERE EXCEPT IN YOUR TAB 3 RESPONSE, THE COST AND PRICE SECTION.

All proposals meeting the stated requirements and specifications except for minor exceptions and deviations, shall be considered. Failure to meet requirements may disqualify a proposal from the selection process. However, proposals having minor exceptions and deviations shall be considered only if the following conditions are satisfied:

- (a) all exceptions and deviations from the specifications are explicitly stated in the Proposal Summary; and
- (b) all exceptions and deviations are appropriately justified on the basis of performance, schedule and/or relative price.

1.6.2 Tab Content

The required content of each tab of your proposal follows:

Proposal Summary (TAB 1)

This tab should summarize all key features of your proposal response. All deviations and exceptions from the RFP should be stated, and a brief justification given. A more detailed justification can be included in the tab that covers the subject.

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Functional and Technical Requirements (TAB 2)

This section should discuss the major aspects of the functional design. You should address

- (1) all areas which result in a potentially high degree of risk
- (2) all areas which impose an unusually high degree of responsiveness, and
- (3) areas that are deficient and that could be improved.

Cost and Price (TAB 3)

This tab shall include a description of the proposed costs and prices. All pricing information shall be limited solely to this tab of your proposal. For purposes of your response you should provide both a three year and five year view. (See Section 10, R10-17 and 18) This tab should address all requirements set forth in this RFP as well as any other items pertinent to your proposal pricing such as additional discounts for increased volume, prompt payment, transportation charges (FOB destination)etc. Pricing shall also be firm for all orders place through December 31, 2001, and shall be based on the EF&I of all applicable goods, software, and services of the most recent vintage and/or technology available in the telecommunications industry.

1.7 Evaluation of Proposals

The criteria to be used for the proposal evaluation include:

- (a) technical merit
- (b) schedule
- (c) price and cost
- (d) quality considerations
- (e) responsiveness to contract provisions
- (f) Prime's financial stability, history, including program management

No weighting or relative importance of criteria is intended or implied by this list.

You shall furnish all information as requested per the applicable instructions providing sufficient data to enable us to evaluate the proposal. Any deviations or exceptions to the RFP should be noted. Any supplier who does not completely reply to the proposal as requested may be eliminated at the discretion of Selection Committee.

The same article, section or paragraph number and title used in the RFP shall be used for your comments.

In the cases where your reply is "will not be complied with" or "not agreed to", you shall indicate your reasons for such disagreement and provide an alternative with which you will comply or agree.

Section 2: Business Process Flows

The following process flows indicate how the NPAC and NPAC/SMS are used in the various business processes associated with number portability. This information is intended to provide an overview of the role of the SMS in number portability. Details of steps in the processes that do not involve the NPAC or NPAC SMS, such as interactions between service providers, will be determined by the service providers and are beyond the scope of this document. Specific requirements generated by the process flows are included in the appropriate sections later in the document.

2.1 Provision Service Process

This process flow defines the provisioning flow in which a customer ports a telephone number to a new service provider.

The new service provider will obtain authorization to port the customer and notify the old service provider according to processes internal to the service providers. Both the old and new service providers will send a notification to the NPAC SMS from their Service Order Administration Systems. When the NPAC SMS receives the notification(s), it will perform certain validation checks, including that both the old and new service provider has sent a notification. If errors are found or both service providers did not send notifications, the SMS will enter into a coordination process described in the next paragraph. Assuming the notifications are valid, the two service providers will complete any physical changes required. At the time new service provider is ready to provide service, it will send an activation notice to the NPAC SMS. The NPAC SMS will place an activation time stamp on the update and broadcast the update out in real time to all local service providers' networks. Upon receiving the update from the NPAC SMS, all service providers will update their networks. The NPAC SMS will record any transmission failures and take the appropriate action.

In the case where either the old or new service providers did not send a notification to the NPAC SMS, the NPAC SMS will notify the service provider from which it did not receive a notification that it is expecting a notification. If it then receives the missing notification and the notifications indicate agreement among the service providers, the process proceeds as normal. If it still does not receive a notification and if it is the old service provider that failed to respond, the NPAC SMS will log the failure to respond and then the process proceeds as normal. If it was the new service provider that failed to respond, the NPAC will log the failure to respond, cancel the notification, and notify the old service provider of the cancellation. If there is disagreement among the service providers as to who will be providing service for the telephone number, the conflict resolution procedures will be implemented. Processes for obtaining authorization from the customer to port a number are defined by the service providers. The NPAC is not involved in obtaining or verifying authorization.

