Before the
FEDERAL COMMUNICATIONS COMMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
AT&T Petition to Launch a Proceeding	)	
Concerning the TDM-to-IP Transition	)	
	)	GN Docket No. 12-353
Petition of the National Telecommunications	)	
Cooperative Association to Promote and	)	
Sustain the Ongoing TDM-to-IP Evolution	)	

REPLY COMMENTS
of the
NATIONAL EXCHANGE CARRIER ASSOCIATION, Inc.,
NATIONAL TELECOMMUNICATIONS COOPERATIVE ASSOCIATION,
WESTERN TELECOMMUNICATIONS ALLIANCE,
and the
EASTERN RURAL TELECOM ASSOCIATION

February 25, 2013

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I. INTRODUCTION AND SUMMARY

The National Exchange Carrier Association, Inc. ("NECA"), the National Telecommunications Cooperative Association ("NTCA"), the Western Telecommunications Alliance ("WTA"), and the Eastern Rural Telecom Association ("ERTA") (collectively, the Rural Associations)[1] hereby submit this Reply to comments filed January 28, 2013 in the above-captioned proceeding.

[1] NECA is responsible for preparation of interstate access tariffs and administration of related revenue pools, and collection of certain high-cost loop data. *See generally*, 47 C.F.R. §§ 69.600 *et seq.*; *MTS and WATS Market Structure*, CC Docket No.78-72, Phase I, Third Report and Order, 93 FCC 2d 241 (1983). NTCA represents more than 800 rate-of-return-regulated local exchange carriers ("RLECs") that operate in small rural communities and surrounding areas across the country; most of these operating companies provide voice and broadband Internet services to their communities, and each is a "rural telephone company" as defined in the Communications Act of 1934, as amended (the "Act"). WTA is a trade association that represents over 250 small rural telecommunications companies operating in the 24 states west of

The record in this proceeding indicates that the TDM-to-IP transition is well under way, and that RLECs and others have been acquiring valuable experience with many aspects of the technical changes involved, including hybrid TDM-IP soft switches, Ethernet and SONET transport, Session Border Controllers, Session Initiation Protocol ("SIP") phones, over-the-top VoIP services, network reconfigurations and subscriber conversions.[2] Whereas the ongoing experience of carriers that are evolving their networks toward IP can deliver useful technical information and assist in the design of industry standards, cryptic "trial runs" of the sort advocated by AT&T need to be better defined, including description of what changes are going to be studied, establishment of clear goals for each trial, and specification of meaningful measurement standards and techniques. Even then, such "trial runs" should be limited to the evaluation of the impacts and consequences of technical changes,[3] and should be conducted separately from the broader and more comprehensive "smart" regulatory review recommended by NTCA.

While telecommunications industry history shows that technology changes do not necessarily require regulatory changes[4] (much less, deregulation in the guise of "trial runs"), the initial comments overwhelmingly support the "smart regulation review" process proposed in the

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the Mississippi River. ERTA is a trade association representing approximately 68 rural telephone companies operating in states east of the Mississippi River.

[2] *E.g.*, NECA and OPASTCO at 4-5; WTA at 6-11; ITTA at 2.

[3] To assist the Commission in exploring these issues, the Rural Associations have engaged Richard Shockey, a consultant specializing in IP network protocols, to provide an expert view on potential technical issues associated with IP network trials. In his attached statement, Mr. Shockey strongly recommends, among other things, that the technical issues implicated in this proceeding be separated from underlying policy, legal and economic questions for more careful consideration in an open, multi-stakeholder, consensus-driven process. *See infra* pp. 6 - 9 and Attachment A.

[4] Free Press at 12; National Association of Regulatory Utility Commissioners (NARUC) at 16.

NTCA petition. Commenters from across the spectrum concur with NTCA's request that the Commission employ a measured and practical approach that evaluates specific regulations in light of statutory standards that require communications policy to serve the objectives of protecting consumers, promoting competition, and achieving universal service.[5]

The record also supports immediate action by the Commission to re-orient its universal service policies to support key components of broadband-capable, IP-enabled networks in high-cost areas. Finally, as discussed below, commenters make clear the Commission should confirm that IP interconnection arrangements between carriers for the exchange of traffic subject to section 251 and 252 are governed by those same sections regardless of the technology employed and that carriers can recover their costs pursuant to the Act in supporting IP-enabled services that provide quality assurances in routing voice and other mission-critical data on something more than a "best efforts" basis.

