

**NORTH AMERICAN NUMBERING COUNCIL**

*Local Number Portability Administration*

*Working Group*

*3<sup>rd</sup> Report on Wireless Wireline Integration*

*September 30, 2000*

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September 30, 2000

North American Numbering Council  
LNPA Working Group 3<sup>rd</sup> Report  
on Wireless Wireline Integration

## 1. Executive Summary

The LNPA Working Group (LNPA WG) has prepared the 3<sup>rd</sup> Report on Wireless Wireline Integration, to address the open issues that were identified in the 2<sup>nd</sup> Wireless Wireline Integration Report submitted to the FCC on June 30, 1999. In the First Report and Order, the Commission established rules mandating number portability for both LECs and CMRS providers. A separate timetable was established for CMRS providers, requiring them to offer Service Provider (SP) number portability to their customers and preserve nationwide roaming, by November 24, 2002.<sup>1</sup> All regulatory considerations including operational and process of this report specifically apply to the US environment.

On May 18, 1998 the LNPA WG presented NANC with the 1<sup>st</sup> LNPA WG Report on Wireless Wireline Integration. During the presentation, the NANC instructed the LNPA WG to continue to review systems and work processes during the remainder of 1998, in order to determine if the porting intervals could be reduced when porting from wireline to wireless carriers. The recommendations were presented in the 2<sup>nd</sup> Report on June 30, 1999, but open issues still remained. This 3<sup>rd</sup> Report addresses those issues as outlined below.

### 1.1 Report Objectives

This report continues to address the integration of wireline and CMRS provider number portability issues. The following list summarizes the objectives of the LNPA WG and its subcommittees in this report. Subsequent individual sections of this report provide a more detailed analysis of these issues.

**1. Examine the Impact to the Industry in Overall Reduction of the Current Wireline Porting Interval.** The FCC and NANC have asked the LNPA Working Group to look into shortening of the overall wireline/wireline porting interval. This report provides detailed information into the makeup of the current porting interval and the industry impacts involved in shortening this timeframe. The report provides the recommendation of the Working Group regarding the shortening of the porting interval in today's environment.

**2. Adjustment of current Wireline Porting Interval to meet Wireless Industry Business Demands.** The current business model for the Wireless Industry provides for immediate activation of customer's service at the time a wireless telephone is purchased. If when purchasing wireless service, the customer requests a port of their wireline telephone number to their wireless phone, the Wireless Industry would like to continue their model of immediate (or closer to immediate) service activation. The report addresses this process in two alternatives to normal wireline portability, which allows activation in the NPAC SMS by the wireless carrier prior to disconnect of the wireline service. This process does include issues with 9-1-1 which are further

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<sup>1</sup> First Report and Order and Further Notice on Proposed Rule Making, adopted June 27, 1996, ¶ 4

addressed by the report.

**3. Address Open Issues from 2<sup>nd</sup> Report**. There were several issues unrelated to porting interval that were open in the 2<sup>nd</sup> Report. These issues include Directory Listings, Rate Center Issues, and Billing Issues the current status of which is discussed in section 5. Also, two new issues involving 9-1-1 address location and alternate billing are included in this section.

## 1.2 Report Recommendations

Most wireline SPs participating in LNP find their processes and systems challenged to consistently meet even the current porting interval. With their efforts focused on achieving this objective, it is not feasible to shorten the current intervals.

The two alternatives described in this report are the possible approaches identified by LNPA-WG for porting from a wireline to a wireless service provider, which accommodates the current wireless business model. Because of the 9-1-1 issues associated with mixed service situations, the LNPA-WG could not reach consensus to support these alternatives. Nonetheless, given that the industry is working on resolving these issues, it is possible that these concerns will be mitigated prior to the integration of the wireless industry. In this context, Service Providers may elect to support Alternative 1 or Alternative 2 based upon negotiated SP to SP business arrangements.

To improve the billing process, accurate population of the Jurisdiction Information Parameter (JIP) is required by wireless service providers prior to InterCarrier testing.

## 1.3 Contents of the Report

- The Introduction in Section 2 discusses the purpose of the 3<sup>rd</sup> Report on Wireless Wireline Integration.
- Section 3 discusses shortening of the current wireline-porting interval for simple ports. The section elaborates on the current wireline porting process and discusses industry identified areas of impact to shortening this interval. The section also provides the LNPA Working Group's recommendation for shortening the porting interval in today's environment.
- Section 4 discusses the two alternatives for porting from wireline to wireless in order to maintain the current wireless business model timeframe. It also addresses the 9-1-1 issues involved with mixed service<sup>2</sup>. The section provides the LNPA Working Group's recommendation on this issue.
- Section 5 discusses open issues from the 2<sup>nd</sup> Report not related to porting intervals as

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<sup>2</sup> Mixed service refers to calls that can be originated from both the new wireless phone and the old wireline phone. There are two forms of mixed service: Before NPAC activation, when all calls terminate to the wireline phone, and after NPAC activation when most calls terminate to the wireless phone. The mixed service period ends when the wireline phone is disconnected.

well as two new issues. The first issue is associated with 9-1-1 address/location for wireline to wireless ports, while the second relates to Alternate billing issues when porting between wireline and wireless carriers.

