**North American Numbering Council**

*Local Number Portability Administration*

*Working Group*

***Report on NANC Change Order 437 Feasibility Analysis***

***January 11, 2011***

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# Introduction

Telcordia Technologies introduced Change Order NANC 437 at the January 2009 LNPA Working Group meeting. NANC 437 proposes that multiple peered Number Portability Administration Center / Service Management Systems (NPAC/SMSs) operate within regional boundaries. The premise proposed by Telcordia is that the introduction of multiple NPAC/SMS database vendors will offer carrier choice and vendor diversity. It is Telcordia’s assertion that this could lead to reduction of business risk and more competitive pricing.

In a multiple NPAC/SMS environment, each service provider would be free to choose the NPAC/SMS to use for administration of porting and pooling activities, and for receiving broadcasts of routing information needed to process and route calls. This architecture requires the design, development, and implementation of processes and interfaces to share data between the NPAC/SMS databases, keep them synchronized, resolve discrepancies, and provide timely accurate data to all service providers.

The LNPA Working Group has endeavored since the introduction of NANC 437 to analyze and determine the technical and operational feasibility of multiple peered NPAC/SMS databases within a region. Telcordia has expended immense effort in preparation of a primer explaining the concept, and in determining required additions and modifications to existing requirements and specifications necessary for implementation. DSET, ESI, Neustar, and Tekelec have participated to varying extents in analyzing and discussing technical issues. Service providers have participated and offered opinions as to how issues affect operations and reliability.

# Summary of the Process Followed

The LNPA Working Group has spent a major portion of thirteen face-to-face meetings and seven conference call meetings since the introduction of NANC 437 reviewing and analyzing the details. Additionally, five conference calls have been held specifically for NANC 437. It is estimated that the Working Group has spent approximately 5600 person hours in review of this change order. This does not include the time spent outside the Working Group meetings by vendors and service providers alike to study and analyze this change order.

The Working Group process consisted of the following activities:

* Telcordia educated the Working Group on the Multiple Peered NPAC/SMS concept using a primer that they developed for instructional purposes.
* Telcordia led a walkthrough of the Functional Requirements Specification (FRS), Interoperable Interface Specification (IIS), Guideline for Definition of Managed Objects (GDMO), and the Abstract Syntax Notation (ASN.1) documents addressing requirements and interface flows that would have to be modified, and new requirements and interface flows necessary for implementation.
* The Working Group documented issues needing further investigation, clarification, or resolution on a “Parking Lot Matrix” for further review. There were 196 issues on the Parking Lot for resolution.
* After the walkthrough of the technical documents, the Working Group analyzed all of the Parking Lot issues. Some were easily resolved, but others were more complicated and required additional development or Methods & Procedures documentation. Some are still left for future resolution. In some cases, the M&P solutions were not considered satisfactory by many of the participating service providers and will require further analysis and development. Opinions varied as to whether solutions must be derived before further action or if solutions can be developed as work progresses.
* The Working Group resolved that there are two questions to be addressed in regard to NANC 437:
  1. Is NANC 437 technically feasible?
  2. Is NANC 437 operationally feasible?
* For consistency, the Working Group developed specific definitions for Technically Feasible and Operationally Feasible (discussed in Section 4).
* The Working Group goal was to determine by consensus if NANC 437 satisfies the definition of Technically Feasible, and if it satisfies the definition of Operationally Feasible. The group agreed early in the process that the primary goal in conducting this analysis was to determine if NANC 437 was technically achievable while not resulting in any degradation to the overall NPAC platform or negative impact to Service Providers and the porting process.

# Technical Documents Reviewed by the LNPA Working Group

As noted in Section 2 of this document, the LNPA Working Group reviewed the various technical specification documents that define the NPAC/SMS functionality and operation. Telcordia expended significant effort in going through the technical specifications to determine additions and changes necessary to implement NANC 437. The Working Group expresses appreciation to Telcordia for that effort, and the Working Group also expresses appreciation to Neustar and the other vendors who spent many hours analyzing the proposed changes to determine the impacts. Several service providers have commented on the professional demeanor of the discussions despite the obvious competitive aspects of the proposal.

The following table lists the documents that Telcordia prepared and presented for the LNPA Working Group to use in analyzing NANC Change Order 437. These documents can be found at <http://www.npac.com/cmas/documents.shtml#CMAS>. (Open the zipped file described as “NANC 437 Documentation”.)

