NANC CHANGE ORDER SUMMARY

FOR

NPAC SMS FUNCTIONALITY

**Rev: 144  
to be used for January 2012 (Scottsdale) meeting**

12/31/11

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# Open Change Orders

| **Open Change Orders** | | | | | | | |
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| **Chg Order #** | **Orig. / Date** | **Description** | **Priority** | **Category** | **Proposed Resolution** | **Level of Effort** | |
|  |  |  |  |  |  | **NPAC** | **SOA LSMS** |
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# Accepted Change Orders

| **Accepted Change Orders** | | | | | | | | |
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| **Chg Order #** | **Orig. / Date** | **Description** | **Priority** | **Category** | **Proposed Resolution** | **Level of Effort** | | |
|  |  |  |  |  |  | **NPAC** | | **SOA LSMS** |
| NANC 372 | Bellsouth 11/15/02 | **SOA/LSMS Interface Protocol Alternatives**  **Business Need:**  Currently the only interface protocol supported by the NPAC to SOA and NPAC to LSMS interface is CMIP. The purpose of this change order is to request analysis be done to determine the feasibility of adding other protocol support such as CORBA or XML. The primary reasons for looking into a change would be 1) Performance, and 2) Implementation complexity.  (continued) |  |  | Func Backward Compatible: TBD  **Dec ’02 LNPAWG**, discuss this change order in January ’03 in the new arch review meeting. | High | | High / High |
| NANC 372 (con’t) | **Jan ’03 APT**, discussion:   * The team began with a discussion on the CMIP Alternative Business Need in order to determine if we need to improve CMIP or identify an alternative. * Dave Cochran, BellSouth and the originator of NANC Change Order 372, discussed potential drivers and cited: * Cost of maintaining internal CMIP interface expertise and resources * Ability to take advantage of in-house expertise for some of the newer architectures, e.g., CORBA, XML, JAVA, J2E * It was stated that CMISE was considered a reasonable protocol for managing network elements in the mid-1990s due to its flexibility. * LNP rules include encryption/decryption functionality. We need to discuss authentication and associated issues. * It was mentioned that if lowering the level of encryption is identified as a benefit for a new protocol, we should also consider that for CMIP. * CMIP is a very robust protocol for describing and managing network elements, but where that robustness begins to become burdensome is subjective. * We need to keep in mind that we need a real-time interface.   **Feb ’03 APT**, discussion:  Dave Cochran, BellSouth, will be providing more input (business drivers, data, operational feedback, etc.) to facilitate further discussion. Sub-tasks still need to be prioritized.  **Dec ’03 APT**, discussion:  No further discussion at this time. Leave off list of change orders discussed during the APT meeting.  **Jan ’07 APT**, discussion:  The APT was activated during the Nov ’06 LNPAWG meeting. No discussion on alternative interfaces took place during that meeting, but change orders (including 372) were reviewed during the Jan ’07 meeting. The brief discussion included: *CMIP-to-XML/SOAP -- It was asked if there is a business need to transition from CMIP to XML/SOAP? It was suggested that since we are tunneling XML into CMIP, we should explore the future evolution of the interface. Service Providers are to discuss internally any drivers for moving from CMIP to XML/SOAP for the SOA and LSMS interfaces including the impact of increasing the size of messages*.  **Mar ’07 APT**, discussion:  More discussion took place regarding an additional NPAC interface using XML/SOAP. For the May ’07 meeting, Service Providers and vendors are to bring any additional data or information to share with the group.  (continued) | | | | | | | |
| NANC 372 (con’t) | **May ’07 APT**, discussion:  1. The IT industry is generally moving towards an XML/SOAP interface. However, there are performance issues and questions. Message size would be greatly increased. Need to investigate compression capabilities.  2. It will be worth pursuing for the long term. Not sure what is next step. Need to find a business driver for pursuing this.  3. The WICIS transfer is planning on implementing a flash-cut to XML (Sep ’08). Plan is to continue to support CORBA interface for testing purposes only. Keep this in mind when planning the NPAC implementation.  4. The group will discuss more during the Jul ’07 mtg, including pros/cons analysis, LOE, and any input on the business case.  **Jul ’07 APT**, discussion:  1. In response to May ’07 #3 above, a question was asked about the ATIS decision to move WICIS from CORBA to XML/SOAP. It was explained that the major driver for the ATIS recommendation was to consolidate the various systems onto a single interface type (XML/SOAP), and not necessarily specific to WICIS. It was also mentioned that the NPAC would be supporting two interface types by adding XML/SOAP, since both CMIP and XML/SOAP would need to be supported on the NPAC for the foreseeable future. Sunsetting of the CMIP interface (and only having the XML/SOAP interface) was briefly discussed, but it was also mentioned that the industry has never sunset any previous NPAC functionality.  2. All Service Providers will investigate internally whether or not their companies are moving towards XML/SOAP, and whether or not they support the ATIS position of consolidating interface types towards XML/SOAP. This will be discussed again at the Sep ’07 meeting, to gauge industry interest in developing an XML/SOAP interface for the NPAC.  **Sep ’07 APT**, discussion:  1. Deb Tucker, VZW, provided the historical info (from multiple ATIS documents) for ATIS and the single interface item. The current situation for most Service Providers is that new systems are going with XML and legacy systems stay on their existing protocols based on each company’s cost/benefit analysis. The group agreed to continue to discuss this item in future meetings. From the NPAC perspective, support for both interfaces is required since a flash cut cannot be assumed.  2. Given the APT’s charter, the correct way to look at this change order is from an architecture perspective. Several items to consider: messaging (continue to use a session approach like CMIP, or an approach like web-services where it’s set up then broken down when the message is done?), security (how does it change with a web services approach?), message content/architecture (same messages used today with CMIP will be used for XML?), performance/message compression, business rules/error handling, efficiencies in data model (e.g., having DPC at the LRN level), audits (the effect on large messages).  (continued) | | | | | | | |