- Section 6 provides definitions of industry terms.
- Appendix A contains a list of the LNPA Working Members.
- Appendix B contains the LNPA Working Group meeting schedule.

## 2. Introduction

The LNPA Working Group, acting as technical consultant, to the North American Numbering Council (NANC), is providing this report to address the issue of porting intervals. The group has looked at the porting interval from two perspectives:

1. Overall shortening of current porting interval used by the Wireline Industry simple ports.
2. Shortening the porting interval to better meet the needs of the Wireless Industry's current business model for simple ports.

Section 3 of the report includes an analysis of current porting intervals and processes used by the Wireline Industry. This section also contains industry-identified areas of impact to shortening the porting interval. Section 3 concludes with the recommendation of the LNPA Working Group's as to whether or not shortening the porting interval is feasible in today's porting environment.

Section 4 of the report provides two alternatives, which will allow the Wireless Industry to continue to provide immediate (or closer to immediate) service to its customers. The section also addresses the 9-1-1 issues that accompany the mixed service condition. Section 4 concludes with the recommendation of the LNPA Working Group as to whether these alternatives should become a NANC standard in a port from wireline to wireless.

Section 5 of the report addresses issues not related to the porting interval from the 2<sup>nd</sup> Report on Wireless/Wireline Integration as submitted to NANC on June 30, 1999. These open issues include:

- Rate Center Issue
- Directory Listing Issue
- Billing Issue

Section 5 provides the current status of each of these issues in addition to two new issues:

- 9-1-1 address/location in a wireline to wireless port
- Alternate billing when porting between wireless and wireline carriers.

Section 6 provides a glossary of industry terms used in the report.

Appendix A provides a current LNPA Working Group Member Roster

Appendix B provides the LNPA Working Group and Subcommittee Meeting Schedule

### **3. Shortening the Wireline Porting Interval for Simple Ports**

#### **3.1 Simple Port**

##### **Consideration of Shorter Porting Interval for Simple Ports**

The LNPA recommendations on shortening the current 4-day porting interval in this report only apply to “simple ports”. In light of the difficulty the wireline industry is currently experiencing in meeting the existing porting intervals, the LNPA decided to look at what needs to be improved to shorten the interval on simple LNP orders. We expect most of the potential customers for porting from wireline to wireless to fall within our definition of a simple port. Currently most of the wireline to wireline ports are not classified as simple ports.

Readers must be careful when using the term simple port because it means different things to different SPs. To ensure precision and consistency we define the term “simple port” as used in this report below:

##### **Definition of Simple Ports**

A “Simple Port”:

- Does not include any Unbundled Network Elements. (no UNE)
- Involves an account for a single line only. (Porting a single line from a multi-line account is not a simple port.)
- Does not include complex switch translations, such as:
  - Centrex or Plexar
  - ISDN
  - AIN services
  - Remote call forwarding
  - Multiple services on the loop (DSL etc.)
- May include CLASS features such as:
  - Caller ID
  - Automatic call back
  - Automatic redial
  - Etc.
- Does not include a reseller.

#### **3.2 Current Wireline Porting Intervals**

The current wireline porting intervals are documented in NANC’s “LNPA Technical & Operational Requirements Task Force Report” dated April 25, 1997. Detailed wireline porting processes, including the intervals, are contained in Appendix B – Inter-Service Provider LNP Operations Flows of the above document. The current minimum-porting interval consists of:

- 24 hours for the New Service Provider (NSP) and Old Service Provider (OSP) to agree on a date to port the customer, i.e. LSR/LSC (FOC) process.
- Three business days to complete the porting process, including interactions with the NPAC SMS, systems updates, and all Central Office (CO) activities.

Additional details of the current LNP porting process are described below.

