

NANC Report and Recommendation
on the Dispute Over
Change Orders 429, 430 and 435

[Date]

Prepared by NCTA, Comcast and Cox Communications

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Executive Summary

The North American Numbering Council (NANC) Dispute Resolution Team distilled the dispute filed by Telcordia Technologies in May 2009 over Change Orders 429, 430 and 435 into two issues:

- Was the full appropriate process followed in the adoption of these Change Orders?
- Do the URI fields in Change Order 429, 430, and 435 meet the requirement of 47 C.F.R. 52.25(f) that the fields in the NPAC "shall be limited to the information necessary to route telephone calls to the appropriate telecommunications carriers."

An exhaustive review of the record demonstrates that the process followed in adoption of the Change Orders was fatally flawed because NANC was not consulted and did not make a determination that the substance of the disputed Change Orders, i.e., adding three new optional fields to NPAC records for Universal Resource Identifiers (URIs), was information "necessary to route telephone calls to the appropriate telecommunications carriers."

The record also demonstrates a persistent lack of consensus on whether such information is actually "necessary to route telephone calls to the appropriate telecommunications carriers." NANC members representing NCTA, Comcast and Cox Communications aver that the uninterrupted, successful routing and completion of telephone calls and other IP-enabled messaging services to the appropriate provider is evidence that inclusion of URI information in the NPAC is not necessary at the present time.

Section 1.0 Background

The present dispute concerns the inclusion into the Number Portability Administration Center database by the North American Portability Management, (NAPM) LLC of three Universal Resource Identifier (URI) fields that were approved by the North American Numbering Council's (NANC) Local Number Portability Administration Working Group ("LNPA WG") in 2008. The three URIs are intended to facilitate routing of Voice over IP (VOIP), Multimedia Messaging Service (MMS), and Short Messaging Service (SMS) communications to ported/pooled numbers between providers of Internet Protocol ("IP") based services who choose to make use of the fields by assisting in associating telephone numbers with the IP domain name address of the telecommunications services provider to whom a number is ported or block is assigned. The Change Orders at issue are Change Orders NANC 429 (VOIP), NANC 430 (MMS), and NANC 435 (SMS).

The URI fields in Change Orders 429 and 430 were originally included in Change Order 400, which was referred to the Federal Communications Commission (FCC) by the NANC without recommendation in June of 2005. Although Change Order 400 was recommended for inclusion in the NPAC by the LNPA WG, the Future of Numbering Working Group ("FoN WG") did not reach consensus in favor of adopting the change order. As the body overseeing these two Working Groups, the NANC also did not reach consensus. The debate at the time concerned whether the URIs were properly within the scope of the NPAC. Additionally, neither the Country Code 1 (CC1) ENUM LLC nor the ATIS PTSC (responsible for NGN interconnection and number portability ANSI standards for call completion) were solicited for input. The CC1 ENUM LLC saw no need for URIs in the NPAC and the PTSC in fact expressed a concern over potential

problems and lack of standards should URI be placed in NPAC. (see attached correspondence, Attachments A & B)

In the beginning of 2006, the FCC directed the NAPM LLC to hold Change Order 400 in abeyance, pending its consideration of the implications of the proposed changes. In late 2007, the Commission adopted an order taking a number of steps intended to ensure that consumers continue to benefit from local number portability. Among other things, this Order clarified that the LNP rules should apply to interconnected Voice over Internet Protocol ("VoIP") service providers. In light of this development, the FCC Wireline Competition Bureau Chief informed the NANC that it could reconsider Change order 400.

In May 2008, the LNPA WG separated Change Order 400 into four separate Change Orders, including Change Order 429 for a Voice URI and Change Order 430, which addresses an MMS URI. One month later, the LNPA WG later added Change Order 435 to create a field for an SMS URI. Ultimately, the LNPA WG reached consensus that a new prioritized release package that included three of the IP data parameters, i.e., Change Orders 429, 430, and 435, should be forwarded to the NAPM LLC for negotiation. The NAPM LLC agreed to include them in the NPAC release via Amendment 72 to the Master Agreements. However, the prioritized release package containing Change Orders 429, 430, and 435 has yet to be formally presented, or approved by the NANC.

In May 2009, Telcordia filed a Request for Dispute Resolution before the NANC, under Section 52.26(b)(3) of the FCC rules, as well as a Petition and a Request for Standstill Order before the FCC. In its Request, Telcordia asserted that the disputed Change Orders were improperly adopted by the LNPA WG because there was no express determination made by the NANC or the Commission that the fields being added to the NPAC database were "necessary to route telephone calls to the appropriate telecommunications carriers," as required by Section 52.25(f) of the FCC rules. Additionally, Telcordia argues that because voice, SMS, and MMS communications were being routed successfully without these URIs, these fields could not be considered "necessary" to the routing of "telephone calls."

Pursuant to Section 52.11 and 52.26 of the FCC rules, the NANC initiated a formal dispute resolution process in July 2009. Former NANC Chairman Tom Koutsky created a Dispute Resolution Team that included himself, Don Gray and Chairwoman Betty Ann Kane, both of whom are NARUC representatives on NANC. The FCC appointed Chairwoman Kane NANC Chair on October 1, 2009 upon Mr. Koutsky's resignation. The Dispute Resolution Team continued its work with two members.

Section 2.0 Issues Under Dispute

The Dispute Resolution Team distilled the dispute into two issues, one procedural and one substantive:

- Was the full appropriate process followed in the adoption of these Change Orders?
- Do the URI fields in Change Order 429, 430, and 435 meet the requirement of 47 C.F.R. 52.25(f) that the fields in the NPAC “shall be limited to the information necessary to route telephone calls to the appropriate telecommunications carriers.”

Section 3.0 Summary of the Record

The following points are NOT disputed in the record:

- The NANC Meeting Minutes and Transcripts demonstrate that the full NANC has not reached consensus that the fields are “necessary to route calls to the appropriate telecommunications carrier” on the record, at any NANC meeting.
- The NANC had one meeting in 2008, in February. The NANC did not meet again until July 16, 2009.
- The FCC Wireline Competition Bureau (WCB) permitted “industry reconsideration” of NANC 400 to determine if there was consensus to include URI fields in the NPAC.
- There is no discussion or consensus on the record of the LNPA WG minutes regarding the necessity of these fields to routing calls to the appropriate telecommunications carrier.
- The LNPA WG did not report to the NANC the results of any industry reconsideration of the need for URI fields in the NPAC.
- The LNPA WG accepted replacement URI Change Orders to be worked in May 2008, which were then included in the Change Order prioritization list. The LNPA WG co-chairs indicated that discussion of consensus at NANC was not permitted during prioritization. The Change Orders were forward to the NAPM LLC in February 2009, and later approved by the NAPM LLC in May 2009.
- Telcordia initiated the dispute before NANC in May 2009.
- In July, 2009, the NAPM LLC reported to the NANC that it had approved in May 2009 the Statement of Work (SOW 72) NeuStar presented to the LLC for NPAC modifications, which included the three URIs fields.
- Telephone Calls, SMS and MMS communications are routing to the appropriate telecommunications carrier and completing successfully to end users with ported and pooled numbers without the URI information in NPAC.
- No prior modification Change Orders have been the subject of a formal dispute before NANC.
- NANC has not reached consensus that URI fields are necessary for the rating and routing of telephone calls. The last consideration of the issue by NANC was the NANC Report on Change Order 400 from 2005.
- Neither the CC1 ENUM LLC nor the ATIS PTSC (responsible for NGN interconnection and number portability ANSI standards for call completion) advises that URIs should be placed in NPAC. (*see attached correspondence*)

The following points on the record are disputed:

- Whether the LNPA WG has the authority to render determinations on behalf of NANC regarding LNP Administration matters or whether the LNPA WG must present issues and recommendations to NANC for NANC review and consensus.

- Whether the prior lack of disputes over NPAC changes and modifications automatically means the LNPA WG followed the appropriate process in handling the Change Orders in question here.
- Whether the addition of URI fields is necessary as a matter of convenience because it might be more efficient for carriers who elect to use them to have IP and LNP information in one database during the actual process of porting telephone numbers.
- Whether the definition of telephone calls in the context of numbering administration and local telephone number portability is open to modification by the NAPM LLC, without an FCC rulemaking.

Section 4.0 Analysis

4.1 Was the full appropriate process followed in the claimed adoption of these Change Orders?

The FCC specifically orders that the NANC will determine which fields are necessary to be in NPAC:

“The information contained in the number portability regional databases should be limited to the information necessary to route telephone calls to the appropriate service providers. The NANC should determine the specific information necessary to provide number portability.” (2nd Report and Order Para 99).

Parties do not dispute that this is a NANC responsibility.

Approval Process

Commenting parties agree that the LNPA WG followed its standard procedures for technical approval of these Change Orders. In addition, all parties agree that the content of the Change Orders 429, 430 and 435 taken together matched most of NANC 400, which the FCC Wireline Competition Bureau indicated could be further considered by the industry. All parties agree that the NANC had previously been unable to obtain consensus with regard to adding URI fields to the NPAC. The receipt of the letter from the Wireline Competition Bureau permitting industry reconsideration of Change Order 400 was in fact discussed at the NANC February 22, 2008 meeting. The review and approval process was delineated, the fact that there were policy issues in the Change Orders was stated, and the need to present the Change Orders to NANC and the FoN WG was mentioned repeatedly. Consequently, it is difficult, at best, to say that the approval process followed by the LNPA WG was sufficient. (See Attachment D, Discussion of Change Order 400 at February 22, 2008 NANC Meeting.)

The LNPA WG's records show it did not directly consider whether the URI fields were necessary for routing telephone calls. Under standard LNPA WG procedures, the disputed Change Orders were “*accepted to be worked*” in May 2008. As with Change Order 400, the LNPA WG found no technical problems with the replacement Change Orders. Thus, the Change Orders were included in the standard prioritization process for all Change Orders whereby LNPA WG members prioritize individual Change Orders in a set of proposed Change Orders, indicating those which are most-to-least important for addition as new NPAC functionality. To be clear, prioritization is a competition among Change Orders, not a debate on the merit of the Change Orders themselves.

Discussion of whether the disputed Change Orders added information necessary to route telephone calls was not permitted during the prioritization. The LNPA WG standard procedure is for all completed Change Orders to be included in the prioritization.

After prioritizing the Change Orders, the LNPA WG forwarded its recommendation to the NAPM LLC and the disputed Change Orders were included in SOW 72. The NANC and entire industry were informed which of the Change Orders were agreed to by the NAPM LLC only after the SOW was executed in May 2009. As previously mentioned, NANC did not hold a meeting between when the LNPA WG agreed to accept the replacement Change Orders and when the NAPM LLC reached a deal with NeuStar to implement SOW 72.

Thus, NANC did not reconsider the replacement Change Orders nor did approve inclusion of the URI data in NPAC.

URI-related Change Orders were and are contentious, and were and are the subject of an unresolved matter before the FCC. Another standard LNPA WG procedure is that policy issues, versus technical issues, are brought to the NANC for resolution. The Change Orders in dispute should have been presented directly to NANC, separately from all other items in SOW 72, along with a separate report and recommendation because, as noted in the NANC Meeting Minutes of February 22, 2008, policy issues that arose during consideration of Change Order 400 were likely to continue to be present. The FCC Wireline Competition Bureau letter permitted consideration of Change Order 400. It is highly improbable that dividing the substance of it into four replacement Change Orders and moving forward without notice to or discussion by the NANC is what the Bureau intended, and is not a reasonable conclusion based on the discussion at the February 22, 2008 NANC Meeting. (See Attachment D)

Delegation

Some parties argue that there exists a NANC standard process of delegation, which essentially ignores FCC rules. In the case at hand, the argument goes that it is not necessary for the NANC to approve adding information to the NPAC because it delegated that responsibility to its subcommittee, the LNPA WG.

A search of NANC meeting minutes and records uncovered no such delegation. The membership of the NANC is distinct from its working groups; the FCC appoints each member. The Council has members who formally represent ratepayers and consumers; due to limited state resources, most working groups do not have consistent participation by regulators or consumer advocates. The NARUC and NASUCA representatives make vital contributions that are a necessary part of the consideration of any issue before the NANC. Their perspective and their ability to express it, in essence, protection of the public interest, cannot be assumed to have been delegated away to a subcommittee.

More directly to the point of delegation, the NANC Charter (http://hraunfoss.fcc.gov/edocs_public/attachmatch/DA-09-2226A1.pdf) gives NANC authority to create subcommittees but is explicit in assigning decision-making power only to the full Council:

13. Subcommittees

Subcommittees of the NANC may be created by the Commission. The Chairpersons of any subcommittees shall be appointed by the Chairperson of the NANC, with the approval of the Chairman of the Commission or the Chief of the Wireline Competition Bureau. Recommendations of subcommittees must be reported to the Council as a

whole, and only as modified or ratified by the Council as a whole, may such recommendations be included in the official record of the Council's proceedings, and reported to the Chairman of the Commission or the Chief of the Wireline Competition Bureau.

The NANC Training Binder further describes the relationship between the NANC, a formally chartered Federal Advisory Committee, and its Working Groups:

NANC/WG Relationship - NANC establishes the clear direction for Working Groups, makes assignments, as necessary, and sets due dates for the delivery of reports to NANC.

Working Groups develop draft recommendations for NANC consideration, which the NANC can accept, reject, change, or remand back to the LNPA Working Group with additional direction.

This language does not provide for a blanket delegation of authority to the LNPA WG, which, while open, does not meet the FACA requirements to substitute for the NANC itself.

Further, the NANC 400 report notes, that the NPAC is a “statutory” capability explicitly created by the FCC to apply to telecommunication carriers in the provisioning of telecommunication services pursuant to the Communications Act of 1996. The “statutory” status is especially significant in light of the U.S. Court of Appeals holding in *USTA v. FCC* where the court underscored that Commission *may not* sub-delegate its decision-making of statutory requirements to outside bodies absent affirmative evidence of authority.”¹

4.2 Do the URI fields in Change Order 429, 430, and 435 meet the requirement of 47 C.F.R. 52.25(f)

The FCC’s implementing regulations explicitly limits the scope of the NPAC to a single purpose, correct routing of telephone calls to appropriate telecommunications carriers, and restricts the use of the LNP database to that single purpose:

(f) The information contained in the regional databases shall be limited to the information necessary to route telephone calls to the appropriate telecommunications carriers. The NANC shall determine what specific information is necessary.