| NANC 372 (con’t) | 3. Business Case. Need to get to the point where the group can either build or not build a strong business case. May need a document to define an XML/SOAP interface which would help answer the question on the business case. Security will be the first issue discussed at the Nov ’07 meeting.  **Nov ’07 APT**, discussion:  1. The wireless group has been discussing this. They will summarize their recent discussion, and forward some relevant bullet points on to the Architecture team. These bullet points will be used as starting point discussions.  2. The group will further discuss dedicated link versus VPN (http/https. Private network/public network), IP security, .data security (encryption). | | | | | | | |
| NANC 382 | NeuStar 4/4/03 | **“Port-Protection” System**  **(The following is the original request. Subsequent modifications were made during several LNPAWG meetings. Refer to the bottom of this change order for the current version.)**  **Overview:**  *The “Port Protection” system is a competitively neutral approach to preventing inadvertent ports that gives end-users the ability to define their portable telephone numbers as “not-portable.” The NPAC SMS enforces the “not-portable” status of a telephone number so long as it remains in effect. No Local Service Provider (LSP) can invoke or revoke “port protection” on a working telephone number; end-users completely control the portability of their portable telephone numbers.*  **Business Need:**  Inadvertent porting of working numbers is a concern to both Local Service Providers (LSPs) and their customers. In today’s LNP environment, an LSP cannot absolutely assure its customers that their terminating service will not be interrupted, even if it can insure that physical plant is operated without failure. This is because any LSP by mistake may port a telephone number away from that number’s current serving switch.  The inadvertent port can occur in a number of ways, but the most common occurrences appear to be caused by two errors: (1.) when the wrong telephone number submitted to NPAC for a conventional inter-SP port, and (2.) when intra-SP ports are not done before a pooled block is created. There is a similar inadvertent port problem for non-working numbers, but erroneous moves of non-working numbers are not directly service-affecting and are not addressed here.  NeuStar suggests the following competitively neutral method to prevent inadvertent ports of working TNs. | TBD | FRS, IIS, GDMO, ASN.1 | Interface and Functional Backward Compatible: NO  **Description of Change:**  **(The following is the original request. Subsequent modifications were made during several LNPAWG meetings. Refer to the bottom of this change order for the current version.)**  See next page. | | TBD | TBD / TBD |
| NANC 382 (con’t) | Continuation of NANC 382, Port-Protection System, Proposed Resolution section:  -- System Architecture --  Changes to the NPAC SMS are required, to establish a table of “Port-Protected TNs” in which portable numbers that no longer can be ported are listed. A step must be added to the NPAC SMS’s validation process in order to check this new table whenever an inter-SP port or pooled block create is attempted.[[1]](#footnote-1) An interface change could be required as well if industry wishes to know when a request’s rejection is due to the involved number being on the “Port Protection” list.  Creation of an IVR system is required, to receive end-user requests for protection of their numbers from porting (or to remove this protection) and to relay the information to the NPAC SMS. The system would automatically modify the NPAC’s “Port-Protection” tables based on the end-user requests it receives. Access to the IVR would be through the end-user’s current LSP customer rep. Any other LSP willing to assist the end-user could be involved.  The end-user’s telephone number is entered in the NPAC’s “Port Protection” tables whenever “port-protection” is requested. The end-user cannot reach the “Port-Protection” IVR system directly, but instead must be connected through a local Service Provider’s customer contact system, much like what is done in the PIC selection process, where the Service Provider’s customer rep advances the call to a third-party verification service, then leaves the call to allow the third-party verifier and end-user to converse.  The IVR system must recognize the LSP as authorized to participate in the “Port Protect” process. (The LSP need not be a facility-based provider.)  Arrangements for security handshakes must be made in advance with each participating LSP.  A telephone number may be added to or removed from the “Port Protection” list whenever and as often as the end-user wishes.  To maintain the proposal’s competitive neutrality, the process assumes any LSP may assist the end-user. However, the possibility of end-users invoking or revoking “Port Protection” on telephone numbers other than their own would be mitigated if only an LSP with which the end-user had a contractual relationship could participate, i.e., only the current LSP or a new LSP in a pending port request situation.  (con’t) | | | | | | | |
| NANC 382 (con’t) | Continuation of NANC 382, Port-Protection System, Proposed Resolution section:  -- System Operation --  The end-user’s telephone number is entered in the NPAC’s “Port Protection” tables whenever “port-protection” is requested. The end-user cannot reach the “Port-Protection” IVR system directly, but instead must be connected through a local Service Provider’s customer contact system, much like what is done in the PIC selection process, where the Service Provider’s customer rep advances the call to a third-party verification service, then leaves the call to allow the third-party verifier and end-user to converse.  The IVR system must recognize the LSP as authorized to participate in the “Port Protect” process. (The LSP need not be a facility-based provider.)  Arrangements for security handshakes must be made in advance with each participating LSP.  A telephone number may be added to or removed from the “Port Protection” list whenever and as often as the end-user wishes.  To maintain the proposal’s competitive neutrality, the process assumes any LSP may assist the end-user. However, the possibility of end-users invoking or revoking “Port Protection” on telephone numbers other than their own would be mitigated if only an LSP with which the end-user had a contractual relationship could participate, i.e., only the current LSP or a new LSP in a pending port request situation.  When the NPAC attempts to create a pending SV or a pooled block, the NPAC will check the “Port Protection” list in its validation process for inter-SP port (including Port-to-Original) and “-X” create requests. [[2]](#footnote-2)  The “Port Protection” validation does not occur for intra-SP ports. These may represent inadvertent ports, but validation necessary to determine whether override would be appropriate is not feasible. The validation occurs for only those deletes that are “Port-to-Original” situations.  (con’t) | | | | | | | |