### **3.2.1 New and Old Service Providers Agree to Port Customer**

The ATIS sponsored Order and Billing Forum (OBF) has established the process for the NSP and OSP to exchange information and agree on a due date to port the customer. The NSP will send, via FAX or electronically, a Local Service Request (LSR) to the OSP with the customer information, details on the port and the requested Due Date. Under the current NANC LNP Process Flows, the OSP has 24 hours to respond to the NSP with a Local Service Confirmation (LSC), e.g. FOC, containing an agreed upon due date. There are many variables in this process, including the number and type of lines being ported, arrangements for the transfer of facilities and/or use of the OSP's Unbundled Network Elements (UNE), as well as the possible addition of resellers that which increase the complexity of the porting process. Problems arising from the predominant use of manual (FAX) processes to exchange information between the NSP and OSP, make it challenging to meet the 24 hour interval to complete the LSR/LSC (FOC) process.

Upon winning the customer, the NSP will collect appropriate information necessary for provisioning of service. This will consist of data gathered from the customer and from the OSP's customer service record. The customer service information can be requested from the OSP.

The information gathered is used by the NSP to prepare a LSR that is sent to the OSP. Upon receipt of the LSR, the OSP verifies that the information on the LSR is correct and that the due date can be met. If all information is correct, the OSP issues an LSC (FOC) back to the NSP. If the information is not correct, the OSP will deny the request and steps will be taken to resolve the problem.

The exchange of the LSR and the LSC (FOC) by the OSP and NSP indicates agreement that the number can be ported, and it indicates agreement on a due time and date for actually moving, or porting, the telephone number.

## **3.3 Wireline Porting Process**

### **3.3.1 LSR/LSC (FOC) Process**

The process for ordering local services includes sending the appropriate Local Service Request (LSR) or Directory Service Request (DSR) forms to the designated local SP. An LSR is submitted by the NSP to the OSP. When an LSR is submitted to the OSP, the OSP will return either an error message or a LSC (FOC). SPs are required to provide a

LSC/FOC within 24 hours of receiving a LSR. Once the OSP has completed all work associated with the LSR, the OSP will send a completion notification to the NSP. The NSP will then initiate their billing process.

The LSR process for Number Portability includes the use of the following forms (data structures) currently in use by wireline carriers:

- Local Service Request (LSR),
- End User Information (EUI),
- Number Portability (NP),
- Local Service Request Confirmation (LSC, formally FOC)

All guidelines for these forms are maintained by the OBF. For description of these forms, please refer to the 2nd Wireless Wireline Integration Report, Section 4.1.

Other OBF forms are being utilized or are under design by the wireline industry for LNP that wireless may need to consider. These forms will be used for pre-order (e.g. Customer Information Request, Service Configuration Request and Loss Alert forms), completion notification and loss alert.

The NANC inter-company provisioning flows allow 24 hours from receipt of the LSR to transmittal of the LSC (FOC), and 3 days to complete the NPAC SMS port after the LSC (FOC) is returned. Actual experience has shown that these times are only met under ideal conditions. If the LSR is sent electronically and the information is correct, it can reasonably be expected that the LSC (FOC) will be returned in 24 hours. If LSRs and LSC (FOC) are transmitted by fax, 48 hours is more realistic and still difficult to achieve at times.

### **3.3.2 Current Wireline Provisioning Process**

The “LNPA Technical & Operational Requirements Task Force Report” established a minimum three-day porting interval starting with the OSP sending the LSC (FOC) to the NSP and ending with the due date. For complex ports, the OSP and NSP may agree to a longer porting interval. During this minimum three-day porting interval, the OSP and NSP will be updating internal systems, provisioning network elements and preparing to transfer facilities. The key steps / intervals in the NANC LNP Provisioning Process following the completion of the LSR – LSC (FOC) process are described below.

- a. Send Subscription Version (SV) Create messages to the NPAC SMS, identifying the TN(s) to be ported: After the OSP sends the LSC (FOC) to the NSP, a SV Create message is sent by the NSP to the NPAC SMS, including the agreed upon due date, and the LNP call routing information. The OSP has the option of sending or not sending an SV Create to the NPAC SMS. The NANC LNP Provisioning Flows do not specify a time interval or a sequence for when the first SV Create message must be sent to the NPAC SMS, by either the OSP or NSP.

