North American Numbering Council

Local Number Portability Administration Working Group Report on Wireless Wireline Integration

May 8, 1998

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SECTION 1 EXECUTIVE SUMMARY

1.1 The LNPA Working Group (LNPAWG) prepared the Wireless Wireline Integration Report to address concerns regarding the implementation of number portability as delegated to the North American Numbering Council (NANC) by the Federal Communications Commission (FCC).

1.2 In the First Report and Order the Commission established rules mandating number portability for both LECs and CMRS providers. A separate time-table was established for CMRS providers, requiring them to implement service provider number portability by June 30, 1999.

1.3 Previous activities of the LNPAWG and associated Task Forces focused primarily on the wireline segment of the industry and subsequently published associated recommendations on April 25, 1997.

1.4 This report addresses the integration of LEC and CMRS provider number portability issues as well as wireless specific issues related to number portability.

1.5 In the Introduction (Section 2) the LNPAWG's responsibilities are discussed.

1.6 The activities of the Wireless Wireline Integration Task Force focused primarily on wireless wireline integration issues (Section 3). These issues included: 1.) Rate Center Issue; 2.) Request for service provider portability; and 3.) Provisioning.

1.7 Number portability has significant impacts in areas that are wireless specific. Section 4 addresses these issues including: 1.) The separation of the MIN and MDN; 2.) Roaming; 3.) Wireless E911; and 4.) Short messaging service.

1.8 Through the undertaking of the Wireless Wireline Integration Task Force, in its efforts to integrate wireless wireline processes, impacts to the existing LNP architecture were brought to light. Section 5 contains a description of the updates to the LNPA Architecture Task Force report, "Architecture & Administrative Plan for Local Number Portability". The full report, which has been updated to include CMRS provider number portability issues, is contained in Appendix C.

1.9 Section 6 contains the LNPA and Operational Requirements Task Force Report. In this section the NPAC SMS change management orders required to implement wireless number portability are detailed.

1.10 The LNPAWG Recommendations and Open Issues section (Section 7) details the recommendations developed in its efforts to integrate wireless and wireline number portability technical and operational processes. This section also identifies issues that will remain open at the submission of this report to the FCC.

1.11 Section 8 defines terms and acronyms used in the document.

SECTION 2 INTRODUCTION TO THE LNPAWG (WWITF)

2.1 Work Directives by the FCC.

2.1.1 On July 2, 1996, the FCC ordered all Local Exchange Carriers (LECs) to begin the phased deployment of a long term service provider Local Number Portability (LNP) method in the 100 largest Metropolitan Statistical Areas (MSAs) no later than October 1, 1997, and to complete deployment in those MSAs by December 31, 1998[1]. The FCC further concluded that public interest is served by requiring the provision of number portability by Commercial Mobile Radio Services (CMRS) providers because number portability will promote competition between providers of local telephone service[2]. Number portability is ordered when switching among wireline service providers as well as among broadband CMRS providers, even if the broadband CMRS and wireline service providers or the two (2) broadband CMRS providers are affiliated[3]. The FCC recognized that the wireline industry had already begun to develop the processes and systems necessary to provide number portability while the CMRS carriers had only begun to address number portability. Therefore, the LNP Order established a separate schedule for CMRS provider portability.

2.1.2 All cellular, broadband PCS, and covered SMR carriers are ordered to have the capability of querying appropriate number portability database systems in order to deliver calls from their networks to ported numbers anywhere in the country by December 31, 1998[4]. All cellular, broadband PCS, and covered SMR carriers are ordered to offer service provider portability throughout their networks, including the ability to support roaming, by June 30, 1999[5].

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[1] *First Report and Order and Further Notice of Proposed Rulemaking*, CC Docket No. 95-116 (LNP Order). On March 11, 1997, the FCC released a *First Memorandum Opinion and Order on Reconsideration*, in which the LNP deployment periods for the first two (2) implementation phases were extended.
[2] Id. At ¶ 153.
[3] Id. At ¶ 155.
[4] First Report and Order and Further Notice of Proposed Rulemaking, 11 FCC Rcd. 8352 (1996) ¶ 165.
[5] First Report and Order and Further Notice of Proposed Rulemaking, CC Docket No. 95-116 (LNP Order) ¶ 166.

Further, the FCC delegated authority to the Chief, Wireless Telecommunication Bureau, to waive or stay these dates, as deemed necessary to ensure the efficient development of number portability, for a period not to exceed nine (9) months[6]. A request for such relief was filed by the Cellular Telecommunications Industry Association (CTIA) in its November 24, 1997 Petition for Extension of Implementation Deadlines. In addition, on December 16, 1997 CTIA requested the FCC to abstain from enforcing the June 30, 1999 implementation deadline at least until the five (5) year buildout period for PCS carriers expires. These petitions are currently under consideration by the Chief, Wireless Telecommunication Bureau.

2.2 Accountability of the Wireless Wireline Integration Task Force to the LNPAWG. The FCC established the North American Numbering Council (NANC), a federal advisory committee, and directed NANC to make several specific determinations regarding the selection of LNPA vendors, the overall national architecture, and technical specifications for regional databases. The NANC established the LNPA Selection Working Group and two subgroups, including the LNPA Architecture Task Force, to review and make recommendations on these issues. The LNP Architecture Task Force developed the LNPA Architecture & Administrative Plan, which was forwarded to the FCC on May 1, 1997, as an attachment to the LNPA Selection Working Group Report. This report made recommendations concerning LNP architecture, including endorsing a regional LNPA structure. The report and attachments were released by the FCC for public comment followed by release of the LNP Second Report and Order in CC Docket No. 95-116, on July 27, 1997. In this order, the FCC adopted all of the recommendations made in the LNPA Selection Working Group Report, including those contained in the LNP Architecture & Administrative Plan. These recommendations included selection of LNPA vendors by region, the process used to make these selections, the specific duties of the LNPAs, the geographic coverage of the regional databases, and adoption of technical standards.

2.3 Future Role of the LNPA Working Group. Section 7, Future Role, of the LNPA Selection Working Group Report outlined seven (7) areas relating to future LNP implementation activities, including integration of wireless in LNP. This was necessary as the original report was developed from a wireline only perspective. In June 1997, the LNPA Working Group established a subgroup to develop a work plan for accomplishing the integration of wireless into LNP, as well as to address several other of the areas defined in the Future Roles section of the report. This activity lead to the formation of the Wireless and Wireline Integration Task Force (WWITF). The WWITF, which is opened to all parties and is

[6] Id. At ¶ 167.

representative of all segments of the telecommunications industry, was chartered to make recommendations on the following areas from the FCC's Second Report and Order.

2.3.1 Modifications to the NANC Functional Requirements Specifications (FRS), which defines the requirements for the NPAC/SMS, as necessary, to support wireless number portability[7].

2.3.2 Modifications to the NANC Interoperability Specifications (IIS), which defines the requirements for the mechanized interfaces with the Number Portability Administration Center (NPAC) Service Management System (SMS), as necessary, to support wireless number portability[8].

2.3.3 Monitor industry efforts to develop technical solutions for implementing wireless number portability[9].

2.3.4 Develop wireless recommendations to the FCC no later than nine (9) months after release of the Second Report and Order (i.e., May 18, 1998)[10].

SECTION 3 WIRELESS WIRELINE INTEGRATION ISSUES

3.1 Rate Center Issue

3.1.1 Issue: Differences exist between the local serving areas of wireless and wireline carriers. These differences impact Service Provider portability with respect to porting both to and from wireline and wireless service providers. These differences, resulting in an impact called "disparity", exist with the current architecture, making it impossible for some wireless subscribers to port to wireline carriers. This disparity is based on the Architecture Task Force recommendations, which were subsequently adopted by the FCC in the Second Report and Order. In the Second Report and Order the FCC recommended that the geographic scope of Service Provider portability be limited to the wireline-established rate centers due to technical limitations associated with proper rating. Also in the Second Report and Order the FCC recognized these recommendations addressed wireline requirements and did not reflect wireless needs.

[7] Second Report and Order in CC Docket No. 95-166, ¶ 61.
[8] Id. At ¶ 64.
[9] Id. At ¶ 92.
[10] Id. At ¶ 91.

3.1.2 Discussion: The fundamental difference between wireline and wireless service is:

> Wireline service is fixed to a specific location. The NPA-NXX portion of the subscriber's telephone number is associated with a specific geographic rate center, and the subscriber's service must be sited within that rate center's geography.
>
> Wireless service is mobile and not fixed to a specific location. While the wireless subscriber's NPA-NXX is associated with a specific geographic rate center, the wireless service is not limited to use within that rate center.
>
> Consequently, if a wireless subscriber's NPA-NXX is outside of the wireline rate center where they wish to port they will not be able to port their number.
>
> Within the WWITF, there is a lack of consensus whether the difference constitutes a lack of competitive parity. The WWITF escalated this issue to the NANC. The two rate center positions and the background information (the wireline and wireless reports) were presented to the NANC and are included in Appendix D.

3.1.3 Solution: Consensus was not reached at the WWITF/LNPAWG on a solution to this issue. The issue was therefore escalated to the NANC on February 18, 1998. A letter was subsequently written to the Local Number Portability Working Group directing it to complete its work regarding the standards and procedures necessary to provide for CMSR provider participation in Local Number Portability for submission to the Federal Communications Commission on or before May 18, 1998.

3.1.4 A copy of the rate center disparity documentation that was forwarded to the NANC as well as the return correspondence from the NANC Chair is in Appendix D.

3.2 Request for Service Provider Portability

3.2.1 Issue: With number portability cellular, broadband PCS, and covered SMR providers must make available upon request to other carriers lists of there switches for which number portability has and has not been requested.[11]

[11] FCC First Memorandum Opinion and Order on Reconsideration, FCC 97-74, CC Docket No. 95-116, para. 137 and Rule 52.31 (a) (1).

3.2.2 Discussion: CTIA has sponsored a series of Subject Matter Expert (SME) workshops on wireless number portability to examine the impacts of the Federal obligation.

3.2.3 Solution: CTIA considered several alternatives available to cellular, broadband PCS, and covered SMR providers that are under the FCC order. The alternatives considered are for each affected service provider to satisfy its obligation individually or to establish a third party to provide the information clearinghouse functions necessary to satisfy the federal requirement. The conclusion is establishing a third party for information clearinghouse activity may provide a desired efficiency.

CTIA is currently refining the details of the function to be provided by the third party information clearinghouse. If the third party is established for providing the information clearinghouse function, this may be an alternative mechanism for requesting service provider to obtain switch and NXX information and to make request for number portability deployment.

