

Exhibit A

Exhibit A

From: crossreg-bounces@listserv.neustar.biz [crossreg-bounces@listserv.neustar.biz] On Behalf Of Wangner, Jessica [Jessica.Wangner@neustar.biz]
Sent: Thursday, May 21, 2009 4:31 PM
To: crossreg@listserv.neustar.biz
Subject: [Crossreg] US Regions: Approval of SOW 72 and NANC Change Orders

US NPAC Users,

The NAPM, LLC has approved SOW 72: Implementation of NANC 429, 430, and 435. This communication serves as the notification required to inform all Users of the SOW, and a brief description of each NANC change order.

A detailed implementation plan including details regarding the Testing and Roll-out dates for the production regions will be forthcoming.

NANC 429 – URI for Voice

The NPAC/SMS will provide the ability to provision a Voice URI for each SV and Pooled Block record. This information will be provisioned by the SOA and broadcast to the LSMS upon activation of the SV or Pooled Block and upon modification for those SOA and LSMS associations optioned "on" to send and receive this data. This Optional Data field parameter shall be added to the Bulk Data Download file, and be available to a Service Provider's SOA, LSMS, or both. This parameter will be supported across the interface on an opt-in basis only and will be functionally backward compatible.

NANC 430 – URI for Multimedia Message Service (MMS)

The NPAC/SMS will provide the ability to provision an MMS URI for each SV and Pooled Block record. This information will be provisioned by the SOA and broadcast to the LSMS upon activation of the SV or Pooled Block and upon modification for those SOA and LSMS associations optioned "on" to send and receive this data. This Optional Data field parameter shall be added to the Bulk Data Download file, and be available to a Service Provider's SOA, LSMS, or both. This parameter will be supported across the interface on an opt-in basis only and will be functionally backward compatible.

NANC 435 – URI for Short Message Service (SMS)

The NPAC/SMS will provide the ability to provision an SMS URI for each SV and Pooled Block record. This information will be provisioned by the SOA and broadcast to the LSMS upon activation of the SV or Pooled Block and upon modification for those SOA and LSMS associations optioned "on" to send and receive this data. This Optional Data field parameter shall be added to the Bulk Data Download file, and be available to a Service Provider's SOA, LSMS, or both. This parameter will be supported across the interface on an opt-in basis only and will be functionally backward compatible.

If there are any questions regarding this notification, please contact me at the numbers below.

Thank you,

Jessica B.F. Wangner: NeuStar, Inc.

NPAC Service Management Analyst

46000 Center Oak Plaza Sterling, VA 20166

[T] +1 571 434 5387 [M] +1 571 236 0652 [F] +1 571 434 5721 [E] jessica.wangner@neustar.biz [W] www.npac.com
/ www.neustar.biz

Exhibit B

May 22, 2009

Ms. Julie Veach
Acting Chief
Wireline Competition Bureau
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Re: Renewed Request for Interim Standstill Order, Petition of Telcordia Technologies, Inc. to Reform or Strike Amendment 70, to Institute Competitive Bidding for Number Portability Administration, and to End the NAPM LLC's Interim Role in Number Portability Administration Contract Management, WC Docket No. 07-149

Dear Ms. Veach:

Telcordia Technologies, Inc. ("Telcordia") hereby renews its request for an interim standstill order regarding the implementation of URI fields in the NPAC database pursuant to Change Orders NANC 429, 430 and 435 ("URI Change Orders"). According to an email from NeuStar to NPAC database users, NAPM LLC approved a statement of work – Amendment 72 – with respect to these change orders, under which NeuStar will provide the "ability to provision" URIs for Voice, for Multimedia Messaging Service (MMS), and for Short Messaging Service (SMS).¹ The information provided to the Bureau by NeuStar in its May 19, 2009 ex parte presentation and letter is incomplete, and could mislead the Commission into believing that there will be no irreversible consequences of permitting NAPM and NeuStar to proceed with Amendment 72 while the Commission considers the lawfulness of inclusion of these fields.

Because NAPM has exceeded its authority under 47 C.F.R. § 52.25(f) by contracting for fields in the NPAC database that have not been found by the North American Numbering Council ("NANC") to be "necessary to route telephone calls to the appropriate telecommunications carriers," Telcordia is separately formally initiating the NANC dispute resolution process with respect to the adoption of Amendment 72 by

¹ A copy of this email is attached as Exhibit A.

NAPM. Telcordia has also filed a petition to reform or strike Amendment 70, to institute competitive bidding for number portability administration, and to end the NAPM LLC's interim role in number portability administration contract management.² Telcordia thus requests that the Bureau issue a standstill order preventing NAPM and NeuStar from implementing any statements of work regarding the URI Change Orders, including the URI-related provisions of Amendment 70, until, at a minimum, the NANC has considered the dispute, provided a recommended decision to the Chief of the Bureau, and the 90 days for Bureau action have passed. Telcordia believes that:

1. There is a substantial likelihood of unlawfulness of Amendment 72;
2. Third parties will incur substantial sunk implementation costs in the absence of a standstill order;
3. There is no substantial offsetting benefit to proceeding with implementation during the NANC dispute resolution process;
4. There are definitive administrative processes available to the Commission.

These points are discussed more fully below.

Substantial likelihood of unlawfulness of Amendment 72. In its letter, NeuStar does not contest that these fields have not been approved by NANC. NANC has never found these URI fields to be "necessary to route telephone calls to the appropriate telecommunications carriers," as rule 52.25(f) requires for all data placed in the NPAC database. Indeed, NANC has not met since February 22, 2008, and did not consider these change orders at that meeting. Neither have the Commission or the Bureau made such a finding. When the Bureau returned Change Order NANC 400 on February 4, 2008, it permitted the industry to "reconsider" the issue.³ As NANC has not discussed these change orders in any meeting since February 4, 2008, such reconsideration cannot possibly be complete.

NeuStar argues that the URI Change Orders were approved by the LNPA Working Group. That is not the full story, as discussed further below. But even if these orders were fully and properly considered by the LNPA Working Group, the LNPA Working Group is not NANC, and cannot make a determination that this is information "necessary to route telephone calls to the appropriate telecommunications carriers" under rule 52.25(f).

² Petition of Telcordia Technologies, Inc. to Reform or Strike Amendment 70, to Institute Competitive Bidding for Number Portability Administration, and to End the NAPM LLC's Interim Role in Number Portability Administration Contract Management, WC Docket No. 07-149 (May 20, 2009) ("Telcordia Petition").

³ See Letter from Dana Shaffer, Chief, Wireline Competition Bureau, to Tom Koutsy, Chair, NANC (Feb. 4, 2008), available at http://www.nanc-chair.org/docs/mtg_docs/Change_Order_400.pdf.

NeuStar's description of the role and actions of the LNPA Working Group is not complete. The Working Group never reached consensus on whether NAPM should proceed with authorizing NeuStar to add and populate the URI fields, except in a very formalistic sense. The URI fields were "approved" as part of a package of change orders, but without individual consideration. Working group participants were told by the chairs that they could only prioritize the change orders within the package, and that they could not seek to strike particular change orders from the package. There was a request from at least one participant to discuss the appropriateness of including the change orders in the package. Nonetheless, given the process used, those participants permitted to vote were forced to prioritize all the accepted change orders in the package; they could not vote "no" for any single change order. Further, after prioritization there was only a call for consensus to send the prioritized change order list to the NAPM. A "no" vote at that time would mean that none of the change orders in the package would be approved. This is not a true consensus. Moreover, the LNPA Working Group practice is to permit only the service provider participants to vote. Non-service provider participants who may be affected are not allowed to vote. This is in contrast to the NANC, which is a chartered federal advisory committee subject to the procedural protections of the Federal Advisory Committee Act, and which has voting representatives from among service providers, vendors, state regulators, standards bodies, associations, and more. This underscores why the Commission's requirement for NANC consideration and determination of necessity must be observed *before* these changes can be lawfully implemented.

