

Origination Date: 4/28/03 (revised 7-24-03)

Originator: NeuStar

Change Order Number: 382

Description: "Port Protection" System

Pure Backwards Compatible: TBD

IMPACT/CHANGE ASSESSMENT

FRS	IIS	GDMO	ASN.1	NPAC	SOA	LSMS
TBD	TBD	TBD	TBD	TBD	TBD	N/A

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.

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.

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). Optionally¹, the validation is performed for intra-SP ports.

The NPAC SMS also will make this validation check in connection with "-X" create requests.²

The validation is not applied to Modify requests³

¹ The validation of intra-SP ports occurs only if the involved SP has indicated in its NPAC SMS profile that this validation is desired.

² 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.

³ 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.

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.

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.