3.3 Provisioning

3.3.1 Issue: The existing wireline inter-service LNP operations flows do not meet the needs of the wireless service providers.

3.3.2 Discussion: CTIA sponsored a Subject Matter Expert Workshop on Inter-Service Provider Communication. The scope of this effort was to focus on the functions required to support inter-service provider communication. This includes provider-to-provider communication, and provider-to-NPAC/SMS communication. The Workshop evaluated the wireline processes, including the Ordering and Billing Forum (OBF) Local Service Request forms, NPAC/SMS communication, and Operational Flows to determine their applicability to the wireless industry.

3.3.2.1 Although several recommendations are made in the Workshop Report, two have major significance. The WWITF adopted these two recommendations with modifications. The first of these recommendations proposes a two phased approach to the implementation of inter-carrier communication to support Wireless Number Portability. The first phase involves using the Local Service Request Process defined by the Ordering and Billing Forum including the following LSR forms: The Local Service Request Form; End User Information Form; Number Portability Form, and Local Service Request Confirmation Form. The second phase would involve eliminating the LSR process only when porting from a wireless to a wireless carrier by implementing an

automated solution through the NPAC/SMS interface.[12] The primary reason for removing the LSR from the wireless to wireless porting process is to reduce the number of steps required to port a subscriber. In turn, this can reduce the length of time required to port a subscriber.

3.3.2.2

A fundamental part of the proposal was to eliminate carrier-to-carrier communications to streamline the wireless porting process. The elimination of the LSR from the wireless porting process is thought to have a major benefit of reducing the overall time and cost of porting a subscriber. A recommendation to implement the second phase would be subject to a feasibility/cost study, followed by acceptance of the industry (WWITF). This cost study will be completed in conjunction with the feasibility on the NPAC/SMS changes and wireless SOA interface changes required for phase II.

If the outcome of the feasibility study indicates that the recommended NPAC/SMS changes for implementation of inter-carrier communication is favorable, the wireless industry does not want to put the NPAC/SMS system enhancements on the critical path to launching wireless number portability. Rather, the wireless industry wants to pursue the NPAC/SMS changes in parallel with its preparation to introduce number portability. The wireless industry will use the existing wireline LSR process until the associated NPAC/SMS changes can be delivered. If the NPAC/SMS changes can be completed in time for wireless number portability launch then wireless carriers would disregard the LSR process and implement number portability between wireless carriers using the NPAC/SMS enhancements. Wireless carriers could continue to use the existing LSR process for wireline/wireless porting.

3.3.2.3 The second CTIA recommendation from the Subject Matter Workshop on Inter-Service Provider Communication proposes changing the porting intervals when porting from a wireless carrier to a wireless carrier to include a Firm Order Confirmation (FOC) response of 30 business minutes, and two (2) business hours for the porting process. Therefore, the timeframe to complete a wireless to wireless port is two and one half business hours. The NPAC SMS contains timers that allow a port to proceed even in the absence of concurrence from the old service provider. In addition, the NPAC SMS contains a conflict period that allows for holding a pending port for a defined timeframe before the due date. Under

[12] This second recommended phase is different than CTIA's Inter Service Provider Portability Workshop recommendations. That group recommended the elimination of the LSR for all porting to or from a wireless carrier, whether with a wireline or wireless carrier.

certain conditions a service provider may use this process to place a pending port into a conflict state of six (6) business hours. If the conflict is not resolved between the service providers at the end of the conflict period, the port may proceed at the discretion of the new service provider. These reduced porting intervals do not consider impacts on resellers of wireless services.

3.3.2.4 For ports from wireline to wireless, wireless service providers desire reduced porting intervals from those currently used by the wireline segment of the industry. The current porting intervals for wireline include a maximum of one (1) day for the FOC process and three (3) days for the porting process. Wireline ports may be accomplished in less time when conditions are optimal, however, the timeframes were established to support the complex systems and work processes of all the wireline service providers. A variety of systems are used during the porting process including, but not limited to the following:

LSR/FOC Systems – Automated processing of inter-service provider communications

Service Order Systems –Initiates the service orders to begin the porting process

Inventory Systems – Manages the distribution and assignment of equipment and telephone numbers

Work Force Assignment Systems – Schedule assignments to accomplish any facilities work.

Billing Systems – Updates records required to ensure accurate billing

Maintenance Systems – Updates records required to enable quality trouble resolution

Switch Administration Systems – Modifications to switch translations and to activate ten (10) digit triggers

E911 Systems – Updates records to ensure accurate data

The above systems were individually designed and developed by each wireline service provider. Generally speaking, these systems operate in a batch environment that requires at least a twenty-four hour timeframe to process updates. Porting intervals were negotiated during 1996 and 1997 by the entire wireline industry

segment to allow for differences in processing parameters of these systems.

3.3.2.5 The one (1) day LSR/FOC process and the three (3) day porting interval were negotiated by the wireline carriers in order to accomplish all of the system updates and any physical work required to accomplish the port. For example the batch service order process used by wireline carriers results in the need for the one (1) day LSR/FOC process. In addition, during the confirmation process where large business customers are involved, some service providers may elect to determine that the party requesting the port is authorized to make such a request. During the three (3) day porting timeframe it is critical to complete the translations work and/or to activate the ten digit trigger through a batch update in order to enable routing calls to ported customers.

3.3.2.6 The other systems described in Paragraph 3.3.2.4 above operate in a batch environment at virtually all wireline service providers. The records maintained in these systems are critical to insure accurate and timely billing, quality trouble resolution, accurate call routing, timely completion of the porting process, and accurate E911 records. During the long and contentious negotiations to establish wireline porting intervals, the wireline industry established the three (3) day porting timeframe in order to accommodate the existing systems and work processes of all service providers.

3.3.2.7 There has been no significant porting experience to date in the wireline industry. These timeframes were established as a starting point with possible revisions in the future should conditions warrant change. It was determined that a cautious approach was wise in order to develop a quality porting process to avoid negative customer impact. Therefore the one (1) day LSR/FOC and three (3) day porting intervals were adopted by the wireline industry.

3.3.3 Solution: The two recommendations described above, which were established on the basis of the current wireless business model that allows for provision of service in a matter of minutes, are addressed below.

3.3.3.1 To address the first recommendation , elimination of the LSR/FOC process, the wireless industry segment requests a feasibility study to identify costs and timeframes to implement the changes necessary to replace the LSR/FOC process. The wireless service providers plan to use the existing LSR/FOC process if a replacement is not available by the time wireless portability is implemented.

3.3.3.2 The second recommendation, reduction of porting intervals, is being addressed from two perspectives. For ports between wireless carriers, an NPAC SMS change order was developed by the LNPA Technical and Operational Requirements (T&O) Task Force that proposes changes to the existing NPAC SMS timers. This change will provide the same level of support in the NPAC SMS for wireless to wireless ports as exists today for wireline to wireline ports. Further description of this and other NPAC SMS changes is described in Section 6 following.

3.3.3.**3 The wireless industry considers the initial wireline porting timeframes acceptable for ports from wireless to wireline. However, wireless service providers desire reduced porting intervals when porting from a wireline to a wireless carrier. Before a determination to shorten porting intervals can be considered, the wireline industry recommends that an analysis be performed to evaluate the impacts of actual porting experience on systems and work processes effected by proposed shortened porting intervals. It is necessary to gather sufficient porting data to complete this analysis. In addition to evaluating porting experience, the analysis will consider several other issues such as competitive parity to insure equal treatment by all service providers in the porting process. The wireless and wireline service providers will jointly evaluate certain operational issues such as different treatment of holidays and different hours of operation between the two industry segments. Finally, the wireless carriers will evaluate the impacts of the porting process on wireless resellers. In order to accomplish this analysis, the LNPA Working Group developed the following high level work plan:**

The WWITF will work during the remainder of 1998 to review systems and work processes in order to determine the reduction in porting interval from wireline to wireless carriers. Monthly discussions will take place at the LNPA Working Group meetings. Monthly status reports will be made to NANC with the final recommendation presented to NANC no later than December 31, 1998

3.3.3.4 With any change in the wireless number portability implementation date NANC reserves the right to review time frames and processes stated in Section 3.3.3.3.

SECTION 4 WIRELESS SPECIFIC ISSUES

4.1 Background Information: Mobile Identification Number (MIN)/Mobile Directory Number (MDN) Separation for MIN based providers (e.g., TDMA, CDMA, AMPS)

4.1.1 The separation of the MIN and MDN refers to the administration and processing of the Mobil Identifier Number (MIN) independently from the Mobile Directory Number (MDN). The former is a number used to uniquely identify the mobile set to the network while the latter is the telephone number that is dialed to reach the mobile set. Prior to WNP, those wireless carriers that relied on MINs for terminal identification often relied on the assumption that the MIN was the same value as the telephone number. Thus, within the network elements and within the operation support systems, the values were used interchangeably.

4.1.2 With the advent of number portability, the industry consensus was to separate these values allowing the customer to specify the MDN when they port and the new service provider specifying the MIN. With this architecture, some systems are retained with little impact while other systems are significantly impacted.

4.1.3 Roaming is an integral part of wireless service. It allows a wireless carrier to provide service for subscriber when they are outside of their "home system". This is accomplished by means of business agreements between the roaming carrier and their home carrier. The process of roaming begins when the subscriber ("roamer") powers on their mobile station. The mobile station sends their MIN value to the serving switch which then sends a registration notification message to the home system. This request is routed through signaling networks using the MIN value. The home system acknowledges the request, usually indicating that service should be provided, assuming the customer is valid and authorized.

4.1.4 Prior to portability, the Wireless Service Provider (WSP) could assume that the MIN value sent by the Mobile Station was the same as its MDN. The serving switch requires the MDN to populate the Calling Party Number parameters in signaling and billing records. If the subscriber has ported, the MIN will not be the same as the MDN and using the MIN as the calling party number is incorrect. Services which rely on the information will not function properly. These include:

- automatic callback, calling number, and calling name delivery;
- the incorrect callback number is delivered on E911 calls;
- the incorrect calling party number is used for toll billing by the interexchange carriers;

- the incorrect calling party number is used for billing records;
- the incorrect calling party number is used to bill for various operator services (e.g. DACC).

4.1.5 To rectify this situation, the home WSP should return the MDN associated with the MIN upon registration. The IS-41C protocol does allow a parameter to be returned as an optional parameter, but support is limited by equipment vendors.