From the time the new service provider sends a notification to the time it sends the activation notice, the new service provider may send a message to the NPAC SMS to cancel the notification. If this occurs, the NPAC SMS will remove the notification from its database and notify the old service provider that the notification has been canceled.

(refer to Figure 1 in Attachments)

2.2 Disconnect Process

When a ported number is being disconnected, the customer and service provider will agree on a date. After an aging period, if any, the service provider will send an update indicating the disconnect to the NPAC SMS. The NPAC SMS will broadcast the update to all service providers and remove the telephone number from its database of ported numbers. Upon receiving the update, all service providers will remove the telephone number from their LNP databases. The NPAC SMS will log the update in history. Calls to the telephone number will be routed as a non-porting number.

In both the service provisioning process and disconnect process, when the NPAC SMS is performing validity checks (such as confirming that required data fields are filled in), if an error is found, the NPAC SMS will notify the service provider's with an appropriate error message. The service provider will have to resend the notification to have it processed.

(refer to Figure 2 in Attachments)

2.3 Repair Service

A problem will be detected either by a service provider or by a customer contacting a service provider.

There will be audit capabilities in the NPAC SMS to aid in isolating problems. If an inaccuracy is found, the NPAC SMS will broadcast the correct data to any involved local service provider to correct inaccuracies.

(refer to Figure 3 in Attachments)

2.4 Conflict Resolution Process

If service providers disagree on who will serve a particular line number, the NPAC will place the request in "conflict" and notify both service providers. The service providers will determine who will serve the customer via internal processes. When a resolution is reached, the NPAC will be notified and will remove the request from "conflict" or cancel it.

2.5 Disaster Recovery and Backup Process

If there is planned downtime for the NPAC SMS, the NPAC SMS will send an electronic notification to the service provider's SOAs that includes information on when the downtime will start, how long it will be and if they will be required to switch to the backup or disaster recovery machine. Downtime is considered planned when the NPAC can provide notification to the service providers at least 24 hours in advance. If the downtime will be less than 60 minutes, the service providers will remain connected to the primary machine and not send any updates during the downtime. If the downtime will be longer than 60 minutes, the NPAC service providers will switch to the backup or disaster recovery machine as indicated in the notification. There will be a quiet period (minutes) when no updates can be sent in order to allow the NPAC to connect the service providers to the proper machine. At the end of the quiet period, processes will proceed as normal. When the primary machine is brought back up, the backup or disaster recovery machine will send an electronic notification to the service providers' SOAs indicating the time the NPAC will switch them back to the primary machine. At the end of the quiet period, processes will

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continue as normal and the NPAC will synch up the database in its primary SMS with any updates sent to the backup or disaster recovery machine during the downtime.

If there is unplanned downtime, the NPAC will assess how long the primary machine will be down. The NPAC will notify all of the service providers by telephone calls to the service providers' contact numbers of the situation and planned action. If the downtime is expected to be less than 60 minutes, the service providers will remain connected to the primary machine and not send any updates during the downtime. If the downtime will be longer than 60 minutes, the service providers will switch to the backup or disaster recovery machine and later back to the primary using the same process as described for planned downtime. In addition, once the service providers have been switched off of the primary machine, each service provider will check to see if any updates of newly ported numbers sent to the primary machine during the time it went down were not broadcast out. If a service provider finds such updates, the service provider may use internal inter-carrier processes to update its own SCPs and have other carriers update their SCPs with the information in order to ensure service to the affected customers. This will not be needed for disconnect orders. Even if it finds such updates, a service provider may choose to wait until it can begin sending updates to the backup or disaster recovery machine and then just resend the updates that had died in the primary machine. If a service provider does use internal processes to request updates to SCPs while waiting to be able to send them to the backup or disaster recovery machine, the service provider will still resend the updates when backup or disaster recovery machine can begin processing them in order to ensure every service provider and the NPAC SMS receive the update.

(refer to Figure 4 in Attachments)

Section 3: NPAC Data Administration

3.1 Overview

The NPAC SMS manages the ported TN information associated with the service provider portability for the LNP service.

3.1.1 Service Data

The Service Data contains global parameters specific to the LNP service.

Examples of some of these parameters are described below. The description presents a logical representation of the data, not an implementation view.

Time interval for concurrence from both service providers (Section 5, R5-21)

Number of retries for download to Local SMS (Section 5, R5-59)

Time interval a subscription version stays in conflict (Section 5, R5-44)

3.1.2 Service Provider Data

Service Provider Data contains information about service providers participating in the LNP service.