[5] *See* 47 U.S.C. §§ 151 (setting forth the purposes of the Act), 201 (requiring just and reasonable charges, practices, classifications, and regulations), 202 (prohibiting unjust or unreasonable discrimination), 251 (setting forth provisions for the development of competitive markets through interconnection and other duties), 252 (establishing processes for implementing section 251), and 254 (requiring the preservation and advancement of universal service); *see also* Remarks of Commissioner Rosenworcel at the Rural Telecom Industry Meeting & EXPO on February 4, 2013. Public Knowledge suggests that five essential principles – service to all Americans, interconnection and competition, consumer protection, network reliability, and public safety – should inform decisions with respect to regulation or lack thereof in communications markets. *See* Letter from Jodie Griffin, Public Knowledge, to Marlene H. Dortch, FCC, GN Docket No. 12-353 (filed Feb. 18, 2013). The Rural Associations concur with this basic approach, noting that the NTCA petition raised these very same concepts in the first instance but simply categorized the same criteria in a different way, with public safety and reliability falling under the umbrella of "consumer protection."

II. "TRIAL RUNS" SHOULD NOT PROCEED UNTIL CLEAR DEFINITIONS, GOALS, AND MEANINGFUL MEASUREMENT TECHNIQUES CAN BE ESTABLISHED.

A. There is Need for Much Better Definition of the Scope and Objectives of any Trial Run, Including Identification of the Technical Aspects and Consequences of Any Trial, Before the "Relief" Sought by AT&T Can be Granted.

Many commenters support the general concept of a carefully managed transition preceding full-fledged conversion of the PSTN to an all-IP network.[6] Most commenters also agree with AT&T that regulation should neither impede investment in new technology, nor require providers to maintain redundant and unnecessary network facilities.[7] The Rural Associations agree with both of these common-sense, relatively non-controversial concepts. Beyond these basic points, however, many commenters oppose adoption of AT&T's somewhat ambiguous proposal for "trial runs" unless and until complete and specific details are furnished, and questions regarding their lawfulness are addressed and resolved. To the extent that AT&T's proposed "trial runs" would eliminate or significantly change regulatory requirements such as interconnection, universal service or consumer protection obligations without careful review and comprehensive discussion among all interested stakeholders, the Rural Associations vigorously oppose "trial runs" that could in effect be better characterized as "deregulatory end runs."

Commenters express a variety of concerns with AT&T's proposal. Several commenters point out that AT&T's proposal appears to be based – and, here again, the ambiguity that pervades AT&T's proposal makes it difficult to confirm – on the ill-founded assumption that IP-enabled services should automatically be treated as interstate information services and therefore outside the scope of traditional Title II-type regulations, simply because the services ride atop

[6] *E.g.*, WTA at 2, 11; USTelecom at 6; NCTA at 3-4; ADTRAN at 6; TIA at 6.

[7] *E.g.*, ITTA at 11; Verizon at 3; TIA at 4; Internet Innovation Alliance at 4.

networks that use IP technology. These commenters correctly recognize the mere fact a new or different technology is employed to provide a service does not automatically determine its regulatory classification.[8]

AT&T's proposal also appears to at least raise, if not rely upon, the presumption that the Commission can preempt states' authority over local voice services. This is another instance where ambiguity as to what AT&T is actually asking, and the objectives of its proposed trials, precludes complete assessment of its proposal. But, in any event, state regulators and many other commenters strongly object to AT&T's proposal on grounds such preemption would be unwarranted and unlawful[9] – and the Rural Associations concur there as well. Further, it is not clear why preemption would be required to conduct *technical* trials to evaluate issues associated with the transition from TDM to IP technologies.