4.1.6 The impact affects any area in which a subscriber can roam. This includes U.S., Canada, Puerto Rico, U.S. Virgin Islands, Guam, and any other area included in the North American Numbering Plan. Consequently, all areas would have to simultaneously support the signaling enhancements upon registration to avoid this problem.

4.2 GSM Based Providers. For GSM, there already exists a separation between the dialed number, the MSISDN, and the routing number, the IMSI. The IMSI allows for location updates and feature interaction. The MSISDN allows for subscriber mobile originations and call delivery. Billing for calls traversing the GSM network can be setup based on IMSI and/or MSISDN depending on the call scenario. Thus, GSM does not have the same national roaming impacts resulting from use of MIN as the mobile identifier. There may be impacts if utilizing dual mode operations.

4.3 E911. The impacts to E911 are related to the roaming impacts described above. Currently, the MSC assumes the MIN value sent by the mobile station on registration is the same as the MDN. While the MIN is a 10 digit number which may have the same format as a telephone number, it is not the same as the telephone number for a ported subscriber. Consequently, if the MIN is delivered to the PSAP for a ported subscriber, that value cannot be used to callback the subscriber.

4.4 Short Messaging Service

4.4.1 Short Messaging Service (SMS) allows the transfer of a limited amount of text information to/from a wireless mobile station. The routing of information is based on the destination's called party number and is based on the use of the SS7 infrastructure.

4.4.2 Currently, a translation type exists for mapping a MIN value to the appropriate route information for SMS applications. With the advent of number portability, the MIN value is no longer appropriate since the originator of the message is unlikely to be aware what the destination MIN value is. Two options have been identified:

- redefine the current translation type for mapping the MDN for SMS application,
- create a new translation type for mapping MDN for the SMS application.

4.4.3 No recommendation is offered herein, rather it is expected the appropriate experts in the ANSI accredited standards groups will define the appropriate course of action.

4.4.4 Since SMS requires that a message be delivered to the appropriate mobile subscriber, it is necessary to determine the current service provider associated with a specific directory number. One method of facilitating this is to upload the SMS routing addresses (Global Title Address -GTA) for each ported subscriber in the NPAC. The NPAC would then disseminate this for inclusion in the NP-DB. This information would have the same attributes and NPAC procedures as defined for Global Title Addresses associated with:

- Calling Name Delivery (CNAME)
- Line Information Data Base (LIDB)
- CLASS services
- Intersystem Voicemail/Message Waiting Indication (ISVM/MWI)

4.4.5 It should be noted that an alternative method was identified to deliver SMS without requiring this information to be included in the NP-DB. However, given that the wireline networks have settled on the architecture which relies on the NPAC broadcasting the GTA information, some benefit was seen in preserving the same architecture for the wireless SMS application.

SECTION 5 ARCHITECTURE AND ADMINISTRATION PLAN FOR LOCAL NUMBER PORTABILITY

5.1 The Architecture and Administration Plan For Local Number Portability (the Plan) was initially developed by the NANC LNP Architecture Task Force, under the NANC Selection Working Group. The Plan was forwarded to the FCC on May 1, 1997 as an attachment to the LNP Selection Working Group Report. The FCC in the LNP Second Report and Order accepted all of the recommendations contained in Issue 1, Revision 3, dated April 25, 1997 of the LNP Architecture and Administration Plan. One of the future activities listed in section 7 of the Plan was the integration of wireless into LNP, since the original report was drafted from a purely wireline perspective. The WWITF was subsequently

formed to make, in part, recommendations on the necessary changes to the LNP Architecture and Administration Plan, which are summarized below.

- Reference to the LNP Second Report and Order, noting the creation of seven number portability database regions (plus Canada), Lockheed Martin and Perot System[13] as database administrators, the responsibility of the N-1 carrier to perform the appropriate LNP data queries, the need to integrate CMRS providers into LNP, the interim acceptance of the already established LLC's under NANC, continue the management and oversight of the LNP administrators, NANC would provide national oversight of LNP administration, and the creation of a committee chaired by the Chief of the Common Carrier Bureau to oversee the introduction of LNP in the top 100 markets. (Section 1)
- The High Level LNP Process view was updated to more accurately indicate the LSR process to show the separation of the SOA and LSMS platforms, and to include reference to a Mobile Switching Center (MSC) and wireless terminals. (Section 4)
- A brief history of the activity leading up to the development of the LNP Architecture and Administration report and the formation of the WWITF, and its mandate. (Section 5)
- A note was added about the requirement for IS-41 based wireless carriers to make network upgrades to support the separation of the Mobile Identification Number (MIN) and Mobile Dialed Number (MDN) which is required to support LNP. These network changes must be made even in markets where numbers will not be ported. (Section 6)
- The service provider definition was changed to include CMRS providers. (Section 7.1)
- The LNPAWG recommended solution for number portability with high volume call-in number (choke network) was noted. (Section 7.13)
- The LNP porting assumptions between wireline and wireless carriers agreed upon in the WWITF were included. (Section 7.14)
- The NPAC regions were updated to include the states in each regions. (Section 9)
- The NPAC/SMS user criteria was modified to include access to address public safety concerns. (Section 12.2.4)
- Wireless call scenario's were identified and added to the report. (Attachment A)

[13] Subsequent to the endorsement of the two LNPA administrators, the LLC contracts with Perot Systems Inc. were terminated in February 1998, and Lockheed Martin IMS became the administrator in all seven regions.

5.2 **See Appendix C** for the complete "Architecture & Administrative Plan for Local Number Portability" report.

SECTION 6 LNPA TECHNICAL & OPERATIONAL REQUIREMENTS TASK FORCE REPORT

6.1 The Cellular Telecommunications Industry Association's (CTIA) Inter Service Provider Portability Workshop adopted a leadership role to develop an LNP plan for the wireless segment of the industry. During the last quarter of 1997 and the first quarter of 1998 the focus of the CTIA workshop was to develop the business needs required to provide LNP between wireless carriers as well as between wireless and wireline carriers. CTIA released its report titled *Subject Matter Expert Workshop Inter-Service Provider Communication Report* on February 4, 1998 and a read out of their results was presented to the LNPA Wireless and Wireline Integration Task Force (WWIFT) on February 9, 1998. The CTIA workshop recommended that WWITF request the LNPA Technical and Operational Requirements (T&O) Task Force to investigate the feasibility of Number Portability Administration Center (NPAC) Service Management System (SMS) modifications to support wireless LNP business requirements. WWITF accepted the recommendations in Section 6.5 of the CTIA report, which contained the business requirements, and presented these recommendations to the LNPA T&O Task Force at their February 12, 1998 meeting.

6.2 The LNPA T&O Task Force developed a timeline of activities necessary to accomplish the requested changes to satisfy the FCC requirement for wireless carriers to provide LNP by June 30, 1999. The LNPA T&O Task Force timeline included activities intended to define the business needs, develop the associated requirements for the systems and applicable interfaces, and prepare a recommendation to the Limited Liability Companies (LLCs) to request the changes from the NPAC SMS vendor (i.e. Lockheed Martin, IMS).

6.3 The LNPA T&O Task Force developed the business requirements and change orders during special task force meetings during March 1998 and the detailed requirements were developed in April and May 1998. Three (3) change orders and associated requirements were developed to satisfy the WWITF request to support business needs for porting between wireless carriers. These change orders are described in Sections 6.4 through 6.6 below. One additional change was requested by WWITF and the LNPA T&O Task Force will handle this request as described in 6.7 through 6.9 below.

6.4 The WWITF requested NPAC SMS timers to support wireless to wireless porting. The existing timers are used by the wireline industry segment to support the flow of porting through the NPAC process. WWITF recommends a reduction in the overall porting timeframe currently used by wireline. In order to support this wireless need, a change order was developed that requests development of four (4) sets of timers that contain tunable values to define concurrence intervals for porting that are easily changed based on business needs. This allows for timers to support wireless to wireless ports, wireline to wireline ports, wireless to wireline ports and wireline to wireless ports. In addition, it provides a foundation to address future industry needs.

6.5 The WWITF requested that NPAC system and center business hours be defined to uniquely address the needs for wireless to wireless porting. A change order was developed to request the addition of Saturday as a business day and to increase the NPAC daily business hours. These business hours are tunable to address individual regional requirements. WWITF supports the holidays currently defined by the NPAC.

6.6 The WWITF requested that the NPAC SMS be modified to include a new set of Destination Point Codes (DPC) and Sub System Number (SSN) information in support of wireless Short Message Service. A change order was developed to include this information in the subscription version received from the Service Order Activation (SOA) systems, stored on the NPAC SMS, and sent to the Local Service Management System (LSMS) for wireless to wireless porting.

6.7 The WWITF recommends that the inter-service provider communication process designed by the wireline industry segment be replaced for wireless portability. The wireline process includes a communication vehicle titled the Local Service Request (LSR). The LSR initiates the communication between the old and new service providers and supports the information exchange required to port customers. The wireless industry segment plans to use this process as an interim measure, however since the process does not currently exist between wireless service providers, a replacement process is requested. The recommendation from WWITF is to replace the LSR process with a modification to the NPAC SMS to communicate customer name and address information. The LNPA T&O Task Force believes that the WWITF recommendation to replace the LSR process by enhancing the existing LNP systems and processes to use customer name and address as the inter-service provider communication channel is inconsistent with the First Report and Order and Further Notice of Proposed Rulemaking, CC Docket No. 95-116, July 2, 1996 (LNP Order). In Paragraph 99 of the LNP Order, the FCC states “We believe that at this time the information contained in the number portability regional databases should be limited to the information necessary to route telephone numbers to the appropriate service providers. To include, for

example, information necessary to provide E911 services or proprietary customer specific information would complicate the functions of the number portability databases and impose requirements that may have varied impacts on different localities".

6.8 Discussion of the proposal to replace the LSR process occurred at the April 21, 1998 NANC meeting. The following three (3) options were discussed as possible solutions to the issue:

Option 1 - Modify the existing LSR process – The LSR process designed for use by the wireline industry is overly burdensome for the wireless industry as much of the information required on the various forms used in the process is not relevant to a wireless service provider. The Ordering and Billing Forum (OBF), the industry organization responsible for developing and maintaining the LSR process, is willing to consider modifications to meet the ordering requirements of the wireless service providers. However, the wireless carriers, who do not currently use the LSR process, believe that it is too cumbersome and costly to implement and does not adequately support the porting intervals required for wireless ports. Therefore, a replacement process is recommended by the wireless industry.