(i) Individual carriers may download information necessary to provide number portability from the regional databases into their own downstream databases. Individual carriers may mix information needed to provide other services or functions with the information downloaded from the regional databases at their own downstream databases. Carriers may not withhold any information necessary to provide number portability from the regional databases on the grounds that such data has been combined with other information in its downstream database.²

¹ See *U.S. Telecom Assoc’ v. FCC*, No. 00-1012 (D.C. Cir., 2 Mar 2004) at 14.

² 47 C.F.R. § 52.25. See also, Telephone Number Portability, First Report and Order and Further Notice of Proposed Rulemaking, 11 FCC Rcd 8352 (1996); Second Report and Order, 12 FCC Rcd 12,281 (1997),

The combination of 52.25(f) and 52.25(i) clearly delineates a distinction between information that is necessary for routing telephone calls and any other information telecommunications carriers use, for example, to determine the end-point of messages other than telephone calls.

Are URIs Necessary Information for purposes of 47 CFR 52.25 (f)?

There is no evidence in the record that any additional information beyond that which is currently in the NPAC is needed to complete telephone calls to ported numbers through the PSTN. At an April 14, 2005 joint meeting of the FoN and LNPA Working Groups there was agreement by all parties that placement of Internet URIs in the NPAC was not necessary to support PSTN telephone call completion. There was further agreement that changes to PSTN elements (Switches, Service Control Points, and Signal Transfer Points) that might involve the use of IP information were not contemplated.

The proposal to add URIs to the NPAC is to support diverse IP-enabled services including MultiMedia Messaging (MMS, e.g., exchange of camera phone pictures via email), and Presence (e.g., Instant Messaging "buddy lists"). It is important to note that several vendors in a competitive marketplace already provide these services without impact on telephone number portability or telephone call completion. These vendors and their services continue to deliver messages to an assortment of mobile devices after any telephone number porting activity. The use of multiple databases for multiple purposes was considered by the FCC and codified in 47 CFR 52.21 (e) and (f). The rule is directly applicable to providers who choose to add information beyond called party routing information, e.g., IP addresses, to their numbering records.

(e) The term database method means a number portability method that utilizes one or more external databases for providing called party routing information.

(f) The term *downstream database* means a database owned and operated by an individual carrier for the purpose of providing number portability in conjunction with other functions and services

Next, both the ATIS (Alliance for Telecommunications Solutions) PTSC (Packet Technologies and Systems Committee) and the Country Code 1 ENUM LLC indicated in their responses to the LNPA WG inquiry that they were both working on routing and addressing across IP networks and the two organizations were focusing on ENUM as the industry solution. As such, neither organization sees a need for URIs in the NPAC. (*See Appendices A & B*) The URI fields in question are similar to the information available in many private ENUM database solutions that are in widespread use nationally and globally.

Finally, and critical to any determination by the NANC on whether the URI information is necessary, the fields to be populated by URI information are optional fields. Optional information by definition is not necessary information.³ Change Orders 429, 430 and 435 are applicable only to the records of the ported or pooled telephone numbers of the undetermined number of service providers who might choose to input data into some or all of the fields, for some or all of their end-user devices. Leaving the fields blank does not cause a port to fail or a telephone call to misroute.

Previous NPAC Modifications

³ www.dictionary.com **op-tion-al** adjective 1. left to one's choice; not required or mandatory: Formal dress is optional. 2. leaving something to choice.

The FCC adopted in its original order the following minimum performance criteria.

Any long-term number portability method, including call processing scenarios or triggering, must:

- (1) support existing networking services, features, and capabilities;
- (2) . . .
- (3) . . .
- (4) . . .
- (5) not result in unreasonable degradation in service quality or network reliability when implemented;
- (6) not result in any degradation of service quality or network reliability when customers switch carriers . . .”⁴

Release 1 of the NPAC contained not only ported numbers and their associated LRNs for call routing, but also non-call-routing-related information necessary to properly route messages related to services and functionality “broken” by the LNP process. These services were CLASS, LIDB, Calling Name (CNAM), and Inter-Switch Voice Messaging Message Waiting Indication (ISVM MWD). Criteria 1, 5 and 6 clearly allow such information in NPAC to support “existing” services. Subsequent services and NPAC Change Orders have been designed with the LRN/PSTN architecture in place.

With Release 2 of the NPAC, in preparation for wireless LNP implementation, an additional set of fields was added to support the proper routing of Wireless Short Message Service text messaging, a feature impacted by LNP similarly to CLASS, LIDB, CNAM, and ISVM MWI. Fields were also added to provide a separate set of business days and timers to support an agreement among wireless carriers and approved by the NANC in its Wireless-Wireline Integration report.

The NANC approved solution for FCC-mandated Thousands-block Number Pooling was to use the NPAC and LRN platform to port blocks of telephone numbers among providers. As such, Release 3 added functionality to support pooled telephone numbers and their associated call-related and non-call-related routing information.

Release 3.3 of the NPAC added the ALT SPID field which was approved and found necessary by NANC in 2005 to address the specific problem of determining which provider in a resale or other multi-provider scenario had responsibility for the ultimate end-user’s service.

The reduced porting interval ordered in FCC 09-41 was accommodated in Release 3.3.4 of the NPAC. New timers to support a one-day interval were necessary. The NANC approved all but one part of the LNPA WG’s recommendation for implementing one day porting, and the FCC adopted most of that recommendation. Where the NANC was unable to make a determination of the information necessary to complete a port request, the FCC opened a docket to address the issue.

In summary, prior Change Orders and modifications that added fields to the NPAC have been due to FCC Orders or have been approved by NANC. In cases where NANC did/does not call the question of consensus on a given agenda item, the opportunity for Council members and the

⁴ FCC 97-074 FIRST MEMORANDUM OPINION AND ORDER ON RECONSIDERATION in the Matter of Telephone Number Portability. ¶12.

public to instigate a dispute or raise an objection was provided during an agenda-noticed Working Group report and/or presentation. No such opportunity was provided to the Council for the replacement Change Orders.

4.3 Other Policy Concerns

The NANC Charter states:

3. The Committee's Objectives and Scope of its Activity

The purpose of the Council is to advise the Commission and to make recommendations, reached through consensus, that foster efficient and impartial North American Numbering Plan (NANP) administration. The Council will advise the Commission on numbering policy and technical issues, initially resolve disputes as directed by the Commission, and provide guidance to the North American Numbering Plan Administrator (NANPA), the Local Number Portability Administrator (LNPA), and the Pooling Administrator (PA) as directed by the Commission.

In carrying out its responsibilities, the Council shall assure that NANP administration supports the following policy objectives: (1) that the NANP facilitates entry into the communications marketplace by making numbering resources available on an efficient, timely basis to communications service providers; (2) that the NANP does not unduly favor or disfavor any particular industry segment or group of consumers; (3) that the NANP does not unduly favor one technology over another; (4) that the NANP gives consumers easy access to the public switched telephone network; and (5) that the NANP ensures that the interests of all NANP member countries are addressed fairly and efficiently, fostering continued integration of the NANP across NANP member countries.

4. Description of the Duties for Which the Committee is Responsible

The general duties of the Council are to gather and discuss information necessary to develop recommendations to the Commission related to the attainment of the objectives stated under (3).

The Charter directs NANC to assure that the NANP gives consumers easy access to the PSTN. NANC is given no such mandate over IP addresses or access to the Internet.

The FCC rules currently require data in the NPAC to be necessary to route "telephone calls" to the appropriate telecommunications carrier. The NANC does not need to take a position on the definition of telephone call to make a decision here. The dispute can be framed concisely, if somewhat broadly, for the NANC to make a formal determination: are the fields that would be added to the NPAC by the disputed Change Orders necessary to complete properly formatted communications, to a ported or pooled telephone number, for the services addressed by the Change Orders? As noted above, even with this broader interpretation the answer technically is clear: IP-enabled services such as MMS and SMS, all successfully reach the intended device today. No other tool or NPAC assistance is necessary to complete these communications. They route and complete properly, just as do voice communications.

Section 5.0 Conclusion and Recommendation

5.1 – Do the URI fields in Change Order 429, 430, and 435 meet the requirement of 47 C.F.R. 52.25(f)?

No. The record is clear that while some service provider participants of the LNPA WG might find inclusion of the URI fields potentially more convenient and efficient, they are not *necessary* in order to complete communications for those services or any telecommunications service. Moreover, at the present time, it has not been substantiated that URIs located in the NPAC database are necessary for the routing of telephone calls, as required by the current rules. The NANC should make a determination and recommendation to the FCC that inclusion of this information in the NPAC is not necessary to route telephone calls to the appropriate telecommunications carriers.

As part of its recommendation, the NANC should note that the NAPM LLC is undertaking a Request for Information process right now in which interested parties can suggest improvements to or alternate methods for porting telephone numbers. The Request for Information process is open to all interested parties, including the NANC

5.1 – Was the full appropriate process followed in the claimed adoption of these Change Orders?

The record is also clear that neither the NANC nor the LNPA WG made a procedurally sound finding that the fields added by the disputed Change Orders are necessary for routing telephone calls. Until such a finding is made by the NANC and the FCC approves a consensus recommendation from NANC or unless there is a change in FCC rules, any provisioning or use of URI fields in the current NPAC release should be halted. At the October 2010 NANC meeting, it was stated that only a very few test URIs were currently provisioned in the NPAC; therefore, a decision that the NPAC should not house URIs will not cause any problems in the network or to consumers.

Section 6.0 Attachments

ATTACHMENT A
CC1 ENUM LLC response to the LNPA-WG

CC1 ENUM LLC

Country Code 1 ENUM Limited Liability Company

c/o McKenna, Long and Aldridge

1875 Lawrence St, Suite 200

Denver CO 80202

Karen N. Mulberry

Chairman, CC1 ENUM LLC

c/o MCI Communications

Office: +1.972.729.7914

Wireless: +1.972.896.8686

Fax: +1.425.963.5445

Pager: +1.800.664.2965

Email: karen.mulberry@mci.com

March 28, 2005

TRANSMITTED ELECTRONICALLY

Gary Sacra

Paula Jordan

LNPA WG Co-Chairs

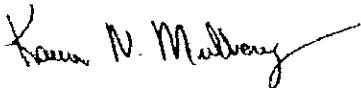
**Subject: North American Numbering Council Local Number Portability
Administration Working Group (NANC LNPA WG) request for
information regarding VoIP service**

The CC1 ENUM LLC has reviewed the correspondence that was sent by the LNPA WG Co-Chairs on March 10, 2005 and provides the following responses to the questions that were raised.

The CC1 ENUM LLC is developing an RFP for an implementation of ENUM in North America that will allow association of URIs with telephone numbers at a 10-digit level. Satisfying the industry's need for such URIs for call routing and other services is the primary driver of the LLC's efforts. Since the association between a telephone number and a URI is at a 10-digit level, communications routed using ENUM do not require a number portability look-up. As URIs can be populated in the ENUM DNS for all numbers, not just those that are ported or pooled, the LLC does not see a need for population of URIs in the NPAC.

If you have any questions or concerns, please contact me as the Chairman of the CC1 ENUM LLC at 972-896-8686 or the Vice-Chairman, James Baskin at 973-783-5873.

Sincerely,



Karen N. Mulberry

Chairman, CC1 ENUM LLC

CC:

CC1 ENUM LLC Membership

Stephen Delaney,
CRTC

Allan MacGillivray, Industry
Canada

Stacy Cheney, NTIA

Thierry Husson, Industry Canada

Cathy Handley, NTIA

Sanford Williams, FCC

ATTACHMENT B:
ATIS PTSC Letter



April 15, 2005

1200 G Street, NW
Suite 500
Washington, DC 20005
www.atis.org

Paula Jordan
Gary Sacra
LNPA WG Co-Chairs

**Packet Technologies and
Systems Committee
(PTSC)**

Subject: North American Numbering Council Local Number Portability
Administration Working Group (NANC LNPA WG) Request for
Information Regarding VoIP Service

Dear Paula and Gary,

Bob Hall
Chairman
bhall@labs.sbc.com

Joe Zebarth
Vice Chairman
zebarth@nortel.com

Jean-Paul Emard
ATIS Director, Industry Forums
+1 202-434-8824
jpemard@atis.org

Susan Carioti
ATIS Manager
scarioti@atis.org

Steve Barclay
ATIS Manager
sbarclay@atis.org

*"Developing Standards
that Drive the Business
of Communications and
Information Technology"*

The ATIS PTSC has reviewed your correspondence of March 10, 2005. In response, the PTSC provides the following observations and concerns with regard to the proposal to capture Uniform Resource Indicator (URIs) in the NPAC database at this time. As explained more fully below, the PTSC does not see a need for a modification of the NPAC database to allow for the capture of URI to 10-digit number associations.

While the PTSC notes there is a necessity to associate URIs with 10-digit numbers, it does not agree that this association should occur in the NPAC database for a variety of reasons. First, the PTSC notes that the presence of URI to 10-digit number associations in the NPAC database, if applied only to VoIP ported and pooled numbers, would not be sufficient to meet industry needs.¹ A change to the NPAC database, therefore, would not eliminate the need for an additional database to capture URI to 10-digit number associations for numbers other than VoIP ported and pooled numbers. An additional database for these VoIP non-portable and non-pooled numbers would mean that redundant information was being stored.

Second, the existence of two databases detailing URI to 10-digit number associations would create a potential for confusion and/or the generation of conflicting data. The potential would be even greater if the different locations have different control mechanisms (for example, if the carrier controls assignment in the NPAC database, but the end user controls assignment in ENUM).

Third, there are a number of issues that warrant further investigation before the change to the NPAC database could be made. For instance, the requirement to capture URIs in the NPAC database could result in a need for additions or changes to the signaling standards for the PSTN environment. The PTSC also notes that number portability requirements for the VoIP environment have yet to be determined. Implementing a change to the NPAC database before the number portability requirements for the IP environment have been finalized may have a significant negative impact on other future network standards and implementations.

