

**North American Numbering Council
Meeting Transcript
March 28, 2017 (Final)**

I. Time and Place of Meeting. The North American Numbering Council (NANC) held a meeting commencing at 10:00 a.m., at the Federal Communications Commission, 445 12th Street, S.W., Room TW-C305, Washington, D. C. 20554.

II. List of Attendees.

Voting Council Members:

- | | |
|-----------------------------------|--|
| 1. Hon. Karen Charles Peterson | NARUC – Massachusetts |
| 2. Henry Hultquist/Mark Lancaster | AT&T Inc. |
| 3. Philip Linse | CenturyLink |
| 4. Betty Sanders/Glenn Clepper | Charter Communications |
| 5. Tim Kagele | Comcast Corporation |
| 6. Courtney Neville | Competitive Carriers Association |
| 7. Benjamin Aron | CTIA |
| 8. David K. Greenhaus | 800 Response Information services, LLC |
| 9. Christopher Shipley | INCOMPAS |
| 10. Cary Hinton | NARUC, DC |
| 11. Paul Kjellander/Carolee Hall | NARUC, Idaho |
| 12. Hon. Lynn Slaby | NARUC, Ohio |
| 13. Cullen Robbins | NARUC, Nebraska |
| 14. Jerome Candelaria | NCTA |
| 15. Brian Ford | NTCA |
| 16. Rosemary Leist | Sprint |
| 17. Michelle Thomas | T-Mobile |
| 18. Robert Morse | Verizon |
| 19. Brendan Kasper | Vonage |

Special Members (Non-voting):

John Manning	NANPA
Amy Putnam	PA
Jackie Voss	ATIS

Commission Employees:

Marilyn Jones, Designated Federal Officer (DFO)
Kris Monteith, Wireline Competition Bureau
Ann Stevens, Competition Policy Division, Wireline Competition Bureau
Sanford Williams, Competition Policy Division, Wireline Competition Bureau
Michelle Sclater, Competition Policy Division, Wireline Competition Bureau
Carmell Weathers, Competition Policy Division, Wireline Competition Bureau

III. Estimate of Public Attendance. Approximately 20 members of the public attended the meeting as observers.

IV. Documents Introduced.

- (1) Agenda
- (2) NANC Meeting Transcript – December 1, 2016
- (3) Robocalls and Spoofing Update (SIP Forum)
- (4) North American Portability Management (NAPM LLC) Report to the NANC
- (5) LNPA Transition Oversight Manager (TOM)
- (6) Local Number Portability Administration Working Group (LNPA WG)
- (7) North American Numbering Plan Administration (NANPA) Report to the NANC
- (8) National Thousands Block Pooling Administrator (PA) Report to the NANC
- (9) Numbering Oversight Working Group (NOWG) Report
- (10) Report of the Toll Free Number Administrator (TFNA)
- (11) North American Numbering Plan Billing and Collection (NANP B&C) Agent Report
- (12) Billing and Collection Working Group (B&C WG) Report to the NANC
- (13) Future of Numbering (FoN) Working Group Report to the NANC
- (14) Internet Protocol Issue Management Group (IP IMG) Report
- (15) Status of the Industry Numbering Committee (INC) activities

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VI. Summary of the Meeting

Karen Charles Peterson: Good morning everyone. We're going to get the meeting started. Good morning. I'm Karen Charles Peterson, the commissioner for Massachusetts. I was asked to chair the meeting this morning. So welcome everyone. We have a very long agenda, so we're going to get started. I believe that there are a number of people on the bridge. It sounds that way. I would just ask for those on the bridge, if you could just mute your phones that would be fantastic.

ANNOUNCEMENTS AND RECENT NEWS

Again, I want to just welcome everyone for being here this morning. Commissioner Kane could not join us, so I am here chairing the meeting. We do have some recent news. We have some new members to the NANC. I'd like to welcome Tim Kagele of Comcast, hey, Tim; Sandra Merrick who is from Massachusetts, she's actually the general counsel, is not here today but again we'd love to welcome her to the NANC; and, Philip Linse of CenturyLink, welcome, Philip.

APPROVAL OF THE TRANSCRIPT

Everyone should have received a copy of the transcript from the last meeting. I hope everyone has had an opportunity to review the transcript, any questions, concerns, edits? Do we have a motion to approve the transcript?

Female Voice: I so move.

Charles Petersen Karen: Second?

Male Voice: I second.

Karen Charles Peterson: All in favor, say aye?

Voices: Aye.

Karen Charles Peterson: The transcript will be Item Number 2. So I'd like to now start by going around the room and just doing introductions. I'll start to my left.

Henry Hultquist: Henry Hultquist, AT&T.

Philip Linse: Philip Linse, CenturyLink.

Betty Sanders: Betty Sanders, Charter.

Tim Kagele: Tim Kagele, Comcast.

Courtney Neville: Courtney Neville, Competitive Carriers Association.

David Greenhouse: David Greenhouse, 800 Response Information Services.

Christopher Shipley: Christopher Shipley with INCOMPAS.

Cary Hinton: Cary Hinton, DC Public Service Commission.

Carolee Hall: Carolee Hall, Idaho PUC staff.

Brian Ford: Brian Ford, NTCA.

Richard Shockey: Rich Shockey, SIP Forum.

Rosemary Leist: Rosemary Leist, Sprint.

Robert Morse: Rob Morse, Verizon.

Marilyn Jones: Marilyn Jones, FCC.

Charles Karen Peterson: Can we have those on the bridge please identify themselves.

Michelle Thomas: Michelle Thomas, T-Mobile, voting member.

Paula Campagnoli: Paula Campagnoli with the LNPA Working Group.

Jennifer Pyn: Jennifer Pyn, NOWG.

Mark Lancaster: Mark Lancaster, AT&T.

Anita: Anita [cross-talking], Minnesota Department of Commerce.

Linda Hyman: Linda Hyman, NEUSTAR.

Rebecca Beaton: Rebecca Beaton, Washington State
Commission staff.

Lisa Jill Freeman: Lisa Jill Freeman, Bandwidth.com

Glenn Clepper: Glenn Clepper, Charter.

Brendan Kasper: Brendan Kasper, Vonage.

Paul Kjellander: Paul Kjellander, Idaho.

Garth Steele: Garth Steele, Welch LLP, Billing and
Collection agent, I will be presenting a report later.

David Reid: David Al Reid, AT&T.

Cullen Robbins: Cullen Robbins, Nebraska Public Service
Commission.

Allyson Blevins: Allyson Blevins, Charter.

Bridget Alexander: Bridget Alexander, JSI.

Joseph Cabrera: Joe Cabrera, CRTC.

Lynn Slaby: Commissioner Lyn Slaby, Ohio.

Lynn Notarianni: Lynn Notarianni, Colorado PUC.

Susan Travis: Susan Travis, Colorado PUC.

Suzanne Addington: Suzanne Addington, FoN Working Group
tri-chair.

Dyan Adams: Dyan Adams, ATIS Inc. Co-chair.

Dana Crandall: Dana Crandall, Verizon.

Karen Charles Peterson: I believe we have everyone. Thank
you.

Chairman Ajit Pai

So we have the chairman of the FCC with us this morning. We are just so happy to have you, Chairman Pai. The chairman is here this morning to make some opening remarks and to welcome us here at the FCC. So take it away, please.

Ajit Pai: I can't do any better than just getting applause for sitting down, so probably I'll [sounds like] take off right now. So what's it? Ninety-nine percent of like just showing up, so I've done that now. But no, thank you very much for that kind introduction.

Charles Karen Peterson: Absolutely.

Ajit Pai: Greetings to the NANC members. Welcome to the FCC. I really appreciate your being here. I also thanks to you for chairing this meeting in Chairman Kane's absence.

Karen Charles Peterson: Absolutely.

Ajit Pai: Please do know that we wish her well and we miss her today.

I was doing my research on the history of NANC and I found that it's one of the longest and most important federal advisory committees that we've got. It was established in October of 1995 and it held its first meeting on October 1st of 1996. To give you a sense of how long ago that was, that very evening the Baltimore Orioles beat the New York Mets in the playoffs. Bobby Bonilla hit a homerun in that game. So we're really dating ourselves. The number one movie was *First Wives Club* with Bette

Midler. The number one song in America was the *Macarena*, believe it or not.

Now, I'd like to think that NANC has much more duration and much more credibility over the long term than any of those three phenomena that I just described. I think it illustrates how well established this committee is. Through your diverse and balanced membership, you've been instrumental in ensuring the efficient and impartial administration of the North American Numbering Plan, which is very valuable to us. I think, frankly, the value of your work today in the telecommunications industry generally cannot be overstated.

In the 20 years since it was established, the NANC has provided numerous recommendations to the FCC to address as you know a wide array of issues including wireless integration for local number portability, abbreviated dialing arrangements, the neutrality of toll-free database administration, and the feasibility of local number portability for 500 and 900 numbers. These efforts have been very helpful to the commission, and so I appreciate the time and the expertise that each of you has dedicated to these tasks.

I also want to thank you all for your attendance and for your efforts to provide the commission with a sound policy and technical recommendations on evolving and competitively significant numbering issues facing the telecom industry.

Numbering resources are a finite and scarce resource, so it's also a critical aspect, I think, of our nation's communications infrastructure. Making those resources available in an efficient and timely basis to communications service providers is essential to a vibrant and dynamic communications marketplace, so thank you for your role in that effort.