Finally, Telcordia is substantially likely to prevail on the decision before the Commission that these URI fields are "not necessary to route telephone calls to the appropriate telecommunications carriers." Two of these URI fields involve MMS and SMS, which are not even telecommunications services and do not fit within the term "telephone calls." In addition, the Voice URI is also not necessary to route telephone calls to the appropriate telecommunications carriers. These calls, whether IP-PSTN or IP-IP, are completed and routed today without using the Voice URI now to be added to the NPAC. In addition, port correction for IP-to-IP communications is done today using NPAC data to determine the service provider ID (Service Provider Identification) of the company the TN is ported to, and the call is then routed to the URI appropriate to that service provider if an IP route is available or via the PSTN if it is not. As was reflected in the 2005 Future of Numbering Working Group Report on NANC Change Order 400:

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 Switched Telephone Network) call completion and that changes to

PSTN elements (switches, Service Control Points, and Signal Transfer Points) were not contemplated.⁴

The result is that today, the value-added service of determining the best route (in this case in IP-to-IP route) is done in a separate service provider database apart from the NPAC, and these calls are being completed. The new URI fields are in no way “necessary” to the proper routing of these calls.

Third parties will incur substantial sunk costs to implement these URI changes in the absence of a standstill order. NeuStar’s May 19, 2009 letter portrays the URI changes as entirely reversible, asserting, “there is no irreversible harm that would come from any action by the North American Portability Management, LLC.” NeuStar represents that the statement of work is constructed such that, should the Commission determine that these fields should not be included in the NPAC, “NeuStar would remove such fields at no cost to the industry,” and that “the severability provision of Amendment 70 . . . simply has no bearing on any amendment under consideration by the NAPM to add URI fields to the NPAC.” Telcordia appreciates NeuStar’s concession that Amendment 70 will not be affected if the Commission concludes that the URI fields cannot be added to the database, and that NeuStar will remove those fields from the database without further charge to the industry. But will NeuStar reimburse the already incurred and billed costs to the industry of installing the URI fields in the first place?

In any event, NeuStar focuses only on a small piece of the potential costs – those costs to modify the NPAC database itself. If carriers actually start to use this capability, potentially much larger costs are those that the industry would incur to modify the Local Systems (Service Order Activations Systems and Local Service Management Systems) that carriers use to access the NPAC and to actually route traffic (including downstream network elements). Local system providers (including Telcordia) are required by their contracts to conform their systems to NPAC specifications. Through NAPM’s action, these URI fields become NPAC specifications, to which local system providers must now modify their systems should they receive requests from their customers. These costs will then be billed by the vendors to their carrier customers. In addition, service providers may have to modify their Operation Support Systems that support provision of portability data and connect to the systems that provision or receive data from the NPAC. The costs of modifying these systems to meet these URI change orders will be sunk once incurred, and cannot be recovered or made useful if the inclusion of URIs is found to be unlawful. In total, these costs, including costs of modifying carrier OSS systems, would likely run into the millions of dollars if there is any significant usage (which by itself raises anticompetitive cross-subsidization concerns, as discussed below). Thus, unless NeuStar

⁴ Report and Recommendation on NANC Change Orders 399 & 400, Future of Numbering Working Group (revised June 10, 2005) at 25-26, available at www.nanc-chair.org/docs/nowg/Jun05_FoN_NANC_Change_Order_Report.doc (“Future of Numbering Report”). When proposed, the stated purpose of these new fields was to coordinate and synchronize the updates of the SS7-based number portability databases with that of the IP-based look up databases. See *id.*

is offering to reimburse third parties – the local system providers and their customers – if the Commission later determines that NAPM has acted beyond its authority in adopting these change orders and Amendment 72, there will be substantial harm to third parties in the absence of a standstill order. Once established, these URI fields, even if unlawful, will seem like a *fait accompli* – which is exactly what NeuStar intends.

In addition, if NeuStar is permitted to proceed with implementation of these URI fields, it will be able to begin to execute the anticompetitive monopoly leveraging and cross-subsidization strategy with respect to the ENUM services market that Telcordia described more fully in its petition.⁵ It will be extremely difficult for the Commission to remedy that competitive harm once it occurs, and third parties will unnecessarily incur substantial cost and expend significant effort in changing their systems and networks if they are forced to switch away from NeuStar because the Commission declares the inclusion of URI fields in the NPAC database to be unlawful. A standstill order would prevent such disruption from occurring.

There is no substantial offsetting benefit to proceeding with implementation during the NANC dispute resolution process. As discussed above, all these messages are being routed today. They are simply being routed without use of the NPAC. There will thus be no substantial benefit to rushing to proceed with implementation of these URI change orders during the NANC dispute resolution process.

There are definitive administrative processes available to the Commission for quick determination. To support these Commission processes Telcordia is taking two steps. First, on May 20, 2009, Telcordia filed a petition asking the Commission to reform or strike Amendment 70, including its URI provisions, and to initiate a new competitive bidding process. The lawfulness of including these URI fields in the NPAC is addressed in that petition. Second, Telcordia will be immediately filing a formal dispute with the North American Numbering Council pursuant to 47 C.F.R. § 52.26(b)(3) to give NANC the opportunity to address the issue of the necessity of these URI codes for the completion of telephone calls, and also to provide a process for Bureau consideration of any NANC recommendation. Both of these actions limit the duration of the interim standstill order, at least pending further Commission action.

* * *

⁵ See Telcordia Petition at 40-43.

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May 22, 2009
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Accordingly, Telcordia requests that the Bureau issue an interim standstill order to direct NAPM to refrain from executing any statements of work regarding the URI Change Orders, including the URI-related provisions of Amendment 70, until, at a minimum, the NANC has completed the dispute resolution process, provided a report to the Chief of the Wireline Competition Bureau, and 90 days have passed to permit Bureau consideration of that report pursuant to 47 C.F.R. § 52.26(b)(3).

Sincerely,



John T. Nakahata
Counsel to Telcordia Technologies, Inc.

cc: Secretary, FCC
Jennifer Schneider
Nicholas Alexander
Mark Stone
Ann Stevens
Marilyn Jones
Melissa Kinkel
Thomas Koutsky
Jordan Goldstein
Dan Sciuillo

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NANC 435 – URI for Short Message Service (SMS)

The NPAC/SMS will provide the ability to provision an SMS URI for each SV and Pooled Block record. This information will be provisioned by the SOA and broadcast to the LSMS upon activation of the SV or Pooled Block and upon modification for those SOA and LSMS associations optioned "on" to send and receive this data. This Optional Data field parameter shall be added to the Bulk Data Download file, and be available to a Service Provider's SOA, LSMS, or both. This parameter will be supported across the interface on an opt-in basis only and will be functionally backward compatible.

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Thank you,

Jessica B.F. Wangner: NeuStar, Inc.

NPAC Service Management Analyst

46000 Center Oak Plaza Sterling, VA 20166

[T] +1 571 434 5387 [M] +1 571 236 0652 [F] +1 571 434 5721 [E] jessica.wangner@neustar.biz [W] www.npac.com
/ www.neustar.biz

Exhibit C

Report and
Recommendation on
NANC
Change Orders
399 & 400

Prepared by
Future of Numbering Working Group

Revised
June 10, 2005

Report and Recommendation on NANC Change Orders 399 and 400
Revised June 10, 2005

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Report and Recommendation on NANC Change Orders 399 and 400
Revised June 10, 2005

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.

Report and Recommendation on NANC Change Orders 399 and 400

Revised June 10, 2005

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.