The data items that need to be administered by Service Provider Data Administration include (but are not limited to):

- A. Service Provider Name
- B. Facility-based Service Provider Identification
- C. Service Provider Address
- D. Service Provider Phone
- E. Service Provider Contact
- F. Service Provider Repair Center Information
- G. Service Provider System Data Link Information

3.1.3 Subscription Data

Subscription Data consists of information about the ported TNs.

The data items that need to be administered by Subscription Data Administration functions are described below. The description presents a logical representation of the data, not an implementation view.

Table 3-1 describes the data items associated with each ported TN that are maintained by the NPAC SMS. Size of the data items is in bytes.

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	Data Item	Size	Type	Src	Default	Input	Comments
1.	TN	10	N	SP		Reqd.	Telephone Number
2.	DD	8	N	SP		Reqd.	Expected Due Date of activation
3.	LRN	10	N	SP		Reqd.	Routing information
4.	Facility - based Service Provider ID	8	N	SP		Reqd.	Facilities-based service providers. This field can be used for repair, maintenance purposes.
5.	Activation Time Stamp	10	N	SMS			Date/Time of activation request from local service provider, e.g., xx-xx-xxxx/xxxx
6.	Disconnect Date	8	N	SP		Reqd.	Date e.g., xx-xx-xxxx of TN (end user) disconnect.
7.	Status	*	*	SMS		Reqd.	E.g., active, old, invalid, conflict.
8.	DPC for CLASS ¹	9	N	SP		Reqd.	DPC for 10-digit GTT for CLASS features
9.	Type for CLASS ¹ DPC	1	N	SP		Reqd.	Indicates whether the DPC for CLASS is End-Office or Gateway
10.	SSN for CLASS ¹	3	N	SP		Reqd.	Required if type for CLASS DPC is EO
11.	DPC for LIDB	9	N	SP		Reqd.	DPC for 10-digit GTT for LIDB access
12.	Type for LIDB DPC	1	N	SP		Reqd.	Indicates whether the DPC for LIDB subsystem or gateway
13.	End-user Location Value	12	N	SP			Value: Zip code, V&H, Longitude and Latitude, rate center (Value not determined yrt. Future Use.
14.	End-user Location Value Type	2	N	SP			Indicates which location value. Future Use.
15.	Billing ID	8	N	SP	Facility-based Service Provider ID		Billing ID. Probably NECA's company number. Future Use.
16.	Future 1	28					Reserved
17.	Future 2	16					Reserved
18.	Future 3	16					Reserved

Table 3-1 Subscription Data

¹ CLASS is a Service Mark of Bellcore®.

*These data fields will be determined by SMS.

3.1.4 Network Data

The data items that need to be administered by Network Data Administration functions are described below. The description presents a logical representation of the data, not an implementation view.

- A. Participating facilities-based service providers and their IDs
- B. NPA-NXXs that are portable
- C. LRNs associated with each facilities-based service provider
- D. Service Provider valid Location Values
- E. Valid Billing IDs

Certain types of updates made to network data, such as NPA splits, may cause mass changes to data managed by the NPAC. The NPAC will need to support such mass changes, which typically involve an investigation of all service, service provider, and subscription data in order to determine if such data will be affected by the change, as well as the potential modifications and activation of the data records affected by the change.

An NPA split is supported by maintaining two sets of records or an equivalent mapping to reduce memory costs and administrative care (old NPA and new NPA) in the NPAC SMS, Local SMSs, and SCPs for the duration of the permissible dialing period, during which dialing of both NPAs are allowed. After the expiration of the transition period, all records for the old NPA are removed from the systems.

3.2 NPAC Personnel Functionality

- R3-1 Authorized NPAC personnel shall be able to initialize the network data when the NPAC SMS is initially deployed.
- R3-2 Authorized NPAC personnel shall be able to administer NPAC network data.
- R3-3 Authorized NPAC personnel shall be able to open up a new NPA-NXX for LNP.
- R3-4 Authorized NPAC personnel shall be able to add/delete a service provider.
- R3-5 Authorized NPAC personnel shall be able to administer information related to a service provider.
- R3-6 Authorized NPAC personnel shall be able to perform mass changes that affect several records. NPA splits, LRN changes, LIDB changes and other similar network data changes affect multiple subscription records in the NPAC SMS.
- R3-7 Authorized NPAC personnel shall be able to select a subset of data which matches a user defined selection criteria, and specify a mass update action to be applied against all key data elements found in the selected records.