¹ The assumption in your correspondence that most numbers used for VoIP service will be ported or pooled numbers has yet to be validated and it is not clear to the PTSC that this will necessarily be the case. Regardless, any implementation would need to deal with cases where the VoIP service was not a ported or pooled number.

Finally, the adoption of the proposal to capture URIs in the NPAC database may also contradict the packet technology interconnection work being completed by the PTSC. For instance, the PTSC is currently developing a standard for IP-to-IP Network Interconnection, to initially support voice services but eventually to encompass multimedia services [IP-IP Network Interworking document]. This effort is based on SIP as the signalling protocol and involves the use of URIs in call set up. This standard assumes the use of ENUM or ENUM-like services.

In the event that ENUM is not immediately available and a code-based routing approach is maintained, the PTSC's current IP-IP NNI working document assumes that URIs would be associated with Central Office codes. Based on this assumption and the existing number portability model (as detailed in T1.TRQ2-2001 and T1.TRQ3-2001), it is expected that an NP query would first determine the proper CO code for routing. Actual routing information, in this case – the URI, would be associated with the CO code rather than returned in the NP query. The working document indicates several potential models for distribution of the CO code – URI association not involving the NPAC.

The PTSC also notes that current NP query mechanisms, as described in the above-referenced TRQs, do not support use of URIs. The PTSC has no plans to revise existing NP standards in this direction. To the degree that non-SS7 (i.e., IP protocols) are employed for call routing, IP-based mechanisms for data distribution, such as those based on the DNS, would seem more appropriate.

The PTSC also notes that the extension of the NPAC database to include URIs may cause longer term problems for next generation networks due to: (1) the potential for confusion/conflicting data; and (2) the impact on the way in which pooled numbers are retained in the NPAC database that could require an expansion of the pooled number ranges.

In summary, the PTSC believes that the NPAC solution may be a potentially less attractive solution to that being generated as part of the ENUM process. At a minimum, the PTSC urges the LNPA not to adopt this solution without a clear understanding as to how it relates to ENUM.

We appreciate the opportunity to provide our input on this matter and would be happy to arrange a more detailed discussion of our work. If you have any questions or concerns, please contact me on 512-372-5842 or my Vice Chairman Joe Zearth on 613-765-8481.

Sincerely,

Bob Hall
Chairman, PTSC

CC: Jean-Paul Emard, ATIS jpemard@atis.org
Susan Carioti, ATIS scarioti@atis.org
Steve Barclay, ATIS sbarclay@atis.org
Tom Goode, ATIS tgoode@atis.org

ATTACHMENT C:
Change Orders 399 and 400 Report

North American Numbering Council
c/o Columbia Institute for Tele-Information
Columbia Business School
1A Uris Hall
3022 Broadway
New York, NY 10027-6902

July 5, 2005

Mr. Thomas Navin
Acting Chief, Wireline Competition Bureau
Federal Communications Commission
445 Twelfth Street, S.W.
Washington, D.C. 20554

RE: LNPA Change Orders 399 and 400

Dear Mr. Navin:

Earlier this year, the FCC directed the North American Number Portability Management (NAPM) LLC to hold in abeyance two proposed changes (LNPA Change Orders 399 and 400) to the software utilized by the Number Portability Administration Center (NPAC) until it had an opportunity to consider the implications of the proposed changes. To assist the Commission in this consideration, the Commission asked the North American Numbering Council (NANC) to identify and analyze the policy, regulatory and consumer issues associated with the proposed changes.

NANC directed the Future of Numbering Working Group (FoNWG) to conduct the requested review. The FoNWG provided an extensive report to NANC at the May 17, 2005 NANC meeting with the following results:

- Change Order 399

The FoNWG determined that Change Order 399 did not have any policy, regulatory or consumer impacts and recommended that it should be implemented. The full NANC agreed with the FoNWG recommendation. On behalf of NANC, I, therefore, recommend that the FCC should advise the NAPM LLC that Change Order 399 should no longer be held in abeyance.

- Change Order 400

The FoNWG was unable to reach a consensus recommendation with respect to Change Order 400. Therefore, NANC asked the FoNWG and other interested

parties to expand the report to provide more extensive arguments in favor of and opposing the proposed Change Order. The FoNWG submitted a revised report dated June 10, 2005 to the NANC, and the NANC had a duly noticed telephonic meeting on June 28, 2005 to consider the revised report.

I must report that neither the FoNWG nor NANC was able to reach a consensus recommendation with respect to Change Order 400. However, the FoNWG's extensive report, which is attached, outlines the issues and arguments in great detail and should assist the Commission in reaching a decision with respect to Change Order 400.

During the telephonic meeting on June 28, 2005, I reiterated my understanding that the Commission's previous directive to hold Change Order 400 in abeyance continues to apply until the Commission directs otherwise. This understanding was confirmed by the FCC's Designated Federal Officer participating in the meeting. I also communicated this status to all NANC Members on June 30, 2005.

I understand that there is a practical deadline associated with these Change Orders: the NAPM LLC needs to receive direction from the FCC by no later than August 1, 2005 in order for any change order to be included in the next release of NPAC software. I, therefore, urge the Commission to reach its decision as quickly as possible (not later than August 1, 2005) and promptly to communicate the decision to the NAPM LLC.

Finally, I should note that the FoNWG and NANC devoted extraordinary efforts to this matter. The Co-Chair of the FoNWG estimates that working group experts devoted a collective 800 hours to conference calls to consider the change orders. I would suspect that an equal amount of time was spent in preparation for the conference calls.

Please let me know if you or members of your staff have any questions or would like any clarifications.

Sincerely,

/Signed/

Robert C. Atkinson
NANC Chair

Attachments

cc: Lisa Gelb, FCC
Narda Jones, FCC
Cheryl Callahan, FCC
Regina Brown, FCC
Marilyn Jones, FCC
NANC Members

Report and Recommendation on NANC Change Orders 399 & 400

Prepared by
Future of Numbering Working Group

Revised
June 10, 2005



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Executive Summary

The North American Numbering Council (NANC) Future of Numbering Working Group (FoN) was tasked with reviewing NANC Local Number Portability Administration (LNPA) Change Orders 399 and 400 to identify and analyze all policy, regulatory or consumer issues with having them coded into the next NPAC software release. The FoN reviewed the change orders from both perspectives: (1) being coded into the release but not activated as well as; (2) if they were coded and activated along with the entire release package. The FoN did not see any distinguishing characteristics when considering the change orders policy, regulatory and consumer concerns and therefore its analysis was considered to be the same whether the change orders were activated or not. It was determined that the best approach to analyze the two change orders, namely 399 and 400, was to separate them and conduct separate evaluations.

The FoN determined that Change Order 399 did not have any policy, regulatory or consumer impacts and should proceed per the recommendation from the NANC LNPA Working Group.

The FoN was unable to reach consensus as to any conclusions or recommendations for the treatment of Change Order 400.

The NANC, at its May 17, 2005 meeting, requested that Parties supporting or opposing Change Order 400 provide additional information for NANC's consideration in order for it to determine a recommended solution for Change Order 400.

Section 1.0 Background

The Local Number Portability Administration Working Group (LNPA) at the direction of the North American Number Portability Management (NAPM) LLC under took a review of two change orders that were not originally contained in its Number Portability Administration Center (NPAC) new software release recommendation. These two Change Orders, NANC 399 and NANC 400, request the addition of six new data identification fields to be developed, but not turned up, in NPAC Release 3.3. Both of these Change Orders are identified as optional NPAC data field change orders such that an NPAC User is not required to modify its systems or processes unless it wishes to support them.

NANC Change Order 399 adds two new data fields, SV type and Alternate Service Provider Identification (SPID) type indicator field. These fields are proposed to be added in order to distinguish the identity of the service the ported telephone number is associated with, such as wireline, wireless, reseller, VoIP or VoIPWIFI.

NANC Change Order 400 proposes the addition four new data fields, Voice Uniform Resource Identifiers (URIs), Multimedia Messaging Services (MMS) URI, Push-to-talk over Cellular (PoC) URI and Presence URI to support IP-based Voice services. These new fields are proposed to coordinate and synchronize the updates of the SS7-based number portability look up databases with that of the IP based look up databases.

The North American Numbering Council (NANC) at its March meeting requested that the Future of Numbering Working Group (FoN) assess NANC Change Orders 399 & 400 to determine if there were any regulatory or policy issues that need to be addressed by the NANC before the LNPA technical recommendation is brought to the NAPM LLC for a business decision.

Section 2.0 Scope of Work

The Future of Numbering Working Group determined that the scope of its work is the evaluation of NANC Change Orders 399 and 400 as they relate to the future of numbering requirements, number portability public policy and regulatory issues as well as consumer concerns.

Section 3.0 Issues

The Future of Numbering Working Group (FoN) identified the following issues in its review of the two NANC NPAC Change Orders, 399 and 400.

3.1 Identification of the business process(s) proposed for these two NPAC **Change Order modifications:**

- a. Coded into the NPAC Software but not turned up until business need identified and contract arrangements are successfully concluded by the NAPM LLC
- b. Coded into the NPAC Software and turned up with Release 3.3 after business justification documented and contract arrangements are successfully concluded by the NAPM LLC

3.2 Intent and purpose of the NPAC per FCC regulatory requirements

In FCC 97-289, released August 18, 1997 the following paragraphs give regulatory direction to the NANC and the NAPM LLC as to the intent and purpose of the NPAC:

69. We adopt the NANC's recommendations concerning the change management process. We agree with the NANC that it is important that a neutral entity oversee the change management process, so that: (1) there is consistency in the submission and consideration of changes to the architectural, technical and operational specifications and procedures; (2) uniform processes are implemented; and (3) no individual carriers or industry segments are disadvantaged. We find that the NANC's proposed change management process will enable the industry to make changes to the architectural, technical and operational specifications and procedures in a timely and uniform manner. The role of the regional LLCs in managing changes to the number portability technical and operational specifications, however, is subject to our planned review of the role of the regional LLCs in implementing long-term number portability. We direct the NANC to continue its oversight of architectural, technical and operational change management processes and to make additional recommendations to the Commission as necessary, consistent with the procedures set forth in 128, *infra*. In the event the NANC is dissolved at some point in the future, we will, at that time, either establish or select an oversight body to perform the change management functions now delegated to the NANC.

92. We direct the NANC to monitor these industry efforts and to make recommendations to the Commission consistent with the procedures set forth in paragraphs 128-132, *infra*, for modifications to the various technical and operational standards as necessary for CMRS providers to efficiently implement number portability and to allow CMRS providers to interconnect with a wireline number portability environment.

47CFR52.25 also provides regulatory direction to the NANC and the NAPM LLC as to the intent and purpose of the NPAC:

Sec. 52.25 Database architecture and administration

(a) The North American Numbering Council (NANC) shall direct establishment of a nationwide system of regional SMS databases for the provision of long-term database methods for number portability.

(b) All telecommunications carriers shall have equal and open access to the regional databases.

(c) The NANC shall select a local number portability administrator(s) (LNPA(s)) to administer the regional databases within seven months of the initial meeting of the NANC.

(d) The NANC shall determine whether one or multiple administrator(s) should be selected, whether the LNPA(s) can be the same entity selected to be the North American Numbering Plan Administrator, how the LNPA(s) should be selected, the specific duties of the LNPA(s), the geographic coverage of the regional databases, the technical interoperability and operational standards, the user interface between telecommunications carriers and the LNPA(s), the network interface between the SMS and the downstream databases, and the technical specifications for the regional databases.

(e) Once the NANC has selected the LNPA(s) and determined the locations of the regional databases, it must report its decisions to the Commission.

(f) The information contained in the regional databases shall be limited to the information necessary to route telephone calls to the appropriate telecommunications carriers. The NANC shall determine what specific information is necessary.

(g) Any state may opt out of its designated regional database and implement a state-specific database. A state must notify the Wireline Competition Bureau and NANC that it plans to implement a state-specific database within 60 days from the release date of the Public Notice issued by the Chief, Wireline Competition Bureau, identifying the administrator selected by the NANC and the proposed locations of the regional databases. Carriers may challenge a state's decision to opt out of the regional database system by filing a petition with the Commission.

(h) Individual state databases must meet the national requirements and operational standards recommended by the NANC and adopted by the Commission. In addition, such state databases must be technically compatible with the regional system of databases and must not interfere with the scheduled implementation of the regional databases.

(i) Individual carriers may download information necessary to provide number portability from the regional databases into their own downstream databases. Individual carriers may mix information needed to provide other services or functions with the information downloaded from the regional databases at their own downstream databases. Carriers may not withhold any information necessary to provide number portability from the regional databases on the grounds that such data has been combined with other information in its downstream database.

3.3 Previous NPAC Modifications

Prior to the implementation of Local Number Portability (LNP) in 1997, for the most part, the NPA-NXX of a customer's 10-digit telephone number identified both the service provider serving the customer, as well as the specific Central Office switch where the customer's service was provisioned. With LNP, NPA-NXXs were still assigned to specific service providers and specific switches at the NXX code level, however, the deployment of LNP "broke" this association for individual 10-digit telephone numbers within an NPA-NXX in that numbers within that NPA-NXX could now be served by different service providers and different switches. Although the NPA-NXX of an individual customer's telephone number is no longer necessarily service provider and switch-specific, call routing at the NPA-NXX level is maintained because the NPA-NXX of the Location Routing Number (LRN) associated with a ported number is still service provider and switch-specific. Calls to non-ported numbers are still routed based on the NPA-NXX of the customer's 10-digit telephone number as they were prior to the implementation of LNP. Post-LNP query, the network understands that the NPA-NXX of the LRN of a ported number, or the NPA-NXX of the dialed digits of a non-ported number, still identifies the target end user's service provider and serving switch.