Option 2 - Modify the existing LNP systems to act as the inter-service provider channel – This proposal was made by the CTIA to modify the NPAC SMS to communicate customer name and address information. This involves the new service provider sending customer name and address information regarding the port via the standard interface to the NPAC SMS. The NPAC SMS then transmits a notification message containing name and address and other information pertaining to the port to the other involved service provider via the standard interface. This acts as the notice to the old service provider that a customer requested a port. The old service provider then follows the current process to provide concurrence to the port. This proposal requires development by the wireless industry of a process to input the customer name and address and other porting information, as well as the process to use this information by the old service provider following receipt of the data. In addition, modifications to the standard interface between the various LNP systems is required to accommodate the name and address information. Finally, modifications are required to the existing NPAC SMS developed and maintained by Lockheed Martin, IMS and to all the various interface systems currently used by the service providers involved in porting today. Further study is required to determine the magnitude of the impacts to the existing LNP systems.

Option 3 - Develop a stand alone inter-service provider communication channel – This proposal recommends development of a stand alone system to perform all of the functions identified in the CTIA proposal described

above. This removes the NPAC SMS from the process, satisfying the LNPA T&O Task Force concern regarding use of the NPAC SMS for transmission of customer name and address information. The recommendation requires development of a new system to perform the inter-service provider communication process. It also requires new interfaces with the involved service providers, and new processes at the wireless service providers to use the system.

6.9 Following lengthy discussion at the NANC meeting, a recommendation was made to investigate development of a capability that uses some concepts from Option 2 and some from Option 3. Further study is required to develop processes and system requirements to provide both the data source and input procedures for the interface and for the use of the port notification message delivered to the service provider. The LNPA T&O Task Force will then request a feasibility study from Lockheed Martin, IMS and will request input from the various interface vendors to develop these system capabilities.

6.10 The LNPA T&O Task Force plans to complete the NPAC SMS requirements in May 1998, followed immediately by a recommendation to the LLCs for a Statement of Work from Lockheed Martin, IMS. The change orders described in 6.4 through 6.6 above are considered essential by WWITF to the successful introduction of wireless portability. Therefore, the recommendation to the LLCs will include the need to obtain these modifications to accommodate the June 30, 1999 implementation of wireless portability. The change described in 6.7 through 6.9 above to replace the LSR communication process for wireless portability is considered by WWITF as a second phase requirement, and its implementation is dependent on the results of the feasibility study requested by the LNPA T&O Task Force and the work directed by the WWITF to make use of the system enhancements.

SECTION 7 LNPAWG ISSUES AND SUMMARY OF RECOMMENDATIONS

7.1 Recommendations

7.1.1 The wireless industry will complete a feasibility study to replace or modify the LSR process for wireless to wireless porting. Refer to Sections 3.3.3.2, 3.3.2.2, and 6.7 to 6.9 of the report.

7.1.2 Recommend reduced porting intervals for wireless to wireless porting to be 30 business minutes for FOC and 2 business hours for the porting process through the NPAC/SMS. Many wireless carriers believe that changes are required to the NPAC/SMS to

support these reduced maximum time intervals. It should be noted that some wireless and wireline service providers did not agree with the need for NPAC changes as the existing NPAC capabilities would accommodate these porting intervals. Refer to Sections 3.3.2.3, 3.3.3.2, and 6.4 of the report.

7.2 Open Issues

7.2.1 This report does not consider LNP impacts on resellers. Analysis of the impacts will be studied during the last half of 1998. Monthly discussions will take place at the LNPA Working Group meetings. Monthly status reports will be made to NANC with the final recommendation presented to NANC no later than December 31, 1998. Refer to Section 3.3.3.3.

7.2.2 Nation Wide Roaming cannot be supported unless MIN/MDN separation is implemented by all MIN based wireless systems (not just those in the top 100 MSAs) prior to the start of wireless number portability. Refer to Section 4.1 of the report for complete details.

The resolution of nation wide roaming is required for the following services:

- automatic callback, calling number, and calling name delivery;
- the incorrect callback number is delivered on E911 calls;
- the incorrect calling party number is used for toll billing by the interexchange carriers;
- the incorrect calling party number is used for billing records;
- the incorrect calling party number is used to bill for various operator services (e.g. DACC).

7.2.3 Consensus was not reached on porting between wireline and wireless carriers. Please refer to Section 3.1 Rate Center Issue and Appendix D. If the FCC chooses to address any potential public policy issues associated with the rate center issues, the industry may need to revisit some of the wireless wireline integration requirements.

7.2.4 Short Message Service is impacted by LNP because the current service provider associated with a specific directory number must be determined to properly deliver the message to a mobile subscriber. Alternative solutions to delivery of Short Message Service in an LNP environment are being evaluated at various ANSI accredited standards groups. Depending on the Short Message Service solution(s) approved, additional translation types

or other modifications to the NPAC/SMS may be required. Refer to Section 4.4 of the report for complete details.

SECTION 8 DEFINITIONS

AMPS	Advanced Mobile Phone System
ANSI	American National Standards Institute
CDMA	Code Division Multiple Access
CLASS	Custom Local Area Signaling Services
CMRS	Commercial Mobile Radio Service
CNAME	Calling Name Delivery
CTIA	Cellular Telecommunications Industry Association
DACC	Directory Assistance Call Completion
FCC	Federal Communications Commission
FOC	Firm Order Confirmation
FRS	Functional Requirements Specifications
GSM	Global Standard for Mobile communication
GTA	Global Title Address
IIS	Interoperability Specifications
IMSI	International Mobile Station Identifier (E.212)
ISVM/MWI	Intersystem Voicemail/Message Waiting Indication
IS-41	Interim Standard 41
LNPA-T&O	Local Number Portability Administration- Technical and Operations group
LNPA-WG	Local Number Portability Administration-Working Group
LEC	Local Exchange Carrier
LIDB	Line Information Data Base
LNP	Local Number Portability
LSR	Local Service Request
MDN	Mobile Directory Number
MIN	Mobile Identification Number
MSA	Metropolitan Statistical Area
MSC	Mobile Switching Center
MSISDN	Mobile Station Integrated Service Digital Network Number (E.164)
NANC	North American Numbering Council
NP	Number Portability
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)
NXX	Office Code
PCS	Personal Communications Service
PSAP	Public Safety Answering Point
OBF	Ordering and Billing Forum

Rate Center	A uniquely defined geographical location within an exchange area for which mileage measurements are determined for the application of interstate tariffs.
SME	Subject Matter Expert
SMR	Specialized Mobile Radio
SMS	1) Service Management System (usually LSMS) 2.) Short Message Service
SOA	Service Order Administration
SS7	Signaling System Seven
TDMA	Time Division Multiple Access
WNP	Wireless Number Portability
WSP	Wireless Service Provider
WWITF	(LNP) Wireline/Wireless Integration Task Force

APPENDICES

Appendix A - Working Group and Task Force Organization

The LNPAWG, the T&O Task Force, and WWITF, are opened to all parties and are representative of all segments of the telecommunications industry.

LNPAWG Member List

Airtouch Communications
Ameritech
Ameritech Cellular
APCC, Inc.
AT&T
AT&T Wireless Svcs.
ATX Telecom
Bell Atlantic
Bellcore
BellSouth
California PUC
CBT
Cox
CTIA
Florida Public Service Com
Frontier
Green River Systems
GTE
GTE Network Systems
Illuminet
Interstate Fibernet
Lockheed Martin
Lucent Technologies
Maryland PSC
MCI
Nextel
NYNEX
Omnipoint Comm Svcs
Ohio PUC
PACE/COMPTEL
Pacific Bell
PCIA
Perot Systems
SBC
SBC/TRI
Selectronics
Sprint
Sprint PCS

Stentor
Tekelec
Telefonica de Puerto Rico
Teleport
Time Warner/NCTA
US West
USTA
WorldCom

T & O Task Force Member List

360 Communications
Ameritech
AT&T
ATX Telecom
Bell Atlantic
Bellcore
BellSouth
BellSouth Wireless
California PUC
Cox
DCS
EDS
Evolving Systems, Inc.
GTE - Information Tech.
GTE Network Systems
IBM
Illuminet
Interstate Fiber Net
Lockheed Martin
Lucent Technologies
MCI
MDF Assoc. for Lockheed
Nortel
NYNEX
OPASTCO
Pacific Bell
Pac Bell Mobile Svc
PCIA
Perot Systems
Pocket Com/CTA
SBC
Sprint
Sprint PCS
Tekelec
Tel Tek Solutions, Inc.
Telecom Software Ent.

Telecom Technologies
Telecommunications Resellers Association
Teleport
Time Warner
US West
WinStar
Worldcom

WWITF Task Force Member List

360° Communications
AGCS
AirTouch
Amdahl
Ameritech Cellular
AT&T
AT&T Wireless
Bell Atlantic Mobile
Bellcore
BellSouth
Canadian Radio, Television, & Telecommunications Commission
Cellular One
Comcast Cellular
CTIA
DSET
Ericsson
Evolving Systems, Inc.
GTE Information Technology
GTE Network Services
GTE Labs
Illuminet
L. A. Cellular
Lockheed Martin
Lucent Technologies
MCI
MCI Metro
Microcell Connexions Inc.
Microcell Telecom
Nortel
Ohio PUC
Omnipoint Corporation
Pacific Bell
Pac Bell Mobile Svc
Perot Systems
Prime Co. Personal Communications
SBC
Southwestern Bell

Sprint
Sprint PCS
Tekelec
Telecom Software Enterprises
Teleport Comm Group
Time Warner Communications
USTA
US West
World Com

Appendix B - Working Group and Task Force Meetings

LNPAWG, T&O Task Force, and WWITF meetings were scheduled concurrently, generally on a monthly basis in various cities throughout the United States.

Week Of	**City & State**
June 30, 1997	Chicago, IL
July 28, 1997	Atlanta, GA
August 18, 1997	Washington DC
September	no meeting
October 10, 1997	Washington DC
November 10, 1997	Washington DC
December 8, 1997	Tampa, FL
January 7, 1998	Kansas City, MO
February 9, 1998	Dallas, TX
March 16, 1998	Washington DC
April 13, 1998	Washington DC

Appendix C - Architecture & Administrative Plan for Local Number Portability (see separate attachment)

Appendix D - Rate Center Issue

1.1 Cover Letter to the NANC

January, 7, 1998

Dear Alan Hasselwander,

The attached documentation package communicates to the North American Numbering Council (NANC) an issue that has been diligently worked in the Wireless Wireline Integration Task Force (WWITF) for several months without resolution. This issue has been termed by the WWITF as "rate center disparity." The task force concludes that there is a difference, within the context of Service Provider Portability, between porting a subscriber, from a wireline service provider to a wireless service provider, and, from a wireless service provider to a wireline service provider. However, there is a lack of consensus as to whether this difference warrants a policy change from the NANC.