Now, in the current NANC term, I recognize and appreciate the fact that you have focused on matters such as local number portability, including the first transition of the LNPA since 1997, examination of the feasibility and the obstacles to nationwide number portability, and annual evaluations of the vendors who provide number administration services, and changes to the annual numbering contribution factors. So you're not just doing make-work. This is serious and complex work that you're doing.

Now, I know that some on the outside who aren't familiar with your work may complain about all the acronyms that inhabit your work. I frankly have no idea what it is that they're talking about. I mean just because our decisions on NANPA, PA and LNPA were informed by the NANC's recommendations, just because you've also considered issues like wireless and intermodal LNP implementation and the NPAC of VoIP and INAM on NANP. How many acronyms -- what's the problem here? I just don't get it.

But, in all seriousness, I do want you to know that despite the fact that you labor in some highly technical thickets, your recommendations, your expertise help us navigate through those thickets and at the end of the day helped the American telecom consumer have a much more efficient and seamless experience. They may never know about your work in this room and going forward, but they'll all benefit from it in the years to come. Speaking not so much as a regulator but as a consumer, I just want to say thank you for all you've done. And thanks for letting me inhabit the floor for a couple of minutes.

Charles Peterson Karen: You're welcome.

Ajit Pai: Thank you. I guess, like George Costanza, I should just say, oh, you've been great everybody, leave on a high note.

REPORT OF THE ROBCALLS AND SPOOFING

Karen Charles Peterson: Okay. Unless you would like to take any questions, we will move on to Item Number 3. That is Richard Shockey in our robocalls and spoofing update.

Ajit Pai: The expert.

Richard Shockey: If we could get it projected.

Karen Charles Peterson: Oh, just one question? Okay.

Cary Hinton: I'm not going to miss out on the opportunity to ask a question. I'm Cary Hinton with the DC Public Service Commission. I'm the alternate to Chairman Kane. Last year, the

NANC submitted a report and recommendations to the commission regarding nationwide number portability. Do you perceive that the FCC may be acting on either those recommendations or something in that area in the near future?

Ajit Pai: I'll be candid. We haven't yet taken a look at it. We're still somewhat green on the job by just a couple of months, so we're still getting our bearings, meeting with various bureaus about some of the things that have been outstanding. But I will be happy to take a look and I will see what action we might be able to take.

Cary Hinton: Thank you very much.

Ajit Pai: Thank you.

Karen Charles Peterson: So Mr. Shockey, take it away.

Richard Shockey: All right. We're working here, I hope. My name is Rich Shockey. I'm a member of the NANC here, and have been during this term. I'm also the chairman of SIP Forum.

Chairwoman Kane asked me to give an update to my last presentation on some of the issues involving robocalls, caller validation and some of the technologies that are involved with that. Certainly in the last 90 days there had been some significant activity that all of you should be aware of. Let me also point out that this is a personal opinion. It's not necessarily the opinion of the SIP Forum or any of its member

companies, et cetera, et cetera. Yes, I am a deranged raging lunatic, et cetera, et cetera.

Let's all remind ourselves how we got here. We wanted competitive voice markets, and we got them. Because of the nature of both the SIP networks and the classic TDM PSTN networks, we have created some attack vectors in the network and resolving those is where we are beginning to work right now. So the central issue for us as an industry as well as from the regulatory perspective is to restore trust in the voice and the messaging networks.

As a reminder, robocalls and spoofing are still the number one complaint to both the Federal Communications Commission and the Federal Trade Commission. It is 5 million complaints a year to FTC. That is beyond unacceptable and we need to fix that. There are lots of issues involved with that. I actually testified before Congress last year in conjunction with reforming TCPA and the Truth in Caller ID Act. Robocalls and spoofing are still the number one complaint to the British regulator, Ofcom. I personally spoke to both British carriers and the regulators last year in November, in London. I would actually want you to know that Huw Saunders of Ofcom actually preceded me. If you're interested in this sort of policy direction that the British government is going to be outlining over this year, that's a good place to start.

In addition, it is still the number one complaint to our friends in Canada and the CRTC. Canada in particular has been taking very, very aggressive action in this area. They have had a consultation which is roughly equivalent to a notice of proposed rulemaking. They have, in fact, issued a directive to Canadian carriers to begin to install anti-robocall solutions within Canadian carrier networks *immediately* or somewhat sooner if at all possible. So that is an area that if some of you are interested in might actually provide some insight as to where things might be going on here in the United States.

Obviously, last year we had to strike force our robocalls. I don't want to go into that too deeply since most of you have already read the reports here. That work seems to be winding up probably in the mid-April timeframe, which means the task involving this will get parceled out to the various committees both industry-wide and perhaps even the NANC itself. So last week was extremely significant and in fact, we have the first notice of inquiry in NPRM on robocalls from the FCC itself. Without going into too much detail, in my opinion this is a start. It only addresses, at least at this particular point, the Do Not Originate and safe harbor for blocking technologies. But I would note that it is not the end of this process. In particular, I would note Chairman Pai's public statement last Thursday that indicated this is not the end of the process by

any stretch of the imagination. It is only the first. So I think we could sort of stay tuned for potentially further action in the future here and, in the interest of time, we are moving down a process to call validation.

This idea of call validation is what is known as attestation, which means service provider A and service provider B. So the full attestation would be a call that originates on one network, is attested to fully and completely to the network of the terminating carrier, and that the SIP invite message actually carries cryptographically secure information which will allow that attestation to be proven in a highly secure manner. There are other forms of attestation that will be developed and deployed, including one where you may have an OTT vendor working through a third party - a competitor provider - and there is going to be some issues involving international call gateways, which I think most of us in the industry realize is the cause of most of our problems where gateway providers who will land calls in the United States will actually have to attest to the origin of where those calls came in from and why. That would allow both this commission, the Federal Trade Commission, and other law enforcement agencies much better track and trace capabilities.

I think last week or the last couple of weeks we saw some extremely egregious problems involving the Jewish Community

Centers. It was not just the attacks on JCC in the United States, but they were attacked in Canada as well. These are exactly the kind of problems that we are restructuring the call networks to be able to address.

One of the more interesting ideas that is going to be deployed really in our numbering networks and in our call termination network is this idea of analytics which is, as a call terminates on a network, that call is evaluated using a variety of data from a variety of sources. Some of this could be the Do Not Originate list. Some of this could be the Do Not Call list. It could be information passed between service providers in a safe harbor manner so that Carrier A or say for instance Comcast realizes there is a problem that is attacking their network and could inform other service providers to be on guard for these kinds of situations as they come up. Those are details from an engineering perspective that we will need to work out fairly shortly.

But along with our partners at ATIS, the SIP Forum and our taskforce is working through those slowly but deliberately. We will certainly need input from the industry and the commission on various technical directions we should be pursuing. This idea of data analytics is now a viable market place. This is where our technology providers are, I think, helping all of us at this particular point.

At least I've been able to count seven companies that are knocking on doors, providing solutions both to U.S. carriers, Canadian carriers, and potentially British carriers on how to mitigate these problems. I think this is also going to be a fruitful area for entrepreneurial activity in the next 12 to 24 months. TNSI and the rest of Virginia, obviously companies that we all know, iconectiv, Neustar, Secure Logic, High-A [phonetic] in Seattle which is working with several major firms as well. This is now a viable business where we can partner with our technology firms in moving forward.

Last, but not the least, we need to get this information into the hands of the consumer. This was clearly one of the ideas that came out of the strike force. We want the telephony application server to be able to put data on to what we call the call user agent. It is the phone that we all carry. It could be the enterprise desktop. It could be the television set. It is in your living room. Both 3GPP and the IETF are looking at various kinds of signaling aspects that move this data back and forth. The technical community is just beginning this process and we look forward to any input that all of you may have to our work going forward.

This is hopefully, again, what we think the end game should look like which is a call message that provides highly valuable information to the consumer on who is calling for you, that the

call has been validated, and that you have options to block callers, throw it into voicemail or other various ideas that carriers may decide to do. We do not believe, by the way, that this should be one size fits all. We believe that both the wireless industry, as well as the traditional landline industries - cable - may wish to look at other value adds as well. We want to encourage innovation here, but any input that we can get on a common set of boundaries would be very, very helpful at this early and nascent stage.

Again, this idea of signaling verification would actually transmit data from the data analytics function to the user agent. This is being worked in 3GPP. A number of you have engineers who participated in 3GPP. This is being worked literally as we speak. This is where the IETF, ATIS, and SIP Forum are beginning to work right now. Our phase one is now done, which is the basic star shaking framework on a forward-looking basis. These documents are now publicly accessible.

I can also announce as well that by agreement with our ATIS partners, all of our further work in progress will be made available publicly. Their regulators both here in the United States, carriers who are not members of ATIS or the SIP Forum and international partners can download these documents and participate in the process in an open and transparent multi-stake holder consensus-driven process as we move forward. So we

do have a governance model for certificate management for the trust anchor in advance state at this particular point. We hope to wrap up that work by early May at AMAC with our friends at ATIS. We will have those documents available publicly probably by the first of next week so that all of you are available to look at the progress that we've made at least so far. There is still time for input. Then last, but not the least, we are going to begin this process of call display.