3.3 System Functionality

- R3-8 The NPAC SMS shall support an off-line batch download (e.g., via tape) mechanism to mass update Local SMSs (e.g., for new service providers, or in case of disaster recovery for a Local SMS).

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- R3-9 The NPAC SMS shall be able to download network data (e.g. portable NPA-NXX data), to the Local SMSs.
- R3-10 The NPAC SMS shall notify (electronic bulletin) all service providers about the availability of the NPA-NXXs for porting. NOTE: This is a temporary solution.
- R3-11 The NPAC shall notify (broadcast / electronic bulletin) all service providers about a new service provider and the associated LRNs. NOTE: This is a temporary solution.
- R3-12 The NPAC shall validate the service, service provider, and subscription data against the current network data.
- R3-13 The NPAC SMS shall have the capability to identify all records affected by mass changes, (such as NPA splits), and automatically carry out the required updates and download the modified data to the Local SMSs.

Section 4: Service Provider Data Administration

4.1 Service Provider Data Administration and Management

Service Provider Data Administration functions allow NPAC personnel to receive and record data needed to identify authorized LNP service providers. The service provider data indicates who the LNP service providers are and includes location, contact name, security, routing, and network interface information. These functions will be accessible to authorized NPAC personnel.

Service Provider Administration supports functionality to manage service provider data. There can be only one instance of service provider data for a specific LNP service provider.

Service Provider Administration Requirements

4.1.1 User Functionality

Authorized NPAC personnel can invoke the following functionality in the SMS to administer service provider data:

- R4-1 Create a new service provider - creates, validates, and updates new service provider data.
- R4-2 Modify service provider data - modifies, validates, and updates existing service provider data.
- R4-3 Delete service provider data - deletes the service provider data and stores it in a history file.
- R4-4 View service provider data.
- R4-5 View a list of subscriptions associated with the service provider (i.e., see all ported TNs associated with a specific service provider).

Additionally, authorized service provider personnel can view their own service provider data.

4.1.2 System Functionality

This section describes SMS functionality required to support the NPAC user requests described in the above section. The following specifies user requests and lists the SMS functionality needed to support those requests:

4.1.2.1 Service Provider Data Creation

An NPAC user requests that service provider data be created in SMS by associating an action of "create" with the data. This functionality enables a new instance of service provider data for a service provider be created, provided that no other service provider data exists for the service provider.

R4-6 When the NPAC user is creating a new service provider, SMS shall receive the following to identify the service provider:

Service Provider ID - identifier of the service provider (e.g., the OCN).

R4-7 SMS shall check to see if there is an existing service provider with the same service provider ID. If there is, the SMS shall notify the user that the service provider data already exists for the service provider and that the new service provider data cannot be created.

R4-8 If there is no existing service provider data, the SMS shall receive the following data:

Service Provider name, address, phone number, and contact organization <-- required data.

Service Provider billing name, address, phone number, and billing contact for NPAC billing <-- optional data. If left blank this shall default to service provider name, address, phone number, and contact.

Service Provider to service provider Repair contact name and phone number <-- optional data. If left blank this shall default to service provider contact and phone number.

Location Routing Numbers (LRN) - the identifier of the switches having portable NXXs and used by the service providers <- at least one LRN is required.

Assigned NPA-NXXs open for LNP <-- at least one required.

Network Address of NPAC to Local SMS interface

Network Address of NPAC to SOA interface

Security data

R4-9 After the service provider data has been collected, SMS shall validate that all required data has been received as defined in R4-8.

R4-10 If all validations are passed, SMS shall notify the user that the request to create the service provider data was successful.

R4-11 If the service provider data fails validation, SMS shall issue an appropriate error message to the request originator. The service provider data shall not be created.

4.1.2.2 Service Provider Data Modification

An NPAC user requests that service provider data be modified in SMS by associating an action of "modify" with the service provider data. This functionality enables a user to add or change data for the service provider.

R4-12 SMS shall receive a request to modify service provider data.

R4-13 SMS shall receive the following data from the user to identify the service provider data to be modified: the Service Provider ID.