At bottom, the record reflects dramatic uncertainty regarding the scope and purpose of AT&T's proposed trials – and neither AT&T's petition, nor its initial comments, provide sufficient clarification to dispel this uncertainty or to justify at this point any grant of authority for AT&T's "trial runs.". From AT&T's petition, it appears the proposed trials would involve elimination of some (or perhaps most or all?) existing federal and state regulatory obligations for services provided in areas selected for trials. Moreover, it is not clear the extent to which the trials involve technical considerations. Numerous commenters argue such trials will inevitably involve technical concerns, as well as universal service impacts, public safety issues, and

[8] *E.g.*, NARUC at 10; T-Mobile at 15; Free Press at 4.

[9] *E.g.*, Nebraska Rural Independent Companies (NRIC) at 15; The State Members of the Federal-State Joint Board on Universal Service at 15; NARUC at 5; NASUCA at 12; Public Knowledge at 10.

potential disruptions to existing interconnection arrangements with carriers located both within and outside of selected trial areas.[10]

To analyze the significance of potential technical concerns in particular arising out of the ongoing IP evolution, the Rural Associations engaged Richard Shockey, a consultant specializing in IP network protocols, to review the record in this proceeding. Mr. Shockey's statement, attached to these comments as Attachment A, emphasizes the "enormous technical challenges" envisioned in the evolution of TDM networks to IP technology,[11] and strongly recommends that such technical issues be separated from underlying policy and economic questions for careful examination. In other words, the technical aspects of a "trial run" specifically and of IP-enabled network conversions more generally should be identified and defined as soon as possible to ensure greater coordination in such transitions. But, as comments indicate, plowing forward with a purported "trial run" that gives some unexplained relief from unidentified regulatory obligations that have their foundation in the protection of consumers, public safety, homeland security, network reliability, internetworking, and universal service goes far beyond a technical "trial run," and at minimum requires a specific authorization or waiver from a regulatory agency having appropriate jurisdiction and that is able to identify and consider the *potential* consequences of any such trial *a priori*.[12]

To this end, Mr. Shockey lists in the attached exhibit a number of technical and operational parameters requiring definition as part of well-managed, industry-wide network conversions, and in any event before unilateral IP deregulatory trials of the kind recommended

[10] *E.g.*, WTA at 11-12; Rural Broadband Policy Group at 8-11; Massachusetts Department of Telecommunications and Cable at 7; AARP at 9; NRIC at 46; Hypercube at 12; Harris Corporation at 8-10.

[11] Statement of Richard Shockey at 2.

[12] *See e.g.*, Harris Corporation at 8-10.

by AT&T can produce meaningful results. These include establishing the requirements, goals and objectives of such tests, defining what network components or services are to be tested, identifying who will participate in such tests, determining Quality of Service (QoS) levels, establishing procedures for notifying stakeholders, analyzing potential impacts on public safety networks and 9-1-1 services, and many others.[13]

These considerations lead Mr. Shockey to conclude there should be a "two track" discussion of IP transition issues, with clear distinctions made between legal and regulatory policy issues on one track, and technical issues on a parallel track. As Mr. Shockey explains in his statement, rapid deployment of IP technology, in parallel with TDM, has already created enormous complexity across the industry, with no clear agreement or consensus on uniform technical standards even as individual providers undertake IP conversions within their own networks.[14] To be sure, regulatory policy questions arising in large part because of technological transitions cannot be resolved without some reference to technical issues, and similarly, certain policy determinations (or "ground rules") will and must guide technical decisions with respect to how, for example, public safety requirements will be fulfilled or competitively neutral network interconnection achieved.[15] But as Mr. Shockey notes, the technical aspects of such issues should be examined to the extent possible in a distinct, open, multi-stakeholder, consensus-driven technical working process that does not permit "capture" by specific segments of the telecom industry, does not result in a "pay-to-play" environment where the largest providers can dominate the debate or the results, and does not rely predominantly (if not exclusively) upon

[13] Shockey Statement at 4.

[14] *Id.* at 5.

[15] *E.g.*, WTA at 11.

unilateral decisions made by a single carrier in a trial or private, bilateral negotiations between individual service providers to fulfill technology transitions.[16]

Mr. Shockey cites the i3 architecture for NG 9-1-1 undertaken under the auspices of the National Emergency Number Association as an example of a collaborative approach that examined technical issues on a distinct track, but then fed back into and informed regulatory processes.[17] In the end, such a distinct technical track will be important, as Mr. Shockey explains, to develop a coordinated and scalable industry-wide infrastructure that enables and facilitates the IP evolution, rather than having individual carriers with proprietary systems and processes attempt to cobble those together with others (or refuse to do so).