**Documents Used to Analyze NANC Change Order 437**

|  |  |
| --- | --- |
| **Industry Document** | **NANC 437 File Name** |
| Initial NANC 437 Change Order | NANC437COJan2009.doc |
| NANC 437 Primer | Change\_Order\_437\_Primer\_02-25-2000.pdf |
| NANC 437 Parking Lot Matrix - NANC 437 Issue | Parking Lot Matrix v22.doc |
| FRS with NANC 437 Requirements | FRS\_4.0\_02\_25\_09.doc |
| First Errata for NANC 437 FRS Requirements | Errata Sheet for Release 4.0.0a.doc |
| Second Errata for NANC 437 FRS Requirements | Second Errata for Release 4.0.0a 3-30-09.doc |
| IIS Part 1 with NANC 437 Modifications | IIS5\_0\_Part\_1\_041009.doc |
| IIS Part 2 with NANC 437 Modifications | IIS5\_0\_Part2\_043009.doc |
| NANC 437 ASN.1 | asn1\_v\_5\_0\_0\_041009.doc |
| NANC 437 GDMO | gdmov5\_0\_0\_0429099.doc |
| Third Errata for NANC 437  FRS/ IIS/GDMO/ASN.1 | Third Errata for Release 5.0.0 04-30-09.doc |

# Technical and Operational Feasibility Goals and Definitions

As noted previously, the Working Group developed specific definitions of Technically Feasible and Operationally Feasible in order to provide consistency to each participating service provider’s analysis of NANC 437. The definitions in the following sub-sections were developed by the Working Group and agreed to by consensus.

## Technical Feasibility

The goal of assessing if NANC 437 is technically feasible is to determine if, after a thorough review of the proposed technical FRS/IIS/ASN.1/GDMO documentation, it is achievable technically. The determination of technical feasibility does not speak to cost of implementation or potential operational or performance impacts to the overall NPAC platform and porting process.

### Working Group Definition of Technically Feasible

The LNPA WG’s definition of “Technically Feasible” in the context of NANC 437 is as follows:

*NANC 437 technical feasibility is achieved when, based on the LNPA WG’s detailed analysis of Telcordia’s proposed FRS/IIS/ASN.1/GDMO documentation, and the Issues Parking Lot Matrix, no insurmountable technical implementation roadblocks have been identified.*

## Operational Feasibility

The goal of assessing if NANC 437 is operationally feasible is to determine if, after a thorough review of the proposed FRS/IIS/ASN.1/GDMO documentation, it is achievable operationally, requires an acceptable level of effort, and would not lead to NPAC platform degradation and adverse operational impacts to Service Providers and the overall porting process. The determination of operational feasibility does not speak to cost of implementation.

### Working Group Definition of Operationally Feasible

The LNPA WG’s definition of “Operationally Feasible” in the context of NANC 437 is as follows:

*NANC 437 operational feasibility is achieved when, based on the LNPA WG’s detailed analysis of Telcordia’s proposed FRS/IIS/ASN.1/GDMO documentation, and the Issues Parking Lot Matrix, implementation of the proposed methodology is achievable operationally, requires an acceptable level of effort, and would neither result in any degradation to the overall NPAC platform in terms of either performance or reliability, nor result in business disruptive or adverse impacts to Service Providers or the current porting process.*

# Consensus Determination

The LNPA Working Group is chartered by and reports to the North American Numbering Council (NANC) and therefore operates using NANC guiding principles. The Working Group uses the guidelines documented in Section I2 of the NANC Operating Manual, version 2, modified on September 9, 2006, to determine consensus. Section I2 is included as Appendix C to this document.

To summarize, consensus, or lack of consensus, is not determined purely by majority vote. Consensus determination is based on a number of factors to include the experience, reputation, knowledge, and participation of the membership. Consensus determination is therefore based on the judgment of the Chair – or in the case of the Working Group, the Co-Chairs.

## Technical Feasibility Consensus

The Working Group consensus is that per the definition of Technically Feasible, no insurmountable technical issues have been identified. As a result, NANC 437 was deemed Technically Feasible.

There were no objections to the consensus opinion. Some service providers commented that, in their opinion, although NANC 437 architecture is technically feasible, it would present significant challenges to implement. As previously noted the determination of Technical Feasibility does not address cost of implementation or operational or performance impacts to the overall platform and porting process.

## Operational Feasibility Consensus

The Working Group was unable to reach consensus regarding the Operational Feasibility of NANC 437.

AT&T, Hawaiian Telco, RCN Telecom, Sprint Nextel, T-Mobile, U.S. Cellular, Verizon, and XO Communications expressed their company positions that NANC 437 is not Operationally Feasible. Cablevision Lightpath, Comcast, Integra, One Communications, and Qwest Communications expressed their company positions that NANC 437 is Operationally Feasible. Windstream acknowledged in the Working Group meeting that they were abstaining, but a number of other companies refrained from stating a position without comment. Subsequent to the September 2010 meeting, Cox Communications contacted the Co-Chairs and indicated their support for both Technical and Operational Feasibility of NANC 437.