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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.²²

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 LNP 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.)

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.²³ 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

²² 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),

²³ The 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.

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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 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.

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 treatment²⁴. The NPRM specifically seeks comment on number portability obligations – an issue recently underscored in the IP SBC Order.²⁵ 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

²⁴ See para 37, *Notice of Proposed Rulemaking* in the matter of IP-enabled services, Docket No. 04-36, FCC 04-28, 10 March 2004

²⁵ 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.

Report and Recommendation on NANC Change Orders 399 and 400 *Revised June 10, 2005*

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.²⁶ The implementations also affect U.S. obligations under international treaty instruments.²⁷ 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.

4.2.2.2 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.

²⁶ 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- R1.

²⁷ See International Numbering Resources, <<http://www.itu.int/ITU-T/inr/index.html>>.

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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.

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

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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-porting 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.

4.2.2.3 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.

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4.2.2.4 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.

4.2.2.5 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.

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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.

4.2.2.6 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.²⁸

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

²⁸ 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),

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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 number portability requirements of the Telecommunications Act of 1996 whose scope would thus appear limited to Telecommunications as opposed to Information services.²⁹

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.³⁰ In addition, previous NPAC changes have been related to FCC orders or ensuring the

²⁹ The 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.

³⁰ Universal 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 Internet Resource Locators" [RFC1736] and "Functional Requirements for Uniform Resource Names" [RFC1737].”

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continued functioning of existing services.³¹ Finally, unlike the previous additions, those 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.

³¹ Because 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, 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.

Exhibit D

LNPA WORKING GROUP
January 2005 Meeting
Final Minutes

Phoenix, Arizona	Host: Qwest and NeuStar
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TUESDAY 01/11/05

Tuesday, 01/11/05, Attendance:

Name	Company	Name	Company
Mark Lancaster	AT&T	Dave Garner	Qwest
Ron Steen	BellSouth	David Taylor	SBC (phone)
Dave Cochran	BellSouth	Craig Bartell	Sprint
Jason Powell	Centennial Wireless (phone)	Jeff Adrian	Sprint
Lonnie Keck	Cingular (phone)	Susan Tiffany	Sprint
Stephen A. Sanchez	Cingular	Steve Moore	Sprint
Michelle Gwaltney	Cingular	Rob Smith	Syniverse
Monica Dahmen	Cox	Darren Paffenroth	Syniverse
Laurie Itkin	Cricket	Adam Newman	Telcordia
Jean Anthony	Evolving Systems	Jason Kempson	Telcordia
Jamie Sharpe	Interstate FiberNet (phone)	Colleen Collard	Tekelec
Jason Lee	MCI (phone)	Paula Jordan	T-Mobile
Larry Vagnoni	NeuStar	Frank Reed	T-Mobile
Holly Jacobs	NeuStar	Maggie Lee	VeriSign
Paul LaGattuta	NeuStar	Gary Sacra	Verizon
Marcel Champagne	NeuStar	Earl Scott	Verizon (phone)
Syed Saifullah	NeuStar	Nancy Davies	Verizon (phone)
Shannon Sevigny	NeuStar (phone)	Jeff Harmon	Verizon Wireless (phone)
Jim Rooks	NeuStar	Deborah Tucker	Verizon Wireless
John Nakamura	NeuStar	Sara Hooker	Verizon Wireless
Stephen Addicks	NeuStar		
Gene Johnston	NeuStar		
Susan Ortega	Nextel		

Attached are the Action Items assigned at the January, 2005 LNPA meeting. Also included are the remaining open Action Items from previous meetings.

- NeuStar teed up the discussion of the two Change Orders (now numbered NANC 399 and 400) and provided a brief history of the VoIP discussions that have taken place in the LNPA since September.



"NANC 399 and 400 ·
ver zeroDOTone.zip"

- A local system vendor stated that their analysis of the GDMO and ASN.1 changes for these Change Orders resulted in no issues with breakage with the functionality turned off. They did provide some questions to NeuStar on the best use of XML. The vendor asked why the apparent push to get these Change Orders through the Change Management process. NeuStar responded that there is an open window of opportunity since there is a release currently under development.
- T-Mobile and Verizon expressed interest in accepting these Change Orders.
- A local system vendor suggested that we send a liaison to have someone from ATIS keep us abreast of what is going on with regard to the VoIP Focus Group Work Plan. It was suggested that we should communicate with other industry groups, ENUM Forum, ENUM LLC, IETF, etc.
- A service provider asked if other vendors could share any other approaches that they may be planning. No additional approaches were offered; however, one local system vendor stated that we need to distinguish between what's required for VoIP porting vs. IP routing.
- NeuStar was asked if they supported these Change Orders as independent Change Orders. NeuStar answered yes.
- A local system vendor stated that we need to look into the impact on throughput, additional queries generated, etc. NeuStar responded that no particular solution was being pushed on the query side. NeuStar expects that the data would have to be forked somewhere downstream.
- A local system vendor asked if the Change Orders were needed to support the porting of VoIP numbers; it was noted that they were not to the extent that they are ported today; however, issues such as efficient routing and service interoperability are not currently addressed.
- Another local system vendor suggested that we may want to consider whether we should propose a new interface other than CMIP. The vendor also asked about sunsetting.
- BellSouth, Verizon, and T-Mobile expressed support for these Change Orders as potential options that may or may not be activated. Each service provider would have to build their own business case after discussions with their internal IP teams

and local system vendors. There were no objections to accepting NANC 399 and NANC 400 to work the requirements.

- The LLC wants these Change Orders to go through the LNPA Change Management Process and will then determine any contractual matters.
- A local system vendor asked if the inclusion of URI data associated with TNs could lead to discrepancies with a public ENUM database and if the ENUM Forum or ENUM LLC TAG were aware of this suggested change to the NPAC.
- A local system vendor asked if the Change Orders were to support carrier to carrier ENUM. NeuStar noted that the Change Orders were independent of carrier to carrier ENUM.
- Sue Tiffany, Sprint, with assistance from Frank Reed, T-Mobile, Dave Garner, Qwest, and Michelle Gwaltney, Cingular, will draft a liaison letter and determine the appropriate recipient industry groups in order to notify them of the discussions currently taking place in the LNPA.
- Continued review of the NANC 399 and 400 requirements will be on the agenda for all day Wednesday, February 16th.

NANC 323 – SPID Migration Documents and Process (NeuStar):

- Mindi Patterson, NeuStar, described the latest changes to the NANC 323 SPID Migration documents (attached), which include conference calls change to as-needed and migrations may be scheduled to occur up to three calendar days *prior* to the LERG effective date



"SPID Migration
Documentation 0106"

- Related Action Items:
 - ❑ 1204-01: NeuStar has found only 1 TN post migration that 4 carriers had the wrong SPID. Closed.
 - ❑ 0304-07: Closed. If anyone wants to bring in a Change Order for Option 4, they can.
 - ❑ 1204-02: Closed
 - ❑ 1204-03: Closed
 - ❑ 1204-04: Closed
 - ❑ 1204-06: NeuStar cannot commit to an earlier time than the current commitment to generate the SMURF files within 2 hours of the start of the maintenance window.
 - ❑ 1204-18: Verizon Wireline, Sprint, Qwest, Nextel, Cingular, and Verizon Wireless expressed approval with the Holiday blackout dates. Closed.
 - ❑ 0904-04 still open.