AT&T clearly recognizes the need for review and action on both the regulatory and technical fronts,[18] but as noted above, its ambiguous trial proposals appear to conflate the two by implementing undefined changes at the same time on each front. In particular, it is unclear how AT&T's trials would or could be implemented without making certain assumptions or effectively prejudging or forcing certain technical decisions at the same time – and, more importantly, having an effect on consumers that might be difficult, if not impossible, to address once deregulation is "out of the gate." For example, what would a trial of the kind proposed by AT&T mean for interconnection, routing of traffic/data, number look-ups, call signaling and Caller ID, service quality, or 911 services? As WTA highlighted in great detail in its initial

[16] *See* Shockey Statement at 6. It is also unclear what precisely AT&T needs relief from in its trials. *See* NECA and OPASTCO at 11. As noted in the NTCA petition and the Rural Association comments, the IP evolution is occurring even under the existing regulatory framework. It is thus difficult, if not impossible, to see what barriers in the form of current regulation preclude AT&T from participating in that evolution such that a trial is warranted. Here again, better definition from AT&T would appear to be essential in considering whether its request is justified.

[17] Shockey Statement at 7; *see also*, http://www.nena.org/?page=i3_Stage3.

[18] AT&T Petition at 10-11.

comments, there are any number of technical issues that require review and resolution in considering whether the regulatory trial sought by AT&T is warranted.[19]

In summary, the IP evolution is already occurring, and the Rural Associations and many other commenters believe that if this transition is to succeed in the long-run, it will ultimately require carefully undertaken review of both the technical and regulatory aspects of the TDM-to-IP transition. But for "trial runs" of the sort sought by AT&T to be meaningful, there needs to be clearer definition of what tests are to be conducted, how they will be conducted, and what standards apply for evaluating the results.[20] Examples of specific areas of inquiry suggested in comments include network performance (including call completion and call signaling), impacts on demand for specific services, effects on competition, effects on interconnection, impacts on industry and network databases, service adoption rates among differing communities, impacts on connecting carriers and a myriad of other potential parameters – all of which should be subject to measurement and quantitative "data driven" evaluation. Moreover, as Mr. Shockey points out, for a trial to have meaning, these technical documentation techniques must be supported by the industry as a whole, not just one individual carrier.[21] On the separate regulatory track, any major policy and rule changes that are seen as necessary or desirable to promote the IP transition should be considered in a comprehensive manner by all federal and state stakeholders, as the impacts and consequences of technical changes become more clear and better understood.

[19] WTA at 11-14.

[20] *E.g.*, Comptel at 5; Public Knowledge at 11; Cox at 11; Granite Telecommunications at 51-55.

[21] Shockey Statement at 4-5.

B. The NTCA Petition Provides a Better Approach to Coordinating Technical and Regulatory Reviews – and for Determining Ultimately What Technology Evolution May Mean for Consumers, Competition, and Universal Service.

The initial round of comments in the instant proceeding reveals an overwhelming degree of support for the "smart regulation review" process proposed in the NTCA petition. Indeed, even where parties might disagree on the ultimate substantive outcome of any such examination (or the need specifically to undertake such an examination in a distinct proceeding), the vast majority of commenters – including rural providers,[22] competitive carriers,[23] state regulators,[24] and consumer advocates[25] – concur with NTCA's request that the Commission employ a measured and practical approach that evaluates specific regulations in light of statutory standards that require communications policy to serve the objectives of protecting consumers, promoting competition, and achieving universal service.[26]

Some parties may dismiss such considerations as academic or relatively abstract, and assert that limited geographic trials – even if they afford substantial deregulation – will be closely monitored and thus cannot give rise to the kinds of risks to consumer protection, competition, and universal service raised by many others in this proceeding. Unfortunately, there are several current "real world" indications that concerns such as those raised by NTCA in its petition and the Rural Associations in their comments must be addressed *before* decisions are made to unleash any provider from most, if not all, regulation, even in a trial context. Perhaps the most notable example for rural consumers of the need for sensible regulation is their ongoing

[22] *E.g.*, WTA at 1; ITTA at 8; Washington Independent Telecommunications Association at 1; NRIC at 5.