There were a number of comments explaining various company positions made during the discussion. An excerpt from the September LNPA Working Group Meeting Minutes is included as Appendix D to this document. All LNPA Working Group minutes can be found at [www.npac.com](http://www.npac.com) in the LNPA WG section.

The Working Group Co-Chairs determined that there was no clear consensus as to the Operational Feasibility of NANC 437.

It was agreed that the companies on each side of this issue would prepare papers documenting the respective positions. These documents are included as Appendices A and B to this report.

# Conclusions

The Working Group unanimous consensus is that NANC 437 does meet the definition of Technically Feasible. There were comments from various service providers stating that NANC 437 is feasible technically, but that implementation would be challenging. No objections were voiced to the consensus opinion.

The Working Group could not reach consensus as to NANC 437 meeting the definition of Operationally Feasible. Those companies in opposition expressed concerns about reliability, performance, resolution of service affecting troubles, and adverse effects on the porting process. Companies in support of NANC 437 meeting the definition acknowledged that there would be operational challenges but they felt that the benefits would outweigh the issues.

# Appendix A – Report in Opposition to Operationally Feasible

At the September 14, 2010 LNPA Working Group meeting, Service Providers who had participated in the feasibility analysis of NANC 437 since it was introduced by Telcordia in January 2009 were asked to provide their company’s position on the question of operational feasibility based on the following goal and definition agreed to by the Working Group.

At that meeting, the following Service Providers stated as their company’s position that NANC 437 was NOT operationally feasible for reasons including those cited further below in this position paper.

* AT&T
* Hawaiian Telco
* RCN Telecom
* Sprint Nextel
* T-Mobile
* U.S. Cellular
* Verizon
* XO Communications

**GOAL:**

The goal of assessing if NANC 437 is operationally feasible is to determine if, after a thorough review of the proposed FRS/IIS/ASN.1/GDMO documentation, it is achievable operationally, requires an acceptable level of effort, and would not lead to any NPAC platform degradation and adverse operational impacts to Service Providers and the overall porting process. The determination of operational feasibility does not speak to cost of implementation.

**DEFINITION OF OPERATIONALLY FEASIBLE:**

The LNPA WG’s definition of “Operationally Feasible” in the context of NANC 437 is as follows:

NANC 437 operational feasibility is achieved when, based on the LNPA WG’s detailed analysis of Telcordia’s proposed FRS/IIS/ASN.1/GDMO documentation, and the Issues Parking Lot Matrix, implementation of the proposed methodology is achievable operationally, requires an acceptable level of effort, and would neither result in any degradation to the overall NPAC platform in terms of either performance or reliability, nor result in business disruptive or adverse impacts to Service Providers or the current porting process.

**WHY NANC 437 IS NOT OPERATIONALLY FEASIBLE:**

In the opinion of the Service Providers listed above, the following issues identified during the feasibility analysis of NANC 437 would result in an unacceptable level of effort to implement and maintain a peered NPAC environment, would degrade the overall NPAC platform in terms of performance and reliability, and would result in adverse impacts to Service Providers, consumers, and the current porting process.

Billing Issues and Concerns:

1. During the analysis, no viable method was identified for billing Service Providers in a peered multi-NPAC environment that is compliant to FCC rules for NPAC administrator compensation and that will prevent Service Providers from being billed by multiple vendors. Every peered NPAC in a Region must perform work every time a number is ported or pooled.

Performance and Reliability Issues and Concerns:

1. Peering NPACs in a Region will add additional potential points of failure and congestion. When NPACs fail, the process to recover data for the failed NPACs and their subtending Service Provider local systems will have much added complexity and take additional time to synch up databases in the Region.
2. NANC 437 proposes that each peered NPAC would treat each other as downstream SOAs and LSMSs for sending and receiving requests, notifications, and actions with the development and implementation of new inter-NPAC SOA and LSMS interfaces. These proposed interfaces are untried and untested concepts and have never been used in such a manner before. SOAs and LSMSs get out-of-synch with the NPAC today. Peering additional NPACs in a Region would result in additional databases to keep synchronized and add complexity to identifying and correcting out-of-synch conditions. There would no longer be a single “Golden Database” as the single NPAC in a Region is considered today for database synchronization. Each NPAC in a peered environment would be the Master only for numbers served by its subtending Service Providers.
3. Although they may not be frequent occurrences, race conditions will likely occur in certain scenarios where competing transactions will result in conflicting data or result in the porting transaction not being allowed to progress to completion. The impacts are not fully understood and the suggested resolution has been to address these conditions with manual inter-vendor Method & Procedures (M&Ps) implemented by competing NPAC vendors that will surely add significant time to any problem resolution. Time is critical when resolving service-affecting issues.
4. There is a contractual Service Level Requirement (SLR) that requires the NPAC to respond to requests from Service Provider local systems within 3 seconds. This is a regional requirement and would have to be split in half in a peered NPAC environment for each vendor’s NPAC involved in an inter-NPAC port. It would be extremely difficult, if not impossible, to determine which NPAC is at fault each time an SLR miss occurs. Since by contract, monetary penalties are levied to the NPAC administrator when this SLR is missed, finger-pointing will be inevitable.
5. There is a contractual Service Level Requirement (SLR) that requires the NPAC to be available for processing 99.9% of the time outside of scheduled maintenance periods. This is a regional requirement and each individual peered NPAC would have to exceed 99.9% availability in order to maintain overall 99.9% regional availability. This higher requirement for each individual peered NPAC would need to be raised even further every time an additional peered NPAC is added to a Region, possibly requiring expensive hardware upgrades for each NPAC in order to meet the higher availability requirement. By contract, monetary penalties are levied to the NPAC administrator when this SLR is missed. How would NPAC administrators in a Region be assured that they could continually meet this critical SLR when the addition of a new NPAC platform in the Region means they immediately have fewer hours of potential downtime to reach before they fail the SLR?

Introduction of New Inter-NPAC Issues and Complexities:

1. With the current one-NPAC-per-Region architecture, there is no such thing as an “inter-NPAC” issue. Peering of multiple NPACs in a Region will introduce additional new issues and complexities that will degrade the current high performance, highly reliable architecture and porting process. In some instances, the suggested resolution during the analysis was to develop manual inter-vendor Methods & Procedures (M&Ps) to resolve issues, some of which are consumer service-affecting, and some of which are resolved with an automated process today. During the NANC 437 analysis, the following areas were identified as either requiring manual inter-NPAC M&Ps to resolve certain issues and/or adding additional complexity and level of effort to accomplish, most of which would add cost and time to the industry.
   * NXX codes opened in error by a Service Provider
   * Failure to protect contaminated TNs in a pooled block
   * Coordination of tunable parameter changes
   * Coordination of SPID migration limitations and process, e.g., deletion/activation of pending Subscription Versions
   * Management of Subscription Version IDs
   * Annual failover exercise
   * Coordination of NPAC software release implementations and resolution of differences among vendors, some of which could be service-affecting
   * Coordination of any NPA splits
   * Added complexity to recovery process when NPACs fail
   * Changes to effective date of pooled blocks
   * Coordination of SPID Migration blackout dates among vendors and their customers
   * Coordination of large ports and mass update projects in order to prevent link congestion and Service Provider aborts
   * Synchronization of Bulk Data Downloads created by peered NPACs and the reconciliation of different snapshots
   * Inter-NPAC certification testing when new NPACs are added to a Region
   * Resolution of issues related to a lagging LSMS on one NPAC that impacts a Service Provider on another NPAC
2. During the feasibility analysis, a number of areas were identified as requiring a neutral 3rd party arbitrator or coordinator. The need for this neutral 3rd party to arbitrate differences and disputes and to coordinate certain activities would add level of effort, cost, and time to the industry. The activities that were identified during the analysis include the following:
   * Disputes over software release development and implementation differences
   * Inter-NPAC testing and certification disputes
   * 3rd Party Change Management Administrator
   * Disputes over Service Level Requirement (SLR) misses by NPACs

NPAC Vendor Viability Concerns:

1. In order for an NPAC administrator to remain viable and operating in a Region, that vendor must be assured relative continuity in terms of a minimum customer base and threshold of transactions as well as a stable operating environment. In a peered NPAC environment where Service Providers can disconnect from one NPAC administrator’s platform and re-establish connectivity with another at any point in time, and where additional NPAC platforms can be added over time reducing the customer base of existing NPAC administrators, stability of the overall porting process in a Region and NPAC administrator viability and ability to sustain their business model in order to continue operations cannot be guaranteed. The result could be fairly frequent disruptions in the porting process and risk of a steady state of instability adversely affecting the consumer’s ability to seamlessly port their number as desired.

Summary:

After over 18 months of detailed analysis of NANC 437 at both the LNPA Working Group and internally within our respective companies, we believe the issues and concerns cited in this position paper represent significant risk to the industry’s porting process and the consumer’s ability to port their number in a transparent, non-service-affecting manner as is the case today. Furthermore, we believe that peering NPAC platforms in a Region would have an unacceptable probability of becoming completely unmanageable in a highly competitive vendor environment, thus shifting in some circumstances the responsibility of ensuring consumers’ ability to seamlessly port their number from the involved Service Providers, where it belongs, to competitive NPAC vendors who have no relationship with the consumer and little to no interest in assisting their competitors’ success in the process.