Exhibit E

Origination Date: 01/05/05

Originator: NeuStar

Change Order Number: NANC 400

Description: URI Fields

Cumulative SP Priority, Weighted Average: N/A

Functionally Backwards Compatible: Yes

IMPACT/CHANGE ASSESSMENT

FRS	IIS	GDMO	ASN.1	NPAC	SOA	LSMS
Y	Y	Y	Y	Y	Y	Y

Business Need:

Voice URI Field

No solution currently exists to address the issue of industry-wide distribution of IP end-point addressing information for IP-based Voice service. No solution addresses portability of such service. A call originating from one provider's IP service typically has no information as to whether the dialed TN's service is IP-based or not, nor what its address is, forcing the use of the PSTN as an intermediary between IP networks. This need not be the case. Look up databases are not the issue, as many methods of looking up the data exist. Typically, VoIP providers have their own intra-network look up capability in order to terminate calls. The issue lies in the availability of a sharing and distribution mechanism for TN-level routing information between all interested service providers. The provisioning and distributing of routing information is the precise charter of the NPAC for all ported and pooled TNs.

It so happens that today, the vast majority of TNs using IP-based Voice service involve an NPAC transaction (existing TNs migrating to VoIP are ported, new assignments are typically taken from a pooled block). The ability for IP-based SPs to share routing data associated with a ported or pooled TN surely will be desired (it is on the "to do" list of IP-groups within many SPs offering or planning to offer VoIP service). The addition of a Voice URI and the various URIs below, because the URIs are merely addressing information, is directly analogous to adding DPC and SSN information to ported and pooled TNs. The addition of the URI fields described in this change order is unlikely to cause additional NPAC activates, because the fields are intended for numbers that would be ported or pooled anyway. This is therefore the most cost effective method of provisioning IP look up engines (in whatever flavor they happen to take) with URI information relating to a ported or pooled TN.

The addition of these URI fields to the NPAC also benefits the industry in that it inherently coordinates and synchronizes the update of the SS7-based number portability look up databases with that of the IP-based look up databases. Should the updates not be synchronized, service could be affected for an indeterminate amount of time.

SUBSCRIPTION VERSION DATA MODEL			
Attribute Name	Type (Size)	Required	Description
[snip]			

Table 3-6 Subscription Version Data Model

NUMBER POOLING BLOCK HOLDER INFORMATION DATA MODEL			
Attribute Name	Type (Size)	Required	Description
[snip]			
Voice URI	C (255)		Voice URI for Number Pool Block. This field may only be specified if the service provider SOA supports Voice URI.
MMS URI	C (255)		MMS URI for Number Pool Block. This field may only be specified if the service provider SOA supports MMS URI.
PoC URI	C (255)		PoC URI for Number Pool Block. This field may only be specified if the service provider SOA supports PoC URI.
Presence URI	C (255)		Presence URI for Number Pool Block. This field may only be specified if the service provider SOA supports Presence URI.
[snip]			

Table 3-8 Number Pooling Block Holder Information Data Model

Exhibit F

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

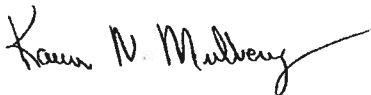
Subject: North American Numbering Council Local Number Portability Administration Working Group (NANC LNPA WG) request for information regarding VoIP service

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
Allan MacGillivray, Industry Canada
Thierry Husson, Industry Canada
Stephen Delaney, CRTC
Stacy Cheney, NTIA
Cathy Handley, NTIA
Sanford Williams, FCC

Exhibit G

LNPA WORKING GROUP
April 2005 Meeting
Final Minutes

Franklin, Tennessee	Host: Verizon Wireless
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TUESDAY 04/12/05

Tuesday, 04/12/05, Attendance:

Name	Company	Name	Company
Wendy Wheeler	Alltel (phone)	Dave Garner	Qwest
Mark Lancaster	AT&T (phone)	David Taylor	SBC
Ron Steen	BellSouth	Leah Luper	SBC (phone)
Dave Cochran	BellSouth	Kelly Gracie	SNET (phone)
Jason Powell	Centennial Wireless	Craig Bartell	Sprint
Lonnie Keck	Cingular	Jeff Adrian	Sprint
Melanie Wilkerson	Cingular	Susan Tiffany	Sprint
Monica Dahmen	Cox	Steve Moore	Sprint
Lori McGarry	CTIA (phone)	Rob Smith	Syniverse
Jean Anthony	Evolving Systems	Darren Paffenroth	Syniverse
Jamie Sharpe	Interstate FiberNet (phone)	Adam Newman	Telcordia
Karen Mulberry	MCI	Jason Kempson	Telcordia
Rick Jones	NENA	Paula Jordan	T-Mobile
Mark Dahlen	NeuStar	Frank Reed	T-Mobile
Syed Saifullah	NeuStar	Maggie Lee	VeriSign
Dara Sedano	NeuStar (phone)	Jim Castagna	Verizon
Jim Rooks	NeuStar	Gary Sacra	Verizon
John Nakamura	NeuStar	Julie Anderson	Verizon
Stephen Addicks	NeuStar	Nancy Briggs	Verizon
Marcel Champagne	NeuStar	Sara Hooker	Verizon Wireless
Larry Vagnoni	NeuStar	Jeff Harmon	Verizon Wireless (phone)
Paul LaGattuta	NeuStar	Deborah Tucker	Verizon Wireless
Holly Jacobs	NeuStar		
Susan Ortega	Nextel		

Attached are the Action Items assigned at the April, 2005 LNPA meeting. Also included are the remaining open Action Items from previous meetings.

- The LNPA's VoIP Obligations Letter was well-received by NANC. The LNPA's position has been sent to the NANC Future of Numbering (FoN) Working Group to work on a recommendation to the FCC.



VoIP Porting
Obligations (Final).do

- NANC released the LNPA to vote on whether or not to recommend to the NAPM LLC the inclusion of NANC Change Orders 399 and 400 in NPAC Release 3.3 in an inactive state, with the understanding that the votes are not final until the FoN WG completes its analysis. The Change Orders are to be voted on separately.
- The LNPA then discussed the feedback received from a number of industry groups in response to the attached LNPA VoIP Information Letter. The industry responses are embedded above.



LNPA VOIP Info
Request (FINAL).doc

- ENUM Forum feedback – The need for VoIP URI data has not been studied in the context of Carrier ENUM. Karen Mulberry, ENUM LLC Chair, stated that the ENUM Forum is a contribution driven forum.
- TMOC stated that they stand ready to assist the LNPA as this further develops.
- ENUM LLC – Karen Mulberry, ENUM LLC Chair, explained that the ENUM LLC only addresses the IP space and not the PSTN. She stated that it is a multi-step process to implement ENUM for the 19 countries in Country Code 01.
 - Current timeline:
 - RFP out by end of year
 - ENUM trial by summer next year

A local system vendor stated that URI data is not currently usable on the PSTN. NeuStar stated that this is a possible means of updating DNS when a number ports. Karen Mulberry agreed.
- The voting members of the LNPA on Change Order activity (Service Providers and Service Bureaus) then voted on whether or not to recommend to the NAPM LLC the inclusion of NANC Change Orders 399 and 400 in NPAC Release 3.3 in an inactive state, with the understanding that the votes are not final until the FoN WG completes its analysis. The Change Orders were voted on separately in a technical context.
 - NOTE: Prior to the vote, Adam Newman, Telcordia, requested that vendors be allowed to vote on Change Orders 399 and 400. A brief

discussion ensued regarding the history of LNPA votes on Change Orders. It was explained that, historically, vendors have not voted on Change Orders in the LNPA because they have a financial stake in the outcome of which ones are included. A number of service provider members expressed concern about changing the LNPA's process immediately prior to a vote, and stated that those allowed to vote should be limited to those members that pay for the implementation of NPAC Change Orders, as has been the LNPA's process. It was agreed that the LNPA's historical voting process would be followed for these votes. Service Providers and Service Bureaus will vote on 399 and 400.

- Following are the results of the two votes. Again, the question asked for both 399 and 400 was:

Are you, or are you not, in favor of recommending to the NAPM LLC the inclusion of NANC Change Orders 399 and 400 in NPAC Release 3.3 in an inactive state?