| NANC 382 (con’t) | Continuation of NANC 382, Port-Protection System, Proposed Resolution section:  -- Process Flow --  The end-user contacts an LSP (or an LSP contacts the end-user). *(It is not inherently necessary for there to be Service Provider involvement in this process, but NeuStar is not prepared to operate a system which does not involve LSP participation.)*  End-user indicates desire to invoke (or revoke) “Port Protection.”  LSP customer rep places end-user on hold and calls the “Port-Protection” IVR.  LSP provides its pre-assigned ID information to IVR system.  *(LSP arrange for security codes before attempting to assist end-users with the “Port-protection” process.)*  LSP brings end-user on to the active line and leaves call; end-user interacts with IVR.  Using a standard script, the IVR confirms caller is authorized to make changes to the telephone number account, determines the caller’s name, and lists the telephone number(s) to be added to (or removed from) the “port-protection” table. The customer may actually enter the TN desired. The call is recorded.  The IVR system then enters this information into an automated ticket system.  Completion of the ticket automatically sends triggers an update of the NPAC’s “port-protection” table.  *In the case of a number that has been entered in the port-protection table, but is no longer assigned to an end-user, the current Service Provider itself can ask that the number be removed from the “port-protection” table. The provider would have to be recognized by the NPAC as the code/block owner and would have to state that the number is not assigned to an end-user.* | | | | | | | |
| **Continuation of NANC 382, “Port-Protection” System**  **This change order was reviewed and revised during the May through Sep ’03 LNPAWG meetings. The final version of the open change order at the time of acceptance (for development of more detailed information) is shown below:**  **Overview:**  The “Port Protection” system is a competitively neutral approach to preventing inadvertent ports. The system makes it possible for end-users to define their portable telephone numbers as “not-portable.” The NPAC SMS prevents the port of a “not-portable” telephone number (TN) through its automated validation processes. A Local Service Provider (LSP) can invoke or revoke “port protection” for a working TN, but only at the end-user’s request.  **Business Need:**  Inadvertent porting of working TNs is a concern to both Local Service Providers (LSPs) and their customers. In today’s LNP environment, an LSP cannot absolutely assure its customers that their terminating service will not be interrupted, even if it can insure that the physical plant is operated without failure. This is because another LSP by mistake may port a TN away from that number’s current serving switch.  The inadvertent port can occur in a number of ways, but the most common occurrences appear to be caused by two errors: (1.) the wrong TN is submitted to the NPAC SMS for a conventional inter-SP port, and (2.) intra-SP ports are not done before a thousands-block is created. There are similar inadvertent port scenarios for non-working TNs, but erroneous moves of non-working TNs are not immediately service-affecting and are not addressed here.  NeuStar suggests the following competitively neutral method to prevent inadvertent ports of working TNs. | | | | Interface and Functional Backward Compatible: NO  **This change order was reviewed and revised during the May through Sep ’03 LNPAWG meetings. The final version of the open change order at the time of acceptance (for development of more detailed information) is shown below:**  **Description of Change:**  -- System Architecture --  Changes to the NPAC SMS are required to establish a table of “Port Protected” TNs, in which portable numbers that no longer can be ported are listed, and to add a validation step that rejects attempts to port a TN that is on the list. The validation is performed on the new-SP’s *Create* message for an inter-SP port, when a thousands block is created, and, optionally, for an intra-SP port. (The optional intra-SP port validation is invoked on a SPID-specific basis.) The rejection notification sent when a request fails this NPAC SMS validation will indicate that the TN is on the Port Protection list. No interface change is required for this rejection message, since a new optional attribute will be added to accommodate the new error text.  LSP requests to add TNs to the Port Protection table are made to the NPAC Help Desk via e-mail (the TNs involved are shown on an Excel attachment to the e-mail message). LSPs use the same approach to delete TNs from the table.  (con’t) | | | | |
| NANC 382 (con’t) | Continuation of NANC 382, Port-Protection System, Proposed Resolution section:  -- System Operation --  A TN is added to the NPAC’s Port Protection table when an LSP requests this action. The same process applies when an LSP requests the removal of a TN from the table.  The NPAC Help Desk accepts requests to change Port Protection table entries only from pre-authorized representatives of an LSP. (The LSP need not be a facility-based provider.) A TN may be added to or removed from the “Port Protection” list as often as required.  When the NPAC SMS receives the new SP’s *Create* request, it will check the Port Protection table during the *Pending SV Create* validation process for inter-SP ports (including Port-to-Original SV deletes). Optionally[[3]](#footnote-3), the validation is performed for intra-SP ports.  The NPAC SMS also will make this validation check in connection with “-X” create requests.[[4]](#footnote-4)  The validation is not applied to Modify requests[[5]](#footnote-5)  In the disconnect scenario, the NPAC SMS will check the Port Protection list and, if the TN is found, will remove the involved disconnected ported TN from the list. This automatic removal of a disconnected TN from the Port Protection list can occur only in the case of a disconnected TN that was ported. A non-ported TN that is disconnected must be removed from the list by the LSP having the disconnected non-ported TN in its inventory.  (con’t) | | | | | | | |