- b. T1 Timer Interval: The NPAC SMS starts a T1 timer upon receipt of the first Create message, for the TN being ported, from either the OSP or NSP. The T1 timer runs until either a matching SV Create message is received from the other SP or the tunable 9-hour interval expires. If there are matching SV Create messages from both the OSP and NSP before the T1 Timer expires, the porting process continues. If the T1 Timer's tunable 9-hour interval was reached, then the NPAC SMS notifies the other SP that a Port is pending and no matching SV Create message has been received from them. When matching SV Create messages are received from both the OSP and NSP, the porting process continues.
- c. T2 Timer Interval: The NPAC SMS starts its T2 Timer only after the T1 Timer has expired without matching SV Create messages from both the OSP and NSP. The SP who received the T1 Timer expiration notice now has a tunable 9-hour interval to clear up misunderstandings, if any, with the other SP and send up a matching SV Create message to the NPAC SMS. If the T2 Timer's tunable 9-hour interval expires and the NPAC SMS did not receive the OSP's SV Create, the porting process continues as this is an optional message for the OSP. If the T2 Timer's tunable 9-hour interval expires and the NSP's SV Create message was not received, the NPAC SMS will cancel the pending SV Create and send notices to both the OSP and NSP.<sup>3</sup> This stops the porting process for the applicable TN.
- d. Setting the Ten-Digit Trigger: The OSP and NSP, may set a Ten-Digit Trigger (TDT) on their switches at least one day prior to the due date for each scheduled TN port. The setting of the TDT causes the switch to query the appropriate LNP network database for calls to the applicable TN, and eliminate some of the close co-ordination needed between the OSP and NSP during the completion of the porting process.
- e. Subscription Version Activation: The NSP is in control of the porting process and on or after the due date, the NSP will first verify the customer dial tone, and then send the SV Activation message to the NPAC SMS. The NPAC SMS will then send (download) updated LNP routing information to all LSMSs identified to receive download information for the applicable NPA-NXX. Each SP's LSMS will then upload the LNP routing data to the applicable LNP network databases(s). The LNPA Technical & Operational Requirements Task Force Report describes a goal of updating the LNP network database within 15 minutes after the ported TN has been downloaded from NPAC SMS to the LSMS.
- f. Order Completion: Within one day after the TN has been ported, the OSP and NSP typically complete system and central office updates and, if applicable, remove the TDT. Also within one day after the port, the industry goal, for each SP, is to update the 9-1-1 database, with the OSP sending an Unlock or Delete message (if a location change is involved) for the ported TN and the NSP sending a corresponding Migrate or Insert message.

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<sup>3</sup> This process is anticipated to be changed in Release 4.0.

While the above outlines the provisioning process, both SP's must also start the internal processes that will be associated with the TN port. The NSP must provision the service in the serving switch and make arrangements for a serving facility. The OSP must issue the service orders to disconnect service to this customer at the due time on the due date. Both the NSP's and OSP's provisioning, routing, billing, maintenance, and administrative systems must be updated to accomplish the transfer of the telephone number. Many of these systems rely on batch processing for completion of the updates.

### **3.3.3 Unconditional Ten-Digit LNP Trigger**

An important tool for eliminating some of the close coordination between the OSP and NSP during a port is the unconditional Ten-Digit LNP Trigger.

The unconditional nature of this trigger forces a query to the provider's LNP database on calls originating from the OSP or NSP switch. The results of the query (for example dialed digits prior to NPAC activation or NSP's LRN after NPAC activation) allows the TN to be resident in both the OSP and NSP switches during the porting interval while ensuring that calls complete properly.

Prior to the port, use of the Ten-Digit Trigger enables the NSP to pre-provision the line translations for the upcoming port in their switch and still complete calls properly to the OSP's donor switch that still serves the customer.

When the customer has been rehomed to and is receiving dial tone from the new service provider's switch, the new service provider immediately activates the pending port via NPAC. The new routing information for the ported number is downloaded to all subtending service provider LSMSs. Implementation of the unconditional Ten-Digit LNP Trigger by the old service provider in their donor switch enables that provider to affect the disconnect of the ported number in the donor switch at their discretion sometime after the port has taken place. This typically takes place around midnight of the due date or sometime during the next day. Use of the Ten-Digit LNP Trigger eliminates the need for donor switch disconnect to take place simultaneously with NPAC activation. The disconnect can be timed to automatically take place after a "safe period" ensuring that the customer port has taken place and there is no danger of prematurely disconnecting the customer from the old service provider's switch.

This trigger is typically set in the OSP and NSP switches at least one day prior to the due date of the port. Upon notification of an upcoming port, the time required to set the Ten-Digit Trigger varies among service provider systems. Some systems enable near real-time setting of the trigger while others require overnight batch processing. Shortening the porting interval could have an impact on a service provider's ability to set the Ten-Digit Trigger in a timely fashion and necessitate development in affected systems to eliminate any batch processing involved.