On architecture, I had certainly spoken with staff here at the commission. I had also spoken with staff at the Federal Trade Commission which also has some interesting ideas about how this can roll out in the future. So what next, I certainly don't want to speak for the chairman or staff, but we believe that a certificate trust anchor does need to be established. There will have to be some policy on who gets 509 credentials and why. There are these privacy issues involving exchange of inter-carrier data.

The other issues are frankly legislative, because the Truth in Caller ID Act is an oxymoron. Proof of intent to defraud is very, very difficult to prosecute. And I think that Chairman Thune in the Senate and Chairman Blackburn in the House have certainly indicated in public statements that they're prepared to take on these issues perhaps as early as this year. So there is a tremendous amount of activity moving along very, very

quickly in these areas. On the basis of that, I'm happy to take any questions.

Female Voice: What does IMHO mean?

Richard Shockey: In my humble opinion.

Karen Charles Peterson: We didn't hear the question.

Richard Shockey: What does it mean?

Female Voice: I just didn't know what it stood for. It was in your presentation.

Richard Shockey: In my humble opinion.

Female Voice: Okay.

Richard Shockey: Right.

Karen Charles Peterson: Okay. Are there any other questions? What about the bridge? Hearing no other questions, thank you so much, Mr. Shockey, for your presentation.

Richard Shockey: And of course this presentation will be available on the NANC chair's website as well.

Karen Charles Peterson: Again, thank you. So that's Item Number 3.

DISCUSSION OF THE NORTH AMERICAN PORTABILITY MANAGEMENT LLC
(NAPM LLC)

Moving forward, we will have Teresa Patton come up and present from the North American Portability Management LLC, which will be Item Number 4.

Teresa Patton: Good morning. So for the month of March, no new statements of work have been received from Neustar. We have received a new one from iconectiv. That's SOW #3. It's in regards to new sunset items under NANC 460, and it's currently review by the NAPM. The NAPM LLC remains open to new members, and new membership outreach was made to ATL Communications since the last report. The current officers for 2017 remain the same as previously reported. That would be myself, Teresa Patton, and Tim Kagele from Comcast as the co-chair. Our treasurer is Suzanne Addington from Sprint. The recording secretary is Rosemary Leist, also with Sprint. And our secretary is Paula Campagnoli from T-Mobile.

As many of you know, Mary Retka did retire from CenturyLink after a long and distinguished career. We definitely will miss her contributions to the LLC.

In regards to the LNPA transition, after a year of negotiation the NAPM reached agreement with Neustar, iconectiv, and the Transition Oversight Manager on the four-way nondisclosure agreement thereby enabling multiparty transition planning meetings to move forward. The NAPM received information concerning an acquisition of a minority investment partner, Francisco Partners in Ericsson's iconectiv business. Anticipated transaction close time is Q3 2017, and is subject to regulatory approval. Neustar has requested acceleration of

changed management responsibilities to iconectiv, and the request is currently under review. The NAPM did send a notification to the LNPA Working Group of this pending change and is seeking any input if concerns exist.

In preparation for the transition, the NAPM, Neustar, and the Transition Oversight Manager are in the process of finalizing deliverable term sheets for all of the parallel operations which will outline the scope of work required. The NAPM approved the second quarterly extension through April 30, 2017 to continue having PricewaterhouseCoopers serve as the Transition Oversight Manager. The NAPM continues to file monthly status reports with the FCC on the last day of each month. We continue to meet regularly with the FCC and the TOM to provide transition status, as well as apprise the FCC of issues and concerns pertinent to the transition. Any questions?
Mr. Hinton.

Cary Hinton: Thank you, Cary Hinton, DC Public Service Commission. In the last report that was filed by the NAPM on the LNPA transition, it was noted that the NAPM views the steps being taken by the participants to be on track for cutover in May of 2018 I believe.

Teresa Patton: Yes.

Cary Hinton: Is there any change to that?

Teresa Patton: No. We are still on track for doing the final migration at the final acceptance day on May 25, 2018.

Cary Hinton: Very good. Thank you.

Karen Charles Peterson: Any questions from members on the bridge, hearing none, thank you.

Teresa Patton: Thank you.

Karen Charles Peterson: Again, that presentation was Item Number 4.

**DISCUSSION OF THE LOCAL NUMBER PORTABILITY ADMINISTRATION
(LNPA) TRANSITION OVERSIGHT MANAGER (TOM) REPORT**

Moving on, we will have a discussion about the LNPA and the TOM. Bill Reilly.

Bill Reilly: Okay. Good morning Commissioner Peterson and distinguished members of the NANC. Thank you for the opportunity to address you today. I'm Bill Reilly. I'm a director with PricewaterhouseCoopers or PWC. I'm here representing the LNPA Transition Oversight Manager or TOM. I'd like to give you an update on the status of the LNPA transition, our accomplishment since our last update, and our planned next steps.

First I'll briefly review the latest transition outreach and education plan events. I'll provide an update on the transition, including a view into the key activities and accomplishments across the four primary work streams of the

project. I will also briefly touch on onboarding and testing activities. Then I'll cover next steps, as well as outreach and education events that will provide additional opportunities to interact with the TOM.

Starting with recent outreach events, since our last report to the NANC in December, we have held four TOEP webcasts attended by approximately 200 to 250 participants each and also provided a transition status update to the National Association of Regulatory Commissioners' meeting on February 13 in Washington, D.C. The most recent Transition Outreach in Education Plan or TOEP webcast was held on March 15. It covered an update on the status of key transition activities, a review of the onboarding process, a walkthrough of the expected regional migration dates, the plans for outreach activities that the TOM is conducting to engage transition stakeholders, and a webcast question and answer session. For those that missed it, the materials from the webcast are available on the LNPA transition tab of the napmlc.org website.

Next, moving to Section 2, to review the key progress and accomplishments across the transition work stream, as you can see from the top level transition dashboard provided in our handout, each row corresponds to one of the major transition work streams. Taking them one by one, within the NPAC SMS

platform build work stream, both software development and production data center construction are on track.

Within the onboarding and outreach work stream, initial efforts have been focused on service providers, service bureaus, providers of telecom-related services and vendors and we've been making great progress. Approximately 50 percent of these users have started the onboarding process. As of March 17, when this report was finalized, 544 users had fully completed registration. Industry testing activities won't really begin until May but, nonetheless, progress is being made in this work stream as well. As of March 17, five acceptance test plans had been approved, and one additional acceptance test plan was expected to be and was fully approved by March 27.

Finally, in the data migration and Go Live work stream, progress is being made in building out the detailed requirements for parallel operations activities which define how the transition will work while both iconectiv and Neustar are performing some activities. We've updated the risk status of this work stream to yellow due to our concern regarding the interface between the NPAC and the Pooling Administrator. Today there is an automated interface or API between these functions. This interface currently operates behind Neustar's firewall as Neustar supports both functions. But after the transition the interface will need to connect iconectiv to Neustar since only

the NPAC is transitioning. Therefore, the API needs to be hardened or readied for external connection.

This hardening is forecast to complete in November, which is after the planned October completion of iconectiv's corresponding release b-software. So the development and test schedules between the two don't align; therefore, we'll need to make some adjustments. As one example, an alternative mechanism like a manual interface between iconectiv and Neustar could be used for a period of time. Additionally, a two-part delivery which provides the main portion of the API in July and the remainder in November has been defined. This approach could also address the gap. We're monitoring this area closely and we'll share additional updates once the PAS change order is fully approved and plan settled.

Moving to Section 2.1, the NPAC platform bill, datacenter construction and configuration is proceeding against the plan to complete by October. Software is being developed in two major releases to facilitate testing. Release A contains core NPAC functionality and is currently a bit ahead of schedule in independent quality assurance testing. QA encompasses several phases and will validate software readiness for the start of vendor testing in May. With the Release A well down the test track, development focus has shifted to Release B which includes

ancillary services as well as administrative and other non-core NPAC functions.

Next, Section 2.2 is outreach and onboarding. The initial onboarding focus, as I mentioned, has been on vendors, service bureaus, service providers, and providers of telecom-related services. As of March 17, good progress has been made with 12 of 13 service bureaus, and 19 of 21 mechanized users have started onboarding. Mechanized use or onboarding is particularly critical as testing is mandatory for this group, and mechanized users have one of the first test windows in July.

Q1 includes an increasing ramp of onboarding activities for ancillary services users. Introductory outreach for WD&C and ELAP users has been completed and the registration site for these users will open today, March 28. As of March 17, approximately 50 percent of service providers and service bureau and PDRC users had started onboarding. This corresponds to about 56 percent of SPIDs. The large majority of those in the process are service providers. Additionally 12 of 13 service bureaus have started onboarding, and five of six SOA and LSMS vendors have executed the confidentiality and testing agreement which is the initial step in the vendor onboarding process. As of March 17, 544 users had completed registration.

Moving to Section 2.3 on industry testing, as you can see from the schedule, vendors of the first group to test beginning

in May, mechanized users will follow in July. As we've discussed, testing is mandatory for mechanized users and optional for those interfacing through other interface types. Additionally, as of March 17, the first five acceptance test plans have been prepared and approved. These include the overall NPAC SMS ATP, as well as ATPs for data migration, WD&C, IVR, and LTI. An additional ATP for business continuity was submitted for approval and was approved on March 27 after the submission of this report.