| NANC 382 (con’t) | Continuation of NANC 382, Port-Protection System, Proposed Resolution section:  -- Process Flow --  **NPAC Help Desk**   * The end-user contacts an LSP (or an LSP contacts the end-user). * End-user indicates to LSP his desire to invoke (or revoke) “Port Protection.” * LSP contacts NPAC Help Desk via e-mail to request change. * The NPAC Help Desk updates the Port Protection table.   **NPAC SMS**   * NPAC SMS applies the Port Protection validation (1.) to the new-SP Create request of an inter-SP port, (2.) to a Block Creation request, and (3.) optionally at the individual SPID level, to an intra-SP port request. If the TN is found on the Port Protection list, NPAC SMS rejects the request and indicates that a Port Protection validation failure is the reason for the request’s rejection. * Disconnect of a ported TN results in automatic removal of the TN from the Port Protection list; disconnect of a non-ported TN requires owning LSP to request the disconnected TN’s removal from the list. * An LSP’s regional NPAC SMS Profile indicates whether the Port Protection validation should be applied also to its intra-SP port requests. | | | | | | | |
| 382 (cont) | **Nov ’03 LNPAWG**, discussion:  The group discussed the high-level steps. There were a couple of updates that were requested. These steps will be evaluated once the policy issues/questions are discussed:   1. For intra-ports, let the port go through and keep them on the list. 2. In steps 4.b, no need to look at the list, just allow the Old SP Create to happen. If they are on the list, then for now, leave it on the list. 3. For step 8, add that this does NOT apply to PTO.   Policy issues/questions: (at the Jan ’04 LNPAWG, we would discuss if and how, we might Tee this up at NANC).  What types/classes of numbers can be placed on the list? What criteria? What kind of criteria.  Who can put it on the list and remove it from the list? This is an authorization question.  What is the PROCESS for getting them on and off the list? How mechanically, do you put/remove it on the list.  Who can access the list, need a process to access the list. What is shown when they access the list (police, other authority)  Other points discussed:   1. Want more than just the IVR way to get numbers on/off the list. 2. Want some type of pre-validation process to “ping” the list and see if someone is on the PPL. 3. Want the ability to audit the list. | | | | | | | |
| NANC 390 | Qwest  10/16/03 | **New Interface Confirmation Messages SOA/LSMS – to - NPAC**  **Business Need:**  Service Provider systems (SOA/LSMS) need to know (in the form of a positive acknowledgement from the NPAC) that the NPAC has received their request message, so the systems (SOA/LSMS) do not unnecessarily resend the message and cause duplicate transactions for the same request.  Based on the current requirements for the NPAC, the NPAC acknowledgement message (generally referred to as "a response to a request" from the SOA/LSMS) is not returned until AFTER the NPAC has completed the activity required by that request. During heavy porting periods, transactions that require many records to be updated may take longer than normal for a response to be received from the NPAC. In the case of a delayed response, the SOA/LSMS may abort the association to the NPAC (e.g., after the 15 minute Abort timer expires). When the association is re-established, the SOA/LSMS may resend messages to the NPAC because they haven’t received a response to the first message and thus believe the NPAC did not receive the original message. This behavior can lead to a duplicate transaction for the same request thus: 1.) causing a heavy volume of transactions over the NPAC to SOA/LSMS interface, 2.) slowing Porting completion, 3.) causing an increase of Porting costs, 4.) causing duplicate message processing at the NPAC, and 5.) possibly causing manual intervention by NPAC and Service Provider personnel, etc. | TBD | FRS, IIS, GDMO, ASN.1 | Func Backward Compatible: NO  A new message will be explored during the Nov ’03 LNPAWG meeting.  Additionally, a discussion item needs to occur regarding the possible inclusion of Service Provider profile settings to support this new feature. | High | | Med-High / Med-High |
| NANC 390 (con’t) | **Nov ’03 LNPAWG**, discussion:  Explained the current functionality, and the fact that higher priority transactions will be worked before other requested work, which can cause delays in responses. In the case where previously submitted work was re-sent to the NPAC, the NPAC may have to re-do work it has already done.  Providers may see a backup in their SOA traffic, thereby causing them to process extra data as well.  A toggle would need to be added for Backward compatibility. Providers that support the new confirmation message would use the new method/flow, and other providers would continue to use the current method/flow. There is definitely a benefit to this, but to obtain the benefit would require changes to the SOA as well.  It was agreed that this would be accepted as a change order, and would continue to be worked with the Architecture group in December.  **Feb ‘04** – Refer to the Architecture Planning Team’s working document for the latest information on this change order. Attached here:    **Jul ’08 LNPAWG**, discussion. Need to develop requirements for Sep ’08 review. See below:  Req-1 Service Provider SOA Interface Confirmation Message Indicator  NPAC SMS shall provide a Service Provider SOA Interface Confirmation Message Indicator tunable parameter which defines whether a SOA supports Interface Confirmation Messages.  Req-2 Service Provider SOA Interface Confirmation Message Indicator Default  NPAC SMS shall default the Service Provider SOA Interface Confirmation Message Indicator tunable parameter to FALSE.  Req-3 Service Provider SOA Interface Confirmation Message Indicator Modification  NPAC SMS shall allow NPAC Personnel, via the NPAC Administrative Interface, to modify the Service Provider SOA Interface Confirmation Message Indicator tunable parameter. | | | | | | | |
| NANC 390 (con’t) | Req-4 Service Provider SOA Interface Confirmation Message – Indicator set to FALSE  NPAC SMS shall process a Service Provider SOA request when a Service Provider SOA Interface Confirmation Message Indicator tunable parameter is set to FALSE, by using the following Interoperability Interface Specification flows:   * B.2.1 – SOA Initiated Audit * B.2.2 – SOA Initiated Audit Cancellation by the SOA * B.2.3 – SOA Initiated Audit Cancellation by the NPAC * B.2.6 –Audit Query on the NPAC * B.2.7 – SOA Audit Create for Subscription Versions within a Number Pool Block * B.3.5 – Service Provider Modification by the SOA * B.3.7 – Service Provider Query by the SOA * B.4.1.4 – NPA-NXX Creation by the SOA * B.4.1.6 – NPA-NXX Deletion by the SOA * B.4.1.8 – NPA-NXX Query by the SOA * B.4.2.2 – LRN Creation by the SOA * B.4.2.3 – LRN Deletion by the SOA * B.4.2.4 – LRN Query by the SOA * B.4.2.11 – Scoped/Filtered GET of Network Data from SOA * B.4.3.4 – Service Provider NPA-NXX-X Query by the SOA * B.4.4.1 – Number Pool Block Create/Activate by the SOA * B.4.4.13 – Number Pool Block Modify by the Block Holder SOA * B.4.4.33 – Number Pool Block Query by the SOA * B.5.1.1 – Subscription Version Create by the Initial SOA (Old Service Provider) * B.5.1.2 – Subscription Version Create by the Initial SOA (New Service Provider) * B.5.1.3 – Subscription Version Create by the Second SOA (New Service Provider) * B.5.1.4 – Subscription Version Create by the Second SOA (Old Service Provider) with Authorization to Port * B.5.1.5 – Subscription Version Activated by the New Service Provider SOA * B.5.1.11 – Subscription Version Create for Intra-Service Provider Port * B.5.1.12 – Subscription Version for Inter- and Intra-Service Provider Port-to-Original * B.5.1.13 – Subscription Version for Inter- and Intra-Service Provider Port-to-Original: All LSMSs Fail * (continued) | | | | | | | |