- R4-14 If the service provider data does not exist, SMS shall issue an appropriate error message to the request originator. SMS shall not proceed further with the modification request.
- R4-15 SMS shall allow all data to be modified or added to the service provider data with the exception of the Service Provider ID which is the key to the service provider data.
- R4-16 When a user attempts to submit modified service provider data, SMS shall revalidate the service provider data. This revalidation process shall include the validations defined in R4-9.
- R4-17 If the service provider data fails validation, SMS shall issue an appropriate error message to the request originator.
- R4-18 If the validations defined in R4-9 are passed, SMS shall determine if there are any subscriptions associated with the Service Provider ID.
 - (A) If there are no subscriptions, SMS shall notify the user that the request to modify the service provider data was successful, or
 - (B) If there are subscriptions that contain data that is dependent on the service provider data proposed for change, SMS shall notify the user that the request to modify the service provider data cannot be completed until the individual subscriptions are modified via subscription administration functions.

4.1.2.3 Delete Service Provider Data

When an NPAC user requests that service provider data be deleted in SMS a network action of "delete" will be associated with the subscription data and it will be written to a history file.

- R4-19 SMS shall receive a request to delete service provider data.
- R4-20 SMS shall receive the following data from the user to identify the service provider data to be deleted: the Service Provider ID.
- R4-21 If the service provider data does not exist, or if it has already been deleted and exists only in a history file, SMS shall generate an error message and send it to the request originator. SMS shall not proceed further with the deletion request.
- R4-22 If the service provider data does exist, SMS shall do the following:
 - SMS determine if there are any subscriptions (i.e., ported TNs) associated with the service provider:
 - (A) If there are no subscriptions, SMS shall notify the user that the request to delete the service provider data was successful and shall write the service provider data to a history file which includes the date and time of deletion and the login of the NPAC personnel.

- (B) If there are subscriptions, SMS shall notify the user that the request to delete the service provider data cannot be completed until the subscriptions are deleted or are associated with a different service provider.

4.1.3 Service Provider Queries

The query functionality discussed in this section will give users the ability to view service provider data without being able to update that data. A user may not be able to modify a particular data item because that user does not have the proper security permissions and the data is made available via SMS for read-only purposes.

Assumptions

Users will need to be able to retrieve service provider data that they cannot modify.

User Functionality

- R4-23 An authorized SMS user shall be able to invoke the following functionality in the SMS to query service provider data:
- a service provider may view only its own service provider data.
- R4-24 Authorized NPAC personnel shall be able to view:
- all subscriptions associated with a service provider, or
 - all subscriptions associated with a LRN.

System Functionality

The following specifies SMS functionality needed to support the user requests described above.

Service Provider Query

- R4-25 For queries regarding service provider data, SMS shall receive the Service Provider ID.
- R4-26 If SMS does not have service provider data as specified by the request originator, SMS shall provide the request originator with a message indicating that there was no data in SMS that matched the search keys. Otherwise SMS shall return all service provider data associated with the Service Provider ID.
- R4-27 For queries regarding subscription data for a specific service provider, SMS shall receive the Service Provider ID, a request to view subscription data, and optionally the subscription data status types to be returned (e.g., active only, active or pending).

R4-28 If SMS does not have subscription data as specified by the request originator, SMS shall provide the request originator with a message indicating that there was no data in SMS that matched the search keys. Otherwise SMS shall return all subscription data associated with the Service Provider ID and any optional status requests.

- **Subscription List Query**

R4-29 For queries regarding subscriptions, SMS shall receive the attributes to be searched on. Allowable attributes are all data elements in Table 3-1 or subsets thereof.

R4-30 If SMS does not have subscriptions as specified by the request originator, SMS shall provide the request originator with a message indicating that there was no data in SMS that matched the search keys. Otherwise, SMS shall return all subscriptions (active versions only) which satisfy the selection criteria. If more than a pre-specified number of subscriptions are found. (This shall be a parameter which is tuneable by the SMS System Administrator the default value shall be 50.) The subscription data shall be returned to a previously designated (off-line) output device/medium.

Section 5: Subscription Administration

5.1 Subscription Administration and Management

Subscription Administration functions allow users to specify data needed for ported numbers. The subscription data indicates how local number portability should operate to meet subscribers' needs. These functions will be accessible to authorized service providers via an interface (e.g., the SOA interface) from their operations systems to the NPAC SMS and will also be accessible to (and performed by) NPAC personnel.

Subscription Administration supports functionality to manage multiple versions of subscription data. A subscription version can be associated with the following statuses: invalid, pending, sending, active, conflict, failed, canceled, or old (history). See Version Management for more details on different states of a version. There can be only one invalid, pending, sending, conflict, or failed version per subscription. There can also be one active subscription version at any time and multiple old and/or canceled subscription versions.