There are three key questions detailed within the documentation for which Local Number Portability Architecture Working Group (LNPA/WG) is seeking direction from the NANC. These questions need to be resolved before the LNPA/WG Report to the NANC on wireless and wireline integration can be completed. The questions are:

- Does the difference in the scope of porting capabilities between wireless and wireline service providers create a competitive disadvantage which would be inconsistent with the FCC's objectives for numbering?
- If so, is this competitive disadvantage overridden by the FCC's order to implement wireless - wireline portability to encourage CMRS - wireline competition?
- Would the inability in certain situations for a wireless end user, staying at the same location, to keep their telephone number when changing to a wireline service provider be acceptable from a statutory or regulatory perspective?

The LNPA/WG report on wireless and wireline integration is due to the NANC on May 18, 1998. In order for the LNPA/WG to meet this requirement it is necessary for the NANC to resolve this dispute. The subsequent direction should be forthcoming by March 16, 1998 so that recommendations can be included in the Integration Report due May 18, 1998.

Respectfully,

Woody Kerkeslager Terry Appenzeller

1.2 Background Information

Report from Wireless Wireline Integration Task Force to the North American Numbering Council (1/20/98)
Rate Center Issue

Issue Statement: It is recognized that there is a difference within the context of Service Provider Portability with respect to porting a subscriber from a:

Wireline Service Provider to a wireless service provider and
Wireless Service Provider to a wireline service provider

Within the WWITF, there is a lack of consensus whether the difference constitutes a lack of competitive parity.

Background Material

Wireless - Wireline Service Provider Portability

1.1 Wireline Rating Architecture

The fundamental building block of the wireline rating architecture is the rate center. A rate center is a geographical area which utilizes a common geographical point of reference, called a rating point and defined by vertical and horizontal (V/H) coordinates, for distance measurements associated with call rating. In Figure 1, a call from a customer in Rate Center D to another customer in Rate Center 1 would be rated on the basis of the distance between their respective V/H coordinates.

A rate center may encompass a single wire center area, a portion of a wire center or multiple wire center areas. Rate Center 1 (Figure 1) might consist of multiple Incumbent Local Exchange Carrier (ILEC) wire center areas while Rate Center 3 might include only a single wire center area. Rate center boundaries are approved by state commissions.

1.2 Wireline Local Calling Areas

Calls between customers located in different rate centers may be billed at local flat rate, local measured rate or toll. The local calling area may be defined in several different ways. Each local exchange carrier defines its own originating calling area which are included in their tariffs filed with state commissions. In some states the distance between the originating and terminating rate center V/H coordinates provide the basis for the differentiation between local and toll calling (e.g. less than 12 miles is local and 12 miles or greater is toll). In other states local calling areas are not distance sensitive, but are defined on the basis of geography as shown in Figure 1. These local calling areas frequently encompass multiple ILEC rate centers.

1.3 Wireline NXX Assignment

For ILECs, NXXs are generally assigned to individual central office switches for use in their respective geographic wire center serving area within a rate center. Competitive Local Exchange Carriers (CLECs) are expected to have fewer switches than the imbedded ILEC architecture. CLEC wire center serving areas may encompass not only multiple ILEC wire centers, but also

multiple rate centers. For example, a CLEC might have a single switch serving one or more MSAs. In order to maintain rate center integrity and avoid consumer confusion, in most areas CLECs will need a minimum of one NXX for each rate center within their planned service area. These NXXs will be used for CLEC customers that are not porting a ILEC telephone number. For example, in Figure 1, a CLEC wishing to serve customers located in the central zone and tier 1 would need 8 NXXs, one for rate centers 1 through 8.

1.4 Wireline TN Assignment

A customer is assigned a telephone number based on their physical location. ILEC customers will be assigned a telephone number from the NXX(s) assigned to the switch that serves the wire center and rate center area in which the customer is physically located. CLEC customers will be assigned a telephone number from the NXX(s) assigned to the CLEC for the rate center area in which the customer is physically located. These assignment procedures ensure the retention of the rating structure integrity.

2.1 Wireless Rating Architecture

Wireless carriers have flexibility in defining their own rating architectures. Factors in determining how to rate a call may include time, distance, whether the call is mobile to mobile versus mobile to land, time-of-day, and aggregate minutes of use per month. Wireless carriers are not regulated at the state or federal level concerning prices or rating, nor are they limited to incorporating originating and terminating rate centers in their rate structures. Their rating structure is solely a business decision.

2.2 Wireless Local Calling Areas

Since they have flexibility in determining their rating structures, wireless carriers define local calling areas to meet the competitive needs of the markets. Wireless carriers have no domestic requirements to file state or federal tariffs. However, all wireless carriers have the concept of calling areas in which no additional toll charges are applied for calls. In some cases, this may be based on:

- BTA (Basic Trading Area),
- MTA (Major Trading Area),
- RSA (Rural Serving Area)
- MSA (Metropolitan Statistical Area),
- State
- Combination of States
- LATA (Local Access Transport Areas)
- NPAs

In addition, these can be combined in a variety of ways with the above rating schemes.

2.3 Wireless NXX Assignments

NXX codes that are assigned to wireless carriers are associated to a specific wireline rate center and are communicated via the LERG. These are assigned to wireline rate centers in order to accomplish land to mobile rating. However, once NPA-NXXs are assigned to a wireless carrier, wireless carriers may select any one of their NPA-NXXs when allocating numbers to a subscriber. The WSP may select a particular NPA-NXX value based on customer desires of calling areas for land to mobile calls, mobile to land calls, or a combination of both. Alternatively, a wireless carrier may choose to select an NPA-NXX value that is physically closest to the subscriber billing address. There are no state or federal requirements to associate an NPA-NXX for a new subscriber based on their residence, billing, or other location. For example in Figure 2 RCs (Rate Center) 2 - 7 have local calling to RC 1, and RCs B - E, 7, 8 have local calling to RC A. Note that RCs A - E are located in NPA 2. Assuming there was customer demand for these calling scopes the WSP

might assign an NXX from NPA1 (214-543) to RC 1 as a wireless exchange W-5 and an NXX from NPA2 (972-234) to RC A as a wireless exchange W-11.

2.4 Wireless Telephone Number Assignment

The customers physical, residential, business, or billing location is not a necessary requirement in determining which numbers are assigned. Rather, factors such as originating or terminating calling scopes in relationship to wireline networks may be a determining factor. The NPA-NXX portion of a telephone number of a wireless subscriber may be selected based on the criteria described above in Section 2.3. There is no requirement that a subscriber limit their service usage to certain rate centers, nor is their physical location necessarily a determining factor in which number they are assigned. In Figure 2, if a customer whose billing address was located in RC X1 wanted to have local calls to their wireless phone from callers located in RCs 1- 8, they would be assigned a telephone number from an NXX in wireless exchange W-5 (214-543) assigned to RC 1.

3.0 Limitations on the Scope of Service Provider Portability

Due to the need to ensure proper rating and routing of calls, the NANC LNPA Architecture Task Force agreed that service provider portability was limited to moves within an ILEC rate center. Section 7.3 of the NANC LNP Architecture & Administrative Plan report which has been adopted by the FCC, states, "portability is technically limited to rate center/rate district boundaries of the incumbent LEC due to rating/routing concerns". As shown in Figure 3, a wireline customer could move from the northeast corner of RC 1 to the southwest corner of the same rate center and port their number, either when changing service providers or for a move within their own network. However a wireline customer could not move between RC 1 and RC 2 and retain their telephone number.

4.0 Location Portability

Location portability will extend the scope of number portability beyond rate center or local calling area boundaries, but there are numerous significant issues that must be addressed in setting the scope of location portability. These issues include, but are not limited to: the loss of the 1+ toll identifier that some state regulators have maintained is a significant consumer issue, the ability to determine the jurisdictional nature of calls to numbers that have been ported across a state boundary, the ability to recognize an interLATA call for routing to the customer's preferred interexchange carrier, the impact of porting beyond a geographical NPA boundary, consumer confusion issues, and development of the means to rate and bill calls for all of the above potential scenarios. The question of location portability was delegated to the states by the FCC in their First Report and Order and Further Notice of Proposed Rulemaking in CC Docket 95-116, released 7/2/96.

5.0 Example Porting Scenarios

The following scenarios reflect rate center limitations included in Section 3.0. See Figures 4A - 4D.

Scenario A - Wireline subscriber with telephone number 214-789-2222, located in RC 7, wishes to change to wireless service while remaining at the same location.

Porting would be permissible as long as the wireless service provider has established an interconnect agreement for calls to this wireless telephone number in RC 4.

Scenario B - Wireline subscriber, 214-456-1111 located in RC 4 is moving to RC 6 and wishes to change to wireless service.

Porting would be permissible as long as the wireless service provider has established an interconnect agreement for calls to this wireless telephone number in RC 4. Because the subscriber will have terminal mobility and the actual location of the phone will vary, the move of the billing location to another rate center does not impact rating.

Scenario C - Wireless subscriber, 972-234-5555, whose billing location is in RC A, wishes to change to wireline service provider while remaining at the same location.

Porting would be permissible because the wireless NPA-NXX, 972-234, is assigned to RC A and the subscriber is located in RC A.

Scenario D - Wireless subscriber, 972-234-3333, whose billing location is in RC F, wishes to change to wireline service.

Porting would not be permissible because the subscriber is located in RC F and the subscriber's telephone number is assigned to RC A. If this were allowed calls from other customers located in RC F to this subscriber would be toll since calls from RC F to RC A are toll and the ported telephone number would be associated with RC A.

6.0 Parity Issues

The above examples provide only a small sample of potential porting scenarios. If all of the potential scenarios were examined, the following patterns would emerge:

Porting from a wireline service provider to a wireless service provider is permitted as long as the subscriber's initial rate center is within the WSP's service area and the WSP has established interconnection/business arrangements for calls to wireless numbers within that rate center. This could apply even when the subscriber is moving to another LATA because of the terminal mobility characteristic of almost all wireless applications. With terminal mobility the subscriber can be physically located anywhere.

Porting from a wireless service provider to a wireline service provider is *only* allowed when the subscriber's physical location is within the wireline rate center associated with the wireless NPA-NXX.

This creates a difference from an end user perspective when porting from a wireline to wireless service provider versus porting from a wireless to a wireline service provider. This difference is due to the inherent differences in service areas and terminal mobility between wireline and wireless service providers.