All Service Providers participating in the LNPA Working Group’s detailed feasibility analysis of NANC 437 unanimously agreed that a determination of operationally feasible would require that the proposed peered NPAC architecture “*requires an acceptable level of effort, and would neither result in any degradation to the overall NPAC platform in terms of either performance or reliability, nor result in business disruptive or adverse impacts to Service Providers or the current porting process*.” We firmly believe that the issues identified in this position paper directly fail this requirement and necessitates a finding of NOT operationally feasible for NANC 437. We also believe that any purported, yet unidentified savings that might result from a peered NPAC architecture would be vastly overshadowed by the performance, reliability, and process degradations and disruptions that the industry and consumers would experience. In a number of areas, the cost to maintain the industry’s porting process would actually increase.

Maintaining the current one-NPAC-per-Region architecture while developing and issuing a competitive bid to viable vendors for the business, as is currently underway in the North American Portability Management (NAPM) LLC, is the soundest approach to delivering the best solution to the industry while ensuring that the current high performance, highly reliable platform architecture and process is maintained to the ultimate benefit of consumers.

# Appendix B – Report in Favor of Operationally Feasible

**NANC 437 – Operational Feasibility Support Rationale**

Cablevision Lightpath, Comcast, Cox Communications, Integra, One Communications and Qwest Communications (herein after referred to as the Supporting Companies), respectfully encourage members of the LNPA W/G, the NANC, and the NAPM LLC to recognize the operational feasibility of NANC 437 and initiate/conclude the process for vendor selection prior to the expiration of the current NPAC provider agreement in 2015 for the following reasons:

The Supporting Companies acknowledge that all change carries the fear of the unknown and must be prudently approached, but also strongly believe that carriers utilizing the NPAC should have a choice of vendors from which to purchase number portability services. The ability for the industry to support vendor choice will not only promote competition for improved service quality, but also ensure NPAC services are delivered at the best price; thereby improving the value proposition for customers. The Supporting Companies also observe that number portability has been deployed in a variety of architectures worldwide, and recognize a peered NPAC architecture as a foundation that would foster innovation and facilitate rapid adoption of new technologies, products and services[[1]](#footnote-1).

The issue of technical and operational feasibility of multiple NPACs was addressed and accepted at the inception of local number portability in 1997 when contracts were awarded to multiple vendors. Although not with respect to a true NPAC peering architecture arrangement, similar concerns to those raised about the operational feasibility of NANC 437 were considered by the industry at that time and deemed surmountable.[[2]](#footnote-2) Most importantly, the FCC policy for the telecommunications industry is predicated on the benefits of competition and choice, which by their very nature, encourage creative solutions, improve performance and reduce cost.

The LNPA W/G and participating vendors have exhaustively investigated, reviewed and resolved the technical aspects of NANC 437. The LNPA W/G reached unanimous consensus that NANC 437 is technically feasible. Included as part of the evaluation, was discussion around the operational feasibility of a peered architecture. This extensive architecture review process undertaken by the LNPA W/G to determine the technical and operational feasibility of NANC 437 neither intended nor required that all issues surfaced during the review process be fully addressed and resolved prior to making such determination. Although options for resolution of the outstanding parking lot items were collaboratively discussed by the LNPA W/G, specific solutions have not been finalized and detailed. Therefore, the parking lot items which remain open should be considered as a “to-do” list rather than a “can’t do” list. The Supporting Companies assert that reasonable solutions can be found via the NAPM LLC RFP process or during the actual contract negotiation process. For example, at least eleven[[3]](#footnote-3) of the open parking lot items concern a lack of existing process for troubleshooting specific problems that may potentially arise in a peered NPAC environment. The Supporting Companies agree that such Methods and Procedures (M&Ps) are necessary, but contend they are not needed at this time in order to make a determination that NANC 437 is operationally feasible. Furthermore, the concerns expressed about lack of the aforementioned troubleshooting process are hypothetical in nature. The Supporting Companies suggest a better approach is to define in detail the specific M&Ps that will require development in a peered NPAC architecture, and then ensure prospective NPAC vendors fully and completely address handling of specific trouble types as part of the RFP process.