- NANC 399:
 - In favor: 12
 - Not in favor: 1
 - Abstention: 1
- NANC 400:
 - In favor: 9
 - Not in favor: 3
 - Abstention: 2
- As a result of these two votes, it was the consensus of the LNPA that a recommendation will go to the NAPM LLC to include both NANC Change Orders 399 and 400 in Release 3.3 in an inactive state.

Discussion of Bulk Data Downloads (Action Item 0205-08):

- Maggie Lee, VeriSign, provided feedback on Action Item 0205-08. It took 4 hours to load a full BDD in an LSMS in a single region. It also took 4 hours to load a full BDD in an LSMS in multiple regions because they can be run simultaneously. This does not include time to load downstream.
- Action Item 0305-01: Still ongoing.
- Action Item 0305-11: Dave Cochran (BellSouth), David Taylor (SBC), Jean Anthony (Evolving Systems), Maggie Lee (VeriSign), Dave Garner (Qwest), Gary Sacra (Verizon), NeuStar, and LSMS vendors will participate in a sub-team to discuss possible alternative solutions to full BDDs. Dave Cochran will Co-Chair.

- Item 0205-08: This item has been completed and is Closed.
- Item 0205-13: This item has been completed and is Closed.
- Item 0205-19: Item remains Open. The Action Item will be modified to reflect that the information should be sent to Rob Smith, Syniverse (robert.smith@syniverse.com).

New Business:

- Sue Tiffany, Sprint – A notice was received from Verizon that Verizon was changing their process based on an FCC Order related to porting numbers with DSL. The Agency Authorization field on the LSR now indicates that the NLSP has the end user’s authority to port number. Sue stated that the notification indicated that it will now mean to Verizon that the port is authorized and to direct Verizon to disconnect the DSL service. A member asked if this is how all wireline providers will interpret this field. Service Providers are to investigate the recent decision and come prepared to the May LNPA meeting to report on any resultant changes to their porting process, especially in the area of numbers associated with DSL. One wireless member stated that they do not want the responsibility of telling the customer that they will lose their DSL if they port their number.
- Jean Anthony, Evolving Systems, asked that documents to be discussed at the meetings be available at least a week before a meeting.
- Rob Smith, Syniverse, regarding PIM 50: Wireline Service Providers are to investigate internally any potential ways relevant CSR information can be provided in an automated manner, when the CSR is deemed too large.

Next LNPA Meeting ... May 10-12, 2005, Overland Park, Kansas – Hosted by Sprint

THURSDAY 04/14/05

Joint LNPA WG Future of Numbering WG Meeting to Discuss NANC 399 and 400

Thursday, 04/14/05, Attendance: Please note that only those LNPA Members present in the meeting room that signed in are captured below as attendees. Due to the large number of participants on the conference bridge, it was not possible to capture those participants for these minutes. All bridge participants should be reflected in the Future of Numbering WG minutes.

Name	Company	Name	Company
Mark Lancaster	AT&T	Dave Garner	Qwest

Ron Steen	BellSouth	David Taylor	SBC
Dave Cochran	BellSouth	Craig Bartell	Sprint
Melanie Wilkerson	Cingular	Jeff Adrian	Sprint
Monica Dahmen	Cox	Susan Tiffany	Sprint
Jean Anthony	Evolving Systems	Steve Moore	Sprint
Karen Mulberry	MCI	Rob Smith	Syniverse
Mark Dahlen	NeuStar	Colleen Collard	Tekelec
Syed Saifullah	NeuStar	Adam Newman	Telcordia
Jim Rooks	NeuStar	Jason Kempson	Telcordia
John Nakamura	NeuStar	Paula Jordan	T-Mobile
Stephen Addicks	NeuStar	Frank Reed	T-Mobile
Marcel Champagne	NeuStar	Maggie Lee	VeriSign
Larry Vagnoni	NeuStar	Jim Castagna	Verizon
Paul LaGattuta	NeuStar	Gary Sacra	Verizon
Susan Ortega	Nextel	Julie Anderson	Verizon
		Nancy Briggs	Verizon
		Sara Hooker	Verizon Wireless
		Deborah Tucker	Verizon Wireless

LNPA/FoN JOINT MEETING MINUTES:

Please note that the FoN WG will issue separate meeting minutes.



FoN_LNPA 4-14-05
Agenda.doc

- Hoke Knox, FoN Co-Chair, reviewed the March NANC meeting regarding the discussion of NANC Change Orders 399 and 400. The team needs to decide if the Change Orders should be loaded in Release 3.3 in an inactive state and what issues may be involved. Mark Lancaster, AT&T, introduced the idea of a joint session at NANC to get an architectural view of how LNP and IP come together so we can make an architectural choice that looks out into the future.
- Gary Sacra, LNPA Co-Chair recapped the LNPA votes on NANC 399 and 400 that took place earlier in the week. The question asked for both 399 and 400 was:
Are you, or are you not, in favor of recommending to the NAPM LLC the inclusion of NANC Change Orders 399 and 400 in NPAC Release 3.3 in an inactive state?

Following are the results of the two votes.

- NANC 399:
 - In favor: 12
 - Not in favor: 1
 - Abstention: 1
- NANC 400:
 - In favor: 9
 - Not in favor: 3
 - Abstention: 2
- As a result of these two votes, it was the consensus of the LNPA that a recommendation will go to the NAPM LLC to include both NANC Change Orders 399 and 400 in Release 3.3 in an inactive state.
- Gary Sacra also reported that the LNPA has completed the technical review of both Change Orders.
- The group then discussed the objective and scope of what is needed to be accomplished. Suggestions were:
 - Determine how 400 fits into the evolution path of numbering.
 - Determine how this fits into LNP and does it fix anything that is broken with LNP.
 - A FoN member suggested that we have to consider regulatory and policy issues and if the NPAC is the right place to put this functionality.
 - Karen Mulberry, FoN Co-Chair, responded that this discussion is not in the context of the Internet, but is this functionality required to support LNP.
 - An LNPA member stated that the NPAC is not a vendor-specific product, but is an industry product. We need to determine if this functionality benefits the industry.
 - Karen Mulberry, FoN Co-Chair: The FoN will determine any policy and regulatory issues for consideration and the LNPA will provide technical assistance.
 - NeuStar was asked what does 400 fix? NeuStar responded that, as an example, MMS is broken with LNP. There are some carrier solutions for fixing this problem, however, NANC 400 is a method for carrier consideration.
 - FoN member: we will need to clarify what are the functions in question and do they interact with LNP.
 - Hoke Knox, FoN Co-Chair: In the LNP arena, is there a need for this functionality to enable SMS and MMS messaging to occur? What is the current need of the industry and the long-term?