Moving to Section 2.4, on data migration and Go Live, the TOM has continued to work on the development and definition of how operational activities will be divided between Neustar and iconectiv while Neustar is operating in certain regions and iconectiv operating others - what we call parallel operations. To date detailed requirements for eight parallel operations areas have been drafted and we're in the process of reviewing them with the parties to get an agreement. Additionally, test planning for the LNPA to LNPA cutover testing is underway. As we've covered previously, we've been exchanging NPAC data from Neustar to iconectiv using the EBDD or Enhanced Bulk Data Download file specification. The testing later this spring will be more reflective of the conditions associated with the actual cut over. For example, using production hardware, timelines constrained by the length of the maintenance window and so on.

And, as I mentioned before, we're monitoring the past API development closely.

Moving to Section 2.5, additional accomplishments and transition support items since our last report include continuing to work with the stakeholders to better understand and assess various approaches for contingency rollback. We've received and executed a four-way LNPA transition non-disclosure agreement from the transition participants. We've also updated frequently asked questions, publication authorized questions log, and posted additional materials to the transition website.

We've conducted weekly meetings with the NAPM LLC, iconectiv, and Neustar to coordinate activities and communication across the parties and address ad hoc issues as they arise, as well as preparing monthly reports on the LNPA transition for the FCC. Going forward, we'll continue to monitor onboarding and other measures of transition progress and communicate the status to transition stakeholders as appropriate.

Finally, I'd like to cover some of the upcoming TOEP events. Over the next month the TOM is planning a number of events that will provide a variety of opportunities to interact with stakeholders. On April 12, we'll have our next TOEP webcast. Then, in early April, the TOM will be available at the INCOMPAS conference in New Orleans on April 4 and 5. So, feel

free to stop by with your questions and perspectives [sounds like] on the transition.

Karen Charles Peterson: Thank you, Mr. Reilly. Any questions in the room, any questions on the bridge, hearing none, again, thank you very much.

Bill Reilly: Thank you.

Karen Charles Peterson: Mr. Reilly's report will be Item Number 5.

DISCUSSION OF THE LNPA WORKING GROUP (WG) REPORT

Moving on to Item Number 6, discussion of the LNPA Working Group, it's a report by Deborah Tucker.

Deborah Tucker: Hello. My report today will cover the LNPA Working Group tri-chair election, the transition from PSTN to IP, and the LNPA transition. Dawn Lawrence has stepped down as a tri-chair of the LNPA Working Group as a result of taking on new roles and responsibilities within the XO of Verizon Company. Nominations are currently being accepted, and an election to fill the vacated tri-chair position will take place at the May 2 and 3 LNPA Working Group meeting.

For the transition from PSTN to IP, the Testbed Focus Group met last on February 28. The test plan subgroups have continued to be encouraged, too, and have been meeting in between the main group meetings to focus on moving forward with the completion of documentation for the individual test plans. Test plan statuses

were reviewed and updated. Several test plans still need the documentation and walkthrough, and provided for the Testbed Focus Group to review. Preliminary testing is underway on some test cases and the tracking sheet is updated on each call for each test case.

As a result of the handoffs from the FCC/AT&T industry RoboCalling Strike Force and the linkage to these groups testing efforts for the Provider to Provider Use Case 1, Secure Telephony Identity Protocols for End-to-End SIP Calls., ATIS provided the Testbed Focus Group with the monthly ATIS readout on the efforts of this and other ATIS groups that is provided to the FCC.

The next meeting with the FCC was in March. ATIS also provides the same information and the readout to the strike force participants monthly. The next strike force meeting was also in March. For the strike force efforts associated with the Provider-to-Provider Use Case 1, Secure Telephony Identity Protocols for End-to-End SIP Calls, ATIS has a Neustar-sponsored testbed set up. Many companies have signed the ATIS NDA for participation in the testing with full access to the testing documentation, and others may still come forward to sign the NDA as well. There is still opportunity for others to come forward to be included.

The next full team meeting was held on March 14 with additional meeting scheduled for April 4, April 25, May 2, and May 23. The group will not meet at the ATIS annual meeting of committees. Any question about the -- I know it's a little bit different to have this report in the working group, but we've asked to provide it with this report.

As far as the LNPA transition goes, pursuant to the NANC chair's request, the LNPA Working Group continues to discuss possible areas where the LNPA Working Group could be involved in the LNPA transition. During the March 7 LNPA Working Group meeting, the testing sub-team was reactivated for the purpose of reviewing existing group and round-robin test cases to determine how best to apply the test cases for the LNPA transition service provider testing period. Renee Dillon with AT&T will lead the sub-team's efforts.

The LNPA Working Group Architecture Planning Team continues to review current test cases and develop any new test cases that may be needed for the transition. John Malyar with iconectiv and Teresa Patton with AT&T lead the APT.

Through the course of testing, if technical requirement issues arise, those items may be discussed in the working group. We will have a hard start for these discussions the first day of our face-to-face meetings at 1:00 PM, in the time zone of the face-to-face meeting, and we will post our agendas to the NANC

website seven days prior to the meeting. Are there any questions?

Our next face-to-face meeting is May 2 and 3 in Miami, if anyone wants to be there in person. Cary? Mr. Hinton?

Cary Hinton: Thanks, Deb. This isn't really a question. This is really a point of information for the members of NANC. As Deb referred to some of the procedural steps that the working group will be taking, that relates to guidance that Chairman Kane sent to the co-chairs of the working group last week. Over the past few months, the chairman has received input, shall we say, from numerous stakeholders regarding the LNPA transition process. As a result of our evaluation of those comments that we have received, discussions that we received, Chairman Kane sent out guidance last week essentially to address some of the procedural steps that the working group could take to enable it to - in my term - serve as more of an open industry forum to be able to communicate and discuss technical issues, as well as the test cases that are under development.

That email, I should also point out, was intended to provide additional guidance to the working group pursuant to a letter that the Chairman received approximately a year ago from Marilyn Jones, of course the NANC's DFO from the FCC. So that email has been sent to the working group co-chairs, not to full membership. But on behalf of Chairman Kane, I would like to ask

the FCC staff if they would make sure to post a copy of that email to the NANC chair's website as an item from our meeting today. Thank you.

Deborah Tucker: Any other questions? Okay. Thank you.

Karen Charles Peterson: Thank you. Again I would like to identify this report as Item Number 6.

DISCUSSION OF THE NORTH AMERICAN NUMBERING PLAN

ADMINISTRATOR (NANPA) REPORT

Moving on, a discussion of the North American Numbering Plan Administrator, the NANPA, by John Manning.

John Manning: Good morning everyone. I'm not used to not going first. We're going to discuss this later, Marilyn, about the agenda re-do. Okay?

This morning what I want to do is provide a general overview of NANP Administration of the various resources that we're responsible for, for 2016, take a look of course at relief planning, focusing primarily what's going to be happening in 2017, and then a brief update on our outstanding change orders. That's another NANPA-related activity.

In my report, you'll see midway through is a document called 2016 NANPA highlights document. That document kind of outlines everything that occurred from a NANPA perspective during the past year. It uses a basis for our operational

review that will be taking place here this week. I provide that for your information only. I will not be going through that.

Page 2 of my report gives you a summary of 2016 CO Code Assignment Activity. A couple of items of note here, you'll notice that 2016 is very similar in terms of assignments as in 2014. We had approximately 3,400 assignments in 2016 and the same quantity in 2014, 2015 was a little over 3,700. So not indicating that we may have peaked or not, but we're just going to take a look at that and see if over time that particular 2015 number was a high level mark or if we're going to settle back down around the 3,000 mark going forward. A little over 80 percent of our applications that were assignments were pooling replenishments. We found also that our 2016 return is continuing to trend downward in terms of year over year the number of codes that we get returned to NANPA. In 2016, 99 percent of all the code assignment request that we received and fulfilled were in pooling areas.

I've also provided here some reports that you can get up to date information about CO code activity. Our remark here with regard to the first quarter of 2017, where approximately around 700 codes had been signed for the first quarter, comparing that to the first quarter of 2016, we're running less than what we were experiencing for the same timeframe last year. So again we'll see if these trends continue or not. We have found that

oftentimes we've been asked what's making the demand go up, what's making the demand go down. All I can say is the quantity of carriers requesting codes makes the quantity go up and the quantity go down. I can't come up with a generalized reason as to why we're seeing the figures go up and down.

On page 3 I just talked a little bit about our top area codes in states in terms of code assignment in 2016. Again, this isn't [sounds like] listed. Maybe you want to as a state or maybe you don't want to appear on this list. The number one area code or area code complex for assignments was in Georgia, the Atlanta metropolitan area. You see there a quantity of 62, which quite frankly isn't a lot of codes. You're seeing that large size of the metropolitan area, followed by two area code complexes in Texas. We have our New York and then Florida. Generally, the top five or six you see here have been on the list almost year over year. They just have a tendency to switch spots in terms of the top complex getting CO codes.

The middle page will give you the top states. Not surprisingly, California leads the way, followed by Texas, New York, Florida, and Pennsylvania. I think it's interesting to note how many codes are being assigned in California; yet, only two of the top ten area codes are California area codes. So they're really spreading out in terms of the codes being assigned in California. Granted there are a lot of area codes

in California, so they have the opportunity to spread that demand.

Turning your attention to area codes, with regard to area codes at the end of 2016, there were 414 that were assigned and 392 are actually in service. The breakdown, 373 are geographic; 19 are non-geographic area codes. And we had 22 area codes awaiting implementation; 267 codes available are currently unassigned. As of 2016, I've covered this numerous times in the NANC, the area codes that were assigned, you can see they were assigned for Texas, two in Pennsylvania and one in New York. And we had nine geographic 5XX and PA522 assigned in 2016.