### **3.4 Industry Identified Areas of Impact to Reduce Porting Intervals**

#### **3.4.1 LSR/LSC (FOC) Process**

The current LSR / LSC (FOC) process faces the following challenges:

- Resource Expensive - Manually Intensive: The current LSR / LSC (FOC) process among most SPs is a manual process which involves completing the LSR Forms and faxing them to the OSP. This process can be very lengthy.
- Data Integrity – Due to the manual process of recreating data from internal provisioning systems on the LSR Forms that are faxed, data is often transcribed incorrectly. This results in errors during processing which increases processing time.
- Time in Process – As a result of the manual intensive process and data integrity issues, time to process LSRs will increase, thus causing an increase in the porting interval.
- Compliance with same LSOG Version – Most SPs are not using the same Local Service Order Guidelines (LSOG) Version. This impacts the manner in which the LSR forms are completed. Without LSOG uniformity across all SPs, the complexity of completing LSRs increases.
- SP specific provisioning processes – Due to SP specific internal provisioning processes, some SPs require additional information relating to their own internal process.

In order to shorten the porting interval, the industry must agree to automate and make the LSR / LSC (FOC) process uniform across all SPs. Automating the LSR / LSC (FOC) process will include:

- Compliance with the same version LSOG that eliminates the need for LEC specific provisioning processes.
- Improvement in Data Integrity by electronically transcribing information from Customer Service Record to the LSR and LSC (FOC).

As a result of these improvements, the industry will see improvements in the overall porting process as seen today between SPs with electronic interfaces. This could also result in a possible impact on staffing requirements.

#### **3.4.2 Batch Processes**

Many of the SPs that are participating in Local Number Portability (LNP) employ the use of large mainframe computer systems. These systems are the core processing systems that run their business operations and provide service to their customers. Most of these existing systems use a batch processing method, which means collecting data during the normal work day and then sorting, processing and distributing this data to other internal and external systems during off peak hours.

These existing systems provide functions such as, Service Order Processing from order creation through to order completion, Customer Billing, Directory Listing updates, Customer Service records generation and maintenance, 9-1-1 updates, Network systems updates for call routing/completion and Customer feature provisioning, etc. Because these systems form the core of the business operation and are inter-dependant on one another, a change to one system may have a cascading effect on the next system. It is estimated a reduction in the porting interval could impact at least 10 to 15 major existing systems within a company.

Elimination of appropriate batch processing would facilitate the possibility of a reduced porting interval. However, to consider a change from batch processing to real time data processing would require an in-depth systems analysis of all business processes that use these systems. This analysis is required to insure that other business processes are not broken by such a change. A normal high level analysis of this type requires, in addition to the systems analysis, cost development, budget preparation and approval, software/hardware development and implementation. Accomplishment of these activities would be a very labor intensive and time consuming effort leading to increased expense.

Another aspect of system change is the effect on operations personnel and staffing levels. Current operations often minimize the staffing level during off peak hours. Changing from the batch processing method of operation could extend staffing hours, particularly on the weekends. Operational changes of this nature could require 24 hours, 7 days a week (24x7) operations, making system development, deployment and maintenance more expensive and difficult. This would require staffing on a 24x7 basis, thus increasing expense to the companies' operation and thus the consumer.

### **3.4.3 Manual Processing Times**

When the OSP receives a Local Service Request (LSR) for porting numbers, it reviews the LSR for accuracy. If an error is found, the LSR is rejected, using the LSC (FOC) process. The LSC (FOC) in this case explains the nature of the errors found on the LSR. However, when errors occur, the process must be interrupted and manual intervention used to correct and reissue the LSR. The time required for such manual intervention varies, depending on the nature of the LSR errors reported. The delay engendered can range from a few hours to several days.

### **3.4.4 UNE Coordination Issues**

The actual port of the telephone number from the OSP switch to the NSP switch is not the only major activity that has to be considered. For instance, if the NSP uses their own loop facilities, they must assure that the loop is in place. If the NSP uses an unbundled loop leased from another SP, those arrangements must be cared for.

Most ports involve several such activities that must be coordinated in order to transition the customer smoothly without service loss. These activities often require coordination of several different orders and sometimes involve companies other than the donor and the

recipient. Shortening the porting interval could increase the likelihood of not having the orders coordinated properly.

The NSP and OSPs' service orders kick off the process for updating the 9-1-1 database. Getting the proper information into the database in a timely manner is a problem today. Decreasing the amount of time to accomplish the port at this time may adversely affect that process.

### **3.5 LNPA Recommendation**

Most wireline SPs participating in LNP find their processes and systems challenged to consistently meet even the current porting interval. With their efforts focused on achieving this objective, it is not feasible to shorten the current intervals.

## 4. Wireless/Wireline Porting Interval

Due to the difference of timeframes involved in the establishment of service between wireline and wireless providers, the LNPA Working Group previously introduced three alternatives in the 2<sup>nd</sup> Report. Due to changes in wireless processes the third alternative (porting without an FOC) has been eliminated. The two remaining “mixed service” alternatives are listed below with a discussion of the 9-1-1 concerns raised in the 2<sup>nd</sup> Report.