5.1.1 Version Management

Version management provides functionality to manage multiple time-sensitive views of subscription data. This section addresses version management for LNP and the user and system functionality needed for subscription administration. In this context a version may be defined as time-sensitive subscription data.

At any given time, a subscription version in the SMS can have one of several statuses (e.g., active, invalid) and may change status depending on results of different SMS processes (e.g., modification, activation). This section describes different statuses that a version can have and the SMS processes that can change the status.

This section on Version Management discusses functionality and data that is needed for Subscription Administration.

Requirements

Version Status

R5-1 At any given time, a version in the SMS will have one of the following statuses:

Pending - passed initial validations and edits and will be submitted to the network (i.e., Local LNP SMSs) when activation is requested.

Invalid - failed validations.

[Note: SMS will not create subscriptions or accept updates to subscriptions which result in an invalid condition. However, pending subscriptions will be revalidated prior to sending updates to the local SMSs. Subscriptions that fail this revalidation will have a status of invalid. It will be necessary to notify the porting service provider of this change in status.]

Conflict - non-concurrence from old facilities-based service provider, lack of concurrence from new facilities-based service provider, or dispute between two new facilities-based service providers.

Sending - being sent to the network.

Active - currently active in the network.

Failed - failed activation in the network (at one or more Local SMSs).

Old - previously active in the network.

Canceled - previously pending, invalid, or in conflict.

- R5-2 The length of time that old subscription versions will be retained (before deletion) and will be accessible through a query request will be a tuneable parameter that is tuneable by the SMS Administrator (with the appropriate security permission). The default value for this parameter will be eighteen (18) months.
- R5-3 The length of time that canceled subscription versions will be retained (before deletion) and will be accessible through a query request will be a tuneable parameter that is tuneable by the SMS Administrator (with the appropriate security permission). For canceled versions, this parameter shall be tuneable based on the last status of the version. The default values for these parameters shall be as follows:

<u>Last status before cancellation</u>	<u>Parameter value</u>
pending	90 Days
invalid	90 Days
conflict	30 Days

Figure 5-1 illustrates the possible status transitions a subscription version may undergo.

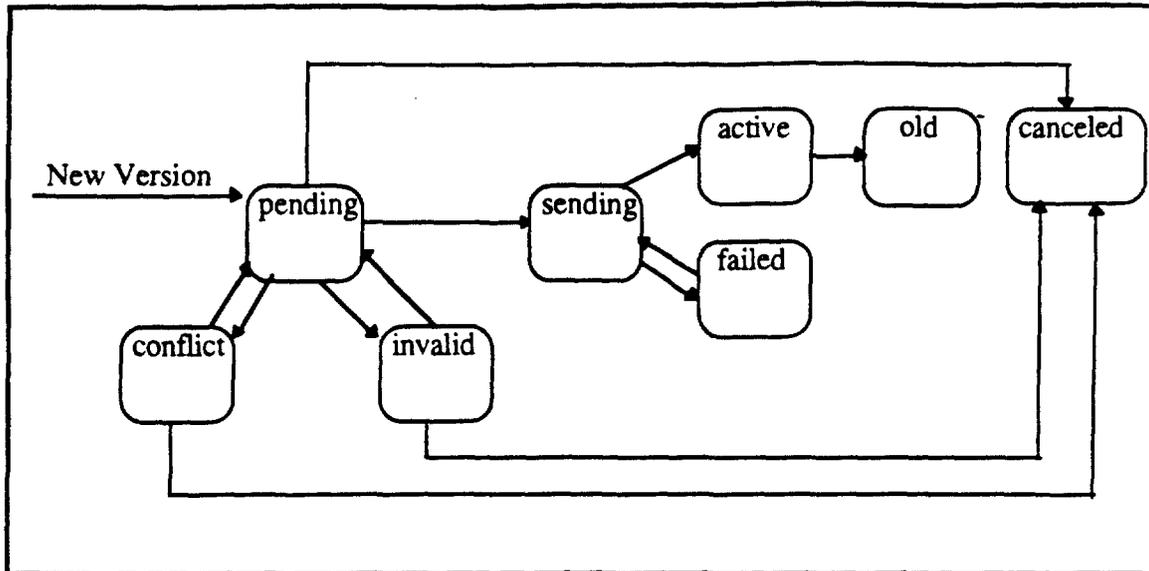


Figure 5-1 Version Statuses

- R5-4 The LNP SMS will maintain only a single pending version of a subscription.
- R5-5 Subscriptions for individual ported TNs that are created through a "TN range-level" request shall be treated as individual subscription versions after activation has occurred.
- R5-6 SMS shall log all subscription administration transactions. The log entries shall include:

Activity Type: create, modify, active, activate, conflict "on," conflict "off," disconnect, cancel, or query

Initial Version Status

New Version Status

User ID and/or Login

Local Number Portability Type (SP, Loc., Serv)

Date and Time Stamp

Ported Telephone Number

Status Flag - successful or failed

5.1.2 Subscription Administration Requirements

5.1.2.1 User Functionality

Authorized users² can invoke the following functionality in the SMS to administer subscription data:

- R5-7** Create a subscription version - creates, validates, and pends (if valid) a new subscription version for activation in the network.
- R5-8** Modify a subscription version - modifies, validates, and pends (if valid) a pending, invalid, or active subscription version for activation in the network. Old, canceled, conflict, and failed versions cannot be modified.
- R5-9** Activate a subscription version - activates a pending subscription version in the network.
- R5-10** Conflict "On"/Conflict "Off" - places a subscription version in conflict or removes it from conflict. A subscription version in conflict cannot be activated.
- R5-11** Disconnect a subscription version (from the network) - deletes the active subscription version in the network and stores it as an old subscription version.
- R5-12** Cancel a subscription version - removes an invalid, conflict or pending subscription version and stores it as a canceled subscription version.
- R5-13** Query: displays a subscription version and its associated parameters.

5.1.2.2 System Functionality

This section describes SMS functionality required to support user requests defined in the above section. Subscription versions can be created or viewed by the old facilities-based service provider. Subscription versions can be created, modified, activated, disconnected, canceled, or viewed by the new facilities-based service provider. In addition to being able to create, modify, activate, disconnect, cancel, and view subscriptions, only authorized NPAC personnel can place subscriptions in conflict and remove them from conflict. Additionally, any authorized service provider can view any subscription version for any ported TN. (Note: Tuneable security permission matrix may be required.)

Additionally, SMS functionality is required to perform operations which are not invoked by a direct user request. This functionality shall monitor a subscription version to determine whether the old and the new facilities-based service providers have authorized the transfer of service for a ported number, shall issue appropriate notifiers to service providers, and shall change the status of a subscription version based on tuneable parameters, e.g. pending version will be automatically canceled after an "X" number of days ("X" = tuneable parameter)

² An "authorized user" shall be able to access the data that is part of or controlled by the SMS. A user, either an individual or machine, shall be identified by a unique user identification code (user id).

The following specifies user requests and lists the SMS functionality needed to support those requests:

5.1.2.2.1 Subscription Version Creation

A user requests a subscription to be created in SMS by associating an action of "create" with a version. This functionality, which can be invoked by the old or the new facilities-based service provider, enables a new instance of a subscription version for the ported telephone number to be created, provided that there exists at most one active subscription version. Multiple old and/or canceled subscription versions may exist. If a create is initiated by the old facilities-based service provider, they shall identify the ported telephone number, the new facilities service provider, the due date and indicate that they are authorizing the transfer of service. If the create is initiated by the new facilities-based service provider, all information pertaining to the ported TN may be provided, with the exception of the old facilities-based service provider's authorization.

R5-14 When the user is the old (ported-from) service provider SMS shall receive the following to identify the subscription version to be created:

Local Number Portability Type ID - identifier of the Local Service Provider Portability (LSPP) type. (NOTE: While Local Service Provider Portability will be the first type supported by the NPAC SMS, the system needs to be extensible so as to support multiple types at a future date.)

Ported Telephone Number(s) - this entry can be a single TN or a continuous range of TNs that identifies a subscription or a group of subscriptions that share the same attributes.

Due Date - date on which transfer of service from old facilities-based service provider to new service provider is planned to occur.

New facilities-based service provider ID - the identifier of the new facilities-based service provider.

Old facilities-based service provider ID - the identifier of the old facilities-based service provider.

Authorization from old facilities-based service provider - indication that the transfer of service is authorized by the ported-from service provider.

R5-15 When the user is the new facilities-based service provider SMS shall receive the following to identify the subscription version to be created:

Local Number Portability Type ID - identifier of the Local Service Provider Portability type.

Ported Telephone Number (TN) - the identifier of a subscription (i.e., the telephone number assigned to the customer).