In addition, the Supporting Companies agree the shared industry goal is to maintain a 99.9% reliability objective for the NPAC as described in Parking Lot item 173[[4]](#footnote-4). In this regard, the Supporting Companies contend the LNPA W/G should direct prospective NPAC vendors to cooperatively develop a practical methodology that will allow inclusion of additional vendors within a peered NPAC region that will not sacrifice overall NPAC performance. Currently, adherence to existing “protocols”[[5]](#footnote-5) that are incorporated into the vendor contracts is the responsibility of the vendors. If performance does not meet the objective, the vendors are assessed penalties until the deficiency is resolved. The goal of incorporating such protocols into the contracts is to ensure that the number portability ecosystem continues to operate efficiently. Since it is impossible to guarantee NPAC performance 100 percent of the time, regardless of the number of vendors involved or the architecture deployed, enforcement mechanisms can drive prompt resolution of issues and thus minimize any impacts to the industry or the end user.

Concern has been expressed that resolution of the open parking lot items may lead to finger pointing or lack of cooperation between competing vendors. The Supporting Companies view this concern as unfounded. The NANC 437 architecture review process initiated by the LNPA W/G in January 2009 included the support and active participation of both service providers and vendors. From its inception, the process has been conducted efficiently and professionally. There was no blame or even reluctance expressed; every participant cooperated. Moreover, the LNPA W/G and the industry have the experience, expertise and available avenues to facilitate prompt issue resolution.

Several carriers opined that implementation of an NPAC peering architecture will increase portability costs overall. The Supporting Companies see this as speculative, premature and insufficient to justify a determination that NANC 437 is not operationally feasible. The Supporting Companies submit that an RFP process inherently addresses cost, and the RFP must make clear to prospective NPAC vendors that development costs are to be borne by the vendor rather than passed on to the industry.

Some concerns were also raised about how billing would be accomplished in a peered NPAC environment. The LNPA W/G held a general discussion on this topic. However, since costs are outside of its mission and scope, the LNPA W/G identified a set of billing Use Cases (Action Item 030910-07) which can be utilized as the basis for development of the RFP billing requirements[[6]](#footnote-6).

In summary, the Supporting Companies are confident that none of the remaining parking lot items are insurmountable problems, and that each can be satisfactorily resolved via collaboration among potential vendors and the industry. The Supporting Companies contend that NANC 437’s Peered NPAC Architecture is operationally feasible. It is imperative that the industry support competition for number portability services, and promote vendor choice for the end user companies that rely on the NPAC.

In these challenging economic times, the industry cannot afford the luxury of complacency and instead must look for improved performance, increased efficiencies, innovations and cost savings wherever they may be found. The Supporting Companies unanimously contend that NANC 437 has the potential to not only capitalize on the significant advances in technology that have taken place since the initial implementation of local number portability in 1997, but also to accelerate those advances in the future to the benefit of all consumers of telecommunications services.

**Attachment A**

**LNPA W/G Proposed NANC 437 Billing Use Cases**

Use Case 1:  Inter-SP Port between two Service Providers with same Primary NPAC:

SP B, served by Primary NPAC B, ports a number from SP A, also served by Primary NPAC B.

* Billing mechanism for Primary NPAC?
* Billing mechanism for Non-Primary NPACs?

Use Case 2:  Intra-SP Port within same Service Provider:

SP B, served by Primary NPAC B, intra-SP ports a number.

* Billing mechanism for Primary NPAC?
* Billing mechanism for Non-Primary NPACs?

Use Case 3:  Inter-SP Port between two Service Providers with different Primary NPACs:

SP B, served by Primary NPAC B, ports a number from SP A, served by Primary NPAC A.

* Billing mechanism for Primary NPACs?
* Billing mechanism for Non-Primary NPACs?

Use Case 4:  Inter-SP Port between same Service Provider (different SPIDs) with different Primary NPACs:

SP B (SPID bbbb), served by Primary NPAC B, inter-SP ports a number to another one of its SPIDs (SPID aaaa), served by Primary NPAC A.

* Billing mechanism for Primary NPACs?
* Billing mechanism for Non-Primary NPACs?

Use Case 5:  Impact on Use Cases 1-4 of adding an additional NPAC vendor to a Region:

An additional NPAC vendor is added to a Region with an existing peered NPAC environment.

* Billing mechanism for Primary NPACs?
* Billing mechanism for Non-Primary NPACs?

# Appendix C – Section I2 Excerpt from “NANC Operation Manual” version 2, dated September 9, 2006

**Chapter I2**

**Consensus**

Ideally, every decision taken by NANC and its subsidiary groups will be made by unanimous consent. The Chair and Members should make reasonable attempts to achieve unanimity. However, a requirement of unanimity would make it impossible for NANC to make any controversial decisions since each Member would hold veto power.

When a decision must be made and unanimity is not possible, NANC decisions will be made by consensus. (This means that decisions are *not* made by simple majority voting.)

But, what is “consensus” and how is it determined?