### 4.1 Alternative 1

By negotiation between individual Service Providers, the potential exists to reduce the porting interval by allowing the new Service Provider to activate the port at the NPAC SMS as soon as the 10-digit trigger has been applied by the old Service Provider, if “mixed service” from both the wireline and the wireless providers is acceptable until the disconnect process can be completed.

### 4.2 Alternative 2

It may be acceptable to perform the new SP NPAC SMS activation of the port immediately following the receipt of the LSC/LSC (FOC) by the new service provider and concurrence at the NPAC SMS by the old SP, if “mixed service” from both the wireline and the wireless providers is acceptable until the disconnect process can be completed.

### 4.3 9-1-1 Issues with Alternative 1 and 2

The 2<sup>nd</sup> Report on Wireless Wireline Integration described a condition, called “mixed service”, associated with shortening the wireline-to-wireless porting interval. During periods of mixed service, calls can be placed from both the wireless and wireline sets during the porting interval. Both Alternatives 1 and 2, described above, will result in periods of mixed service.

Issues related to these intervals of mixed service were also described in the 2<sup>nd</sup> Report. The issue initiating the most concern and discussion was that of callbacks from the 9-1-1 Public Safety Answering Point (PSAP) to re-establish a connection to the calling party during periods of mixed service. Between the time when the wireless set is activated and the port is completed via NPAC, all callbacks will route to the wireline location. After the port is activated and completed via NPAC, and until the wireline service is disconnected in the wireline switch, most callbacks will route to the wireless set. This routing, both before and after activation of the port via NPAC, will take place regardless of where the 9-1-1 call originated (i.e. wireline location or wireless set location). The exact routing scenarios are detailed below:

**Before the NPAC and local SMSs have been updated:**

- Between the time that the wireless phone is activated and when the NPAC SMS has been updated to reflect the port, any callback will go to the wireline phone, regardless of which one was used to place the call.

**After the NPAC and local SMSs have been updated, there are multiple possibilities:**

- If the donor service provider has activated a Ten-Digit Trigger, and the PSAP and the wireline phone service are in the same switch, any PSAP callback will go to the wireless phone, regardless of which was used to place the call.
- If the donor service provider has not activated a Ten-Digit Trigger, and the PSAP and the wireline phone service are in the same switch, any callback will go to the wireline phone (despite the NPAC SMS activation), regardless of which was used to place the call.
- If the PSAP and wireline phone service are in different wireline switches, any callback will go to the wireless phone, regardless of which was used to place the call.

In addition to the PSAP callback issue during mixed service, the Address Location Information (ALI) database, used by the PSAPs to identify the location of the calling party, will contain the invalid wireline location. The wireline location data, in some cases, is deleted a number of days after the port takes place.

Subsequent to issuing the 2<sup>nd</sup> Report, the LNPA Working Group was requested by NANC to investigate the requirements for shortening the current wireline porting interval. The results of this investigation are detailed in this 3<sup>rd</sup> Report. Coincident with this investigation, the LNPA Working Group consulted with the National Emergency Number Association (NENA) to obtain their input on the mixed service issues. NENA has provided an opinion stating that the PSAP callback issues associated with Alternatives 1 and 2 did not constitute reason enough to prevent their implementation in wireline-to-wireless porting. NENA has identified a potential issue with ALI display during mixed service. However, NENA believes this issue will be resolved prior to any wireless portability implementation.

The original mixed service issue associated with the routing of PSAP callbacks to the proper location does not preclude the use of Alternative 1 and 2 in the opinion of NENA. However, some service providers continue to express concern with possible liability should a PSAP not be able to re-establish connectivity with a 9-1-1 caller. On a port from wireline to wireless, regardless of the use of Alternatives 1 and 2, there will be a period of mixed service if the wireline disconnect does not take place simultaneously with NPAC activation. The use of Alternative 1 and 2 increases the duration of that mixed service and causes concerns of liability on the part of some SPs.

The scenario that has been used to illustrate this concern is as follows:

- A wireline customer has ported their wireline number to a wireless service provider and has activated their wireless set with their ported number.
- The port has been activated in NPAC, which means most calls (see above) to the ported number will now be routed to the wireless set.
- The wireline service has not yet been disconnected in the wireline switch, so calls can still be originated from the wireline location. The ported number will be transmitted as the ANI.
- A babysitter at the customer's home, unaware of the port and the mixed service, has an emergency and calls 9-1-1.
- The customer, unaware of the emergency at home, is several miles away in their car with their new wireless set.
- The 9-1-1 call from the babysitter at the customer's home is disconnected.
- The PSAP attempts to call the babysitter back using the ANI transmitted on the 9-1-1 call.
- The callback routes to the wireless set and not to the location of the emergency.