- Future meeting schedule: 4/22/05 from 10am-1pm eastern, 4/29/05 from 10am-2pm eastern, and 5/6/05 from 10am-2pm eastern.
- VeriSign presentation – Tom Kershaw



LNPWG_VeriSign_IPP
ortability_april05.ppt

- Slide 16 – It was suggested that the ¼ % figure may be low because when families and businesses migrate to VoIP, they will call each other.
 - An LNPA member stated that today, numbers port from PSTN to VoIP by porting to a CLEC. ENUM databases are planned in 2006. We need to figure out how we synch up LRN data with URI data changes.
 - Tom Kershaw – we need to remain as flexible as possible and not rule out options. Decisions we make today may be wrong 5 years from now.
 - Hoke Knox – Who controls URI changes in ENUM? End user? Karen Mulberry said that it is still being addressed.
 - Tom Kershaw – VoIP providers are offering numbers outside the physical rate center of the customer. They cannot port out to PSTN providers. When enough complain, the FCC will do something.
- Telcordia presentation – Adam Newman



Telcordia_VoIP_NPA
C_FON_Final.doc

- Adam was asked how LNP data gets provisioned in ENUM the database? He responded that SIP address changes and how they get provisioned into ENUM is being worked in the ENUM LLC. The questioner said that where the domain change comes from is the question that 400 is trying to solve.
 - Tom McGarry, NeuStar, stated that NPAC is the fairest vehicle to deliver routing data because all carriers have access to it.
 - Adam Newman stated that, like they ruled on QoR, the FCC needs to rule on proposed changes to the LRN architecture.
 - A question was asked as to how data, where the end user only opts in to a particular carrier's ENUM database, can only be opted in to that carrier if the data is placed in NPAC? NeuStar responded that placing the data in DNS means that the data is on the internet and available to anyone.
- Tekelec presentation – Colleen Collard



LNPA-ENUM Tekelec
presentation.ppt

- It was pointed out that the NPAC is not controlled by a monopoly, as is stated on Slide 4, but is controlled and managed by the NAPM LLC, which represents the industry.

- NeuStar presentation – Tom McGarry



NeuStarJoint FoN
LNPA Mtg.ppt

- It was asked if NANC 399, with the Alternate SPID, assist with the workaround solution for MMS that uses the SPID approximation? Tom responded no. The originator would not know which SPID owns the terminating customer, or it could be an MVNE, which would not show up as either SPID in the record.
- Tom McGarry – ENUM is addressing Tier 1 and Tier 1B databases, which do not contain URI data. Tier 1 database will contain pointers to the right Tier 2 databases. Tier 2 database, which will contain URI data, will be provisioned by carriers and end users.
- Adam Newman – The current LNP query does not expect a URI in return. Tom McGarry – It probably is not cost-effective to upgrade SS7 infrastructure to support URI data. NeuStar has implemented DNS and SIP for IP query and response protocol.

- AT&T presentation – Penn Pfautz



AT&T-
FoN_LNPA041405.pp

- An LNPA member asked how provisioning will take place when a TN goes from one VoIP provider to another? Penn responded that the carrier of record will provision.
- Penn Pfautz – NPAC and LERG are currently the databases of record for who the carrier is.
- An LNPA member asked, with ENUM, how does one carrier know the URI of another carrier's customer? Penn: Tier 2 will query Tier 1 database.

- Panel Discussion:

- Tom Kershaw, VeriSign – For a period of time, both NPAC and ENUM databases will need to be updated when numbers port from the PSTN to the IP. LRNs will still be the method of routing in the PSTN to the IP interconnection point.

- An LNPA member raised concern with synchronization.
- A FoN member asked what the implementation of 400 would do in terms of slowhorse? NeuStar: What is seen today is that the slowhorse issue has been taken care of. In addition, NeuStar feels it is unlikely that every record will be populated with 4 URIs. There will be some impact but will not result in slowhorse problems as seen in the past.
 - Adam Newman stated that he didn't suggest that it would cause a slowhorse problem, but that it hasn't been studied yet.
 - An LNPA member stated that the record size would increase about 20% if all 4 URIs were populated based on discussions at LNPA.
 - NeuStar – This discussion of impact is only relevant if the fields are turned on, and not related to the question we are discussing today, and that is should we put in the capability to turn them on.
 - NeuStar – A discussion of the NANC Architecture and Administrative Plan for LNP ensued. The document states that, “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.”

NeuStar asked how ENUM will get updated? That is what 400 is trying to address.

- Penn Pfautz, AT&T, stated that he doesn't see a legal issue with carrier information from NPAC being populated in ENUM.
- Tom Kershaw, VeriSign stated that the NANC Architecture document was developed before there were URIs.
- A number of LNPA members again expressed a concern with updating multiple databases with separate paths and how to ensure timing and synchronization of LRN and URI updates when customers port.
- Action Item for all – develop any additional questions/presentations to clarify our path forward.

Exhibit H

NANC Future of Numbering Working Group

TITLE: VoIP Routing Alternatives

DATE: April 14, 2005

SOURCE: Adam Newman
Telcordia Technologies, Inc.
8 Corporate Pl, PYA 3E133
Piscataway, NJ 08854
anewman@telcordia.com
732-699-6425

Gary Richenaker
Telcordia Technologies, Inc.
8 Corporate Pl, PYA 3E112
Piscataway, NJ 08854
grichena@telcordia.com
732-699-3264

ABSTRACT: This contribution discusses alternatives to NPAC for VoIP/NGN call routing, and discusses issues with inclusion of VoIP routing data in NPAC that is not required to support porting of VoIP numbers.

NOTICE:

This document is offered to the NANC Future of Numbering Working Group as a basis for discussion and is not a binding proposal on Telcordia. Telcordia specifically reserves the right to amend or withdraw the statements contained herein.

- VoIP and portability by VoIP providers and by extension of VoIP numbers is being considered by the FCC in 04-36 proceeding

The FNPRM in the Matter of VoIP Services document FCC 04-28 requests comment on the general matter of VoIP use of NANP numbers and related regulatory treatment at Para 37. At Para. 73 the NPRM specifically seeks comment on number portability obligations. Finally Para 77 notes Further, that the FCC seeks comment 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. In addition, the FCC is considering porting and numbering aspects as noted in the SBCIS Order. Clearly this is an area that is under regulatory consideration and a change in NPAC to accommodate porting for VoIP providers should be part of that process and should not be determined 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.

Finally the FCC has deliberately refrained from regulating the Internet marketplace, and attempts to commingle Internet addressing with FCC-regulated numbering. In fact, the FCC and NTIA wrote a letter to the ENUM Forum and, in essence, conferred standing on the ENUM Forum and member entities, to form an ENUM LLC to address the issue of internet/IP record/addressing. Inclusion of TN-URI data in NPAC seems to conflict with this policy direction.

- Expands role of NPAC

FCC rules specifically limit the role of the NPAC to the information needed to route calls to the appropriate service provider, not to a service providers particular interconnection point. 47 CFR 52.25(f) notes “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.” The necessary information that NANC is delegated to determine refers clearly to the information necessary to route calls in the previous sentence.

Further, 47 CFR 52.25(i) clearly demonstrates that added functionality should be done in a service provider’s private database not the industry database, “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.” Since the LRN and SPID information already maintained in NPAC is all that’s necessary to route telephone calls to the carrier of the ported TN, least cost routing, or more efficient IP routing would clearly be an such an other service or function covered under this rule making addition of VoIP data to provide for more efficient IP routing or other multimedia services an expansion of the functionality provided for in the rule.

- Potentially conflicts with ENUM or provides one vendor with an unfair and unnecessary advantage in the competitive ENUM realm

ENUM is a communications protocol and technical solution that has been developed to deliver advanced services using IP protocol to reach end users that register their TN with a Tier 2 ENUM provider. The ENUM database at that level will associate one or more URIs with a TN. There is an industry agreed to protocol for resolving and routing these address resolutions. Provision of essentially similar but potentially conflicting data relating URI to a TN could result in confusion in routing of calls to URIs for TNs that are provisioned in NPAC and ENUM.

From an ENUM perspective, the availability of VoIP URI data in an industry database is not pertinent to the implementation of end-user, opt-in ENUM, as described in RFC 3761.