Fundamentally, determining when consensus is reached is a judgment call to be made by the Chair.  Included in the Chair’s judgment are not just the numbers of Members "for" or "against" but, more importantly, the “weight” (i.e., the experience, reputation and knowledge) of each Member who is “for” or “against.” Another judgment factor to be considered by the Chair is the intensity with which each Member’s views are held.

The Chair cannot and should not attempt to determine when consensus is achieved by some sort of mechanical “objective” process. However, the following examples illustrate how the subjective decision might be made.

Each NANC Member earns his or her consensus “weight” through regular participation, expertise, collegiality and other factors valued by the Chair. Thus, if only one “heavyweight” – a very experienced, knowledgeable and fair person – was strongly against a decision, that might be enough to defeat consensus.  Similarly, if a large number of "lightweights" (i.e., those who have earned little respect, rarely attend meetings or participate in them) attend a meeting and take one side of an issue and a similar number of "heavyweights" are on the other side, it would be reasonable for the Chair to find that the heavyweights’ view constitute the consensus. Similarly, a smaller number of heavyweight Members with intensely held views could constitute the consensus against weakly held views of lighter weight Members.

Because determining consensus is inherently a subjective judgment by the Chair, due process requires a Members who are disappointed by the Chair’s decision have an appeal. In NANC, any Member who disputes the finding of a "consensus" may bring their point of view to the next higher authority as a minority opinion. (The higher authority is the full NANC in the case of subsidiary groups’ decisions and the FCC in the case of the full NANC’s decisions).  It is better for the higher authority to receive a “consensus” decision and one or more “minority” opinions than to have no recommendations at all. Indeed, having both “consensus” and “minority” views can be very valuable to the higher authority.

In summary, unanimity is ideal. When unanimity is impossible, anything other than the admittedly subjective consensus process runs the risk of gridlock. It is much better to present a disputed consensus opinion than no advice at all. Consensus keeps things moving and the "appeal" process ensures fairness.

# Appendix D – Excerpt from LNPA Working Group September 14-15, 2010, Minutes

NANC 437 Feasibility Discussion (Action Item 060810-04) – All:

**Action Item 060810-04:** At the September 14-15, 2010 face-to-face LNPA WG meeting, the Service Providers that have participated in the LNPA WG’s feasibility analysis of NANC 437 will determine if consensus can be reached on two separate questions:

1. Based on the definition attached, is NANC 437 “Technically Feasible?”
2. Based on the definition attached, is NANC 437 “Operationally Feasible?”

See related Action Items 060810-02 and 060810-03.

* Technical Feasibility:
  + T-Mobile began the discussion by stating that they believed NANC 437 was technically feasible but would require significant level of effort and money to develop and implement. Sprint Nextel, Comcast, Qwest, Integra, Verizon, AT&T, and US Cellular also voiced their opinion that NANC 437 is technically feasible.
  + Some providers stated that, per the definition of technically feasible, no insurmountable technical issues have been identified during the analysis, but added that the architecture has significant technical challenges in their opinion.
  + There were no objections voiced by participating Service Providers on the question of NANC 437 technical feasibility. As a result, consensus was reached that NANC 437 is believed to be technically feasible.
* Operational Feasibility:
* Comcast stated that they believed NANC 437 was operationally feasible and will require a high level of cooperation among vendors, but they felt benefits of increased competition would result.
* Verizon stated that they believed NANC 437 was not operationally feasible due to reasons including the need for highly competitive vendors to cooperate with each other to resolve service-affecting issues and the likely resultant delays, their view that an unacceptable level of effort would be required to maintain the current level of NPAC platform performance and reliability, and unacceptable adverse impacts to the overall porting process and the consumer’s ability to seamlessly port their number. Verizon further stated that they did not recommend any further consideration of a peered NPAC architecture and that the best path to ensure competition was continued development of a competitive bid by the NAPM LLC for the current one-NPAC database-per-region architecture.
* AT&T stated that they agreed with Verizon and believed NANC 437 was not operationally feasible.
* Sprint Nextel stated that they also agreed with Verizon and cited the remaining open issues in the NANC 437 Issues Parking Lot Matrix in stating that they believed NANC 437 was not operationally feasible.
* XO Communications stated that they felt a peered NPAC architecture would be a step backward from the current architecture and believed NANC 437 was not operationally feasible.
* T-Mobile stated they felt NANC 437 was not operationally feasible and cited a recent example of finger pointing between vendors that led to prolonged resolution of a service-affecting issue.
* US Cellular stated that they believed NANC 437 is not operationally feasible because addition of the second and subsequent NPACs will either result in the degradation of service or an additional expense to maintain the service at the same level.  Consequently, adding new NPACs into the region will cause significant risk to number porting for an uncertain reward.
* Qwest stated that they felt NANC 437 is operationally feasible and added that it will require effort, and there are still some open parking lot issues, but felt that the open issues could be dealt with as part of the RFP process.
* One Communications stated that they believe NANC 437 is operationally feasible and that it was neither the intent of NANC 437 nor  necessary for every issue to be vetted to a final solution in order to make that determination.
* Integra stated that they felt NANC 437 is operationally feasible but may be difficult and costly to implement and must be monitored to ensure it can work ongoing.
* A provider stated that some seem to be confusing the definition of technical feasibility with operational feasibility. Another provider responded that that was not the case and that they had considered the definition of both when making their determination.
* A provider stated that, although the LNPA WG typically does not consider the cost of Change Orders, it is difficult to not consider the cost when making feasibility decisions.
* Following are the positions of those providers that voiced opinions on the question of NANC 437 operational feasibility:

OPERATIONALLY FEASIBLE NOT OPERATIONALLY FEASIBLE

Cablevision AT&T

Comcast Hawaiian Telco

Integra RCN

One Communication Sprint Nextel

Qwest T-Mobile

US Cellular

Verizon

XO Communications

ABSTAINING: Windstream

As a result, the Co-Chairs determined that there was no clear consensus either way as to the question of NANC 437 operational feasibility.

NOTE: Subsequent to the September 2010 LNPA WG meeting, Cox Communications contacted the Co-Chairs and asked that their position in support of both NANC 437 technical and operational feasibility be noted.

* It was agreed that position papers on both sides would be developed documenting the rationale for each. Service Providers on both sides of the question of NANC 437 operational feasibility are to develop a document with their rationale for their respective positions. The two documents are to be distributed to the LNPA WG by October 8, 2010 for review prior to discussion on the October 12, 2010 LNPA WG conference call. Tim Kagele, Comcast, will lead the group drafting the position paper in support of NANC 437 operational feasibility. Gary Sacra, Verizon, will lead the group drafting the position paper in opposition to NANC 437 operational feasibility.
* Joel Zamlong, Telcordia, summarized by thanking the LNPA WG for a great job in performing the feasibility analysis of NANC 437 and stated that Telcordia appreciated the diligence and commitment by all vendors and Service Providers.  He stated that the fact that there was a parking lot of approximately 200 items that were each discussed attests to the diligence of the group.  He further stated that he intends to thank the WG again in front of the NANC.  He feels that NANC 437 is an industry Change Order brought to the table by Telcordia.  He further stated that based on discussions that Telcordia was having with the NAPM LLC in 2008 on NPAC solutions, the LLC asked Telcordia to get input from industry experts on the technical feasibility of a peered NPAC solution.  Telcordia chose to approach the LNPA WG in January 2009 to present the Change Order which was accepted by the industry to develop an assessment of its feasibility. Joel further stated that all comments expressed on cost and vendor cooperation in the operational feasibility area are valid concerns but believes they are business concerns that the NAPM LLC would need to further assess with the associated benefits through an RFP process to determine the business viability of the solution.
* Next Steps – All:
* The Co-Chairs outlined the next steps for NANC 437 stating that only Telcordia has requested that the WG address the peered NPAC architecture proposal by conducting the feasibility analysis, which has now been completed. The Final Report will be given to Telcordia and distributed over the LNPA WG distribution list. A readout of the outcome of the LNPA WG’s determinations of technical and operational feasibility will also be part of the Project Executive report to the NAPM LLC and the LNPA WG’s report to NANC at their October 22, 2010 meeting.

1. The Supporting Companies acknowledge that there may be other acceptable architectural solutions proposed via the RFI/RFP process that are technically and operationally feasible. [↑](#footnote-ref-1)
2. The Supporting Companies recognize that one vendor departed the process leading to a single NPAC vendor operating the number portability platform. [↑](#footnote-ref-2)
3. Parking Lot #6, #15, #17, #23, #25, #27, #33,#58, #139, #177, #195 address M&Ps for porting problems encountered in a multi NPAC environment [↑](#footnote-ref-3)
4. Maintain the current requirement that the service provider to NPAC system interfaces

   will remain available 99.9% of the time, regardless how many NPAC’s serve an NPAC

   region (Parking Lot #173): [↑](#footnote-ref-4)
5. Protocols may include, but not be limited to Service Level Requirements (SLRs), Methods and Procedures (M&Ps), metrics, reporting requirements and other measuring and performance data. [↑](#footnote-ref-5)
6. See attachment A for LNPA W/G proposed NANC 437 Billing Use Cases [↑](#footnote-ref-6)