The LNPA Working Group believes it does not have the legal expertise to adequately address the liability issue.

#### **4.4 LNPA Recommendation**

The two alternatives described in this report are the possible approaches identified by LNPA-WG for porting from a wireline to a wireless service provider, which accommodates the current wireless business model. Because of the 9-1-1 issues associated with mixed service situations, the LNPA-WG could not reach consensus to support these alternatives. Nonetheless, given that the industry is working on resolving these issues, it is possible that these concerns will be mitigated prior to the integration of the wireless industry. In this context, Service Providers may elect to support Alternative 1 or Alternative 2 based upon negotiated SP to SP business arrangements.

## **5. Open Issues**

### **5.1 Rate Center Issue**

The difference in local serving areas of wireless and wireline carriers impacts the Service Provider Portability with respect to porting from a Wireless Service Provider to a Wireline Service Provider (See 1<sup>st</sup> and 2<sup>nd</sup> report for details). These differences, resulting in an impact called “disparity”, exists because the geographic scope of Service Provider number portability was limited to the wireline rate center. This issue was escalated to the NANC on February 18, 1998, and subsequently referred to the FCC. No resolution of this issue has occurred.

### **5.2 Directory Listings Issue**

Directory listing issues may occur when porting between wireline and wireless Service Providers (See 2<sup>nd</sup> Report for more details). For example, at the present time wireless customers do not generally list their mobile directory numbers. The new Service Provider must designate the disposition of the listing, if the telephone number to be ported is currently listed in the directory. This issue was referred to OBF for resolution.

### **5.3 Billing Issue**

During the mixed service period, calls made through Inter-exchange carriers (IXC) may not be billed properly. Calls may be billed twice, rated wrong or not billed at all depending on whether the calls are originated from the old or new SP network and the billing arrangement the IXC has with the SPs.

For a TN that is ported between wireless carriers or ported between wireline and wireless carriers, ANI (MDN) alone is not adequate to identify call origination as either wireless or wireline and it is not adequate to identify call origination with either the old or new SP.

Before NPAC activation, the IXC will bill according to its Inter Carrier agreement with the old SP. After NPAC activation, the IXC will bill according to its InterCarrier agreement with the new SP.

To improve the billing process, accurate population of the Jurisdiction Information Parameter (JIP) is required by wireless service providers prior to InterCarrier testing. The JIP provides the IXC with the correct identification of the originating switch. The LNPA-WG recommends that the JIP be supported in wireless standards.

### **5.4 Alternate Billing**

Wireless service providers typically block collect and third party billed calls to the subscribers. Some operator service providers do a table look up by NPA-NXX code. If the NXX code is a wireless code the collect or third party called is rejected. Other

operator service providers do a LIDB query but may or may not go beyond the NPA NXX for collect or third party calls to wireless NXX codes.

With wireless number portability, this type of look up will cause some ported subscribers to be treated improperly with respect to collect and third party calls. For example, if a collect call is placed to a wireline subscriber who has ported their number from a wireless carrier, the operator may reject the call if validation is done on the NPA-NXX code. This issue will be worked by OBF.

## 6. Acronyms/Definitions

ALI	Address Location Information
AMPS	Advanced Mobile Phone System
ANI	Automatic Number Identification
ANSI	American National Standards Institute
ATIS	Alliance for Telecommunication Industry Solutions
CDMA	Code Division Multiple Access
CLEC	Competitive Local Exchange Carrier
CLASS®	Custom Local Area Signaling Services
CMRS	Covered Commercial Mobile Radio Service
CNAM	Calling Name Delivery
CTIA	Cellular Telecommunications Industry Association
DACC	Directory Assistance Call Completion
DID	Direct Inward Dial
E9-1-1	Enhanced 9-1-1
EDI	Electronic Data Interchange
EUI	End User Information
FCC	Federal Communications Commission
FOC	Firm Order Confirmation
FRS	Functional Requirements Specifications
GSM	Global Standard for Mobile communication
GTA	Global Title Address
HLR	Home Location Register
IIS	Interoperable Interface Specification
ILEC	Incumbent Local Exchange Carrier
IMSI	International Mobile Station Identifier (E.212)
ISVM/MWI	Intersystem Voicemail/Message Waiting Indication
IS-41	Interim Standard 41
IXC	Interexchange Carrier
JIP	Jurisdiction Information Parameter