7.0 Federal Statutory and Regulatory Policies

Definition of Service Provider Portability - Section 3, Telecommunications Act of 1996. "The term 'number portability' means the ability of users of telecommunications services to retain, at the same location, existing telecommunications numbers without impairment of quality, reliability, or convenience when switching from one telecommunications carrier to another."

Federal Policy Objectives for Numbering - Report and Order, CC Docket No. 92-237 Released 7/13/95.

- Administration of the plan (NANP) must seek to facilitate entry into the communications marketplace by making numbering resources available on an efficient, timely basis to communications service providers.
- Administration of the NANP should not unduly favor or disadvantage any particular industry segment or group of consumers.
- Administration of the NANP should not unduly favor one technology over another. The NANP should be largely technology neutral

Location Portability - First Report and Order and Further Notice of Proposed Rulemaking in CC Docket 95-116, released 7/2/96. The FCC delegated the question of location portability to the states. The FCC stated in paragraph 186, "To avoid the consumer confusion and other disadvantages inherent in requiring location portability, however, we believe state regulatory bodies should determine, consistent with the Order, whether to require carriers to provide location portability. We believe the states should address this issue because we recognize that "rate centers" and local calling areas have been created by individual state commissions, and may vary from state to state."

Portability between CMRS and Wireline Service Providers - First Report and Order and Further Notice of Proposed Rulemaking in CC Docket 95-116, released 7/2/96.[14]

- Paragraph 155: "This mandate is in the public interest because it will promote competition among cellular, broadband PCS, and covered SMR carriers, as well as among CMRS and wireline providers. We therefore include those carriers in our mandate to provide long term service provider portability …"
- Paragraph 160: "We further conclude that number portability will promote competition between CMRS and wireline service providers as *CMRS providers offer comparable local exchange and fixed commercial mobile radio services*…. Finally in the Fixed CMRS Notice, the Commission tentatively concluded that PCS and cellular providers will provide *fixed CMRS local loop services, and that such carriers will directly compete with traditional wireline local exchange carriers*. We believe, for the reasons stated above, that service provider portability will encourage CMRS-wireline competition, creating incentives for carriers to reduce prices for telecommunications services and to invest in innovative technologies, and enhancing flexibility for users of telecommunications services."
- Paragraph 161: "…Several parties have indicated that at least some CMRS providers intend to compete with wireline carriers in the local exchange market. To do so effectively, *CMRS carriers are likely to change their pricing structures to resemble more closely wireline pricing structures*."

8.0 Key Escalation Issues

There are three key questions which need to be resolved before a method for wireline wireless portability can be selected:

- Does the difference in the scope of porting capabilities between wireless and wireline service providers create a competitive disadvantage which would be inconsistent with the FCC's objectives for numbering?
- If so, does this competitive disadvantage override by the FCC's order to implement wireless - wireline portability to encourage CMRS - wireline competition?
- Would the inability in certain situations for a wireless end user, staying at the same location, to keep their telephone number when changing to a wireline service provider acceptable from a statutory or regulatory perspective?

[14] Italics in following excerpts added for emphasis.

APPENDIX A

Potential Alternative Methods to Achieve Parity Considered

I. Require assignment of NXXs to wireless service providers on a per rate center basis, and require assignment of telephone numbers to wireless customers based on their billing location.
A. This would have a significant negative impact on NPA exhaust.
B. There is no technical need from a routing or rating perspective within the wireless service provider's network for this restriction since with terminal mobility the physical billing location of a wireless set is not relevant.
II. Require alignment of local service areas between wireless and wireline service providers.
A. This is problematic from a jurisdictional basis since wireless service providers are regulated federally and since local calling areas for wireline service providers are largely regulated on a state basis.
B. Wireline local service areas are restricted from extending beyond LATA boundaries.
III. Require wireless and wireline service providers to adopt the same rating methods.
A. Same jurisdictional problems as described in B.
B. Many state regulators (and consumers) would not be in favor of mandatory measured rate service for wireline service.
C. Wireless rating methods are business decisions and are not subject to regulation.
IV. Defer wireless portability until state commission order implementation of location portability beyond the rate center, NPA boundary, state and LATA.
A. Location portability would be very complex and costly to implement.
B. Location portability has been delegated to state commissions.
V. Limit wireless - wireline portability to fixed location/non-roaming wireless services where the wireless service provider has agreed to adopt numbering assignment and portability rules consistent with wireline service providers.
A. Does not provide full wireless - wireline portability.
VI. Limit service provider portability to intra-wireline service provider and intra-wireless service provider changes.
A. Not compliant with the FCC requirements in their First Report and Order.

1.3 Wireline Position Paper

Wireless Wireline Integration Task Force
Rate Center Issue Position Paper
North American Numbering Council
January 20, 1998

EXECUTIVE SUMMARY

The paper addresses the three key questions being referred to the NANC by the WWITF:

1. Does the difference in scope of porting capabilities between wireless and wireline service providers create a competitive disadvantage which would be inconsistent with the FCC's objectives for numbering?
2. If so, is this competitive disadvantage overridden by the FCC's order to implement wireless - wireline portability to encourage CMRS - wireline competition?
3. Would the inability in certain situations for a wireless end user, staying at the same location , to keep their telephone number when changing to a wireline service provider be acceptable from a statutory or regulatory perspective?

All parties recognize that a difference exists in the scope of number portability when porting from a wireless to a wireline service provider as compared to porting from a wireline to a wireless

service provider. Porting from a wireline to a wireless service provider is virtually unlimited - the end user can be physically located anywhere, while porting from a wireless to a wireline service provider is narrowly limited to the situation where the wireless end user is physically located within the rate center associated with the NPA-NXX of the end user's telephone number. This is a significant disparity in porting capabilities which would create a distinct competitive disadvantage to wireline service providers. This is clearly not in compliance with the FCC's Policy Objectives for Numbering in that it unduly disadvantages an industry segment, wireline service providers, and it unduly favors wireless technology.

Some wireless participants have argued that resolution of this disparity is not a prerequisite to meeting the FCC's ordered implementation of service provider portability between wireless and wireline service providers. They suggest that the disparity is not unreasonable compared to the benefit of portability to foster CMRS - wireline competition and thus is overridden by the FCC's mandate to integrate wireless into number portability. It is not plausible that the FCC would condone the imposition of a significant competitive disadvantage on a competing industry segment, wireline carriers, in order to encourage competition between two industry segments. The FCC's orders on number portability were not to the exclusion of their Policy Objectives for Numbering. Competitive parity is not optional.

Finally, implementation of wireless - wireline number portability must be compliant with the definition of portability contained in the Telecommunications Act of 1996, that is, a end user staying at the same location must able to change service providers and retain their telephone number. With the current method/architecture, wireless customers staying at the same location would not be able to retain their number when they change to a wireline service provider if they are physically located outside of the rate center associated with the NPA-NXX of their assigned telephone number.

The attached paper addresses these issues further and examines alternatives for the introduction of wireless - wireline number portability within the scope of the FCC's policy objectives for numbering.

I. ASSUMPTIONS

A. The following is responsive to the FCC's directive that the NANC develop standards and procedures necessary to provide for CMRS participation in local number portability. It is not an endorsement of number portability between CMRS providers or between CMRS and wireline service providers.

B. There are two key criteria that any service provider portability method must meet: 1) rate center integrity, which is required in the wireline industry to ensure the ability to properly rate, bill and route calls, and 2) competitive parity which is a principle fundamental to all FCC orders dealing with numbering and competitive issues.

II. DISCUSSION AND IMPACTS

A. Rate Center Integrity

1. Section 7.3 of the Architecture Task Force report which was adopted by the FCC states "portability is technically limited to rate center/rate district boundaries of the incumbent LEC due to rating/routing concerns." It also noted that additional boundary limitations could be required due to E911 or NPA serving restrictions. Although this originally addressed only wireline service providers, service provider portability between wireline and wireless service providers via LRN continues to be technically limited to the rate center.

2. Rate centers have been established by state regulators, and are the fundamental building block for toll/local differentiation, toll rating and network routing. Rate center integrity (consistent rate center boundaries) is essential to maintain these capabilities. Inconsistencies create ambiguities in identifying a terminating customer's location which in turn create inconsistencies in originating calling scopes and toll rating, consumer confusion and potential problems routing to a customer's presubscribed intraLATA or interLATA carrier.

3. Additionally, the initial introduction of numbering pooling is planned at the rate center level. Rate center consistency is a requisite part of that introduction, and inconsistencies would unnecessarily complicate and delay the introduction of pooling or could create the need for multiple pools.

B. Competitive Parity

1. The FCC's "Policy Objectives for Numbering" included in their Report and Order, CC Docket No. 92-237 Released 7/13/95 provides overarching principles for all NANP issues:

- Administration of the plan (NANP) must seek to facilitate entry into the communications marketplace by making numbering resources available on an efficient, timely basis to communications service providers.
- Administration of the NANP should not unduly favor or disadvantage any particular industry segment or group of consumers.
- Administration of the NANP should not unduly favor one technology over another. The NANP should be largely technology neutral

2. Currently available wireless-wireline porting methodologies proposed in the WWITF have met the criterion of rate center integrity within the technical limitations of LRN service provider portability, but have not met the criterion of competitive parity included in the FCC's Policy Objectives for Numbering and their orders addressing interconnection and other competitive issues.

3. As indicated in Section 6.0 of the Report from Wireless Wireline Integration Task Force to the North American Numbering Council (12/16/97),

"Porting from a wireline service provider to a wireless service provider is permitted as long as the subscriber's initial rate center is within the WSP's service area and the WSP has established interconnection/business arrangements for calls to wireless numbers within that rate center. This could apply even when the subscriber is moving to another LATA because of the terminal mobility characteristic of almost all wireless applications. With terminal mobility the subscriber can be physically located anywhere.

Porting from a wireless service provider to a wireline service provider is *only* allowed when the subscriber's physical location is within the wireline rate center associated with the wireless NPA-NXX."

4. Since wireless telephone numbers are not assigned based on the physical service location of the end user, it is expected that in the majority of cases wireless end users will not be physically located within the rate center area. These end users would have to change their number to change to wireline service. This disparity clearly favors the wireless industry segment and creates an unfair competitive disadvantage to the wireline industry segment.

5. The root causes of this disparity are inherent differences in rating methods, service areas, terminal mobility and number assignment methods between

wireline and wireless service providers and technical LRN limitations. A number of potential alternatives to eliminate this disparity while maintaining rate center integrity have been identified and considered, but none were found to be practical solutions. Two of these alternatives are examined more closely in Sections 2.3 -2.4.