The architects of the Number Portability Administration Center (NPAC) designed Release 1 of the NPAC not only to contain ported numbers and their associated LRNs for call routing, but to also contain non-call-routing-related information necessary to properly route messages related to services and functionality also "broken" by LNP. These services were CLASS, LIDB, Calling Name (CNAM), and Inter-Switch Voice Messaging Message Waiting Indication (ISVM MWI). Hundreds of thousands of customers using these services would have been affected, and carriers providing these services could have seen significant revenue impacts if porting eliminated their usefulness.

Because these services relied on the NPA-NXX of a customer's telephone number to indicate a target database or switch, fields were added in the NPAC's ported number record to now route these messages properly in an LNP environment where numbers in the same NPA-NXX can reside in multiple databases and switches.

With Release 2 of the NPAC, in preparation for wireless LNP implementation, an additional set of fields was added to support the proper routing of Wireless Short Message Service text messaging, a wireless feature also impacted by LNP similar to CLASS, LIDB, CNAM, and ISVM MWI. With these added fields, end users can send text messages to other end users even though the target wireless telephone number has been ported. Again, these services were already in widespread use before wireless carriers were required to port.

With the implementation of Telephone Number Pooling (TNP), it was determined by the industry that the NPAC in Release 3 would contain pooled telephone numbers and their associated call-related and non-call-related routing information, in addition to ported telephone numbers. Thousands blocks of telephone numbers, whether pooled between

service providers or moved within a provider's network through pooling functionality, now reside in the NPAC for both wireline and wireless carriers.

The potential change order costs will need to be more fully determined by the NAPM LLC as there is a concern that the cost of these two change orders may be driven to parties that have no need for them as they could lead to additional porting transactions for which all NPAC Users will be assessed a share.

3.4 Policy Issues

The FoN identified four policy issues that that need to be considered when making a determination whether NANC Change Orders 399 and 400 should be included in the NPAC. The four policy issues are as follows:

1. Resolution needed on whether services involving only IP-IP versus PSTN should be in the NPAC.
 - Rules for SPs using IP interfaces are not defined and whether the NPAC should be used for this purpose is unclear.
 - Should the NPAC provide an additional mechanism to support IP to IP?
 - It should be noted that the NPAC is a provisioning system that will help facilitate the coordination between SPs that otherwise will require multiple database checks.
2. If adding this information will incur cost upon those that do not use these features, should the entire industry be forced to pay (will they pay?) for it?
 - The NPAC has in the past had quite a few modifications added that have provided a benefit to a select group of SPs.
 - Cost may be a secondary issue and discussion may be premature if the business case that surrounds it has yet to be developed. Since the change orders will be installed in an inactive state, there is no cost until they are turned on.
3. The two change orders will be separated for policy considerations and analysis.
 - Change Order 399 does not appear to have the same impacts and issues as Change Order 400.
 - It was noted that the LNPA considered both change orders relative to being added in a turned off state or as fully operational as part of NPAC Release 3.3 implementation.
 - The purpose of the NPAC is to avoid limiting an end-user's ability to port. For example, a carrier stated that it is able to port numbers without impacting services today without needing the NPAC change orders.

4. Do these change orders make sense relative to the long-term needs of the industry?
 - It was stated that the FoN may not have the right technical representation to consider long term technical requirements.
 - The FCC's recognition of existing needs for portability when the NPAC was created limits addressing future needs.

Section 4.0 Analysis

The two Change Orders were separated for the following FoN analysis.

4.1 Change Order 399

The FoN determined that there are not any relevant policy issues identified for Change Order 399 and therefore the LNPA-WG should conclude its work and proceed with its recommendation to the NAPM LLC.

4.2 Change Order 400

Change Order 400 contains numerous issues that either support or oppose proceeding with its NPAC development. For the purposes of this analysis the details were broken into supporting or opposing statements.

- Section 4.2.1 provides the arguments of those that support Change Order 400.
 - 4.2.1.1 Introduction
 - 4.2.1.2 Scope of the NPAC
 - 4.2.1.3 Conclusions
 - 4.2.1.4 Background: Telephone Numbers and IP Protocol
 - 4.2.1.5 LNP Performance Criteria
 - 4.2.1.6 NPAC to LSMS Architectural Restrictions
 - 4.2.1.7 and 4.2.1.8 ENUM
 - 4.2.1.9 Policy Perspective
 - 4.2.1.10 Support Recommendation
- Section 4.2.2 provides the arguments of those that do not support Change Order 400
 - 4.2.2.1 Regulatory Issues – Scope of the NPAC
 - 4.2.2.2 IP-Enabled Services Policy Considerations
 - 4.2.2.3 Technical Approach
 - 4.2.2.4 Costs
 - 4.2.2.5 Competitive Concerns
 - 4.2.2.6 Conclusion
 - 4.2.2.7 Opposition Recommendation

4.2.1 Support

Support for inclusion of Change Order 400 in NPAC Release 3.3 in an inactive mode for two reasons.

- First, to have more options available for address resolution of existing and future fixed and mobile services, including Multi-Media Services (MMS), Session Initiation Protocol (SIP) and VoIP services.
- Second, to have this capability available in a timely manner at no expense to the industry or any carrier if not utilized. This position is based upon the understanding that, if this capability is turned on in the NPAC, the SPID and URI data would be available to any carrier or vendor on a non-discriminatory basis to provision number portability and/or portability correction for ENUM, SIP or VoIP services for ported and pooled numbers.

4.2.1.1 Introduction

Adoption of NANC 400 is within the scope of the Number Portability Administration Center (NPAC). The Federal Communications Commission (FCC) designated the North American Numbering Council (NANC) and its Local Number Portability Administration Working Group (LNPAWG) as the “oversight” committee for Number Portability. The LNPAWG is an industry working group open to all interested parties to develop Local Number Portability (LNP) standards and best practices.

The NPAC SMS Change Order Management Process involves two major steps. Step 1 is the approval of the NANC 400 functionality in an “inactive” state in the next NPAC Release 3.3. Step 2 is evaluation of the “business need” to implement NANC 400 in the NPAC.

To date, no policy or regulatory issues have been identified that would justify intervening with the NPAC SMS Change Order Management Process for Step 1 and prohibit the inclusion of NANC 400 in an “inactive” state in NPAC Release 3.3.

The following subsections detail why NANC 400 should proceed as an inactive option.

4.2.1.2 NANC 400 is within the scope of the NPAC

Based upon FCC regulations and LNP orders, the addition of new fields is within the scope of the NPAC:

- NANC 400 creates no new users in the NPAC
- NANC 400 creates no new Telephone Numbers (TNs) in the NPAC
- NANC 400 imposes no new regulatory obligations on service providers
- The LNPA WG fully reviewed NANC 400 and reached consensus to implement it in a turned off state in NPAC Release 3.3

In the *First LNP Order*, the FCC delegated its authority over LNP issues in large part to the NANC, directing it to determine the duties of the local number portability administrator (“LNPA”) and other matters relating to the administration of LNP.⁵

The *Second LNP Order* also specifically applied this layered oversight regime to the change management process governing modifications to the LNP “architectural, technical and operational standards” and “related specifications and processes.”⁶ The FCC adopted NANC’s recommendation that NANC be authorized “to approve or disapprove all [NPAC] changes, and that each respective regional LLC manage implementation of these changes with its respective [LNPA].”⁷ In describing the role of the LLCs in the change management process, the FCC referred to the LLCs’ overall “immediate oversight and management” function.⁸

The FCC also directed NANC “to continue its oversight of architectural, technical and operational change management processes....”⁹

The LNPAWG has fully reviewed and reached consensus to support NANC 400 in an “inactive” state, i.e. part of Step 1. Thus, the NANC has satisfied its “oversight” requirement.¹⁰ Now it is up to the NAPM LLC to fulfill its FCC-mandated “immediate oversight and management” role¹¹ and decide, applying its recognized “expertise regarding the structure and operation of the [NPAC] database,”¹² whether to include Change Order 400 in the next NPAC software release. The FCC should facilitate this process by allowing the NAPM LLC to act on the basis of the LNPA WG’s approval.

⁵*Telephone Number Portability*, First Report and Order and Further Notice of Proposed Rulemaking, 11 FCC Rcd 8352, 8401-02 (1996) (“*First LNP Order*”). Section 251(e) of the Communications Act of 1934, as amended, authorizes the FCC to “create or designate one or more impartial entities to administer telecommunications numbering....” 47 U.S.C. § 251(e)(1). The FCC, in its *First LNP Order*, adopted rules, set forth in Part 52 of the FCC’s rules, to carry out this statutory mandate.

⁶*Second LNP Order*, 12 FCC Rcd at 12321.

⁷*Id.*

⁸*Id.* at 12321-22 & n.198, 12345. The FCC explained that “each LLC is the entity with the greatest expertise regarding the structure and operation of the database for its region,” and that, without LLC oversight of “database system enhancements and other modifications,” the LLCs’ expertise would be wasted, running “the risk that necessary modifications to the database system may be delayed.” *Id.* at 12346.

⁹*Id.* at 12322. In exercising its oversight authority, NANC has approved an “NPAC SMS Change Management Process” providing that “Change requests can originate in the LLC, in the T&O Task Force or by others who refer change requests to either the LLC or the Task Force.” *NPAC SMS Change Management Process*, Document Section of the Local Number Portability Administrator website, at <http://www.fcc.gov/wcb/tapd/Nanc/nanclnpa.html> (last visited Apr. 5, 2005).

¹⁰*Second LNP Order*, 12 FCC Rcd at 12322.

¹¹*Id.* at 12345.

¹²*Id.* at 12346.

Step 1 ~ Benefits of NANC 400 and Rationale for Approval

- Currently, there is no industry wide provisioning and synchronization mechanism for the TN related services addressed by NANC 400 for ported and pooled numbers
- NANC 400 provides a means of providing timely and accurate portability and pooling updates for any other routing database approaches on an industry wide, non-discriminatory basis
- There is precedent for NPAC to provision non-call related routing data for services associated with a Telephone Number (TN)
- NANC 400 provides the necessary granularity needed to solve the growing issue caused by the “wholesale-retail” paradigm, in which resellers and mobile virtual network operators (MVNOs) may implement and operate their own vertical services, while using the wholesaler’s voice network
- The wholesale-retail paradigm is common in the VoIP industry, and NANC 400 would differentiate VoIP service providers from their Network Facilities Provider.)
- NANC 400 Provides a provisioning option for portability correction (TN to URI) for existing Multi-Media Services (MMS) and future IP based services for both mobile and fixed service providers

Prior to 1997 when LNP was implemented in the United States, a telephone number (TN) was both the name and address for the purposes of routing calls to geographic numbers. LNP separated the name from the address. A pooled or ported TN must now have a Location Routing Number (LRN) for an address. The network performs an LNP query to a network routing database and receives the correct routing number for the TN. The call is routed to the switch identified by the LRN. The TN is the name - the LRN is the address.

After LNP was initially deployed, the industry decided that each ported number would be provisioned with an LRN for call routing and DPC/SSNs for SS7 message routing. The TN is the name – the DPC/SSNs are the addresses. This information is provisioned through the Number Portability Administration Center (NPAC) to all of the users of the NPAC. Some of these DPC/SSNs, like CNAM and CLASS, are associated with telecommunications services, other DPC/SSNs, like wireless short message service (SMS) and inter-switch voice messaging (ISVM)¹³ and wireless short message service (SMS)¹⁴ are associated with information services.

¹³ ISVM, a voice mail service provided on a centralized basis, is an information service. Like plain voice mail, this service allows users to store information and interact with stored information unrelated to the placing of a telephone call. These characteristics place voice mail, as well as electronic mail, firmly in the enhanced (information) service category. *See Amendment of Section 64.702 of the Commission's Rules and Regulations (Second Computer Inquiry)*, 84 FCC.2d 50, 54-55 (1980) (subsequent history omitted).

¹⁴ SMS is a store-and-forward method of transmitting messages to and from wireless devices. Store-and-forward technology is generally considered a characteristic of an information service. *See, e.g., Policy and Rules Concerning the Interstate, Interexchange Marketplace*, Further Notice of Proposed Rulemaking, 13

The technology used to deliver services to pooled or ported numbers is irrelevant to NANC's determination of what information is necessary to provide number portability for those numbers. Today, records in the NPAC already contain routing information for numbers used for information services such as voice mail and text messaging for cell phones. This demonstrates the fact that the designation of a service as an information service is not relevant to the decision to provide routing information in the NPAC for that service.

NANC 400 would facilitate the efficient routing of calls to numbers that have been pooled or ported from one carrier to another, some of which may be used for VoIP or IP services. The services that rely on the IP infrastructure and use TNs for naming will fail if the routing address is not corrected for pooled and ported TNs. The NPAC already allows for routing of calls to pooled or ported numbers, whether those numbers are IP-enabled or not. As stated in the FCC orders referenced above, facilitating the routing of pooled or ported numbers is the NPAC's purpose.

The NANC 400 data fields do not impose any new regulatory obligation on NPAC users. Implementation of the Change Order would not require any carrier or other entity to do, or refrain from doing, anything that it is not already doing. NANC 400 simply would facilitate routing of calls to ported and pooled numbers. The information contained in the NPAC is available to all carriers and vendors in an equitable and non-discriminatory manner. NPAC data is not subject to ownership by any one vendor or database registry.

It is common for VoIP service providers to implement IP networks to support services to their customers and to interface with the PSTN for interoperability between carriers. NANC 400 would allow the IP based services to route based upon the URI of the Service Provider (VoIP) instead of the URI of the Network Facilities Provider (LEC). Similarly, Mobile Virtual Network Operators (MVNOs) may have their own network elements and need to identify the correct URI address for that element for service delivery, i.e. the IP address of their network element. Although NANC 399 provides the ability to designate different Service Provider Identifiers (SPIDs), it does not allow differentiating the URI address of the TN between the Service Provider and the Network Facilities Provider.