Going into service, we had seven that went into service, Ohio, North Carolina, New York, and Indiana; two are in Canada, and one non-geographic area code that went into service in 2016.

Turning your attention to relief planning, just this month the 315 area code introduced its overlay. The new 680 MPA is the new relay code there, and that was an in-service date of March 11.

The next several bullets talk about area code activity that's going to be taking place this year, first of which is going [sounds like] to New York 212-646-917. We'll have a new area code there in June. Then in August we have two area codes coming online. Well, actually one area code, Washington, 360 is getting a new area code. California we have a geographic area

code where we're actually doing boundary elimination overlay. Idaho, 208's new area code will be coming onboard in September, along with 518 gets its overlay in September. Not to be outdone, Pennsylvania, also in September, 717 will be relieved. Then we will end up with, October, the Texas 210 with an overlay of the 726 area code.

Pennsylvania, 215-267, we received a go ahead from the Pennsylvania commission late last year to go ahead and add a new area code in that area code complex. The 445 area code will be added in March of next year. New this time around to the NANC, in February of this year, the California commission approved an overlay of a 916 with the 279 area code. You can see the start of a permissive [sounds like] 1 + 10 digit-dialing schedule for August of this year, mandatory dialing in February of next year, and the in-service date being March of next year.

Finally, there are two area codes that we recently announced will be relieved. The Newfoundland and Labrador in Canada 709 will be an overlay with the 879 area code scheduled for November 24, 2018. Eastern Quebec, Canada, the 418-581, will have a new area code added to that complex. The 367 also taking place in November of 2018.

A couple of projects to just bring the NANC up to speed on with regard to relief planning underway, all of them are in California, for the California 805 area code. What's pending

there is an ALJ decision. We're expecting that within the next couple of weeks. An overlay has been recommended for the 805 area code. The 619, this is also an MPA boundary elimination that is expected with the 619 and 858 area codes. Again, we're expecting an ALJ decision on that within the next several weeks. California 510, this one had its public and jurisdiction meetings in January and February of this year. An application will be filed by NANPA within the next couple of weeks. Then on the last page, page 6, California 909 area code, public and local jurisdiction meetings are scheduled for next month.

Let's turn our attention real quick to some of the other resources that NANPA administers. These again are all year-end results. In our feature Group B Carrier Identification Codes, you'll see that no codes were assigned in 2016 and nine were reclaimed. We are not concerned about the exhaust of this resource. As you can tell from the chart, we continue to reclaim or recover more of these codes than we're ever assigning. For feature Group D Carrier Identification Codes, we assigned 23 of these codes and 33 were returned or reclaimed in 2016. Also, looking at the chart, you can kind of see beginning in roughly 2013 the trend is we do continue to assign these codes; we would continue to get more of them back.

With regard to the 5XX area code, in 2016 we assigned 826 new 5XX-NXX codes and 50 codes were returned or reclaimed

leaving us 561 codes remaining at the end of the year. This resource is a very popular resource. You can see in 2016 basically we assigned a number of codes equivalent to a full area code in the 5XX area code.

Just last week NANPA published a planning letter announcing that the expected exhaust of this resource will occur sometime in the second half of this year, and the next new 5XX MPA will be the 521 area code. As soon as we run out of the current available 5XX MPA and XXs, we'll announce when assignment start for the 521 area code. The 900 area code, we had no assignments this past year. Five codes were returned, just five. Coincidence if you look at it, 2015 we assigned five 9YY codes, in 2016 we got those five back.

Continuing on page 8, the 555 line numbers, this will be the last time I speak about 555. But in 2015, as you well know, we begin a process of extending communications to all 555 line holder assignees. A moratorium was placed on the assignment at this resource in 2015, and in 2016 we continue that effort. The result was we got 2,900 numbers returned or reclaimed in 2016. For the whole project, over 7,100 555 line numbers were returned or reclaimed. Per NANPA change order 5 and NANPA planning letter 498, the 555 NXX assignment guidelines were sunset on October of 2016. So going forward I will not be reporting on

that resource until some point in time that resource is made available again for assignment.

On 800-855 line numbers, there were no new assignments of that resource in 2016. A total of 93 of these line numbers are assigned. The 456 NXX codes, no new assignments in 2016, we did have one code returned. Right now there are only two 456 NXXs assigned at the end of 2016. Certainly, we'll be looking at potential - maybe - sometime in the near future, seeing that those two assignments are no longer needed, we can actually get this resource returned to our inventory and then the industry numbering committee could possibly look at what we might want to do with this area code. For vertical service codes and ANI information digi-pairs [sounds like], there were no new assignments in 2016.

On NANPA change orders, the only outstanding change order is NANPA Change Order Number 6. This is where we're moving the NANP Administration system to the Amazon Cloud. That change order was approved at the end of September, and we've been working on that over the past five months. Timeframe for implementation is the latter part of April 2017.

Finally, on page 9, some other items of note. NANPA, as has done in previous years, assisted the NOWG with getting out the 2016 NANPA survey by posting it to our website, as well as numerous reminder notifications. Our annual report will be

published by the end of this week. The fourth quarter newsletter came out in the first part of January, and our first quarter 2017 newsletter will be coming out in the first two weeks of April. We will be having our 2016 NANPA annual operations' review over the next couple days with the NOWG. We will be publishing the April 2017 MPA NANP and 5XX MPA exhaust projections in the latter part of April.

I do want to note that we did published some revised exhaust projections just a few weeks ago impacting the Texas 214-469-972. That particular exhaust projection moved out a couple of quarters. The Pennsylvania 484-610, that actually moved out five quarters. And the California 805 also moved out a couple of quarters.

As I mentioned earlier, the next several pages are a highlights document. At the very end of the report is the report titled "MPA's Exhaust in the 36 Months." It's just a summary of all of those area codes that are projected to exhaust of the next three years and their current status in terms of area code relief. Any questions?

Rosemary Leist: Rosemary Leist with Sprint. I just wanted to say, John, that I'm looking forward to the always successful ops review tomorrow. We will be receiving a full download of everything NANPA over the last year. I've always tried to promote these meetings to everyone at the NANC. They're really

informative. They're really good for those of us that are passionate for numbering and numbering resources. It's all day, but it goes by pretty quick. It's just a really good way to know exactly what happened all year last year. It's just very interesting. So thank you. I'm looking forward to it.

John Manning: Thank you, Rosemary.

Karen Charles Peterson: Any other questions, any questions from the bridge, hearing none, thank you, Mr. Manning. Mr. Manning's report is Item Number 7.

DISCUSSION OF THE NATIONAL THOUSANDS BLOCK POOLING

ADMINISTRATOR (PA) REPORT

Now, moving forward, we have Amy Putnam.

Amy Putnam: I am pleased to report the pooling is fine. We were busy the last three months, but we've been fine.

Okay, turning to our first chart here, the PA activity summary data, you see that our figures are up in December, January, and February. Particularly in February, we had a carrier exiting the market, submitted over 2,000 block requests and multiple code requests. That's a lot of work for us because we need to find someone else to take the blocks if the blocks are over-contaminated, and we want to make sure that the customers do not go out of service.

The next chart is the p-ANI summary data, which is comparable to the pooling administration summary data. On page

3, we have the PAS part 3 rolling 12-month figures and the summary data sorted by type which gives you a little more detail. On page 4, among other things, we have the summary information for the rolling 12-month summary on the CO codes that were opened. If you'll notice, we had about 83 percent that were open for pool replenishment in the last 12 months, about 5 percent for dedicated customers and about 12 percent for LRNs.

On page 5, we have the summary of the rate center information changes. That's sorted by the number of affected NPAs and the number of affected states. These tend to be excluded rate centers moving to optional because a second carrier is moving into the rate center. Page 6, we have the reclamation summary. The reclamation summary doesn't show the amount of work involved in sending the notices out every month to the states and the carriers, and working with carriers who have customers on blocks that are eligible to be reclaimed. It always makes me feel kind of bad that that last column looks like it's so small compared to the amount of work that's done.

We have the PAS performance for the last 12 months. We're very pleased with the amount of uptime that we've had, and the RNA, the routing number system performance. Then we move to other pooling-related activities. We submitted all of our reporting requirements on time. P-ANI administration continued

working on reconciling data discrepancies. I don't think that's ever going to go away. We continue to find more.

The NOWG, of course we participated in the regular monthly meetings in January, February, and March. We preceded NANPA this year in our operational review. We met on March 9 and 10. For the first time this was a virtual meeting. By all accounts it was successful, although it is nice to have face-to-face.

Change Orders, Change Order 3B was submitted to the FCC in October. It was revised. It was revised again. Although this says the current status is pending at the FCC, it was pending when I filed this report but it was signed, sealed, and delivered as of 5:21 PM last Friday. So Change Order 3B is executed and we are working on it. Our first deliverable under 3B will be a WebEx this coming Wednesday showing the screens that the NPAC users will see.

Other pooling activities, we changed the number of digits and the tracking number, from six to seven, in a build on February 24. You may have noticed that.

VoIP order, this is a list of companies that have applied for national authorization. Obviously, you can see date filed, docket number, and effective date. This information is available at various places on the FCC website. The initial application shows in Docket Inbox - 52.15. When the FCC begins its review, it assigns a docket number and then after that, to

find out the status, you need to search each docket number. Once the FCC accepts the application and puts it out for public comment, that information is made available on the wireless competition website. We monitor all of that so that we can provide this little list to you.