Due Date - date on which transfer of service from old facilities-based service provider to new facilities-based service provider is planned to occur.

New Facilities-based Service Provider ID - the identifier of the new facilities-based service provider.

Old Facilities-based Service Provider ID - the identifier of the old facilities-based service provider.

Authorization from New Facilities-Based service provider - indication of whether the transfer of service is authorized by the new Facilities-based service provider.

Location Routing Number (LRN) - the identifier of the ported-to switch.

LIDB Global Title Translation (GTT) data - network addressing information for routing to the serving LIDB.

Destination Point Code (DPC) type for LIDB features GTT - indicates whether destination point code identifies the subsystem or a gateway STP.

CLASS Global Title Translation (GTT) data for LIDB DPC - network addressing information (i.e., mapping of new LRN to destination point code) for routing TCAP messages to the ported-to switch.

Destination Point Code (DPC) type for CLASS features GTT - indicates whether destination point code identifies the end office or a gateway STP.

R5-16 The following fields are for future use. The new facilities-based service provider may not be required to treat these fields as mandatory.

Billing Service Provider ID

End-User Location - Value

End-User Location - Type

Future 1

Future 2

Future 3

SMS shall invoke the following Version Creation functionality:

R5-17 When a user attempts to submit a new version, SMS shall determine whether a pending version already exist for the entity in question.

If a pending version exists and if the authorized user is associated with the old or new facilities-based service provider (who has not yet authorized the transfer of service), SMS shall:

Allow the old facilities-based service provider to perform the functions defined in R5-14 or

Allow the new facilities-based service provider to perform the functions defined in R5-15 and R5-16.

Otherwise, the SMS will send an error message to the request originator.

R5-18 If there is no pending version of the subscription (or if the conditions in R5-17 have been met) and no active version, SMS shall proceed as follows:

SMS shall perform the following validations for the version:

All data has been received as defined in R5-14 or R5-15 and R5-16.

The old and the new facilities-based service provider must agree as to the Due Date.

The Due Date is the current date or a future date.

The NPA-NXX of the ported Telephone Number must be in the Portable NPA-NXX table.

The old and new facilities-based service provider IDs must match existing service provider data.

The new LRN must be associated with the new facilities-based service provider.

The LIDB DPC data must be associated with the new facilities-based service provider.

The CLASS DPC data must be associated with the new facilities-based service provider.

R5-19 If there is no pending version of the subscription but there is an active version, SMS shall, in addition to the validations defined in R5-16, verify that the old service provider on the version being created is equal to the service provider on the active subscription version.

R5-20 If the subscription version fails validation, SMS shall issue an appropriate error message to the request originator. If a valid subscription version already exists (e.g., the current create is being done by the old facilities-based service provider, but the new facilities-based service provider has already done a create for the ported TN), the pending subscription version shall be retained. Otherwise, the subscription version shall not be created.

R5-21 If the subscription version passes validations, SMS shall:

Verify if both the old and the new facilities-based service providers have authorized the transfer of service for the ported TN.

If not, SMS shall compute the date by which authorization data from both service providers must be received and shall store this with the subscription version. The date by which concurrence from both service providers must be received shall be computed as being a predetermined number of days prior to the Due Date. This will be a parameter that is tuneable by the SMS Administrator. The default value for this parameter shall be three (3) days.

Mark the version with a status of pending in the SMS and issue an appropriate message to the request originator indicating successful completion of the pending process.

R5-22 When the date for concurrence for a pending subscription version has been reached, SMS will send a notifier to the service provider (old or new) who has not yet authorized the transfer of service.

R5-23 If authorization for the transfer of service has not been received from the new facilities-based service provider within the allotted period of time (tuneable parameter) after SMS sent the notifier, the subscription version shall be canceled as defined in R5-70. The user ID for this transaction shall be the "SMS System ID."

5.1.2.2.2 Subscription Version Modification

A user requests a pending, invalid or conflict subscription version to be modified in SMS by associating an action of "modify" with a version. This functionality, which can be invoked only by the new facilities-based service provider, enables a user to add or change data in a subscription version.

5.1.2.2.2.1 Modification of a Pending, Invalid, or Conflict Subscription Version

R5-24 SMS shall receive data in support of modification of a subscription version:

- (1) to change the data associated with a pending, conflict, or invalid subscription version or
- (2) to add additional data to a pending or conflict subscription version.

R5-25 If the version status is sending, failed, canceled, or old, SMS shall generate an error message and send it to the request originator. SMS shall not proceed further with the modification request.