LNPA-T&O	Local Number Portability Administration- Technical and Operational Requirements Task Force, Former Subcommittee of the LNPA WG
LNPA-WG	Local Number Portability Administration-Working Group
LEC	Local Exchange Carrier
LIDB	Line Information Data Base
LNP	Local Number Portability
LSC	Local Service Confirmation (Formerly FOC)
LSMS	Local Service Management System
LSR	Local Service Request
LTI	Low Tech Interface
MDN	Mobile Directory Number
MIN	Mobile Identification Number
MSA	Metropolitan Statistical Area
MSC	Mobile Switching Center
MSID	Mobile Station Identifier
MSISDN	Mobile Station Integrated Service Digital Network Number (E.164)
NANC	North American Numbering Council
NP	Number Portability
NPA	Numbering Plan Area
NPAC	Number Portability Administration Center
NPAC SMS	Number Portability Administration Center/Service Management System
NPDB	Number Portability Database (contains associations between ported numbers and LRNs)
NSP	New Service Provider
NXX	4 <sup>th</sup> , 5 <sup>th</sup> , 6 <sup>th</sup> digits of the 10-digit dialable number. N cannot equal 1 or 0.
OBF	Ordering and Billing Forum
OSP	Old Service Provider
PCS	Personal Communications Service
PSAP	Public Safety Answering Point

PSTN	Public Switched Telephone Network
Rate Center	A uniquely defined geographical location within an exchange area for which mileage measurements are determined for the application of call rating.
SCP	Service Control Point
SME	Subject Matter Expert
SMR	Specialized Mobile Radio
SMS	Service Management System
SMS	Short Message Service
SOA	Service Order Administration
SP	Service Provider
SS7	Signaling System Seven
SV	Subscription Version
TCIF	Telecommunications Industry Forum
TDT	Ten Digit Trigger
TDMA	Time Division Multiple Access
TN	Telephone Number
WNP	Wireless Number Portability
WSP	Wireless Service Provider
WWISC	Wireless Wireline Integration Sub Committee
WWITF	(LNP) Wireline/Wireless Integration Task Force

## **APPENDIX A LNPA WORKING GROUP MEMBER LIST**

The LNPA WG is open to all parties and is representative of all segments of the telecommunications industry. The following is a current list of members:

Aerial Communications  
AG Communication Systems  
Airtouch Cellular  
Alcatel  
Allegiance Telecom  
Alltel  
APCC, Inc.  
Architel Systems Corp  
AT&T  
AT&T Wireless Services  
Bell Canada  
Bell Mobility  
BellSouth  
BellSouth Cellular  
Canadian Consortium  
Cincinnati Bell Telephone  
Cox  
CTIA  
DSC  
DSET  
Electric Lightwave  
Evolving Systems, Inc.  
Florida Public Service Commission  
Global Crossing  
GST Telecom  
Illuminet  
Intermedia  
Interstate FiberNet  
JFS Telecom Consulting  
Level 3 Communications  
Lucent Technologies  
MDF Associates  
MetroNet Communications  
Microcell

Navitar Communications, INC.  
NENA  
NeuStar  
Nextel  
Nextlink Communications  
Norigen Communications, INC.  
Nortel  
Omnipoint Communication Services  
Ohio PUC  
OPASTCO  
Operations Development Consortium  
PCIA  
Peak Software Solutions  
SBC  
Sprint  
Sprint PCS  
Tekelec  
Telcom Strategies Group  
Telcordia Technologies  
Telecom Software Enterprises (TSE)  
Telecom Technologies  
Telecommunications Resellers Association  
TeLogic  
Telus  
Time Warner  
US West  
USTA  
Verizon  
Videotron  
Voicestream Wireless  
Williams Communications  
WinStar Communications  
WorldCom

## **APPENDIX B**

### **LNPA WORKING GROUP MEETINGS (AS OF OCTOBER, 2000)**

LNPA Working Group meetings (and associated integration subcommittee meetings) are scheduled generally on a monthly basis in various cities throughout the United States and Canada.

<b>Week Of</b>	<b>City &amp; State</b>
October 9, 2000	Banff, Alberta, Canada
November 6, 2000	St. Petersburg Beach, FL
December 11, 2000	Phoenix, AZ
<b>2001 Tentative Schedule</b>	
Jan 8 – 11	Nextlink, TBD
Feb 12 –15	Telcordia, San Diego
March 12 – 15	ESI, Denver
April 9 – 12	Verizon, Dallas
May 14 – 18	Bell South, Atlanta
June 11 – 14	Sprint, Kansas City
July 9 – 12	Canadian Consortium, Toronto
August 13 - 16	Verizon, Baltimore
September 10 - 13	AT&T, NY or Seattle
October 8 – 11	SBC, San Francisco
November 12 - 15	NeuStar, New Orleans
December 10 – 13	Qwest, Phoenix