- Reaches an ENUM infrastructure policy decision, with broad ramifications on the industry for years to come, without proper notice, comment and consideration
- As noted by AT&T at the FCC's Future of Numbering Symposium, the industry and regulators may want to consider a transition to an alternate interconnection regime with the ascendancy of VoIP networks. The infrastructure ENUM as it has been called provides for URI to URI interconnection information between networks. While AT&T noted that this could replace most current routing databases, including NPAC, this change order in essence implements this entirely new regime for all ported and pooled TNs without notice from a regulatory perspective and without the opportunity for competitive procurement for the new routing database regime. There are several products and service offerings from many companies that show this area 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 communications should remain unregulated. Inclusion of the URIs in NPAC put them into a monopoly provided regulated solution that all SPs are required to use essentially eliminating a currently competitive marketplace and potentially deciding by fiat decision of a federal advisory committee the outcome of an infrastructure ENUM solution without the opportunity for public notice and comment across the industry.

Exhibit I



Federal Communications Commission
Washington, D.C. 20554

February 4, 2008

Mr. Thomas M. Koutsky
Chair, North American Numbering Council
c/o Phoenix Center for Advanced Legal and Economic Public Policy Studies
5335 Wisconsin Avenue, NW
Suite 440
Washington, D.C. 20015

Dear Mr. Koutsky:

In 2004, NeuStar presented Change Order 400 to the Local Number Portability Administration (LNPA) Working Group. Change Order 400 proposes to add four new fields to each ported and pooled telephone number record in the Number Portability Administration Center (NPAC) database. Its purpose is to facilitate more efficient routing of calls to numbers that have been pooled or ported from one carrier to another.

In 2005, the Commission directed the North American Portability Management (NAPM) LLC to hold in abeyance Change Order 400, until it had a chance to consider the implications of the proposed change. 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 change. The NANC directed the Future of Numbering Working Group (FoNWG) to conduct the requested review.

Neither the FoNWG nor the NANC was able to reach a consensus recommendation with respect to Change Order 400. The Commission recently adopted an order which took a number of steps designed to ensure the benefits of local number portability. In light of that order, the industry may reconsider Change Order 400 rather than continue to hold in abeyance its consideration.

Mr. Thomas M. Koutsky
Phoenix Center for Advanced Legal and
Economic Public Policy Studies
Page 2

Please let me know if you have any questions regarding this matter.

Sincerely,

A handwritten signature in black ink, appearing to be 'Dana R. Shaffer', with a long horizontal line extending to the right.

Dana R. Shaffer
Chief
Wireline Competition Bureau

Cc: Julie Veach, Deputy Chief, Wireline Competition Bureau, Room 5-C450
Amy Bender, Legal Counsel, Wireline Competition Bureau, Room 5-C360
Ann Stevens, Deputy Chief, Competition Policy Division, Wireline
Competition Bureau, Room 5-C162
Marilyn Jones, Designated Federal Officer to the NANC, Wireline Competition
Bureau, Room 5-C264
Melvin Clay, AT&T, Co-Chair, NAPM LLC
Timothy Decker, Verizon Communications, Co-Chair, NAPM LLC

Exhibit J

LNPA WORKING GROUP

May 2008 Meeting

Final Minutes

Overland Park, Kansas	Host: Sprint Nextel
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TUESDAY 05/06/08

Tuesday, 05/06/08, Attendance:

Name	Company	Name	Company
Joe Cudo	Alltel (phone)	Charles Ryburn	NeuStar (phone)
Mark Birkholz	Arvig Comm (phone)	Syed Saifullah	NeuStar Clearinghouse
Ron Steen	AT&T	John Nakamura	NeuStar
Teresa Patton	AT&T (phone)	Stephen Addicks	NeuStar
Mark Lancaster	AT&T	Marcel Champagne	NeuStar
Renee Dillon	AT&T Mobility	Paul LaGattuta	NeuStar
Lonnie Keck	AT&T Mobility	Dave Garner	NeuStar
Joan Johnson	Big Bend Tel (phone)	Shannon Sevigny	NeuStar Pooling (phone)
Mike Lofton	CenturyTel	Linda Peterman	One Communications
Cal Simshaw	CenturyTel	Rick Finnigan	Oregon Tel Assn and Washington Ind. Tel Assn (phone)
Bill Solis	Comcast (phone)	Steve Trimble	Palmer Mutual Tel (phone)
Cindy Sheehan	Comcast	Kathy Faircloth	Peoples Telecom (phone)
Nancy Sanders	Comcast	Mary Retka	Qwest
Jennifer Hutton	Cox (phone)	Jean Thaxton	Randolph Tel (phone)
Chris Brown	Cox (phone)	Harold Oster	Rio Virgin Tel (phone)
Angela Reid-Jordan	Embarq	Paul Stowman	Rothsay Tel (phone)
Kathee Glodowski	Embarq	Matt Kohly	Socket
Judy Whitney	Embarq	Carol Frike	Sprint Nextel
Tonya Woods	Embarq	Lavinia Rotaru	Sprint Nextel
Vicki Goth	Embarq	Susan Tiffany	Sprint Nextel
Bob Malone	Evolving Systems	Michael Klappa	Sprint Nextel
Greg Council	Evolving Systems (phone)	Don Lawrence	Stayton Coop Tel (phone)
Robert Binder	Frontier (phone)	Sara Cole	TDS Telecom (phone)
Beth O'Donnell	GCI Consulting (phone)	Doug Babcock	Syniverse
John Hoffmann	Gervais Tel (phone)	Adam Newman	Telcordia

The group reviewed NANC 433 and it was accepted. Action Item 0308-04 is closed.

- Change Order to Define SP Type 3 for Class 1 VoIP (Action Item 0308-05)

NeuStar will develop a Change Order to designate SP Type 3 for Class 1 Interconnected VoIP providers.

The group reviewed NANC 434 and it was accepted. Action Item 0308-05 is closed.

- Review of NANC 400 Spin-off Change Orders (Action Item 0308-03)

Action Item 0308-03: For review at the May 2008 LNPA WG meeting, NeuStar will break up NANC 400 into 4 separate and distinct Change Orders, one for each URI type.

- NANC 429 – Voice URI: It was stated that this Change Order can serve as a means of synching the association of TN to LRN and URI and distributing it to ENUM lookup engines.
 - In response to a question of why this would be needed, it was explained that there is a need to synch up the routing information in real time associated with ported/pooled numbers that are assigned to IP endpoints so that calls originating from PSTN endpoints or from IP endpoints can be routed properly as ported or pooled TNs are assigned to IP endpoints.
 - NANC 430 – MMS URI:
 - NeuStar stated that this could resolve PIM 67, which seeks to address instances where newly ported-in customers are unable to receive text messages from customers of the carrier they left due to the data in the Old Service Provider's system(s) not being fully deactivated or cleaned-up.
 - T-Mobile stated that they are interested in this.
 - Sprint Nextel is working with NeuStar to develop a Change Order for an SMS URI.
 - It was stated that this could help with the NRRIC issue of sending a photo or video of a crime to law enforcement and facilitate a return response.
 - NANC 431 – Push to Talk over Cellular
 - NANC 432 – Presence URI
 - It was suggested that we would have to validate URIs similar to the DPC validation that is proposed in NANC 427 if any of these Change Orders were to be implemented.
 - Action 0308-03 is closed.
- NANC 401 Discussion – Refer to APT?



NANC_401_-_ver_ze
roDOTfour.doc

- NANC 401 will be reviewed during the July 2008 meeting at the beginning of Change Management.
- NANC 397 – Mandatory in next release? (Action Item 0308-15)

Action Item 0308-15: Service Providers are to determine for discussion at the May 2008 LNPA WG meeting if NANC 397, Large Volume Port Transactions and SOA Throughput, is to be considered a mandatory Change Order for a next NPAC release.

- There were no objections to making NANC 397 a mandatory Change Order in the next NPAC release.
- It was stated that NANC 397 impacts local systems as well as the NPAC and it is important to understand that.

Action Item 0308-15 is closed.