C. Rate Center Consolidation/Modification

1. Some wireless participants have indicated that the problem is solely due to limitations of the wireline service providers' billing systems and rate center structure, which if modified, would alleviate all concerns. Rate centers, which are the fundamental building block of wireline rating systems, have been created by individual state commissions. Wireless service does not utilize rate centers other than for rating of calls from wireline end users. As indicated in Section 2.1 of the 12/16/97 report to the NANC, wireless carriers have flexibility in defining their rating architecture - it is solely a business decision. Besides the issue of preemption of the state regulators rights to establish rate center boundaries, forced modification of wireline *or* wireless rating systems is not an appropriate solution.

2. Rate center consolidation has also been suggested as an alternative to eliminate this disparity. Rate center consolidation is being considered by some state commissions as a means to conserve NXX codes. If ordered by a state, it would enlarge the geographic area of a rate center which in turn would reduce the disparity in porting. However, wireless service areas are not limited to rate centers, but can extend beyond rate center, NPA, state and LATA boundaries, so enlarging the rate center will not eliminate the disparity. Additionally consolidation may not be appropriate in many states, and as indicated in 2.3.1, forced consolidations would raise the issue of preemption of what the FCC has recognized as a state matter.

D. Numbering Alignment

1. This alternative assumed that both wireless and wireline service providers would use the same NXX and telephone number assignment rules and conventions to meet the rate center integrity and parity criteria. This would require wireless service providers to be assigned an NXX for each rate center in which they offered service and the assignment of telephone numbers based on the physical location of the wireless customer.

2. This alternative was discarded because of the impact on NPA exhaust and the fact that there is no technical need from a routing or rating perspective within the wireless service provider's network for this restriction. Because most wireless applications include terminal mobility, there is no technical requirement for association of the telephone number and a geographic location of the user.

III. Conclusions/Recommendations

A. The FCC's mandate for service provider portability between wireless and wireline service providers was not a separate and distinct order but rather was part of a complex series of orders on number portability and numbering principles in general. It therefore cannot be considered in isolation, but must be considered in context of the other requirements specified by the FCC including the minimum performance criteria, delegation of location portability to the states, and policy objectives for numbering. Parity between service providers is a minimum criteria for portability between wireless and wireline service providers.

B. In their Second Report and Order the FCC directed the NANC to develop standards and procedures necessary to provide for CMRS provider participation in number portability and to provide recommendations to the Commission. The FCC recognized that changes to local number portability standards and procedures would probably be needed to support wireless number portability and that differences in service area boundaries between wireline and wireless service would need to be considered. However, neither the FCC or the industry understood the complexity or the scope of the changes that portability between wireless and wireline service providers would entail.

C. The WWITF began an in depth discussion of these issues in its August 1997 meeting and reached consensus to refer the issue to the NANC at the September NANC meeting. However immediately before the September NANC meeting several WWITF members complained that they had not had adequate time to review the material and disagreed that referral was necessary. This has resulted in a 3 to 4 month delay in getting the issue resolved with no substantive change in the background material or issue that was planned for the NANC in September. Much of the intervening WWITF meetings have been spent debating whether a disparity exists and whether the disparity needed to be resolved or if the existing method/architecture was adequate.

D. The background material provided to WWITF members in August included a number of potential alternatives to resolve the disparity. However, none of these provide a viable solution available today that meets the minimum criteria of parity and rate center integrity. Additionally, the available method/architecture does not meet the definition of number portability found in the Telecommunications Act of 1996 and the FCC's First Report and Order and Further Notice of Proposed Rulemaking (FNPRM) in CC Docket 95-116 because some wireless end users staying at the same location would not be able to change to a wireline service provider and retain their telephone number. Implementation of this method/architecture would not constitute compliance with the FCC's ordered implementation of CMRS number portability.

E. While no method exists today, it is important to note that no competition exists today between wireless and wireline services, and by most experts, neither is expected to provide services which will replace the other in the foreseeable future. The one exception to this is wireless local loop, where wireless technology is used to replace the physical loop facility to the end user service location. Because this is a replacement local loop architecture, rather than a service, this fixed location, non-roaming situation should be considered separately.

F. Because no service competition exists and is not expected in the foreseeable future, the recommended course of action is to defer the introduction of portability between wireless and wireline service providers until a clear and real competitive need exists. This would allow the natural course of competition in the marketplace to address the issues of rate center integrity, service areas, pricing methodology and the LNP provisioning processes between service providers.

G. There is only one technical alternative that has been identified that can meet the FCC's requirements including the minimum criteria identified above - location portability beyond rate center, NPA, state and LATA boundaries. It the First Report and Order and FNPRM, the FCC delegated location portability to the states, "To avoid the consumer confusion and other disadvantages inherent in requiring location portability, however, we believe state regulatory bodies should determine, consistent with the Order, whether to require carriers to provide location portability. We believe the states should address this issue because we recognize that "rate centers" and local calling areas have been created by individual state commissions, and may vary from state to state."

H. Location portability is expected to be an enormous undertaking which could be at least as large in scope, complexity and cost as service provider portability. In addition, it will

have significant consumer impact due to the loss of traditional toll service indicators and NPA boundary restrictions. Location portability also raises significant regulatory and jurisdictional issues that will need to be addressed at federal and state levels. Location portability should not be introduced *until adequate market demand exists* to support the associated enormous costs or until there is *a real and compelling need* from a competitive perspective and *cost recovery* mechanisms developed. Because competition does not currently exist between wireless and wireline services, location portability should not be advanced to provide number portability between wireless and wireline service providers.

I. Wireless Local Loop/Fixed Location, Non Roaming Wireless Applications

1. As noted earlier, wireless technology is being used in some instances to replace existing or avoid placement of physical loop facilities, and there may be a need to identify a means to address number portability for these situations. In the Fixed CMRS Notice the Commission tentatively concluded that wireless local loop would be provided by CMRS providers, however, this technology has also been used within the wireline industry in the past.

2. In order for number portability to work with this fixed location application, wireless service providers would need to utilize wireline numbering conventions including the assignment of NXXs to each rate center where the application is being used and the assignment of telephone numbers based on the physical service location of the end user. Prior to the availability of number pooling this could create some additional pressure on NXX codes. However, new NXX codes would only be required for new customers as existing wireline customers would already be assigned telephone numbers. Considering the limited nature of the application and the existing rate of NXX code usage by wireless service providers, the increase in NXX code demand need not be significant. This proposal would provide wireless service providers an option for participating in number portability with wireline service providers if the need existed.

J. Summary

- The difference in porting capabilities between wireless and wireline service providers with the existing method/architecture creates a significant competitive disadvantage to wireline service providers. Despite the absence of real competition between wireless and wireline service providers today this competitive disparity is not consistent with the Commissions policies and should not be allowed.
- The FCC's orders on number portability were not intended to exclude the Commission's requirements for competitive parity and thus do not override their Policy Objectives for Numbering.
- There are no alternatives currently available for wireless wireline number portability which meet these criteria. The current method/architecture does not meet the definition of number portability in the Telecommunications Act of 1996, and if implemented would not constitute compliance with the FCC's orders on number portability.
- Location portability beyond rate center, NPA, state and LATA boundaries is the only identified technical alternative which meets the minimum criteria for wireless - wireline portability. However in light of the absence of substantive wireless - wireline service competition and the complexity, scope and costs of location portability, it is recommended that location portability not be advanced and that wireless - wireline portability, other than the fixed location applications discussed in 3.8, be delayed until a clear and real competitive need exists.

1.4 Wireless Position Paper

1.0 Executive Summary

WWITF recognizes that fundamental differences exist between the operations of wireless and wireline carriers, and that these differences impact Service Provider portability with respect to porting both to and from wireline and wireless service providers. Recognizing these differences, in the *Number Portability Second Report and Order* in CC Docket 95-116, the FCC mandated that the North American Numbering Council (NANC) incorporate the wireless service providers into number portability. NANC, in turn, assigned this task to the Local Number Portability Administration Selection Working Group (LNPA WG) which established the Wireless Wireline Integration Task Force (WWITF) to identify issues and recommend changes to the wireline-developed architecture to permit full integration of the wireless service providers. As recently as December 5, 1997, the FCC's intention to include all wireless carriers, cellular, PCS and covered SMR, was reaffirmed.

During its deliberations, the WWITF has identified a so-called "disparity" which would exist with the current architecture, making it impossible for some wireless subscribers to port to wireline carriers. No such restriction would prevent wireline subscribers from porting to a wireless carrier. This apparent "disparity" is based solely on the wireline carriers' position that the limitation of Service Provider portability to the wireline-established rate centers must remain an inviolable provision of the number portability architecture. Although there is consensus within WWITF of one mechanism—location number portability—that would ameliorate the claimed "disparity," all parties do not agree that location portability is a prerequisite to the implementation of Service Provider portability between wireline and wireless carriers. Indeed, no technical barrier has been identified which would prevent the full integration of wireless service providers into wireline portability from continuing, on schedule, while the WWITF develops a solution that would give all telecommunications users the benefits of number portability.

The WWITF has spent considerable effort trying to resolve this issue. However, it has not made any significant progress toward defining the changes to the existing number portability architecture that would be necessary to resolve the "disparity" issue and incorporate wireless carriers. Instead, proposals have been made to cease the integration of wireless carriers altogether, to delay integration of wireless carriers until location portability is ordered and fully developed or to limit wireless wireline portability to only fixed-wireless alternatives to wireline service. Clearly, each of these alternatives falls short of the FCC's objective to enhance competition between wireless and wireline carriers. Many wireless service providers, however, believe that a final resolution of the "disparity" issue is unnecessary for the implementation of wireless wireline portability to continue.

Lack of progress by the WWITF does not relieve NANC from meeting its FCC directives to incorporate wireless. Nor is it a basis to delay or negate such aspects of the *Number Portability Second Report and Order*. It is recommended that NANC direct WWITF to define a solution to the "disparity" issue and that wireless wireline portability will continue on schedule, even with the temporary "disparity," until a defined solution can be implemented.

2.0 Assumptions

2.1 Fundamental Differences

During its identification of issues to be addressed, WWITF developed the following consensus description of the inherent assumptions of the defined Service Provider portability architecture when applied to wireless wireline portability.

ASSUMPTIONS FOR WIRELESS WIRELINE SERVICE PROVIDER PORTABILITY:[15]

COMMON:

[15]This factual description of porting between wireless and wireline, in terms of assumptions and conditions, was tentatively agreed upon during the Oct 6-7, 1997 WWITF meeting.