We continue to educate and work with the VoIP providers in states on application processing requirements and documentation, and we send regular updates to the state commissions. We've received several inquiries from state commissions about VoIP providers not dealing with state requirements. Those have been referred to the FCC. We have a process by which we work with the FCC on issues related to state requirements.

Next page, page 11, starts our 2016 pooling and p-ANI administration highlights. On June 7 the FCC exercised its third one year option beginning July 15, 2016. It expires with the contract on July 14, 2017. We have a summary here of pooling administration application and processing and reclamation information. Although our total applications were down from 2015, we had 123,629 in 2016 and a record high 145,828 in 2015.

The number of block assignments was up in 2016. We are quite pleased to be able to say the PAS was available for 99.995 percent of the time in 2016. We moved it to the AWS Cloud platform on June 11. We had moved the RNS in February and we

are pleased with the way it is performing in the cloud. It dances a lot. We were down for only 25 minutes in 2016, and we conducted maintenance eight times and used none of the scheduled downtime that we've requested. So we were very pleased with that. There's industry support information, change orders. We had a huge amount of activity this year related to transition in the category of change orders, although we actually ended up with only three since the beginning of the contract.

Reporting, we produced a total of 676 reports in 2016. And although it wasn't in 2016, last week we did send in our 2016 annual report to the FCC and we posted it. So if you crave more data about pooling administration or p-ANI, you can go to our website and download our annual report.

Other projects, the implementation of the direct numbering access interconnected VoIP service provider order was significant for us this year. We had processed development, monitoring, education of both states and carriers, and assistance to carriers and that was a significant amount of work across the board. Under p-ANI administration, I particularly note the migration to the cloud on February 20th where we used only 55 minutes of our approved six hours of scheduled downtime. That is the report of the pooling administrator. Any questions? Thank you.

Karen Charles Peterson: Are there any questions on the bridge?

Jerome Candelaria: This is Jerome Candelaria, NCTA. I do have a quick question. It was mentioned that there was a provider who went out of business and there were contaminated codes that were blocked [sounds like] and need a new home. What is the process for finding those? Is it direct outreach to all the providers holding codes in whatever region this company went out of business? Is it direct contact?

Amy Putnam: Well, it's not obvious that a carrier is going out of business. Sometimes, they're exiting a particular market. But the process that we use, we need to verify the amount of contamination on each block that they are interested in disconnecting. Once we have that information, we can then determine whether or not blocks can be returned to the pool because they're under 10 percent contamination or whether we need to find a new home for them. The INC guidelines direct us to seek other carriers who will take the blocks over from the carriers that have ports out of those blocks.

Jerome Candelaria: Right. What I'm curious about, is this a direct outreach to those carriers --

Amy Putnam: Yes.

Jerome Candelaria: -- or do you telegraph it to all the carriers at the same time?

Amy Putnam: We notify the carriers with the largest number of ports, and then we continue to work the list.

Jerome Candelaria: Thanks.

Karen Charles Peterson: Any other questions? Thank you.

Amy Putnam: Thank you.

Karen Charles Peterson: So I'd like to note for the record that Ms. Putnam's report is Item Number 8.

DISCUSSION OF THE NUMBERING OVERSIGHT WORKING GROUP (NOWG)

REPORT

Moving along, we have Laura Dalton discussing Numbering Oversight Working Group, Report Number 9.

Laura Dalton: I have copies for everyone here around the table. I left a printout. Good morning. I'm Laura Dalton from Verizon. I'm one of the co-chairs of the Numbering Oversight Working Group, which is the NOWG, along with Karen Riepenkroger from Sprint.

Slide 2 lists the content of our report. The topics that I'll be discussing on the following slides are the NANPA NPA technical requirements documents, the NOWG's performance evaluation process, and the 2016 performance surveys, followed by a brief summary of the NANPA NPA change orders. The last few slides contain a schedule of our upcoming meetings and a list of NOWG participants.

Turning to Slide 3, NANPA and PA Technical Requirements Documents or TRDs, as we reported at the last NANC meeting, the NOWG has been reviewing and updating the NANPA and PA TRDs. It had been several years since the TRDs were updated. Since the NANPA and PA contracts are due to expire soon in July, we're updating the TRDs so that they're ready to be issued along with the RFPs for the new contracts. We're working on this at the request of the FCC. We have made quite a bit of progress, but these are lengthy documents and we are being very thorough. We have spent time focusing on the details and reviewing the entire documents rather than just adding in anything new as had been the approach with past TRD updates. This is a little bit more extensive than we have seen in the past, but we felt that it was time to really review it. So recently, we temporarily paused our TRD reviews to start preparing the annual performance evaluation reports for the NANPA and the PA.

Slide 4 outlines some of the activities that go into preparing the NANPA and the PA performance reports. As this timeline of activities shows, during the first half of the year the NOWG issues its annual performance surveys to the industry and we review and analyze the survey results. I'll be speaking more about the survey on the following slide. We attend the annual operational reviews that are conducted by the PA and the NANPA. We work individually on drafting the various sections of

the performance evaluation reports. These sections are compiled into draft reports, and we meet several times as a group to review and revise the drafts.

After we determine the annual ratings for the PA and the NANPA, we complete the performance reports. The NOWG then meets with the staff of the FCC's Wireline Competition Bureau to present a readout of our preliminary reports. On June 12 this year we will be meeting with the FCC for the readout, and later in the day we will meet with the NANPA and the PA. We plan to present the performance reports to the NANC for approval at the June NANC meeting.

Turning to Slide 5, the 2016 performance surveys, annually the NOWG conducts three separate industry surveys to obtain information on the performance of the NANPA, PA, and RNA. The surveys are an important aspect of the NOWGs performance evaluation process. It's the means for the NOWG to hear from the entire industry and not just the NOWG participants about their experiences with the NANPA and the PA. The surveys for the 2016 performance year were deployed on January 3 and were open online for a six-week period.

This slide shows the count of the number of entities that completed the three different surveys this year. The response rate was consistent with prior years for the PA and the RNA surveys. The NANPA survey received a greater number of

responses this year from the state regulators. The detailed survey results will be provided to the NANC in the performance evaluation reports that will be presented at the June NANC meeting.

Moving on to Slide 6 and 7, NANPA NPA Change Orders, since John and Amy have already reported on them, I'll only briefly address them here. Slide 6 shows the most recent NANPA Change Order. It's the only outstanding change order right now, and that's Change Order number 6 which is to migrate NAS to the Cloud. This Change Order has been approved and scheduled for implementation in April.

Slide 7 shows recent PA Change Order activity pertaining to Change Order 3B. This change order relates to the LNPA transition from Neustar to iconectiv and the interaction between the PA and the NPAC. It addresses the development and support of the PAS, NPAC, and API. The NOWG recommended approval of this change order as revised and it was approved, as we just heard, by the FCC a few days ago, and is executed. Since that occurred after this report was submitted an update to note on this slide would be the approval of this change order.

Slide 8 shows the NOWG's upcoming meeting schedule for our regularly scheduled monthly conference calls with the NANPA and the PA and for our NOWG-only calls. As Amy had mentioned, earlier this month, on March 9 and 10, the PA conducted its

annual operational review for the NOWG. The NANPA operational review, as Rosemary had mentioned, is coming up this week on Wednesday and Thursday. In addition to the meetings noted on this list, we plan to schedule additional conference calls as needed to prepare the NANPA and the PA performance reports and to continue our TRD review and update.

Slide 9 shows the contact information for the co-chairs and where to find our meeting notes and information. That is on the nanc-chair.org website. The last slide, slide 10, shows a list of NOWG participating entities. That concludes our report.

Karen Charles Peterson: Any questions? Cary?

Cary Hinton: Thank you, Laura. I'm Cary Hinton, DC Public Service Commission. On slide 6, you indicate - Change Order #6 - that the working group has apparently been providing some oversight regarding the NANPA's NAS to the cloud. Could you explain to what extent the working group looks at security issues in that transition to the cloud. With so much press reports about hacking by Russians and others these days, to what extent should we have confidence that by moving the NAS to the cloud, or a cloud or one of the clouds, that there is not an increased opportunity for cybersecurity problems?

Laura Dalton: Well, that certainly is an issue. It could be an issue for any system, I would imagine. But the NOWG, in our review of these change orders, the change order is submitted

by NANPA or the PA - depending on which change order. It gets submitted to the FCC, and at the same time the NOWG receives a copy of the change order. Usually, the FCC holds off acting on it until the NOWG reviews it. We can only review it to the extent of the information that we are given, and that's pretty much the document that has been finalized and submitted to the FCC already. The NOWG as a group reviews the change order more for reasonableness as opposed to doing any deep diving on certain change orders such as the PA change orders that related to the transition, the NPAC transition.

We had further follow-up questions and at times we will submit follow-up questions to the NANPA or the PA. In this case with the NAS, the NAS migration to the cloud, I don't believe that we had any follow-up questions, although I do remember having a conversation with John Manning probably at about the time the change order was submitted where he explained a few additional details to me about it.