| NANC 390 (con’t) | (continued)   * B.5.1.14 – Subscription Version for Inter- and Intra-Service Provider Port-to-Original: Partial Failure * B.5.1.17 – Subscription Version Port-to-Original of a Ported Pool TN Activation by SOA * B.5.1.17.13 – Subscription Version Port-to-Original of a Pool TN – Creation Prior to NPA-NXX-X Effective Date * B.5.1.18 – Subscription Version Inter-Service Provider Create by either SOA (Old or New Service Provider) with a Due Date which is Prior to the NPA-NXX Effective Date * B.5.2.1 – Subscription Version Modify Active Version Using M-ACTION by a Service Provider SOA * B.5.2.3 – Subscription Version Modify Prior to Activate Using M-ACTION * B.5.2.4 – Subscription Version Modify Prior to Activate Using M-SET * B.5.2.7 – Subscription Version Modify Disconnect-Pending Version Using M-ACTION by a Service Provider SOA * B.5.3.1 – Subscription Version Cancel by Service Provider SOA after Both Service Provider SOAs have Concurred * B.5.3.2 – Subscription Version Cancel: No Acknowledgment from a SOA * B.5.3.3 – Subscription Version Cancels with Only One Create Action Received * B.5.3.4 – Subscription Version Cancel by Current Service Provider for Disconnect-Pending Subscription Version * B.5.3.5 – Un-Do Cancel-Pending Subscription Version Request * B.5.4.1 – Subscription Version Immediate Disconnect * B.5.4.2 – Subscription Version Disconnect With Effective Release Date * B.5.4.7.1 – SOA Initiates Successful Disconnect Request of Ported Pooled TN * B.5.4.7.3 – Subscription Version Disconnect Request of Ported Pooled TN With Effective Release Date * B.5.4.7.14 – Subscription Version Immediate Disconnect of a Contaminated Pooled TN Prior to Block Activation (after Effective Date) * B.5.5.2 – Subscription Version Conflict Removal by the New Service Provider SOA * B.5.5.4 – Subscription Version Conflict by Old Service Provider Explicitly Not Authorizing (2nd Create) * B.5.5.5 – Subscription Version Conflict Removal by the Old Service Provider SOA * B.5.6 – Subscription Version Query * B.6.4 – lsmsFilterNPA-NXX Creation by the SOA * B.6.5 – lsmsFilterNPA-NXX Deletion by the SOA * B.6.6 – lsmsFilterNPA-NXX Query by the SOA * B.7.3 – Sequencing of Events on Initialization/Resynchronization of SOA * B.7.3.1 – Sequencing of Events on Initialization/Resynchronization of SOA using SWIM | | | | | | | |
| NANC 390 (con’t) | Req-5 Service Provider SOA Interface Confirmation Message – Indicator set to TRUE  NPAC SMS shall process a Service Provider SOA request when a Service Provider SOA Interface Confirmation Message Indicator tunable parameter is set to TRUE, by using the following Interoperability Interface Specification flows:   * B.2.1C – SOA Initiated Audit – Confirmed * B.2.2C – SOA Initiated Audit Cancellation by the SOA – Confirmed * B.2.3C – SOA Initiated Audit Cancellation by the NPAC – Confirmed * B.2.6C –Audit Query on the NPAC – Confirmed * B.2.7C – SOA Audit Create for Subscription Versions within a Number Pool Block – Confirmed * B.3.5C – Service Provider Modification by the SOA – Confirmed * B.3.7C – Service Provider Query by the SOA – Confirmed * B.4.1.4C – NPA-NXX Creation by the SOA – Confirmed * B.4.1.6C – NPA-NXX Deletion by the SOA – Confirmed * B.4.1.8C – NPA-NXX Query by the SOA – Confirmed * B.4.2.2C – LRN Creation by the SOA – Confirmed * B.4.2.3C – LRN Deletion by the SOA – Confirmed * B.4.2.4C – LRN Query by the SOA – Confirmed * B.4.2.11C – Scoped/Filtered GET of Network Data from SOA – Confirmed * B.4.3.4C – Service Provider NPA-NXX-X Query by the SOA – Confirmed * B.4.4.1C – Number Pool Block Create/Activate by the SOA – Confirmed * B.4.4.13C – Number Pool Block Modify by the Block Holder SOA – Confirmed * B.4.4.33C – Number Pool Block Query by the SOA – Confirmed * B.5.1.1C – Subscription Version Create by the Initial SOA (Old Service Provider) – Confirmed * B.5.1.2C – Subscription Version Create by the Initial SOA (New Service Provider) – Confirmed * B.5.1.3C – Subscription Version Create by the Second SOA (New Service Provider) – Confirmed * B.5.1.4C – Subscription Version Create by the Second SOA (Old Service Provider) with Authorization to Port – Confirmed * B.5.1.5C – Subscription Version Activated by the New Service Provider SOA – Confirmed * B.5.1.11C – Subscription Version Create for Intra-Service Provider Port – Confirmed * B.5.1.12C – Subscription Version for Inter- and Intra-Service Provider Port-to-Original – Confirmed * B.5.1.13C – Subscription Version for Inter- and Intra-Service Provider Port-to-Original: All LSMSs Fail – Confirmed * (continued) | | | | | | | |
| NANC 390 (con’t) | (continued)   * B.5.1.14C – Subscription Version for Inter- and Intra-Service Provider Port-to-Original: Partial Failure – Confirmed * B.5.1.17C – Subscription Version Port-to-Original of a Ported Pool TN Activation by SOA – Confirmed * B.5.1.17.13C – Subscription Version Port-to-Original of a Pool TN – Creation Prior to NPA-NXX-X Effective Date – Confirmed * B.5.1.18C – Subscription Version Inter-Service Provider Create by either SOA (Old or New Service Provider) with a Due Date which is Prior to the NPA-NXX Effective Date – Confirmed * B.5.2.1C – Subscription Version Modify Active Version Using M-ACTION by a Service Provider SOA – Confirmed * B.5.2.3C – Subscription Version Modify Prior to Activate Using M-ACTION – Confirmed * B.5.2.4C – Subscription Version Modify Prior to Activate Using M-SET – Confirmed * B.5.2.7C – Subscription Version Modify Disconnect-Pending Version Using M-ACTION by a Service Provider SOA – Confirmed * B.5.3.1C – Subscription Version Cancel by Service Provider SOA after Both Service Provider SOAs have Concurred – Confirmed * B.5.3.2C – Subscription Version Cancel: No Acknowledgment from a SOA – Confirmed * B.5.3.3C – Subscription Version Cancels with Only One Create Action Received – Confirmed * B.5.3.4C – Subscription Version Cancel by Current Service Provider for Disconnect-Pending Subscription Version – Confirmed * B.5.3.5C – Un-Do Cancel-Pending Subscription Version Request – Confirmed * B.5.4.1C – Subscription Version Immediate Disconnect – Confirmed * B.5.4.2C – Subscription Version Disconnect With Effective Release Date – Confirmed * B.5.4.7.1C – SOA Initiates Successful Disconnect Request of Ported Pooled TN – Confirmed * B.5.4.7.3C – Subscription Version Disconnect Request of Ported Pooled TN With Effective Release Date – Confirmed * B.5.4.7.14C – Subscription Version Immediate Disconnect of a Contaminated Pooled TN Prior to Block Activation (after Effective Date) – Confirmed * B.5.5.2C – Subscription Version Conflict Removal by the New Service Provider SOA – Confirmed * B.5.5.4C – Subscription Version Conflict by Old Service Provider Explicitly Not Authorizing (2nd Create) – Confirmed * B.5.5.5C – Subscription Version Conflict Removal by the Old Service Provider SOA – Confirmed * B.5.6C – Subscription Version Query – Confirmed * B.6.4C – lsmsFilterNPA-NXX Creation by the SOA – Confirmed * B.6.5C – lsmsFilterNPA-NXX Deletion by the SOA – Confirmed * B.6.6C – lsmsFilterNPA-NXX Query by the SOA – Confirmed * B.7.3C – Sequencing of Events on Initialization/Resynchronization of SOA – Confirmed * B.7.3.1C – Sequencing of Events on Initialization/Resynchronization of SOA using SWIM – Confirmed | | | | | | | |
| NANC 390 (con’t) | GDMO/ASN.1  **Nov ’08 LNPAWG**, request to include GDMO, see the following:  (open this file with NotePad or WordPad) | | | | | | | |
| NANC 400 | NeuStar  1/5/05 | **URI Fields**  **Business Need:**  Refer to separate document (last update Mar ’05). | TBD | TBD | Func Backward Compatible: Yes  **Dec 05** – moved to Accepted per LNPAWG discussion    **Mar ’08 LNPAWG,** discussion**:**  With the FCC lifting abeyance on NANC 400, discussion took place on the change order. Several Service Providers requested that NANC 400 be broken up into four separate and distinct change orders, one for each URI Type. These four will be 429, 430, 431, and 432. | | N/A | N/A |
| NANC 401 | VeriSign  1/13/05 | **Separate LSMS Association for OptionalData Fields**  **Business Need:**  Refer to separate document (last update Jun ’05). | TBD | TBD | Func Backward Compatible: Yes  **Jan 06** – moved to Accepted per LNPAWG discussion | | High | None / High |
| NANC 403 | NeuStar  3/30/05 | **Only allow Recovery Messages to be sent during Recovery**  The current documentation does NOT specifically state that ALL recovery messages should only be sent to the NPAC during recovery (it is currently indicated for notifications and SWIM data). This change order will clarify the documentation to include ALL data.  This will require some operational changes for Service Providers that utilize Network Data and/or Subscription Data recovery while in normal mode. | TBD | TBD | Func Backward Compatible: Yes  The proposed solution is to update the FRS, IIS and GDMO recovery description to indicate that network data and subscription data recovery requests sent during normal mode will be rejected.  No sunset policy will be implemented with this change order. | | Low | None / None-Med |
| NANC 403  (con’t) | Proposed Resolution:  FRS, new requirements:  **Req 1 All Data Recovery Only in Recovery Mode**  NPAC SMS shall allow a SOA or LSMS to recover data ONLY in recovery mode.  **Req 2 Recovery Restriction Tunable Parameter**  NPAC SMS shall provide a Regional Recovery Restriction in Recovery Mode Only tunable parameter which is defined as an indicator on whether or not the restriction of recovery requests only is allowed while in recovery mode is supported by the NPAC SMS for a particular NPAC Region.  **Req 3 Recovery Restriction Tunable Parameter Default**  NPAC SMS shall default the Regional Recovery Restriction in Recovery Mode Only tunable parameter to TRUE.  **Req 4 Recovery Restriction Tunable Parameter Modification**  NPAC SMS shall allow NPAC Personnel, via the NPAC Administrative Interface, to modify the Regional Recovery Restriction in Recovery Mode Only tunable parameter.  IIS, section 5.2.1.9, add the following text:  All recovery requests can only be sent to the NPAC when the SOA/LSMS is in recovery mode, otherwise an error message is returned (failed).  IIS, section 5.3.4, change the following text:  ~~Service Provider and Notification~~ All recovery requests can only be sent to the NPAC when the SOA/LSMS is in recovery mode, otherwise an error message is returned (failed).  GDMO, lnpDownload notification, add the following text in the behavior section:  All recovery requests can only be sent to the NPAC when the SOA/LSMS is in recovery mode, otherwise an error message is returned (failed).  **Dec 05** – moved to Accepted per LNPAWG discussion. | | | | | | | |
| NANC 415 | NeuStar 12/1/06 | **SIP and H.323 URIs in the NPAC**  **Business Need:**  Refer to separate document (last update Dec ’06). | TBD | TBD | Func Backward Compatible: YES | | Low | Med |
| NANC 417 | Syniverse 12/18/06 | **Provide record count(s) for BDD Files and Delta BDD Files**  **Business Need:**  Refer to separate document (last update Mar ’07). | TBD | FRS | Func Backward Compatible: TBD | | Low | Low |
| NANC 419 | AT&T  3/15/07 | **User Prioritization of Recovery-Related Notifications**  **Business Need:**  The existing NPAC Notification Priority process only allows a certain type of notification to have a different priority from another type. Using this method, however, SOAs cannot distinguish between the ***reasons*** for a certain type of notification. For example, a Status Attribute Value Change notification could indicate that all LSMSs successfully responded and a pending SV is moving to active, or it could indicate that a discrepant LSMS has just completed recovery and a partial-failure SV is moving to active.  As a result, an SP that is recovering SVs could cause the activating SOA to experience unintended delays in receiving notifications for different activities because the recovery process generates its own set of notifications. This unintended delay could happen hours after the initial activity, when the SOA is otherwise relatively lightly loaded, causing confusion to the SOA users. |  |  | Func Backward Compatible: TBD  Develop a mechanism that further defines certain notifications as initiated by regular activity versus recovery activity. With this change order the two instances would be differentiated, and an SP could indicate a different prioritization for one versus the other.  **May ’07 APT:**  The business need/scenario was explained during the APT meeting, with agreement from the group that the text captured the current business need. The group also agreed to recommend acceptance of this change order by the LNPAWG. The CMA will add additional text to this change order, then send out prior to the Jun ’07 LNPAWG con call, with a recommendation of approval from the APT.  Example of current notification:  Notification -- L-11.0 A1 SV SAVC Activates to new SP priority.  Definition -- When an INTER or INTRA SV has been created in the Local SMSs (or ‘activated‘ by the SOA) and the SV status has been set to: *Active* or *Partial-Failure*. The notification is sent to both SOAs: Old and New. If the status has been set to *Partial-Failure*, this notification contains the list of Service Providers (SP) LSMSs that have failed to receive the broadcast. | | Med | None / None |