1. In the context of Service Provider Portability the NPA-NXX is associated with a single rate center.
2. Call rating to the caller is based upon the NPA-NXX of the called TN.

WIRELINE PORTING:

1. A wireline subscriber's physical location must be in the same Rate Center as defined by the wireline subscriber's NPA-NXX.
2. When porting to a wireline service provider, Common #1 above still applies.

WIRELESS PORTING:

1. Wireless subscriber's physical location may be different than the Rate Center defined by the NPA-NXX.
2. Porting to a wireless service provider can occur as long as the rate center associated with the porting TN is geographically located within the serving area of the ported to Wireless Service Provider and the Wireless Service Provider has or establishes a business or interconnect arrangement for incoming calls to the ported TN.

The fundamental difference between wireline and wireless service is:

Wireline service is fixed to a specific location. The NPA-NXX portion of the subscriber's telephone number is associated with a specific geographic rate center, and the subscriber's service must be sited within that rate center's geography.[16]

Wireless service is mobile and not fixed to a specific location. While the wireless subscriber's NPA-NXX is associated with a specific geographic rate center, the wireless service is not limited to use within that rate center.

Consequently, when a wireless subscriber ports a number to a wireline carrier, the potential exists that the subscriber's NPA-NXX will not associate with their desired wireline service rate center.

2.2 Issue Awareness

The FCC is aware of the above fundamental aspects of wireline and wireless operation and that terminal mobility is an intrinsic part of Commercial Mobile Radio Service (CMRS). Indeed, the FCC directed NANC to squarely address this issue when it stated:

> "The NANC must also consider other issues of concern to CMRS providers, such as how to *account for differences between service area boundaries for wireline versus wireless services* and how to implement number portability in a roaming environment."[17]

This issue, in fact, has been known for some time. The conditions necessary for porting to a wireless or wireline provider were investigated by the wireless industry in early 1997 and released in the April 11 , 1997 document: *CTIA Report on Wireless Number Portability*. Section 1.6.3 ("Porting To and From") discussed the criteria necessary when porting to and from wireless wireline carriers:

> "Consequently, to maintain consistent rating from the calling party's perspective, porting from a WSP (Wireless Service Provider) to a wireline service provider can

[16]Wireline carriers do offer Foreign Exchange Service where a customer can receive a telephone number from a different rate center than their physical location. Further, wireline carriers can provide a "personal mobility" service as defined by the ITU-T.
[17]Telephone Number Portability, *Second Report and Order*, CC Docket 95-116 (rel. Aug. 18, 1997), ¶ 91 ("*Number Portability Second Report and Order*") (emphasis added).

> only occur when the resulting wireline service is geographically located within the wireline rate center associated with the ported MDN (mobile directory number)."[18]

Many of the service provider participants in the CTIA activity that produced the above report are participants in the NANC WWITF.

3.0 Discussion/Impacts

3.1 Possible Solutions

Although several alternatives to resolve the apparent "disparity" issue have been identified, most either do not meet the implementation objectives defined by the FCC; have a negative impact on numbering resources; cause severe customer disruption; or, result in new disparities with harsher and longer term consequences than the issue under consideration. However, many wireless service providers do not agree that arriving at a perfect solution is a necessary prerequisite to the implementation of wireless wireline portability. They argue, here, that the benefits to competition of number portability transcend any temporary "disparity" that may occur while a longer-term solution is realized.

Among the alternatives considered are:

3.1.1 Location Portability

WWITF reached consensus that location portability could resolve the parity issue, as documented in the background section: "Location portability may extend the scope of number portability beyond the rate center… ."[19] Various issues have been identified regarding location portability, but the capability has been recognized as providing additional benefits to consumers and is discussed as a mechanism involved in certain types of number pooling. However, there are no directives for the implementation of location portability, and it is not a requirement for opening up local markets to competition.

3.1.2 Rate Center Consolidation

As wireline rate centers are consolidated, the likelihood increases that, when porting to a wireline carrier, a wireless subscriber could be served in the same rate center that is associated with their wireless NPA-NXX. While the definition of rate centers is under the jurisdiction of each state, this mechanism could ameliorate the "disparity," and provide an industry-acceptable alternative until longer term solutions are in place.

3.1.3 CMRS Number Assignment

CMRS carriers could obtain additional NPA-NXXs in all wireline rate centers and provide new subscribers a telephone number based on their corresponding wireline residential rate center. This would allow some of the newer CMRS subscribers to port to wireline providers with no impact. However, the assignment of NPA-NXXs for every rate center is neither an efficient use of numbers, nor a necessity for wireless carrier operation. With this solution, pre-existing CMRS customers would not be afforded the ability to port unless, by happenstance, their desired location for wireline service was in the same rate center as their wireless NPA-NXX.

3.2 Role of NANC with respect to CMRS porting

The FCC has mandated that NANC incorporate CMRS into service provider portability. Specifically, it states:

> "At the same time, we recognize that it will probably be necessary to modify and update the current local number portability standards and procedures in order to support wireless number portability… Thus, we direct the NANC to develop standards and procedures necessary to provide for CMRS provider participation in local number portability."[20]

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[18]CTIA Report of Wireless Number Portability, Section 1.6.3.2, page 15.
[19]"Background Material – Wireless-Wireline Service Provider Portability", Section 4.
[20]*Number Portability Second Report and Order*, ¶ 91.

Consequently, NANC has an obligation to fulfill this directive.

3.3 Role of the WWITF

The WWITF has been charged with defining the architecture changes necessary to integrate wireless service providers. It was recognized early on by some that this might involve discussion of location portability or rate center consolidation and was mentioned during the initial meetings of the WWITF, but there was not a consensus to either solution as it related to wireless Service Provider integration.

To date, no work has been conducted on any potential solution to the so-called issue of "disparity." Some members of the WWITF have argued that since the architecture does not support location portability and since the states determine rate centers, then porting from wireless to wireline should not exist or should be deferred as long as the difference in service definition exists. Others have argued that the conditions that exist for porting between wireline and wireless, although not 100% equal, are not grounds for deferring portability between wireline and wireless and do not require any near term solution.

The FCC has indicated that delaying the portability implementation until all providers have the same capabilities is not justified:

> "While delaying implementation of number portability until all wireless concerns are fully addressed might result in an easier transition to a number portability environment for CMRS providers, we believe that such delay would be contrary to the public interest because a far greater number of wireline customers could not, during the period of delay, switch local providers without also changing telephone numbers. At the same time, we recognize that it will probably be necessary to modify and update the current local number portability standards and procedures in order to support wireless number portability."[21]

As recently as December 5, 1997, the FCC's intention to include all wireless carriers, cellular, PCS and covered SMR, was reaffirmed when, in conjunction with its Automatic Roaming Docket, it asked:

> "The Commission also invites comment on whether our roaming proposals are technically compatible with the CMRS number portability requirements established in the *Number Portability First Report and Order* in CC Docket No. 95-115."[22]

Obviously, if the FCC is concerned about the effects of number portability on roaming, it does not envisage number portability solely in the context of fixed wireless services.

3.4 A temporary "disparity" will not create a severe competitive impact

With respect to the "disparity" issue, it should be recognized that, without making modifications to the architecture, there is an asymmetry in porting between wireless and wireline. However, refusing to solve the issue of "disparity" by refusing to consider available options is a guarantee that the issue will not be resolved.

Ironically, some members of WWITF argue that the restrictions of porting from wireless to wireline are a "competitive disparity" but those same members state:

> "The simple fact is that consumers are not expected to replace their wireless service with wireline service or vice versa in the foreseeable future."[23]

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[21] *Id.*

[22] Commission Seeks Additional Comment On Automatic Roaming Proposals For Cellular, Broadband PCS, And Covered SMR Networks, *Public Notice*, CC Docket No. 94-54, DA 97-2558 (rel. Dec. 5, 1997).

[23] "Alternatives for Provision of Number Portability", G. Flemming and D. Engleman, contribution to Wireless – Wireline Integration Task Force, December 4, 1997.

If no one is expected to port from wireless to wireline, then what is the "disparity" concern? There would be no desire by the consumer to do so, and consequently no need for architectural changes at this time.

However, there are participants in WWITF that perceive some potential in porting from wireline to wireless, and the FCC mandate indicates that they should not be denied the benefits of competition. Indeed, the FCC', in its *Telephone Number Portability First Report and Order,* ordered that LECs provide telephone number portability to all telecommunications service providers, including CMRS.

One philosophy is to slow down competition to reflect the lowest common denominator. As indicated by the FCC, delaying implementation until all issues are resolved is not always in the best interest of competition. While this might result in a "disparity" in the perspective of some, it reflects that "Competition will come in fits and starts."[24]

4.0 Conclusion/Recommendation

As explicitly directed by the FCC, NANC is to define how to integrate wireless into the existing Service Provider portability architecture. The impacts of porting between wireless and wireline were identified by the wireless industry early on, and although there is agreement that long term solutions, such as location portability, would remove any disparity, there is not agreement that there is a need for a solution prior to the implementation of wireless wireline portability. In fact, no evidence has been presented at WWITF that the current number portability architecture would technically have any detrimental call routing or rating impacts.

To date, WWITF efforts have focused on why the FCC Order should be reconsidered rather than focusing on defining how to implement the Order.

Arguments that prohibit the full integration of wireless wireline number portability should be rejected. The WWITF should define a solution to the "disparity" issue and to be fully cognizant that wireless wireline portability will continue on schedule, even with a temporary "disparity," until a defined solution can be implemented.

1.5 Letter From the NANC

February 19, 1998

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At the meeting of the North American Numbering Council (NANC) yesterday the Council members considered the questions raised in your January 7 letter to me concerning "three key questions. . . for which Local Number Portability Architecture Working Group (LNPA/WG) is seeking direction from the NANC ".

[24] *See* Debra Wayne, *New FCC commissioners are mum on pending wireless issues*, RADIO COMMS. REP., Nov. 24, 1997, at 12 (quoting FCC Commissioner Harold Furchgott-Roth).

The Council concluded that it would not take a position on the public policy questions raised in your letter. Rather the Council concluded that it would direct the LNPA/WG to complete its work regarding the standards and procedures necessary to provide for CMSR provider participation in Local Number Portability for submission to the Federal Communications Commission on or before May 18, 1998.

The Council also agreed to provide to the Commission factual information regarding the issues you have identified commonly termed "rate center disparity."

Please call me if you have any questions about this matter. My number is 716 334 9419.

Alan Hasselwander,