We meet as a group, the NOWG members. It is not a very large membership group but we have various, I guess mostly numbering expertise but some other areas also of expertise. To the extent that the people in our group would catch something within the written documentation that would flag concern, we would certainly follow up on it. In this case, this was last year now. I know that right now that's kind of a timely issue

that you had mentioned. But this change order was filed back in September of 2016 and we recommended it for approval by the end of September.

So we did our normal review process, and nothing I would say over and above that in this case. We also used the PA's experience with their PAS migration and also the RNAS migration to the cloud. That was kind of a trial period. We had seen how that went. Everything seemed to be working fine for that. It didn't raise any red flags for us; I'll put it that way. Did you want to address any of these?

Female Voice: Yes.

Laura Dalton: Okay.

Female Voice: Say as someone who has done this already, when we began the process to look at the possibility of moving any of our systems into the cloud, the first thing we did was verify that this was something that the FCC was comfortable with. We were advised that AWS was an FCC-designated cloud provider and that they had been vetted. That was why we chose that vendor.

Karen Charles Peterson: Thank you. Any other questions either in the room or on the bridge, hearing none, again, thank you very much, we will take a 5-minute break. It is now 11:25. If we can return at 11:30, that would be fantastic.

It's 11:30. I'd like to resume. Thank you everyone. So right before we took our short break, we heard from Laura Dalton. That report is Report Number 9 for the record.

DISCUSSION OF THE TOLL FREE NUMBER ADMINISTRATOR (TFNA)

REPORT

We will now hear a discussion of the Toll Free Number Administrator Report from Joel Bernstein. I hope we didn't lose Joel.

Joel Bernstein: No. I'm ready to go.

Karen Charles Peterson: Oh, perfect.

Joel Bernstein: Just snuck up from behind you. Joel Bernstein, SOMOS, for the Toll Free Neutral Administrator, and this is the report for the NANC for this March meeting.

If you go to page 2 on our report, you can see that we have approximately 41.5 million numbers in use as of the end of February. That leaves a spare pool at a little bit over 6.2 million numbers with an exhaust rate of 86.86 percent.

On page 3 we have a handy-dandy chart that gives you toll-free number usage over time from 1998. You can see what the trends are. The last little bit of course covers the last quarter.

On page 4 we have the exhaust by NPA. As always, the 800 numbers, as soon as they come into our system, get reserved again. So we have 100 percent of 800. There are approximately

300,000 or 400,000 numbers left in 888, 877, 866. With 855 being 75 percent used, that's about 2 million numbers left. And 844 is creeping up with 61.2 percent done, so there's a little over 3 million left in that NPA.

Finally, on page 5, you can see the trends of how the NPAs have gone and you can look particularly at how 844 has been reserved a pretty steady rate and pretty strong. Because that's the newest code that is most available, it is logical that's the one that most numbers are going to be reserved from. That's all I have for today. Does anyone have any questions? Thank you very much.

Karen Charles Peterson: Before you go, Joel, are there any questions on the bridge?

Joel Bernstein: Oh, sorry.

Karen Charles Peterson: No worries. Hearing none, thank you, Joel.

Joel Bernstein: Thank you.

Karen Charles Peterson: Joel's report is Item Number 10.

**DISCUSSION OF THE NORTH AMERICAN NUMBERING PLAN BILLING AND
COLLECTION AGENT REPORT (B&C AGENT)**

We will now hear a discussion of the North American Numbering Plan Billing and Collection Agent Report from Garth Steele. Garth is on the bridge. Garth, are you there.

Garth Steele: Yes. Can you hear me okay?

Karen Charles Peterson: Yes, we can.

Garth Steele: Good. So the report you are looking at is titled "B&C Agent Report to NANC - March 28, 2017." The first page of numbers in the report is the Statement of Financial Position for the North American Numbering Plan Fund as of the most current month in, which is February 28, 2017. So at the end of February you will see from that report that we had \$3.5 million in the bank. We had \$154,000 of accounts receivable for total assets of \$3.7 million. At the end of February, we owed various suppliers for services rendered to the end of February in the amount of \$500,000. So that leaves us with a fund balance at the end of February of \$3.2 million.

If we flip to the next page, which is a wide page, we'll see the income and expenses broken down by month. The first five columns of the report represent actual figures for the months from October to the end of February. If you look at the bottom of the February column, you'll see that surplus or fund balance there of \$3.2 million which tied into the surplus on the previous page. So those are actual numbers, \$3.2 million in surplus at this point.

If you go to the end of the budget column, the September 2017 numbers, you'll see at the bottom line there is \$410,000. So we, from today's perspective, expect to end the year - at the end of September - with a surplus of \$410,000. That is made up of our contingency reserve of \$500,000, plus a small budgetary deficit at this point of \$89,000 which of course the contingency is easily able to absorb. If you look in the second column from the right, you'll see that it's the original budget that was approved at NANC a few meetings ago and we budgeted to end the year with our contingency reserve in place at \$500,000. So that means, from today's perspective, it looks like we're going to eat into our contingency by about \$89,000.

The right-hand column, in the little box in the bottom right of that page, explains where the variances from budget are that would lead to this \$89,000 shortfall. Nothing too significant, I would expect that there's going to be other movement on this as we march through the remaining months to the end of September. But at this point it looks like there might be a small deficit for the year of \$89,000 which could easily be covered off by the contingency reserve that's been budgeted.

Going on to the next page called, "Current and Forecasted Liabilities," we've got the various contracts listed there and the anticipated payments under those contracts for the next six months. Very stable contract amounts with the exception of the

carrier audits, which is the second last line on that page, as we do every year budget for carrier audits in the amount of \$300,000. To-date there have been no carrier audits conducted and so we've arbitrarily assigned that \$300,000 budget amount to the May 2017 month.

The final page of the report goes through some of the various deliverables. Really no major highlights here, nothing that I really need to bring to your attention. So with that, I'll just conclude that the fund appear to be acting as it should. We might end up this year with a small deficit, but that can easily be absorbed with the contingency reserve. I'll turn it back to you.

Karen Charles Peterson: Thank you, Garth. Any questions in the room, any questions on the bridge, hearing none, again thank you, Garth, that will be Report Number 11.

DISCUSSION OF THE BILLING AND COLLECTION WORKING GROUP (B&C WG) REPORT

We now will entertain a discussion of the Billing and Collection Working Group Report by Rosemary Leist.

Rosemary Leist: Good morning.

Karen Charles Peterson: Did I say your last name correct?

Rosemary Leist: Yes. Rosemary Leist.

Karen Charles Peterson: Leist.

Rosemary Leist: Good morning. I chair this with Phil Linse of CenturyLink. I haven't had to give a B&C Working Group Report in a very long time. But now that Mary Retka has chosen not to be on the NANC or be working with us at this particular time, here I am.

In any event, if you go to page 2, the B&C Working Group is responsible for overseeing the performance of the functional requirements provided by the B&C agents. We identified what may need to be included in the budget. Today we're going to talk about the B&C agent contract, and the 2015 and 2016 B&C agent performance review. Due to the budget interval change that we had last year, we're going to be providing two years' worth of evaluation during this particular NANC meeting. That project has been successfully completed, the budget cycle as well as the evaluations.

I wanted to take a quick minute now to mention to the NANC members that the B&C Working Group, in performing our oversight, has been discussing the 8 percent fee that we pay for USAC for their services in assisting with this billing. It's something that we've never talked about before. Well, at least since I have been doing this which is I think since the board of directors took over which was, I don't know, a long time ago. But we noticed that the fee hasn't changed. Since we haven't

talked about it, we would like to investigate the possibilities of negotiating this fee downward if at all possible.

The path to making this happen isn't clear to us, so I just want to take a moment during this B&C Working Group presentation today. We know that some of the state commissioners sit on the USAC board and we thought we'd just quickly mention today that if anyone would be willing to talk to Phil or I or have any insight at all on this particular subject or could help point us in the right direction of some sort, you could reach out to us after the meeting, that would be great. Our emails are listed in the last page of this presentation.

Going on to page 4, our contract renewal, the contract expired October 2009. Welch has been receiving contract extensions, and their last contract extension was through April 30, 2017.

Page 5 and 6 list the contribution factor details. So if you will move to page 7, we will now go on to the 2015 and 2016 performance evaluation. We developed the evaluation consistent with the monthly deliverable matrix that we keep. We evaluated Welch based on their monthly performance. The ratings schematic that we used for performance, which we have used for probably - I don't know - six or seven years now, has been a met or not met schematic. We hold monthly conference calls to gain industry consensus on rating and evaluation.

On page 8, it lists what we considered and reviewed and analyzed in order to come up with our overall evaluation. I won't read all of these to you, but they're all listed there. We take all of these into consideration.

On page 9, I'm happy to report that the 2015 performance evaluation rating is a met. Their performance was competent and reliable. Their decisions and recommendations were within the requirements and fit the expectations. So we want to thank Garth and Heather for all of the work that they do as the B&C working agents, again, for yet another year.

Page 10 lists our membership. On a membership note, we have had one company resign from our group. So as we always are actively looking for new members, we are especially now because we are down one. If anyone is interested in sitting in on our meetings, it's a very simple group to be involved with. We don't require you to do any work. So if you just wanted to join the call, and you could just listen in, we just meet once a month. Our meeting schedule is listed on page 11. Our conference calls last for less than an hour once a month. We're basically just looking over the shoulder of the B&C working agent. Heather does all the work. She just feeds us everything she's done for the last month and we get to become educated on all things billing and collection. It's an interesting process to follow. We would really love to have the new membership. So

on page 11 Phil and my email address are listed. Please let us know. If you like to bridge information, we'd love to have you. Thank you.