| NANC 419 (con’t) | Proposed Resolution:  Add a new scenario to the list of notification priorities (42 listed in the FRS, Appendix C). The new one will be specific to notifications generated as a result of recovery requests (not to be confused with notification recovery). This will allow notifications generated where the *reason* is recovery to have a lower priority than the same notification generated where the *reason* is a SOA GUI user working real-time with a customer request.  In the example above, notification L-11.0 A1 would have a lower priority in a recovery-related SV activate scenario where one LSMS failed the initial SV activate download, but successfully recovered that SV activate download at a later time, whereas a different instance of notification L-11.0 A1 would have a higher priority in a regular SV activate scenario where all LSMSs successfully processed the SV activate download.  **Jun ’07 LNPAWG con call:**  The change order was accepted by the LNPAWG during the call. Detailed requirements will begin to be developed.  **Jul ’07 LNPAWG meeting:**  Upon further discussion, it was agreed that instead of just one new notification that would be generated as a result of a recovery request, the type of activity (activate, modify, disconnect) should also be accounted for in the proposed solution. The group will discuss the complexity of different types of activity, and whether this is needed and/or confusing to manage. With this new ability to “change the order”, the issue of out-of-sequence notifications needs to be discussed as well.  The attached document describes the proposed new notifications in blue. These will be discussed during the Sep ’07 LNPAWG meeting.    **Sep ’07 LNPAWG meeting:**  All participants were not available to discuss this at this time. Discussion will carry forward into the Nov ’07 meeting.  **Nov ’07 LNPAWG meeting:**  After a brief discussion, it was agreed that no solid business case could be identified for keeping this at the “type of activity” level, so instead of one each for activate, modify, and disconnect, just a single recovery notification will be used for all three types. | | | | | | | |
| NANC 423 | VeriSign  9/11/07 | **Low Tech Interface (LTI) Transaction Filter**  **Business Need:**  (PIM 64) – Currently, when a SPID has both LTI & SOA connectivity/usage, LTI generated transactions are broadcast to their respective SOA as well. This potentially creates more work for the SOA when receiving unwanted LTI data. This change order requests functionality that filters out or eliminates unwanted LTI transaction data broadcast to the SOA. Should the need arise to see this data in the SOA it could be obtained via an Audit-in activity.  **Nov ’07 LNPAWG**, discussion:  Clarification was provided by VeriSign on the specific situation, whereby the LTI is used for a specific SPID that only uses the LTI for half their users, and the SOA for the other half of those users. The ones initiated from the LTI would use this indicator to determine whether or not to send transactions to the SOA. |  |  | Func Backward Compatible: Yes  The NPAC SMS would add a tunable parameter to the SPID-level customer profile that could be set to allow the suppression of LTI initiated transactions to the respective SOA.  Req 1 – Service Provider SOA LTI Transaction Indicator  NPAC SMS shall provide a Service Provider SOA LTI Transaction Flag Indicator tunable parameter which defines whether a SOA will receive/not-receive LTI-generated transactions over their SOA connection.  Req 2 – Service Provider SOA LTI Transaction Indicator Modification  NPAC SMS shall allow NPAC Personnel, via the NPAC Administrative Interface, to modify the Service Provider SOA LTI Transaction Flag Indicator tunable parameter.  **Req 3 – Service Provider SOA LTI Transaction Indicator Usage**  NPAC SMS shall send LTI-generated transactions over the SOA connection only when the Service Provider SOA LTI Transaction Flag Indicator tunable parameter is set to TRUE. | Med | | None-Low / None |
| NANC 425 | LNPA WG  9/12/07 | **Large Volume Port Transactions and SOA Throughput Using Message Efficiency (son of NANC 397)**  **Business Need:**  Review the Sep ’07 meeting discussion in NANC 397. Going forward, discussion of everything outside of the 25K/hr increase will be documented in this change order  **Nov ’07 LNPAWG,** discussion**:**  After some initial discussion on the various options of NANC 397 that have moved into NANC 425, the group questioned the need to continue looking into this change order when 397 will meet the performance needs. The group agreed to let 425 go dormant for now, and will bring up in the future if necessary. |  |  | Func Backward Compatible: TBD | N/A | | N/A / N/A |
| NANC 431 | LNPA WG  3/12/08 | **URI Fields (PoC)**  **Business Need:**  Refer to separate document (last update Mar ’08). |  |  | Func Backward Compatible: Yes  **Mar ’08 LNPAWG,** discussion**:**  With the FCC lifting abeyance on NANC 400, discussion took place on the change order. Several Service Providers requested that NANC 400 be broken up into four separate and distinct change orders, one for each URI Type. These four will be 429, 430, 431, and 432. | Low | | Med / Med-High (new down-stream inter-face). After first one, next one is Low. |
| NANC 432 | LNPA WG  3/12/08 | **URI Fields (Presence)**  **Business Need:**  Refer to separate document (last update Mar ’08). |  |  | Func Backward Compatible: Yes  **Mar ’08 LNPAWG,** discussion**:**  With the FCC lifting abeyance on NANC 400, discussion took place on the change order. Several Service Providers requested that NANC 400 be broken up into four separate and distinct change orders, one for each URI Type. These four will be 429, 430, 431, and 432. | Low | | Med / Med-High (new down-stream inter-face). After first one, next one is Low. |
| NANC 437 | Telcordia  1/8/09 | **Multi-Vendor NPAC SMS Solution**  **Business Need:**  Refer to separate document. |  |  | Func Backward Compatible: TBD  **Jan ’09 LNPAWG,** discussion**:**  A walk-thru of the proposed solution took place. Telcordia will be providing addition information prior to the Mar ’09 LNPAWG meeting.  **Mar ’09 LNPAWG,** discussion**:**  A walk-thru of some of the documents provided in Feb were reviewed. Further review will take place during the Apr con call, and the May face-to-face mtgs.  **May ’09 – Jul ‘10 LNPAWG,** discussion**:**  The group has continued reviews during the monthly mtgs. | TBD | | TBD |