Another problem that exists today is portability corrected URI addresses for the accurate delivery of Multi-Media Message Service (MMS). The same issue will exist for future Session Initiated Protocol (SIP) services. GSM North America (NA) formed an Addressing Task Force to resolve the issue because existing signaling solutions are expected to be inefficient with the advent of IP services provided by multiple carriers around the globe in countries with various number portability schemes. The ultimate objective is to have portability-corrected interoperability between all carriers, e.g. GSM, CDMA, and fixed/wireline service providers. At GSM NA, NeuStar was the only vendor

FCC Rcd 21531, 21533 (1998); Report to Congress, 13 FCC Rcd at 11537; *Bell Operating Companies Joint Petition for Waiver of Computer II Rules*, Order, 10 FCC Rcd 13,758, 13,770-74 (CCB 1995).

to provide a contribution on how to provision portability-corrected URIs. The GSM NA executive advisory group approved the Addressing Task Force recommendation for private Operator ENUM query/response to resolve TN to URI addresses for GSM carriers per Internet Engineering Task Force (IETF) and 3rd Generation Partnership Program (3GPP) standards.

Step 2 ~ Debate Over Business Need

- Adoption of NANC 400 will be complementary to any public or private ENUM deployment
- Adoption of NANC 400 in an inactive state is more cost effective than a subsequent implementation as a single Change Order
- Adoption of NANC 400 will not affect or prejudice the outcome of the IP NPRM

As referenced in this Section, NANC 400 has been thoroughly discussed and evaluated by both the LNPAWG and GSM NA. How to provision portability-corrected URIs is a topic that is still under evaluation at the GSM Association ENUM Ad Hoc. Moreover, the CC1 ENUM LLC is in the process of defining its Tier 1A and Tier 1B requirements for public ENUM. Thus, it is still uncertain exactly how private or public ENUM will be implemented. Given the “business need” for private or public ENUM is not yet explicitly defined or deployed, it is premature to complete Step 2, the evaluation of the “business need” for activating NANC 400.

Since NeuStar has agreed to implement NANC 400 in an inactive state at no cost to the industry, there is little cost associated with its inclusion in Release 3.3 per Step 1. However, it would be more costly to implement NANC 400 later, as a separate Change Order, because of administrative and testing expenses.

Finally, implementing NANC 400 would not affect whether or how the FCC classifies IP enabled service for regulatory purposes. NANC 400 does not create a new category of service providers or NPAC users. The data fields that would be added to the NPAC pursuant to NANC 400 does not have any role in determining whether the provider of IP services uses TNs.

4.2.1.3 Pro NANC 400 Conclusions

The NPAC enables number portability and pooling between carriers and the routing, rating and billing of calls involving numbers that have been ported or pooled between carriers.

- NANC 400 is a practical and technically sound alternative for provisioning and synchronizing TN to URI routing databases for ported and pooled telephone numbers (TNs).
 - Leverages a proven, trusted, secure provisioning mechanism (NPAC SMS)

- Deemed worthy of being implemented in a turned off state by the LNPA WG, which recommended to the NAPM LLC that it be included in release 3.3 of the NPAC SMS
 - Currently no industry wide provisioning and synchronization mechanism for the TN related services addressed by NANC 400 for ported and pooled numbers.
- NANC 400 can solve pooling and portability related issues currently experienced by carriers for various services.
 - NANC 400 provides the necessary granularity needed to solve the growing issue caused by the “wholesale-retail” paradigm, in which resellers and mobile virtual network operators (MVNOs) may implement and operate their own vertical services, while using the wholesaler’s voice network.
 - No current provisioning mechanism for sharing IP routing data between service providers
 - NANC 400 is beneficial and/or complementary to all known IP routing approaches.
 - Poses no threat to ENUM – as it is either uninvolved (at Tier 1 level) or provides a potential provisioning and synchronization alternative for ported and pooled numbers (at Tier 2 level).
 - Provides a means of providing timely and accurate portability and pooling updates for any other routing database approach on an industry wide, non-discriminatory basis
 - NANC 400 is within the scope of the NPAC
 - It provides a means to minimize disruption of TN related services when TNs are ported or pooled.
 - NANC 400 is consistent with existing NPAC fields
 - There is precedent for NPAC to provision non call related routing data for services associated with a TN (LIDB, CLASS, CNAME, etc...)
 - There is precedent for NPAC to provision routing data for “data services” associated with a TN (ISVM and Wireless Short Message Service)
 - The NPAC administrator would incur all cost and risk should fields never be used.

4.2.1.4 Background: Telephone Numbers and the Internet Protocol

“On February 8, 1996, the “Telecommunications Act of 1996” became law. This legislation makes sweeping changes affecting all consumers and telecommunications service providers. The intent of this legislation is “to provide for a pro-competitive, de-regulatory national policy framework designed to accelerate rapidly private sector

*deployment of advanced telecommunications and information technologies and services to all Americans by opening all telecommunications markets to competition."*¹⁵

"SEC. 706.ADVANCED TELECOMMUNICATIONS INCENTIVES. (a) IN GENERAL- The Commission and each State commission with regulatory jurisdiction over telecommunications services shall encourage the deployment on a reasonable and timely basis of advanced telecommunications capability to all Americans.

(c) DEFINITIONS - For purposes of this subsection:

*(1) ADVANCED TELECOMMUNICATIONS CAPABILITY- The term 'advanced telecommunications capability' is defined, without regard to any transmission media or technology, as high-speed, switched, broadband telecommunications capability that enables users to originate and receive high-quality voice, data, graphics, and video telecommunications using any technology."*¹⁶

MVNOs Expected to Grow - From CTI:

*According to the Yankee Group, mobile virtual network operators (MVNO) will generate service revenue of \$10.7 billion by 2010 and have a subscriber base of 29 million. The research group predicts large MVNOs will grow and fuel the industry by segmenting the host carriers' target subscriber base and distribution channels."*¹⁷

"The LNPA WG was designated by the FCC as the NANC Oversight Committee for LNP. The LNPA WG is responsible for developing and maintaining the process that is followed by all Service Providers who participate in LNP. A complete description of the operation flows is contained in Inter-Service Provider LNP Operations Flows located on this Web site. These flows have been revised to include wireless carrier operations. The updated flows will be included in the second NANC report on Wireless Wireline Integration due out in the second quarter of 1999.

The LNPA WG is also responsible for defining the requirements for the national Number Portability Administration Center (NPAC) Service Management System (SMS) and how it interfaces to each Service Provider's local LNP system to enable LNP. The NPAC SMS is operated by NeuStar, which serves as the central mediation system and source database for all number portability data. The requirements are contained in the "NPAC SMS

¹⁵ Implementation of Section 402(b)(1)(A), CC Docket No. 96-187, of the Telecommunications Act of 1996, rel. September 6, 1996.

¹⁶ An Act, To promote competition and reduce regulation in order to secure lower prices and higher quality services for American telecommunications consumers and encourage the rapid deployment of new telecommunications technologies. [Italic->] Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, [<-Italic] SECTION 1. SHORT TITLE; REFERENCES. (a) SHORT TITLE- This Act may be cited as the "Telecommunications Act of 1996".

¹⁷ CTIA Newsletter, Source: CNet News, May 10th, 2005

Functional Requirements Specification (FRS)" and the interface standards are contained in the "NPAC SMS Interoperable Interface Specification (IIS)".¹⁸

4.2.1.5 LNP Performance Criteria

The FCC adopted in its original order the following minimum performance criteria. Any long-term number portability method, including call processing scenarios or triggering, must:

- (7) support existing networking services, features, and capabilities;*
- (8) efficiently use numbering resources;*
- (9) not require end users to change their telecommunications numbers;*
- (10) Deleted*
- (11) not result in unreasonable degradation in service quality or network reliability when implemented;*
- (12) not result in any degradation of service quality or network reliability when customers switch carriers;*
- (13) not result in a carrier having a proprietary interest;*
- (14) be able to accommodate location and service portability in the future; and*
- (15) have no significant adverse impact outside the areas where number portability is deployed."¹⁹*

4.2.1.6 NPAC to LSMS Architectural Restrictions

All networks will rely on the NPAC database as the ultimate source of porting data. Synchronization of networks to a single set of routing data is paramount to network operations. Therefore appropriate restrictions must be placed upon how these network elements may interconnect from an architectural perspective.

Specifically, the NPAC shall download relevant porting data required by participating carriers or their agents for the specific subset of network nodes. Consequently, the NPAC system shall be the source of all porting data for all carriers or agents of those carriers, thereby being the sole originator of all downloads."²⁰

NANC Change Order 400

Naming and addressing is an integral part of any communications network. Names are memorable strings of numbers or words which consumers use to make phone calls, send

¹⁸ LNPA WG Charter

¹⁹ North American Numbering Council, Architecture & Administrative Plan for Local Number Portability, Section 6, pg 6

²⁰ North American Numbering Council, Architecture & Administrative Plan for Local Number Portability, Section 7.12, pg 8

emails, or access web pages. Addresses are often lengthy strings of numbers used by networks to identify network elements. Communications networks map names to addresses for the purposes of routing messages and establishing sessions between network elements like telephone switches.

Prior to 1997 when local number portability (LNP) was implemented in the US, a telephone number (TN) was both the name and address for the purposes of routing calls to geographic numbers. Local number portability separated the name from the address. A TN could now have a Location Routing Number (LRN) for an address. The network would perform an LNP query to a network routing database and get the correct routing number for the TN. The call would be routed to the switch identified by the LRN. The TN is the name - the LRN is the address. This allowed the industry to move TNs from one switch to another.

In addition to call routing the industry had to devise a solution for the routing of SS7 messages that enable enhanced functionality like calling name (CNAM) and automatic callback (CLASS). Prior to LNP these services used the NPA-NXX of the TN to map to an SS7 address - a destination point code and subsystem number (DPC/SSN). Once the network had the DPC/SSN it would send a message to the correct SS7 node. Each ported number not only needed the correct LRN for call routing but also the correct DPC/SSN for SS7 routing for enhanced services.

After LNP the industry decided that each ported number would be provisioned with an LRN for call routing and DPC/SSNs for SS7 message routing. The TN is the name - the DPC/SSNs are the addresses. This information would be provisioned through the Number Portability Administration Center (NPAC) to all of the users of the NPAC. Some of these DPC/SSNs, like CNAM and CLASS, are associated with telecommunications services, other DPC/SSNs, like wireless short message service (SMS) and inter-switch voice messaging (ISVM) are associated with information services.

The Internet incorporates an architecture with a separate name and address. The name is a domain name such as fcc.gov, which is mapped to an IP address such as 199.255.987. The IP address is what the Internet uses to identify network devices, including servers that host applications like websites and email. The Internet Protocol (IP) is becoming widely used within communications networks. Some of the services that rely on this infrastructure use TNs for names. Wireless short message service was one of the first to evolve from the SS7 protocol to IP and continue to use a TN for a name.

These services that rely on IP infrastructure and use TNs for naming will fail if the correct address is not used for ported and pooled TNs. There are two ways, from a network perspective, to solve this problem. The network can map the TN directly to an IP address or it can map it to an Internet name, called a Uniform Resource Identifier (URI), which then would map to an IP address.

How to Provision and Synchronize Update for Ported and Pooled TNs?

So the question becomes how to provision and synchronize the update of TN to URI mapping information for ported and pooled numbers into these various Routing DBs. Since the NPAC is a provisioning engine for Routing DBs for ported and pooled TNs, clearly NANC 400 is one method for accomplishing this.

The “Approximation Method”

Currently, the NPAC already plays a role in TN to URI translation. The industry has figured out a way to approximate a URI from NPAC data (the SPID of a ported or pooled TN) for wireless multimedia messaging service (MMS). If Carrier A’s SPID is 1234 the service provider will run a program that creates a mapping from that SPID to a specific URI. For example if the TN 202-555-9876 is ported to Carrier A, the program will create the following mapping:

202-555-9876 to uri:2025559876@carriera.net

The carrier will then load that mapping in their internal routing DB and will query the DB for that TN to get that URI.

This has been effective so far but has a few problems:

- Carrier A is not provisioning this information - other carriers/service providers are approximating it based on a combination of NPAC data and information received from Carrier A. This creates opportunity for errors.
- This may not provide the granularity and flexibility that carriers desire as these services grow and evolve. For instance, this approach will not scale as these network services evolve to a wholesale-retail paradigm – Many VoIP service providers use LEC services from wholesalers. The VoIP service provider maintains an IP network while the wholesaler provides PSTN interconnection. Approximating a URI based on the SPID of the wholesaler may not identify the correct network element, as the SPID to URI data relationship is no longer necessarily one-to-one but now can be one-to-many. Many wireless carriers are implementing a wholesale-retail model to serve Mobile Virtual Network Operators (MVNO). Approximating the URI has the same drawback for this model.
- Troubleshooting may be difficult – Creating the record for the LNP DB is a multiple stage process – get the SPID, map it to a URI, load it in the LNP DB – making troubleshooting more difficult. Also the approximation method is often outsourced and not integrated into carrier’s LNP infrastructure.

4.2.1.7 Public ENUM

Public ENUM is an industry standard created by the Internet Engineering Task Force (IETF) that provides a framework for mapping TNs to URIs. Could this be used to map TNs to URIs for ported and pooled TNs?

Public ENUM is intended to be a global discovery service that would allow users to discover routing information from other users. It is not intended as a provisioning engine for Private ENUM DBs (or more generically "Internal Routing databases"). But if we assume that Public ENUM is deployed in the future in such a way that telecommunications carriers rely on it for routing VoIP calls, then it would be seamlessly integrated into a service provider's routing architecture.

Public ENUM was initially conceived as a consumer service similar to Internet domain names. As Public ENUM evolves however there is a movement to modify it so that service providers could have control of a set of these records. This concept is called Infrastructure ENUM.

Within the US there are four regulatory bodies involved in Public ENUM; the Federal Communications Commission (FCC), the National Telecommunications and Information Administration (NTIA), the State Department and the Federal Trade Commission (FTC). Each of these has its own concerns and have been monitoring Public ENUM as it is progressing. However, the industry has not yet sought approval for the implementation of Public ENUM. The industry has to continue the process of resolving issues before it can seek approval from the regulators.

Public ENUM issues are, of course, resolvable but the fact is that they are not resolved right now. The process of defining and refining ENUM will most likely be an iterative one with the regulators accepting some solutions and rejecting others. It is unknown what the ripple effect will be from having to come up with any alternate solution. It is also unknown if the resolutions of these issues will be acceptable to the communications service provider community.