[23] *E.g.*, Comptel at 3; GCI at 5; Hypercube at 2.

[24] *E.g.*, California PUC at 11; Ohio PUC at 4; NARUC at 3; NASUCA at 34.

[25] *E.g.*, AARP at 21.

[26] *Supra*, n.5.

"disconnection" from other Americans as calls dash and dart – or too frequently stall and get dropped – across a patchwork of TDM and IP-enabled networks. As the Commission itself recently noted, the problem of persistent call failures "causes rural businesses to lose customers, cuts families off from their relatives in rural areas, and creates potential for dangerous delays in public safety communications in rural areas."[27] This problem highlights broad concerns about the inability of regulators to address market failures in the absence of adequate regulatory tools.

In other words, putting aside whether call completion failures arise because of technological evolution, the experience of such failures should give the Commission substantial pause in granting even further deregulation without consideration beforehand of the potential consequences. As NTCA explained in its petition, when "the interests of individual consumers and the terms and conditions by which networks are connected hinge largely on the discretion of individual industry participants," it is unclear how the regulator can "step back in" to ensure and enforce the statutory cornerstones of consumer protection, competition, and universal service in the event of market failures or service disruption.[28] The very recent and ongoing experience of call completion failures thus provides Exhibit A in the case against overarching deregulation of the essential systems by which Americans communicate with one another.

Other "real world" examples underscore the need to proceed in a more measured and practical way in evaluating the implications of deregulation and related technical concerns. Public Knowledge, for example, has highlighted service outages on the Verizon FiOS network in the wake of Superstorm Sandy and disruptions to voice, video, and Internet services on the

[27] *Rural Call Completion*, WC Docket No. 13-39, Notice of Proposed Rulemaking, FCC 13-18 ¶ 2 (rel. Feb. 7, 2013).

[28] NTCA Petition at 6-7.

AT&T network as a result of a mere software upgrade.[29] Similarly, NTCA's petition supplied other examples in which failures in virtually unregulated markets ranging from Internet access to programming content led to significant disruption for consumers.[30] Such disruptions or risks to service quality may be acceptable as a matter of national communications policy in these specific contexts (although the Rural Associations submit they should not be). But it should be axiomatic that disruption or unreasonable degradation of services, whether due to market dispute or technical difficulty, is simply unacceptable in the context of the fundamental mechanisms by which Americans communicate with one another – regardless of whether those communications are ultimately formatted in TDM, IP, or Morse Code and carried by fiber, copper, coaxial cable, or radio spectrum.[31] At bottom, the Commission should not cede its authority or dismantle its capability, nor should it preempt or preclude the corresponding authority of state regulators, to oversee communications markets and to respond quickly and forcefully where market failures or disputes threaten consumers, network reliability, public safety, competition, or universal service. Instead, as the NTCA petition suggests, the Commission should thoughtfully evaluate *specific* regulations to determine whether each such regulation remains necessary to meet these statutory objectives or whether modification (or elimination) is appropriate in light of changes in consumer preference, market forces, or technological evolution.

Finally, it is worth noting that a "smart regulation" approach provides the most certain footing by which to promote broadband investment and IP enablement. As NTCA stated in its

[29] Public Knowledge at 24.

[30] NTCA Petition at 7, notes 12, 13.

[31] As AARP observes, "There may be legacy obligations that may not make sense *per se* in the IP-enabled broadband world because of their PSTN-based specifics. However, the legacy obligations hold the kernel of a policy objective that will continue to make sense for the IP-enabled broadband environment, thus requiring a reworking of the legacy requirement." AARP at 23.