| NANC 446 | Neustar  7/12/11 | **Pending SV Interference**  **Business Need:**  Refer to separate document. |  |  | Func Backward Compatible: Yes  **Jul ’11 LNPAWG,** discussion**:**  A walk-thru of the proposed change order took place. The group accepted the change order.  **Sep ’11 LNPAWG,** discussion**:**  The group agreed to forward the change order to the NAPM for an SOW request. | TBD | | TBD |
| NANC 447 | AT&T  11/01/11 | **NPAC Support for CMIP over TCP/IPv6**  **Business Need:**  Refer to separate document. |  |  | Func Backward Compatible: Yes  **Nov ’11 LNPAWG,** discussion**:**  A walk-thru of the proposed change order took place. The group accepted the change order. | TBD | | TBD |
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# Next Documentation Release Change Orders

| **Next Documentation Release Change Orders** | | | | | | | |
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| **Chg Order #** | **Orig. / Date** | **Description** | **Priority** | **Category** | **Proposed Resolution** | **Level of Effort** | |
|  |  |  |  |  |  | **NPAC** | **SOA LSMS** |
| NANC 445 | Neustar 6/22/11 | **Doc-Only Change Order: FRS Updates**  **Business Need:**  Update the current documentation to be consistent and reflect the current behavior.   1. Update Appendix E, BDD Files to clarify Optional Data (when included, where placed). 2. Update Appendix E, SIC-SMURF Files to correct the end-of-line character (change from CR to LF). |  |  | Func Backward Compatible: YES  Update the FRS. | None | None / None |
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# Current Development Release Change Orders

| **Current Development Release Change Orders** | | | | | | | |
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| **Chg Order #** | **Orig. / Date** | **Description** | **Priority** | **Category** | **Proposed Resolution** | **Level of Effort** | |
|  |  |  |  |  |  | **NPAC** | **SOA LSMS** |
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# Cancel – Pending Change Orders

| **Cancel - Pending Change Orders** | | | | | | | |
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| **Chg Order #** | **Orig. / Date** | **Description** | **Priority** | **Category** | **Proposed Resolution** | **Level of Effort** | |
|  |  |  |  |  |  | **NPAC** | **SOA LSMS** |
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# Current Release Change Orders

| **Current Release Change Orders** | | | | | | | |
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| **Chg Order #** | **Orig. / Date** | **Description** | **Priority** | **Category** | **Proposed Resolution** | **Level of Effort** | |
|  |  |  |  |  |  | **NPAC** | **SOA LSMS** |
|  |  | See Implemented List for details on Release 3.4, and Release 3.4.2. |  |  |  |  |  |

# Summary of Change Orders

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| **Release # / Target Date** | **Change Orders** | **Backward Compatible** |
| Open |  |  |
| Accepted | NANC 372 – SOA/LSMS Interface Protocol Alternatives  NANC 382 – “Port-Protection” System  NANC 390 – New Interface Confirmation Messages SOA/LSMS – to - NPAC  NANC 400 – URI Fields  NANC 401 – Separate LSMS Association for OptionalData Fields  NANC 403 –Only allow Recovery Messages to be sent during Recovery  NANC 415 – SIP and H.323 URIs in the NPAC  NANC 417 – Provide record count(s) for BDD Files and Delta BDD Files  NANC 419 – User Prioritization of Recovery-Related Notifications  NANC 423 – Low Tech Interface (LTI) Transaction Filter  NANC 425 – Large Volume Port Trans and SOA Throughput Using Message Efficiency (son of NANC 397)  NANC 431 – URI Fields (PoC)  NANC 432 – URI Fields (Presence)  NANC 437 – Multi-Vendor NPAC SMS Solution  NANC 446 – Pending SV Interference  NANC 447 – NPAC Support for CMIP over TCP/IPv6 |  |
| Next Doc Release | NANC 445 – Doc-Only Change Order: FRS Updates |  |
| Current Development Release |  |  |
| Cancel-Pending |  |  |
| Current Release | See Implemented List for details on R3.4 and R3.4.2 |  |

1. It is appropriate to prevent the creation of a pooled block if any non-ported number in the block is “port-protected” since to allow the block’s creation would result in an inadvertent port of these numbers if the block eventually is assigned to another switch. But the intra-SP porting activity required before creating a contaminated block must be allowed to occur without requiring end-users to temporarily lift the port restrictions on their numbers. It therefore appears that an exception to the port protection validation is required, to allow a protected number to be intra-SP ported even if the number is “Port Protected.” Without network data that is unavailable to NPAC today, the NPAC could not reliably determine whether an intra-SP port maintains the telephone number’s association with the same switch from which the number was served before the intra-SP port occurred. A reasonable compromise appears to suppress the “Port-Protect” check when validating intra-SP ports rather than develop an elaborate validation process to address this scenario more completely. [↑](#footnote-ref-1)
2. A modify of an active SV’s or block’s LRN can result in the move of a telephone number to a different switch and thus could result in an inadvertent port. NeuStar is not proposing the “Port Protect” validation be applied to Modify actions because of the complexity of such validation. [↑](#footnote-ref-2)
3. The validation of intra-SP ports occurs only if the involved SP has indicated in its NPAC SMS profile that this validation is desired. [↑](#footnote-ref-3)
4. It is appropriate to prevent the creation of a pooled block if any non-ported number in the block is on the Port Protection list, since to allow the block’s creation would result in an inadvertent port of these numbers when (if) the block eventually is assigned to another switch. But the intra-SP porting activity, necessary before creating a contaminated block, is allowed to occur without requiring that the port restrictions be lifted from TNs in the block. This exception to the Port Protection validation is provided in order to allow a TN to be intra-SP ported even if the TN is on the Port Protection list. The option to include intra-SP ports in the Port Protection validation process is provided at the individual LSP’s request. [↑](#footnote-ref-4)
5. A modify of the LRN in an active SV or block record also can result in the move of a telephone number to a different switch and thus could result in an inadvertent port. However, NeuStar is not proposing the Port Protection validation be applied to Modify actions because of the complexity of such a validation. [↑](#footnote-ref-5)