4.2.1.8 Private ENUM

The GSMA International Roaming Expert Group's ENUM Ad Hoc and GSMNA Addressing Task Force have developed recommendations for private Operator ENUM solutions that would provide portability corrected address resolution for MMS and IMS-based services. Number Portability correction has been identified as necessary for accurate delivery of MMS and IMS services to international roamers. This is a problem that exists today for MMS and needs a solution. As part of the GSM NA work effort, NeuStar proposed provisioning URIs in the NPAC, which ultimately led to the NANC 400 change order. Several carriers and vendors participate in these committees, and there were no other contributions or objections to the NeuStar contribution. T-Mobile supported the contribution as a possible "option" for provisioning URIs for private Operator ENUM.

Currently, it is uncertain exactly how private Operator ENUM, as recommended by the GSM NA based upon Internet Engineering Task Force (IETF) and 3GPP standards, or Public ENUM or Public Carrier ENUM, based upon the IETF and CC1 ENUM LLC Technical Advisory Group, will evolve. Nonetheless, the more options available for address resolution, the more likely there will be efficient and accurate delivery of services.

What does it all mean?

In summary ENUM and NANC 400 have little technological overlap at this time and in fact they are complementary. Furthermore there are many outstanding issues with regard to ENUM deployment that will effect how and if carriers choose to use it as a tool for resolving TNs/porting TNs to URI mapping.

To simply assume that issues such as those resolved by NANC 400 (TN to URI provisioning and update synchronization for ported and pooled TNs) will be efficiently and cost effectively resolved somewhere down the road could prove to be rather short sighted. NANC 400 can be complementary and likely beneficial to any routing solution that eventually entrenches itself (this data will always need to be provisioned in some manner). Leveraging NPAC for this purpose provides a non-discriminatory, trusted, accurate, timely and proven solution using existing industry infrastructure. The solution that is ultimately used for provisioning and synchronization will need to be all of those things.

4.2.1.9 Policy Perspective

NANC Change Order 400 is within the Scope of the NPAC and Consistent with Existing Fields

The First LNP Order and the FCC's regulations mandate that the NPAC contain the information necessary for number portability *"without impairment of quality, reliability, or convenience" and that it also be used for "billing, routing, and/or rating" of calls to ported numbers. Thus, it must contain far more information than is necessary for routing. Moreover, the Change Order facilitates routing and billing, which is well within the scope of the NPAC, even under the narrowest interpretation of the FCC's orders and regulations. The FCC also stated that "NANC should determine the specific information necessary [in the NPAC] to provide number portability."*²¹

The Change Order would facilitate the efficient routing and billing of calls to numbers that have been pooled or ported from one carrier to another, some of which may be used

²¹ *Telephone Number Portability*, First Report and Order and Further Notice of Proposed Rulemaking, 11 FCC Rcd 8352, 8403 (1997).

for VoIP or IP services. Facilitating the routing and billing of ported numbers is well within the LNPA's role, as stated in the FCC orders and rules discussed above.

The technology used to deliver services to ported numbers is irrelevant to NANC's determination of what information is necessary to provide number portability for those numbers. Records in the NPAC already contain routing information for numbers used for information services such as voice mail and text messaging for cell phones. This demonstrates the fact that the designation of a service as an information service is not relevant to the decision to provide routing information in the NPAC for that service.

The Change Order does not make possible the porting of numbers by non-carriers or to non-carriers. To the contrary, the Change Order would not expand the class of existing service providers that access the NPAC for the porting of numbers or any other purpose, nor would it expand the universe of numbers in the NPAC.

The new data fields do not impose any new regulatory obligation on NPAC users. The Change Order would implement existing LNP policy -- by facilitating the routing and billing of calls to ported numbers -- rather than aiding any new or modified numbering-related policy. Implementation of the Change Order would not require any carrier or other entity to do, or refrain from doing, anything that it is not already doing. NANC 400 simply would facilitate routing of calls to ported and pooled numbers.

It also would not provide VoIP providers or users with any additional portability. Numbers would still be ported by and to the same service providers that port numbers now. Implementation of the Change Order therefore would not impose any obligations requiring a rulemaking or other policy proceeding.

NANC 400 Will Not Affect The FCC's Consideration Of Whether IP-Enabled Services Should Be Subject To FCC Rules Regarding Numbering Resources

Adoption of NANC 400 cannot and will not affect, interfere with, or prejudice the outcome of the *IP NPRM*. The Change Order adds certain fields to the NPAC that would facilitate efficient routing and billing of calls to ported and pooled telephone numbers, some of which may be used for VoIP or IP-enabled services. Neither the proposed data fields nor the routing facilitated thereby are related to the policy considerations that the FCC is reviewing.

Adoption of NANC 400 cannot and will not affect, interfere with, or prejudice the FCC's deliberations in that proceeding because the Change Order does not relate to: (1) whether the regulatory classification of IP-enabled and/or VoIP services should be dependant on the use of traditional TNs; (2) whether the FCC should impose number portability obligations on IP-enabled services; or (3) whether the FCC should take regulatory action with regard to numbering resources to facilitate or at least not impede the growth of IP-enabled services.

- The *IP NPRM* questions whether the FCC should regulate certain categories of IP-enabled services, and if so, whether those categories should be determined by

whether the IP-enabled services “utilize traditional NANPA-administered telephone numbers.” In addition to providing number portability, the NPAC is used for the routing of calls to ported numbers (some of which may be used for VoIP of IP-enabled services) and related rating and billing. The Change Order would simply make these existing tasks efficient. The data fields that will be added to the NPAC pursuant to NANC 400 do not have any role in whether a provider of IP-enabled service uses TNs. Rather, providers currently can obtain TNs from telecommunications carriers or directly from the NANPA or PA with the permission of the FCC, as in the *SBCIS* waiver proceeding. The porting of TNs that may be used by providers of IP-enabled services is irrelevant to the classification of those services. Accordingly, implementing NANC 400 would not affect whether and how the FCC classifies IP-enabled service for regulatory purposes.

- The NPAC, currently or after implementation of NANC 400, does not and would not impose portability obligations on VoIP or other IP service providers. NANC 400 does not accommodate porting of VoIP providers. The NPAC already allows for the routing of calls to ported numbers, whether those numbers are IP-enabled or not. The Change Order does not expand this functionality or create a new category of service providers with access to the NPAC.
- The IP NPRM asks “whether any action relating to numbering resources is desirable to facilitate or at least not impede the growth of IP-enabled services, while at the same time continuing to maximize the use and life of numbering resources in the North American Numbering Plan.” The additional data fields proposed in NANC 400 do not have any relationship to this issue. They do not relate to or authorize the use of numbering resources by particular types of service providers. They would not affect the use and life of numbering resources.

Adoption of the NANC 400 Will Not Interfere with ENUM

The ways in which the data added by the Change Order will be used are complementary to ENUM. There is no conflict between selecting a Tier 1 ENUM database provider, as supported by the government, and adding the proposed data fields to the NPAC. To the extent that it has been alleged that NANC 400 is an alternative to ENUM, it should be noted that the government has indicated that it supports alternatives to ENUM. The August 13, 2003 letter states that an earlier February 12, 2003 government letter from the NTIA to the Department of State sets forth “*baseline specification[s] for implementation of ENUM in the United States.*”²² One of the principles to guide domestic implementation of ENUM set forth in that letter is to:

²² Letter from Ambassador David A. Gross, U.S. Coordinator for International Communications and Information Policy, Department of State, Chairman Michael K. Powell, Federal Communications Commission, and Nancy J. Victory, Assistant Secretary for Communications and Information, Department of Commerce to Chairman Gary W. Richenaker, ENUM Forum (Aug. 13, 2003).

Preserve opportunity for alternative deployments: The implementation of ENUM within the United States must not preclude alternative deployments of ENUM or other solutions that may provide competitive alternatives to ENUM.

Another principle states:

*"Allow for interoperability: In order to support competition and the emergence of alternative technologies and networks, the implementation of ENUM within the United States should accommodate alternative deployments' interconnection with the ENUM tree."*²³

The quoted specifications underscore that the government letters regarding selection of a public ENUM cannot be read to suggest that the NPAC, which includes only ported and pooled numbers, should limit its rating, routing and billing functionality for pooled and ported numbers that happen to be used for VoIP or IP services.

4.2.1.10 Support Recommendation

NANC Change Order 400 should be included in NPAC Release 3.3 in an **inactive mode**. Carriers need more options available for address resolution of Third Generation mobile services, including Multi-Media Services (MMS) and Session Initiation Protocol (SIP) services. Also, NANC Change Order 400 provides this capability in a timely manner at no expense to the industry or any carrier, if not utilized. This position is based upon the understanding that, if this capability is implemented in the NPAC, the SPID and URI data would be available to any carrier or vendor on a non-discriminatory basis to provision number portability and portability correction for ENUM, SIP or VoIP services. s

Approval of NANC 400 has followed the NPAC SMS Change Order Process and is within the scope of the NPAC. Carriers need more options available for address resolution and routing of existing and future services. Taking Step 1 and approving NANC 400 would provide that functionality in a timely manner. The NANC 400 data fields and information would be available to any carrier or vendor on a non-discriminatory basis.

To date, no policy or regulatory issues have been identified that would justify changing the NPAC SMS Change Order Management Process. Thus, the NANC and NAPM LLC should be able to proceed with Step 1. Step 2 should be evaluated at a later time, when there is a business need to activate and implement this provisioning option.

²³ Letter from Nancy J. Victory, Assistant Secretary for Communications and Information, Department of Commerce to Ambassador David A. Gross, U.S. Coordinator for International Communications and Information Policy, Department of State (February 12, 2003).

4.2.2 Opposition

This section summarizes the concerns of the parties that oppose implementation of NANC Change Order 400.

4.2.2.1 Regulatory Issues – Scope of the NPAC

The capabilities proposed in Change Order 400 seem outside the scope of the NPAC.

The NPAC is a “statutory” capability explicitly created by the FCC to apply to telecommunication carriers in the provisioning of telecommunication services pursuant to the Communications Act of 1996. Under the Act, the Commission prescribes the requirements that *telecommunication carriers* must meet to provide “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.”²⁴ [Emphasis added.] The “statutory” status is especially significant in light of recent U.S. Court of Appeals holding in *USTA v. FCC* where the court underscored that Commission may not subdelegate its decision-making of statutory requirements to outside bodies absent affirmative evidence of authority.”²⁵

The FCC’s implementing regulations explicitly delimit the scope of the NPAC in terms of “routing telephone calls” for telecommunications carriers and limits its use for other purposes:

(f) The information contained in the regional databases shall be limited to the information necessary to route telephone calls to the appropriate telecommunications carriers. The NANC shall determine what specific information is necessary.

(i) Individual carriers may download information necessary to provide number portability from the regional databases into their own downstream databases. Individual carriers may mix information needed to provide other services or functions with the information downloaded from the regional databases at their own downstream databases. Carriers may not withhold any information necessary to provide number portability from the regional databases on the grounds that such data has been combined with other information in its downstream database.”²⁶

No additional information beyond that currently in the NPAC is needed to complete telephone calls to ported numbers through the PSTN. At the April 14, 2005 joint meeting of the Future of Numbering and LNPA Working Groups there was agreement of all parties that placement of Internet URIs (Universal Resource Identifiers) in the NPAC (Number Portability Administration Center) was not necessary to support PSTN (Public

²⁴ Sec. 3, Telecommunications Act of 1996, Public L. No. 104-104, 110 Stat. 56, Codified at 47 U.S.C. §§ 151 *et. seq.* (1996 Act).

²⁵ See U.S. Telecom Assoc’ v. FCC, No. 00-1012 (D.C. Cir., 2 Mar 2004) at 14.

²⁶ 47 C.F.R. § 52.25. See also, Telephone Number Portability, First Report and Order and Further Notice of Proposed Rulemaking, 11 FCC Rcd 8352 (1996); Second Report and Order, 12 FCC Rcd 12,281 (1997),

Switched Telephone Network) call completion and that changes to PSTN elements (switches, Service Control Points, and Signal Transfer Points) were not contemplated. Instead, the proposal to add URIs to the NPAC is to support diverse IP-enabled services beyond call completion, including MultiMedia Messaging (MMS, e.g., exchange of camera phone pictures via email), Push-to-Talk (PTT, using VoIP), Presence (as in Instant Messaging "buddy lists"), and VoIP interconnection (i.e. completing calls using IP-based networks without traversing the PSTN.)

These proposed services would not seem to constitute the routing of telephone calls as required by the Commission and are thus not permitted in the NPAC. Furthermore, these services appear to be information services rather than telecommunication services under the Communications Act, and as implemented by the Commission.²⁷ Using these definitions, number portability currently appears limited to telecommunications services, which do not change in form or content that which is being sent, whereas information services do have such change in form or content. If the FCC based its number portability orders upon these definitions, it may be concluded that number portability as ordered by this commission did not contemplate the commingling of LNP and IP-to-IP routing information, and thus did not authorize it. If this is so, the NANC may be embarking upon a groundbreaking venture to allow IP-to-IP routing information to reside in this "telecommunications services" database.

Parties favoring the implementation of Change Order 400 have suggested the services should be considered within scope simply because they involve telephone numbers. However, the FCC CFR citation above suggests that there may be some services which are outside the scope of the NPAC. It is our belief that the services in question are information services, and therefore, are outside the permitted NPAC functionality. At a minimum the FCC must make a determination as to the classification of these services in order for them to be added to the NPAC in light of the rule.

Proponents of Change Order 400 also have argued that the FCC rules were not meant to exclude new services from use of the NPAC and that, indeed, data to support additional services, such as wireless Short Message Service (SMS), as well other functions not directly in support of call completion (e.g., LIDB – Line Information DataBase for

²⁷The distinction between the terms "telecommunication services" versus "information services" was especially significant within the context of the same 1996 Act that created the number portability obligation :

(46) NUMBER PORTABILITY - 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.

(51) TELECOMMUNICATIONS SERVICE - The term 'telecommunications service' means the offering of telecommunications for a fee directly to the public, or to such classes of users as to be effectively available directly to the public, regardless of the facilities used.'