Karen Charles Peterson: Thank you. Any questions, any questions from anyone on the bridge, hearing none, thank you, Rosemary. Again Rosemary's report is Item Number 12 for the record.

DISCUSSION OF THE FUTURE OF NUMBERING WORKING GROUP (FoN WG) REPORT

We will now entertain a discussion of the Future of Numbering Working Group, FoN, from Carolee Hall.

Carolee Hall: Hi. I'm Carolee Hall, former tri-chair for the FoN, filling in for the new tri-chairs.

FoN held an election on February 28. There are two new tri-chairs. Hopefully, they'll be joining you guys next time. They are Cullen Robbins from Nebraska and Allyson Blevins with Charter Communication. The FoN working group continues to receive updates from other industry forums to keep the members informed, including those listed - ATIS testbed activities, ATIS-INC, LNPA Working Group, ATIS/SIP Forum.

The FCC Wire Center Trial updates are being monitored and they remain on the agenda, as is nationwide ten-digit dialing. We're keeping an eye on that and where the industry is going with IP transition.

We have a number of attendees, and input is always appreciated and encouraged. The next meeting date is on April 12. The tri-chair contacts are listed there. So if you have any questions or would like to participate, please contact the tri-chairs.

Karen Charles Peterson: Thank you, Carolee. Any questions, any questions from the bridge, hearing none, again thank you. Carolee's report will be Item Number 13.

**DISCUSSION OF THE INTERNET PROTOCOL ISSUE MANAGEMENT GROUP
(IP IMG) REPORT**

Moving on, we'll entertain a discussion of the Internet Protocol Issue Management Group reported on by Betty Sanders.

Betty Sanders: Good morning.

Karen Charles Peterson: Is that a good thing or a bad thing?

Betty Sanders: Hi. I'm Betty Sanders. As others have mentioned as well, we have gone through some transition with new tri-chairs. First I want to thank Valerie Cardwell and Gina Perini for their leadership and work on the committee. I'm relatively new myself. I came onboard last year as tri-chair. I want to introduce two new tri-chairs, Rosemary Leist and Joel Bernstein. Welcome.

Other than that, we do meet bimonthly, and it's all via phone call, nothing face-to-face. It's important that we get

copies of the committee's report so that we can review those. One of the things that we're getting ready to do due to the fact that we do have new tri-chairs is that we're going to meet as a tri-chair group pretty quickly. I would have our first full meeting itself in June.

Other than that, I will read what our mission statement is because of course we welcome participation by everyone, as Rosemary has said as well for her committee. I'm trying to grab some of your people. The mission is, the NANC Internet Protocol Issues Management Group was formed by the NANC during March 27, 2014 and IP/IMG will monitor and track IP numbering-related activities that are currently being worked by industry committees identified by the IP/IMG. We'll track the progress of testbed activities, the goals being to examine and identify areas related to numbering that need to be raised to the NANC. That's why it's important that we get those reports as regularly as possible.

The IP/IMG is responsible for the collection and monitoring of the information from various industry groups and the FCC in accordance with this mission statement. The IP/IMG functions include holding data collection and review meetings where information received from various industry groups regarding IP numbering-related activities will be reviewed and discussed. The IP/IMG will provide status reports to the NANC.

We have various members so far, which you will see on page 6 of the report. The last actual report that we received was in January of this year. That's all I have to say at this point. Hopefully, we'll have more to report next time.

Karen Charles Peterson: Thank you very much for your report. That report will be identified as Item Number 14. Are there any questions from the room? Seeing none, any questions on the bridge? Thank you, Ms. Sanders.

STATUS OF THE INDUSTRY NUMBERING COMMITTEE (INC) ACTIVITIES

Moving on is status of the Industry Numbering Committee. Connie Hartman, welcome.

Connie Hartman: Thank you. It's very unusual to be the last to report and then still say good morning. I'm Connie Hartman of iconectiv. I co-chair the ATIS Industry Numbering Committee, along with Dyan Adams of Verizon.

If you look at slide 2, you'll see an overview of what I'll be covering for this meeting: a little bit about INC; our meetings; our Issue 832, 835, and 838; as well as provide a list of those issues we have in initial closure, initial pending, and tabled status, and also in final closure; then a little bit about some relevant webpages related to INC.

Slide 3 gives you a little bit about who the INC is and information about becoming a member of the INC or ATIS itself.

Slide 4, since the last NANC meeting, INC has met three times, once in January, once in February, and once just last week. Our future meetings are listed. To point out, our next meeting is in May at the ATIS AMOC.

If you go Slide 5, I'll review Issue 832, add language to the TBPAG and COCAG guidelines regarding documentation needed for nonexclusive nationwide FCC licenses. Some of you will remember, I think about a year ago, for the same reason INC had updated the p-ANI guidelines. The prompting of the update to the TBPAG and COCAG guidelines was because the PA and NANPA were seeing an increased use of a nonexclusive 3650-3700 megahertz radio service nationwide FCC license as a proof of certification and recognized that the guidelines needed to be updated.

Service providers are to provide the service registration acceptance letter from the FCC to establish that the applicant has registered fixed sites or base stations and the location of those sites. The TBPAG and COCAG were updated to add direction to service providers using these types of licenses to keep it consistent with the language that we did update in the p-ANI guidelines.

Issue 835, update guidelines to clarify that the 30-day state notification required by interconnected VoIP service providers applies to growth request as well as initial request, these were updates to both the TBPAG and the COCAG. The

reference to the 30-day state notification being required in both of those instances did already exist in both guidelines. However, we added some clarification in the growth request section to reiterate the 30-day state notification in that instance. That was done to ensure that applicants were aware of those requirements and to prevent any denial of applications.

Issue 838, requirements for additional CIC assignments and direction from non-use, INC updated the CIC assignment guidelines to reinforce the requirement. The CIC assignees shall have a current Entity Access/Usage Report on file with NANPA to receive additional CICs and to demonstrate CIC use and prevent the reclamation of assigned CICs. The Entity Access/Usage Report is a required semiannual report for CIC assignments. It's similar to what you may be familiar with for NRUF reporting.

On slide 8, you'll see a list of our issues and initial closure and tabled issues. I won't read them in detail, so I'll give you an opportunity to just look down the list. The next slide, slide 9, lists the issues that are in final closure since the last report to the NANC. And our last slide is relevant INC webpages that may be of interest to you. Thank you.

Karen Charles Peterson: Thank you. Any questions from the room, any questions from those on the bridge? Connie Hartman, thank you very much.

Connie Hartman: Thank you.

Karen Charles Peterson: So here we are. That was Item Number 15.

SUMMARY OF ACTION ITEMS

I don't believe, Marilyn, that we have any summary of action items from this meeting.

PUBLIC COMMENTS

Are there any public comments?

James Falvey: Jim Falvey with Eckert Seamans. I'm here on behalf of the LNP Alliance. It looks like this meeting could end before noon, so I'm going to keep it very brief. There was mentioned in the LNPA Working Group report of a new opportunity to discuss the LNPA transition during the LNPA Working Group meetings beyond the development of the test cases. To date the focus has just been on developing test cases. The LNPA Working Group, along with some other folks, have been asking Chairman Kane and the FCC to broaden that agenda so that we could also have a two-way conversation with iconectiv and with Neustar at those LNPA Working Group meetings and then also an opportunity for carriers to discuss the LNPA transition amongst themselves so that folks that are going through the testing process or have issues will have an opportunity at those meetings to have an

iterative discussion. The TOM also obviously is in attendance, and so there would also be an opportunity to do that.

I just wanted to mention this. We're going to be meeting with the TOM at the INCOMPAS. They're going to be down at the INCOMPAS conference in New Orleans next week, and so we look forward to talking to them. We look forward to talking to the co-chairs about how that would be structured. The one thing we've asked for is a set time and date on the agenda so that it might be let's say on a meeting on Wednesday morning, we'd say, okay, Wednesday at 9:00 AM or 10:00 AM, there's going to be dedicating a block of time for this to take place. So for those that are not on the NAPM and want that opportunity to have a more iterative discussion, we welcome input and attendance at upcoming LNPA Working Group meetings.

Karen Charles Peterson: Thank you.

Jim Falvey: Thank you.

Karen Charles Peterson: Any other comments from the room? On the bridge, any comments?

OTHER BUSINESS

Moving on to other business, I'd like to mention that iconectiv was at the very last NARUC winter meeting that was held here in DC in February. They made a fantastic presentation and they are available to meet with states to talk further about the process that they are undertaking. So if anyone has any

questions, I know that there are representatives from iconectiv in the room, if you'd like to stay in so that -- if you have any questions, feel free.

I would also like to mention that the next meeting of the NANC will be held on June 29 at 10:00 AM, and our chair will be here. So, again, thank you very much. If there are no other questions or concerns or issues, I'm going to turn to Marilyn to see if I'm forgetting anything.

Marilyn Jones: No.

Karen Charles Peterson: No? I think I'm in trouble because I'm about to adjourn the meeting at 11:58 AM. Okay. So do I have a motion?

Male Voice: I so move.

Karen Charles Peterson: A second?

Female Voice: I second.

Karen Charles Peterson: All in favor?

Voices: Aye.

Karen Charles Peterson: Thank you very much everyone.

[End of file]

[End of transcript]