- Review of NPAC, SOA, LSMS Development Levels of Effort for All Change Orders (Action Items 0308-02, 0308-12)

Action Item 0308-02: NeuStar will determine the NPAC development level of effort for the proposed Change Orders in the attached for review at the May 2008 LNPA WG meeting. Note that it was determined at the March 2008 meeting that Change Orders 382, 402, and 425 will not be considered at this time. See related Action Item 0308-12.

Action Item 0308-12: Local System Vendors will determine the SOA and LSMS development level of effort for the proposed Change Orders in the attached for review at the May 2008 LNPA WG meeting. Note that it was determined at the March 2008 meeting that Change Orders 382, 402, and 425 will not be considered at this time. See related Action Item 0308-02.

The NPAC, SOA, and LSMS development levels of effort were provided by NeuStar and the Local System Vendors respectively and reviewed by the group. The vendor responses have been captured in the following file as part of the Co-Chair notes. NeuStar will revise the NANC Change Order list to add the NPAC, SOA, and LSMS development levels of effort identified at the May 2008 LNPA WG meeting, and distribute the revised document to the group in order for Service Providers to develop their individual rankings of the Change Orders in preparation for the prioritization session scheduled for the July 2008 LNPA WG meeting.



NANC Change
Orders 05-01-08 - ch

All open change orders will be moved to accepted for placement in the candidate pool for consideration for the next NPAC release

Exhibit K

LNPA WORKING GROUP
June 2008 Conference Call
Final Minutes

MONDAY 06/09/08

Monday, 06/09/08, Conference Call Attendance:

Name	Company	Name	Company
Tina Plaisance	Alltel	John Nakamura	NeuStar
Joe Cudo	Alltel	Paul LaGattuta	NeuStar
Ron Steen	AT&T	Jim Rooks	NeuStar
Mark Lancaster	AT&T	Stephen Addicks	NeuStar
Lonnie Keck	AT&T Mobility	Karen Mulberry	NeuStar
Barbara Hjelmaa	Bright House	Shannon Sevigny	NeuStar Pooling
Marian Hearn	Canadian Consortium	Mubeen Saifullah	NeuStar Clearinghouse
Calvin Simshaw	CenturyTel	Linda Peterman	One Communications
Mike Lofton	CenturyTel	Richard Finnigan	Oregon Telecommunications Association and the Washington Independent Telecommunications Association
Bill Solis	Comcast	Jan Doell	Qwest
Cindy Sheehan	Comcast	Mary Retka	Qwest
Nancy Sanders	Comcast	Matt Kohly	Socket Telecom
Bob Malone	Evolving Systems	Susan Tiffany	Sprint Nextel
Robert Binder	Frontier	Carol Frike	Sprint Nextel
Therese Mooney	Global Crossing	Michael Klappa	Sprint Nextel
Crystal Hanus	GVNW	Dennis Rose	Texas Statewide Telephone Cooperative
Ann Vick	GVNW	Mohamed Samater	T-Mobile
Courtney Spears	GVNW	Paula Jordan	T-Mobile
Connie Stufflebeem	Iowa Network Services	Amanda Molina	Townes Telecom
Angie Beckett	JSI Tel	Darla Pistulka	Vantage Point
Karen Hoffman	JSI Tel	Chipp Nelson	VeriSign
Wes Robinson	JSI Tel	Gary Sacra	Verizon
Dean Uher	Martin Group	Earl Scott	Verizon
Trip England	Missouri RLECs	Jason Lee	Verizon
Craig Johnson	Missouri RLECs	Deb Tucker	Verizon Wireless
Geoff Feiss	Montana Telecom Assn.	Tom Zablocki	Vonage

Action Item 0508-02: NeuStar will report out on the June 9, 2008 LNPA WG conference call on the quantity of providers utilizing standard FTP and suggest a sunset date for support of standard FTP – NeuStar:

- This agenda item was deferred to the July 2008 LNPA WG meeting.

Review of Proposed SMS URI Change Order – All:



NANC TBD SMS URI -
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- The group discussed the business need of the attached Change Order, proposed by Sprint Nextel to add a field for a Short Message Service (SMS) URI. With wireline IP sets now supporting SMS messages, it can no longer be assumed that no wireline TNs are capable of supporting the receipt of SMS messages. In the case of wireless TNs, it is assumed that all are capable of supporting receipt of SMS messages.
- It was asked by a participant if the chartered purpose of the NPAC was being exceeded by the LNPA WG in adding NGN data fields to the NPAC. It was explained that this proposed data field is analogous to the data field that was added previously for the wireless SMS DPC and the purpose of this newly proposed data field is to address the need to identify which wireline TNs can support SMS and which cannot. It was then asked if this changed the end user experience. It was explained in response that, in today's environment, wireless end users can send SMSs to wireline TNs that do not support receipt of SMS messages and could possibly be billed for failed messages or not know that the message failed. The participant stated that this is a partial solution because it would not include native numbers, only ported or pooled numbers. It was stated that providers offering IP-enabled services, such as receipt of SMSs on wireline IP sets, could likely have ported-in or pooled TNs.
- Support for this functionality would be optional in local systems and would be backwards compatible.
- It was asked if anyone has looked at the impact to record size in the LSMS. It was stated in response that that would be up to the LSMS vendors.
- A participant asked what error message was received by the originating carrier if an SMS message fails. Another participant responded that they are not sure what the carrier receives, but some carriers do not send error messages to their customers. Another participant stated that he has received them.
- The group was then polled regarding whether or not this Change Order should be accepted. AT&T and Comcast voiced objections to moving forward with this Change Order at this time. No other objections were voiced. It was determined by the Co-

Chairs that consensus was reached to accept this Change Order and place it in the candidate pool of Change Orders to be prioritized at the July 2008 LNPA WG meeting.

- NeuStar will provide the NPAC Level of Effort for the attached SMS URI Change Order prior to the July 2008 LNPA WG meeting.
- Local System Vendors will provide the SOA and LSMS Levels of Effort for the attached SMS URI Change Order prior to the July 2008 LNPA WG meeting.
- NeuStar will distribute the complete Change Order package containing all Change Orders in the candidate pool for prioritization, including NPAC, SOA, and LSMS Levels of Effort, prior to the July 2008 LNPA WG meeting.
- Another participant stated that some carriers are placing non-ported/non-pooled TNs in the NPAC in order to populate the WSMSC DPC/SSN data fields.. Therese Mooney, Global Crossing, will attempt to determine why these carriers are putting these numbers in the database just to populate these data fields rather than using STP Global Title data at the NPA-NXX level to route the messages.

Finalization of Condition 4 of Best Practice 50 – All:

- Condition 4 of Best Practice 50, as proposed, currently reads as follows:
“The New Service Provider switch that already serves the Rate Center of the customer’s number(s) has an existing POI, consistent with applicable federal and state regulatory requirements for service provider interconnection obligations, over which calls to these numbers are routed. If this customer's number(s) are ported into the New Service Provider switch, they will be routed and transported in a manner consistent with these applicable legal requirements. The New Service Provider would then be responsible for arranging for the transport and delivery of traffic from that existing POI to the customer's premise that is located outside of the Rate Center associated with the customer’s number(s).”
- A number of wireless carriers expressed concerns that the opening paragraph of BP50 was not explicitly clear that this Best Practice addressed wireline FX service. The second sentence in the opening paragraph of BP50 currently reads, “The following conditions are intended as technical guidelines for porting in conjunction with FX service and are not intended to address location (geographic) portability, virtual NXX, transport obligations, or inter-carrier compensation, nor are they intended to be inconsistent with any applicable federal and/or state regulatory requirements.”

The group agreed to revise the second sentence to read, “The following conditions are intended as technical guidelines for porting in conjunction with wireline foreign exchange (FX) service and are not intended to address location (geographic) portability, virtual NXX, transport obligations, or inter-carrier compensation, nor are