(48) TELECOMMUNICATIONS- The term 'telecommunications' means the transmission, between or among points specified by the user, of information of the user's choosing, without change in the form or content of the information as sent and received.

(41) INFORMATION SERVICE- The term 'information service' means the offering of a capability for generating, acquiring, storing, transforming, processing, retrieving, utilizing, or making available information via telecommunications, and includes electronic publishing, but does not include any use of any such capability for the management, control, or operation of a telecommunications system or the management of a telecommunications service.

alternate billing and CNAM – for Calling Name delivery) have been added. We would note that the data added for all of these services specify PSTN points of interface, i.e., SS7 (Signalling System 7) Destination Point Codes and Subsystem Numbers, while Change Order 400 proposes the inclusion of Internet addresses representing a wholly separate technology and network. Change Order 400 thus represents a significant extension of the NPAC beyond the PSTN interconnection regime that the Commission regulates in detail and into a completely new realm, IP interconnection that the Commission has not regulated.

4.2.2.2 The proposed work raises significant IP-enabled service policy considerations

The Commission's omnibus IP-enabled Services NPRM in Docket No. 04-36 is currently considering the use of NANP numbers and related regulatory treatment²⁸. The NPRM specifically seeks comment on number portability obligations – an issue recently underscored in the IP SBC Order.²⁹ Comment is also sought on whether any action relating to numbering resources is desirable to facilitate or at least not impede the growth of IP-enabled services, while at the same time continuing to maximize the use and life of numbering resources in the North American Numbering Plan. Clearly this is an area that is under regulatory consideration and a change in NPAC to accommodate porting for VoIP providers outside the PSTN should be part of that process and might better be deferred until that larger policy framework is set by the Commission, rather than predetermined outside of that process by a sub-committee of a Federal Advisory Committee, which can only provide recommendations to the federal agency that chartered it.

Addition of URI data in NPAC significantly impacts and prejudices Commission decisions with respect to the use of telephone numbers – which are 1996 Act Network Elements - in conjunction with IP-enabled services, with broad ramifications on the numerous industries for years to come. As the D.C. Circuit underscored in the USTA Decision – the Commission must itself make all substantive decisions concerning the use of telephone numbers. As noted at the FCC's Future of Numbering Symposium, various industries and regulators may want to consider a transition to an alternate interconnection regime with the ascendancy of IP networks as the means of carrying voice traffic.

A substantial amount of global industry technical collaborative and standards making activity over the past five years has converged on the use of other solutions for telephone number to URI resolution, not the NPAC.³⁰ The implementations also affect U.S.

²⁸ See para 37, *Notice of Proposed Rulemaking* in the matter of IP-enabled services, Docket No. 04-36, FCC 04-28, 10 March 2004

²⁹ See para. 11, *Order* in the matter of Administration of the North American Numbering Plan, CC Docket No. 99-200, FCC 05-20, 1 Feb 2005.

³⁰ See, e.g., The E.164 to Uniform Resource Identifiers (URI) Dynamic Delegation Discovery System (DDDS) Application (ENUM), IETF RFC 3761, Apr 2004; International Telecommunication Union – Telecommunications Standards Sector, Report of the Study Group 2 Meeting, Geneva, 16-24 February 2005. Doc. COM 2- RI.

obligations under international treaty instruments.³¹ By adding carrier URI data to the NPAC for use by carriers via LNP systems and architectures, the NANC would be prematurely choosing NPAC as the solution to this important issue, and would be doing so outside of the FCC IP proceeding. In addition, by adopting changes in support of this issue to a system that is designed to support porting across PSTN networks, it does not permit design of a system specifically meant to support carrier to carrier IP routing, losing any benefits that could be gained from next generation networks and incorporating any issues that are associated with using the LNP systems including issues endemic to legacy telephone networks.

4.2.2.3 Technical Approach

The solution embodied in NANC 400 is not the direction the industry is pursuing for routing and addressing across an IP Network-to-Network Interface (NNI) and for mapping a telephone number to a URI.

Both the ATIS (Alliance for Telecommunications Solutions) PTSC (Packet Technologies and Systems Committee) and the Country Code 1 ENUM LLC indicated in their liaison responses to the LNPA (see Section 6.0) that, in addressing the problem of routing and addressing across an IP NNI, they were focusing on ENUM and did not see a need for URIs in the NPAC. Since the issue was referred to the Future of Numbering Working Group in the context of understanding how Change Order 400 fit into the industry's plans for evolution, we believe that the FoN should not support an approach which is at odds with industry direction. The Internet Engineering Task Force (IETF) has not yet responded to the LNPA WG, also suggesting a decision to move forward with NANC 400 is premature.

The NANC 400 suggested solution does not fully address the stated needs.

As had been noted by even the proponents of NANC 400, the change order only potentially addresses pooled or ported TNs. Further, since when turned on the capabilities remain optional for carriers, NANC 400 addresses only ported or pooled TNs of those SPs that choose to populate the data. As the related NANC Change Order 401 demonstrates, for many SPs to use the data, a significant amount of work and cost would need to be undertaken for those SPs to exercise this option. In addition, this is not a short-term answer to any problem that might exist since it will require local system development, NPAC development and is at first added in a turned off state and remains optional in a turned on state. Its optional nature makes it in essence similar to the many private ENUM solutions currently available but in this solution the cost is potentially spread across the entire telecommunications industry rather than just the carriers who choose to pay NeuStar for this solution.

³¹ See International Numbering Resources, <<http://www.itu.int/ITU-T/inr/index.html>>.

Other methods exist and are successfully being used to solve the needs Change Order 400 is intended to address.

As noted, NANC 400 is promoted to address several needs. MMS routing is one of those frequently described as most pressing. For example, one provider has noted that it has difficulty routing for international roamers MMS messages to ported customers. However, at least one wireless service provider (Cingular) has indicated that it already can direct MMS messages to ported numbers without recourse to changes in the NPAC. As noted below, private ENUM solutions exist to address some of these problems, including a private solution offered by the current NPAC vendor and change order originator. While addition of this data to the NPAC may make it more efficient for some SPs to route messages for certain customers, most efficient or least cost routing, especially that which benefits some SPs, but is not needed by all or even most SPs, is not within the scope of the NPAC and is inappropriate from a policy perspective. It should also be clarified that NANC 400 is not required to support VoIP call completion. VoIP calls are passed successfully over the PSTN today including between VoIP providers.

The full solution for the needs NANC 400 attempts to address has not been defined

Change Order 400 addresses routing only for ported and pooled numbers, but MMS routing is also required for non-ported/pooled numbers. However, procedures for the non-ported case have not been defined by the telecommunications industry. In the absence of such definition we remain concerned that some providers will be led to intraservice provider port numbers simply to be able to make use of the NPAC for MMS and other URI-based routing. The costs of these additional transactions, which would not be the result of any customer-required ports, would increase the costs for all users of the NPAC.

Our concern is exacerbated by the statement that Change Order 400 is to address Mobile Virtual Network Operator (MVNO) situations, on the grounds that MMS URI cannot be determined by SPID (Service Provider ID). If additional NPAC data is needed to deal with cases where a resold ported number requires different treatment than a similarly ported number not resold by the ported-to carrier, then it is logical to ask how service providers would obtain different routing data for a resold number within a non-ported number block shared with the underlying service provider – except perhaps by porting it. Further, it would seem that with the acceptance of Change Order 399 to allow a specification of a separate reseller SPID, the problem of determining URI based on SPID for MVNO customers would be resolved.

It is also a matter of concern that the details of downstream use of the new data to be provided by the NPAC have not been detailed. In previous work on number portability, definition of the data required in call processing has preceded definition of NPAC capabilities.

4.2.2.4 Costs

Change Order 400 may drive costs to non-users.

Although the current proposal is to put Change Order 400 into the NPAC but not activate it, we remain concerned about costs that may be driven to parties that have no need for it. We believe that the intention is, in fact, to eventually turn it on. Thus, potential impacts once it is turned on need to be considered now, to avoid a slippery slope argument along the lines of "It's there; let's use it." Furthermore, there is in the final analysis no such thing as a free lunch. There will be costs associated with putting Change Order 400 into the NPAC, and the NPAC contractor, as a commercial institution, will seek to recover them.

We seek to understand whether:

1. In the inactive state, the presence of the change order will still increase testing costs for the release that are allocated to all users.
2. If, when activated, testing costs will be distributed to parties that do not seek to make use of the change order.

With Release 2 of the NPAC, in preparation for wireless LNP implementation, an additional set of fields (DPC, SSN) was added to support the proper routing of Wireless Short Message Service text messaging, a wireless feature also impacted by LNP. However this data is not in use today for intercarrier text messaging. The data currently being used for delivery of SMS messages is data found in the NPAC (SPID) which was not created for a specific service. Forward looking investigations could have prevented the incorporation of these additional fields into the NPAC which do carry some overhead costs just as the new URI fields being proposed will carry overhead costs even if the service is never used.

Also, as noted above, we are concerned that use of Change Order 400 for MVNO/resale customers inevitably will lead to additional transactions for which all users will be forced to pay.

4.2.2.5 Competitive Concerns

For any sole source industry solution, multiple vendors should be allowed to bid on an industry proposed solution for storing URI information related to telephone numbers.

- a. Because there is only one vendor associated with the contract for the provisioning of the number portability database, Change Order 400 is the equivalent of predetermining a specific vendor solution for telephone number to URI mapping.
- b. Allowing multiple vendors to bid on an industry proposed solution would create a competitive bidding process that could result in lower costs for the functionality to the entire industry.

We are concerned that Change Order 400 will predetermine a vendor to provide these additional services.

We are also concerned about the impact on the competitive private ENUM marketplace. There are several products and service offering from many companies that show private carrier to carrier exchange of URI data (i.e., private ENUM) is a competitive marketplace. The FCC has expressed in multiple arenas a preference for competition when feasible, and Congress has also said that when possible Internet communication should remain unregulated. Inclusion of the URIs in NPAC effectively adopts a single regulated solution that all SPs are required to use for other regulated purposes and potentially eliminates a competitive marketplace through a process that does not include all affected parties.

The Number Portability Orders from the FCC do not require the population of URI information in the NPAC, and even the proponents of the change order note that the implementation of it is optional. The NANC and the FCC should assess any implications for Intellectual Property Rights associated with work beyond the scope of the Number Portability Orders given that the administration of the NPAC may be awarded to a different vendor in the future.

4.2.2.6 Opposition Conclusion

In summary, we oppose the inclusion of Change Order 400 in the NPAC for the following reasons:

1. It appears to expand NPAC functionality beyond what is permitted by both Congressional statutory and the FCC regulatory provisions,
2. The process concerning the expansion of this functionality must occur in the only domestic body with the authority to consider the matter – the FCC
3. It is ineffective as a short term solution.
4. It does not represent the general approach being developed by the global and domestic standards bodies for the industry to address Network-to-Network interconnection of IP-enabled services.
5. Other solutions are already in use to address stated needs.
6. It will drive costs even to those users who do not make use of the added functionality.
7. It will produce anti-competitive effects, and indeed, substantially more competitive solutions are available.

4.2.2.7 Opposition Recommendation

In response to the offer made by the DFO in the May 17th NANC meeting the parties opposing the implementation of Change Order 400 request that the Commission address the following question:

1. Are the capabilities proposed in Change Order 400 within the legal scope of the Number Portability Administration Center (NPAC) as defined by statute and FCC orders?

The FCC's implementing regulations explicitly delimit the scope of the NPAC in terms of "routing telephone calls" for telecommunications carriers and limits its use for other purposes:

(f) The information contained in the regional databases shall be limited to the information necessary to route telephone calls to the appropriate telecommunications carriers. The NANC shall determine what specific information is necessary.

(i) Individual carriers may download information necessary to provide number portability from the regional databases into their own downstream databases. Individual carriers may mix information needed to provide other services or functions with the information downloaded from the regional databases at their own downstream databases. Carriers may not withhold any information necessary to provide number portability from the regional databases on the grounds that such data has been combined with other information in its downstream database.³²

No additional information beyond that currently in the NPAC is needed to complete telephone calls to ported numbers through the Public Switched Telephone Network (PSTN). There have been no claims by any party in the Future of Numbering (FoN) Working Group meetings that "routing of telephone calls" was at issue; rather, the services for which support was requested are beyond telephone calls and outside the PSTN. At the April 14, 2005 joint meeting of the Future of Numbering and LNPA Working Groups there was agreement of all parties that placement of Internet URIs (Universal Resource Identifiers) in the NPAC (Number Portability Administration Center) was not necessary to support PSTN (Public Switched Telephone Network) call completion and that changes to PSTN elements (switches, Service Control Points, and Signal Transfer Points) were not contemplated.

Instead, the proposal to add URIs to the NPAC is to support diverse IP-enabled services beyond call completion, including MultiMedia Messaging (MMS, e.g., exchange of camera phone pictures via email), Push-to-Talk (PTT, using VoIP), Presence (as in Instant Messaging "buddy lists"), and VoIP interconnection (i.e. completing calls using IP-based networks without traversing the PSTN.) Note that the NPAC is a creature of the

³²47 C.F.R. § 52.25. See also, Telephone Number Portability, First Report and Order and Further Notice of Proposed Rulemaking, 11 FCC Rcd 8352 (1996); Second Report and Order, 12 FCC Rcd 12,281 (1997),

number portability requirements of the Telecommunications Act of 1996 whose scope would thus appear limited to Telecommunications as opposed to Information services.³³

Parties favoring the implementation of Change Order 400 have suggested the services should be considered within scope simply because they involve telephone numbers.

Although additional data have been added to the NPAC subsequent to its inception (e.g., data to support wireless Short Message Service (SMS), the data added specify PSTN points of interface, i.e., SS7 (Signalling System 7) Destination Point Codes and Subsystem Numbers, while Change Order 400 proposes the inclusion of Internet addresses representing a wholly separate technology and network outside of the PSTN.³⁴ In addition, previous NPAC changes have been related to FCC orders or ensuring the continued functioning of existing services.³⁵ Finally, unlike the previous additions, those

³³The distinction between the terms "telecommunication services" versus "information services" was especially significant within the context of the same 1996 Act that created the number portability obligation :

(46) NUMBER PORTABILITY - 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.

(51) TELECOMMUNICATIONS SERVICE - The term 'telecommunications service' means the offering of telecommunications for a fee directly to the public, or to such classes of users as to be effectively available directly to the public, regardless of the facilities used.'

(48) TELECOMMUNICATIONS- The term 'telecommunications' means the transmission, between or among points specified by the user, of information of the user's choosing, without change in the form or content of the information as sent and received.

(41) INFORMATION SERVICE- The term 'information service' means the offering of a capability for generating, acquiring, storing, transforming, processing, retrieving, utilizing, or making available information via telecommunications, and includes electronic publishing, but does not include any use of any such capability for the management, control, or operation of a telecommunications system or the management of a telecommunications service.

³⁴Universal Resource Identifiers (URIs) are defined in the Internet Engineering Task Force RFC 3986 (<http://www.ietf.org/rfc/rfc3986.txt?number=3986>): "A Uniform Resource Identifier (URI) provides a simple and extensible means for identifying a resource. This specification of URI syntax and semantics is derived from concepts introduced by the World Wide Web global information initiative, whose use of these identifiers dates from 1990 and is described in "Universal Resource Identifiers in WWW" [RFC1630]. The syntax is designed to meet the recommendations laid out in "Functional Recommendations for InternetResource Locators" [RFC1736] and "Functional Requirements for Uniform Resource Names" [RFC1737]."

³⁵Because the FCC ordered the implementation of LNP to allow existing services to continue unhindered ("... Any long-term number portability method, including call processing scenarios or triggering, must... support existing network services, features, and capabilities"First Report and Order and Further Notice of Proposed Rulemaking, CC-Docket 95-115 Telephone Number Portability, June 27, 1996; pp.48.), the architects of the Number Portability Administration Center (NPAC) had to design Release 1 of the NPAC to not only to contain ported numbers and their associated LRNs for call routing, but to also contain non-call-routing-related information necessary to properly route messages related to services and functionality also "broken" by LNP. These services were CLASS, LIDB,

proposed in Change Order 400, are not required to fix any services that are broken by LNP since LNP does not "break" these services.

Section 5.0 Conclusion and Recommendation

The FoN reviewed all the issues and contributions that have been identified by participants and has reached the following conclusions:

The two Change Orders (399 and 400) should be addressed separately when reaching a conclusion and making a recommendation.

- Change Order 399
 - The FoN reached consensus in its May 6, 2005 meeting to recommend to the NANC that Change Order 399 be implemented as presented by the LNPA WG. Telcordia asked that its position in opposition be noted.
- Change Order 400
 - As of May 11, 2005, the FoN was unable to reach consensus as to any conclusions or recommendations for the treatment of Change Order 400.

Calling Name (CNAM), and Inter-Switch Voice Messaging Message Waiting Indication (ISVM MWI).

In addition to call routing the industry had to devise a solution for the routing of SS7 messages that enable the above functionalities. Without SS7, those services would be broken if, for example, a TN with Caller ID functionality attached was ported. To ignore SS7 routing in the NPAC would have violated a clear mandate of the FCC.

Release 2 of the NPAC, in preparation for wireless LNP implementation, also was required to support existing wireless features. As such, an additional set of fields were added to support the proper routing of Wireless Short Message Service text messaging, a wireless feature also impacted by LNP in the same way CLASS, LIDB, CNAM, and ISVM MWI were affected. In fact, a different implementation of wireless SMS, that does not rely on SS7, was implemented by wireless carriers.

Steve	Addicks	NeuStar
Phyllis	Anderson	SBC Labs
Jean	Anthony	Evolving Systems
Bob	Atkinson	NANC Chair
Cat	Baird	SureWest Comm.
Mike	Balch	Iowa PSC
Craig	Bartell	Sprint
Natalie	Billingsley	NASUCA California
Doug	Birdwise	Bell Canada
Jerome	Candelaria	NCTA
Jay	Carpenter	AFTA
Jim	Castagna	Verizon
Jeffrey	Citron	Vonage
David	Cochran	BellSouth
Pamela	Connell	NeuStar
Andrea	Cooper	Verizon Wireless
Cheryl	Cox	
Carrie	Cox	NCTA
Mark	Dallen	NeuStar
Bob	Delaney	Tekelec
Ron	DelSesto	Vonage
Jena M.	Downs	Verizon
Joanne	Edelman	Verizon Wireless
Jean-Paul	Emard	ATIS
Rosemary	Emmer	Nextel
Lolita	Forbes	Verizon Wireless
Dave	Garner	Qwest
Don	Gray	Nebraska PSC
George	Guerra	SBC
Michell	Gwaltney	Cingular
Jeff	Hartsel	
Ken	Havens	Sprint
Suzanne	Howard	Cox
Dawn	Howland	XO
Dena	Hunter	Level 3
Linda	Hymans	NeuStar
John	Jefferson	SBC
Rick	Jones	NENA
Paula	Jordan	T-Mobile
Christine	Kelly	New York PSC
Tom	Kershaw	Verisign
Dave	Kitchen	New York PSC
Hoke	Knox	Sprint
Paul F.	La Gattuta	NeuStar

Maggie	Lee	Versign
Jason	Lee	MCI
Kecia B.	Lewis	MCI
Christopher	Littlewood	Level 3
Louis	Mamakos	Vonage
John	Manning	NANPA
Lori	McGarry	CTIA
Tom	McGarry	NeuStar
Kimberly	Miller	NeuStar
Anna	Müller	T-Mobile
Karen	Mulberry	MCI
Chris	Murray	Vonage
Robert	Myers	ONSTAR
John	Nakamura	NeuStar
Julie	Neumann	Cingular
Adam	Newman	Telcordia
Karen	Norcross	Michigan PSC
Beth	O'Donnell	Cox Communications
Susan	Ortega	Nextel
Julie	Peterson	SBC
Penn	Pfautz	AT&T
Carrington	Phillip	Cox
Jason	Powell	Centennial Wireless
Amy	Putnam	NeuStar
Charles	Pyott	ATIS
Frank	Reed	T-Mobile
Mary	Retka	Qwest
Tony	Rutkowski	Versign
Gary	Sacra	Verizon
Bob	Schaffer	MCI
Shannon	Seigny	NeuStar
Bill	Shaunessy	BellSouth
Elliott	Smith	Commissioner Iowa
Eric	Smith	SBC
Dana	Smith	Verizon Wireless
Tom	Soroka	USTA
Brent	Struthers	NeuStar
Doug	Sullivan	Verizon
Sue	Tiffany	Sprint
Deborah	Tucker	Verizon Wireless
Mike	Whaley	Qwest
Wendy	Wheller	AllTell
Mark	Lancaster	AT&T
Yun	Lee	Verizon

Draft Draft Draft Draft Draft

The full text of the Change Order can be found at <http://www.npac.com/> under LNPA Working Group Documents - CMAS Reports. The following document has been abbreviated for this report.

NOTE: The attachments to the FoNWG report can be found at www.nanc-chair.org/docs/documents8 under the July 19, 2005 NANC Meeting

Karen N. Mulberry
Chairman, CCI ENUM LLC
c/o MCI Communications
Office: +1.972.729.7914
Wireless: +1.972.896.8686
Fax: +1.425.963.5445
Pager: +1.800.664.2965
Email: karen.mulberry@mci.com

Draft Draft Draft Draft Draft

**ATTACHMENT D:
NANC February 22, 2008 Meeting Transcript:
Discussion of Treatment of Change Order 400**

IMPLEMENTATION OF FCC NUMBER PORTABILITY ORDER

MR. KOUTSKY: This isn't really an agenda item. It kind of came up after the agenda -- it was sent to me by the Commission in terms of NANC recommendation 400 and I think that was a recommendation that came from the L&P working group that was passed to the FCC.

The FCC sent us a letter which you all have been saying that to the extent that industry discussions were being held in abeyance based on FCC non-action of that that they were essentially un-abeyance would be a way of saying it.

(LAUGHTER)

The letter speaks for itself. I don't want to characterize the letter one way or the other. You all have it. But I just wanted to ask Gary because we had a brief discussion about it in terms of next steps with regard to that recommendation, so if you could go over that really quickly so everyone knows.

MR. SACRA: Certainly, thank you. I guess my view on the abeyance being listed is that the change order in my view is now to be treated no different than any other open change order that we have in the working group. We do have a number of outstanding change orders that are kind of in the hopper. They're in various stages of being developed, technical requirements being discussed. In some cases they've probably been shelved in terms of other change orders so I guess my view as a working group co-chair would be that 400 just go back to the working group. It's been a few years even since we've looked at it so obviously as we would do with any other change orders, we would need to review the technical requirements. Basically just let the established process take its course, let nature take its course if you will, and if the industry should determine that there is a need for any change order including 400, then our process is that we identify all the candidate change orders, the ones that are viable, and service providers participate in the priority session and the ones that are highly prioritized flow to the top, the ones that are not highly prioritized if there is not deemed to be a need for it by the industry, they flow to the bottom or in some cases even shelved.

So I would just recommend as a representative of the working group that 400 just go back to the working group and let it go into the hopper with all the other existing open change orders and let the process take its course.

MR. KOUTSKY: Rosemary.

MS. EMMER: Rosemary Emmer, Sprint Nextel. I echo Gary's comments. Also seeing as though it's three years old, we might want to look at the fields, we might want to bifurcate the issue, we might want to take one or two fields out. Who would know, it's been a couple of years so I think that's another reason why I think it's a good idea for us to be there and really have a fresh look at it.

MR. KOUTSKY: Any other comments on that? I wanted to have that discussion so we all knew what was going on with it and we didn't have open questions. Adam.

MR. NEWMAN: Adam Newman, Telcordia Technologies and one of the FoN co-chairs. I guess I'm just wondering because actually the report on 400 that went from NANC to the FCC was actually the FoN report on 400, right.

LNPA working group came to a consensus and FoN came to a separate bifurcation, and I'm just sort of wondering how that all fits together because the FoN report raised the policy issues that I'm not really sure how they will get resolved by the lifting of the abeyance. So from a FoN perspective I'm just wondering what happens to our report, whether we're supposed to be revisiting it based on it.

MR. KOUTSKY: I hadn't thought of that aspect. Beth, go ahead.

MS. O'DONNELL: Beth O'Donnell, Cox Communications. I'm not opposed to it going back to the LNPA working group if they want -- if any of the options that Rosemary just brought up come to be.

At that point however I suspect that then old policy issues come back into play and you wind up with the FoN reviewing it again or an issue management group or something like that. I'm just pointing it out. I don't have an opinion on it. The LNPA working group might come up with something different.

MR. KOUTSKY: I wasn't here at the time so in terms of the history, was it originated in a LNP document and then people realized that there were policy issues and there was general consensus to have FoN look at it too? Is that right? Okay. My initial inclination is that if it goes back to LNPA to reconsider it or in considering the course at other change orders, you know, maybe it doesn't come up again, maybe it comes up in a completely different form in which case that maybe at that point we think about bringing the FoN back in. It's not the intent to exclude FoN from thinking about this at all. Don.

MR. GRAY: Don Gray, Nebraska Public Service Commission. As Adam said, it was a FoN that was generated and unfortunately there was no consensus. We had two different positions stated, didn't have a consensus position. One possibility may be that it be sent back to the FoN to simply look at it from the standpoint, have issues changed, have circumstances changed that would allow the FoN to present a consensus recommendation which then could go back to the LNPA working group for okay, there is a consensus on what the position should be and what does the industry think we should do in terms of priorities and how it would actually be implemented.

MR. SACRA: And I certainly respect that opinion, Don. I guess my views as the working group co-chair and right or wrong, this is one change order that's been treated quite a bit differently than any other NANC change order that I've been involved doing since I've been going to the working group.

Not quite knowing what the intent was when the abeyance was lifted, I can only view that as -- to me that was I guess a message that the process, the current established process for working NANC change orders that involve NPAC, that that change order reverts back to that process. It goes back into the hopper with the other change orders.

You know quite frankly, 400 may or may not flow to the top eventually. I don't know. Obviously since we haven't looked at it for two or three years, even if it were ever to eventually go back to the FoN it may not go back in the same form that it is now. So I think it's more appropriate, well within the purview of the working group to at least have an opportunity to re-look at that change order to see if there's anything applicable in terms of necessary changes to the technical requirements. That I see as the working group's job and with all due respect not in the FoN.

At some point in time if it does go to the FON, as I said it may not even be in the same form as it is now. We just haven't had a chance to look at in a couple of years and obviously we haven't looked at it because of the abeyance but now that it's been lifted I see now the process taking its course.

MR. KOUTSKY: Rosemary.

MS. EMMER: Rosemary Emmer, Sprint Nextel. Changer order 400 has four fields. I'm not sure that every single one of those fields has policy implications. It's very possible that if the LNPA working group looks at this issue they could get bifurcated and one or two of those fields might get removed and as such it may not even ever need to go to the FoN.

Maybe it would come here to the NANC first and maybe it would, but I think it that respect it's probably best to go to the LNPA working group first otherwise the FoN might be talking about something that the industry after three years might not even need anymore. Thanks.

MR. KOUTSKY: Don.

MR. GRAY: Don Gray, Nebraska Public Service Commission. Trust me, I wasn't lobbying for the FoN to take on any more of a challenge.

(LAUGHTER)

But I think as Gary pointed out, and I think if we use our collective memories and go back, originally the way it got to the FoN was 399 and 400 were tied together at the hip and no progress was being made so Chairman Atkinson gave it to the FoN to say okay guys, take a look at this, what do we do, where do we go from here, and that's when the decision was made bifurcate those two issues. And he said 399 go for it, and 400, we need to do this study and unfortunately we came up with a non-consensus issue. I certainly would agree with Gary and Rosemary that the expertise from an industry standpoint on this probably rests within the LNPA working group and not necessarily the FoN. So, I would certainly support you guys taking a look at it and if you need a broader consensus of people to look at it that have got more policy issues, then that time will come.

MR. SACRA: Thank you, Don.

MR. KOUTSKY: Okay, that sounds good. Thanks. Now to the second half of the LNPA discussion.