petition, "[i]f] regulatory oversight stifles investment, the uncertainty of a regulatory vacuum and a lack of clear 'ground rules' are likely to stifle investment even more – and far more likely to leave consumers in the lurch."[32] Indeed, it is not as if the pre-existing regulatory environment deterred investment in broadband-capable networks; to the contrary, as numerous commenters highlight, the IP evolution is an ongoing phenomenon and the industry has seen a remarkable amount of broadband investment in the last decade.[33] Taking a sledgehammer to regulatory constructs would thus not only risk undermining core statutory principles as discussed above, but it would also inject more regulatory uncertainty into a capital-intensive line of business that demands a reasonable degree of certainty to justify investment in long-term network assets. It presents a false choice, therefore, to assert that "but for" regulation, the IP evolution would take full flight, and it would be the utmost in regulatory brinksmanship for any carrier to condition its investments in next-generation network technologies implicitly or explicitly on a wiping clean of the regulatory slate. In lieu of stalling the ongoing IP evolution by attempting to wipe clean or reinvent altogether known regulatory frameworks that give all industry players a sense of the "rules of the game," the Commission would better promote investment and access to capital by expressly committing to a surgical and thoughtful review of existing regulations to determine which ones might require elimination or modification in light of changes in consumer preference, market forces, or technological evolution.

[32] NTCA Petition at 8.

[33] *See e.g.*, NECA and OPASTCO at 4-5; WTA at 6-9. Evidence continues to accumulate that uncertainty stemming from the regulatory changes adopted in the *Order* have had dramatic adverse impacts on investment in rural areas. *See, e.g.*, Letter from John Charles Padalino, Acting Administrator, RUS, to Marlene H. Dortch, FCC (Feb. 15, 2013); Initial Comments of NECA, NTCA, *et al.* WC Docket No. 10-90, at 53-55 (filed Jan. 18, 2012); Reply Comments of NECA, NTCA, *et al.* WC Docket No. 10-90 (filed Feb. 17, 2012).

III. THERE ARE SEVERAL NEAR-TERM STEPS THAT THE COMMISSION CAN AND SHOULD TAKE AS SOON AS POSSIBLE TO ACCELERATE A SUSTAINABLE IP EVOLUTION IN HIGH-COST AREAS.

A. The Commission Should Take Immediate Steps to Reorient its Universal Service Policies to Support Key Components of Broadband-Capable, IP-Enabled Networks in High-Cost Areas.

The comments filed in this proceeding confirm widespread acceptance that the next generation of communications capabilities will depend upon sufficient access to broadband.[34] For this very reason, the Rural Associations have suggested that the availability of Universal Service Fund ("USF") support for standalone broadband service is essential to ensure that the IP transition takes sustainable root in rural areas and that consumers in all corners of the United States will be able to participate meaningfully in the evolving communications marketplace.[35] For the reasons explained in NTCA's petition and as further set forth herein, the Commission should make certain technical fixes to its rules as soon as possible to achieve these essential universal service objectives.

In its *Order*, the Commission indicated that the service to be supported through USF would no longer be regulated voice local exchange service (or "POTS"), but rather "voice telephony service" – which could be provided via any technology and was not tethered to specific form of regulation.[36] The *Order* further confirmed that USF support would be available

[34] *E.g.*, ITTA at 2-4; Granite at 8-9; Rural Broadband Policy Group at 3-4; NRIC at 8-9.

[35] *See* Initial Comments of NECA, NTCA, *et al.*, WC Docket No. 10-90, at 22 (filed Jan. 18, 2012); Reply Comments of NECA, NTCA, *et al.*, at 10, n.23 (filed Feb. 17, 2012).

[36] C*onnect America Fund*, WC Docket No. 10-90, A *National Broadband Plan for Our Future*, GN Docket No. 09-51, *Establishing Just and Reasonable Rates for Local Exchange Carriers*, WC Docket No. 07-135, H*igh-Cost Universal Service Support*, WC Docket No. 05-337, *Developing an Unified Intercarrier Compensation Regime*, CC Docket No. 01-92, F*ederal-State Joint Board on Universal Service*, CC Docket No. 96- 45, *Lifeline and Link-Up*, WC Docket No. 03-109, *Universal Service – Mobility Fund*, WT Docket No. 10-208, Report and Order and FNPRM, 26 FCC Rcd. 17663, 17692-93, ¶¶ 77-81 (2011) (*Order*).

as long as a carrier used such support to invest in networks capable of *offering* voice telephony service and broadband.[37] Unfortunately, while the Commission announced these dramatic steps in the body of its *Order*, it did not "connect the dots" in the text of the actual rules that govern USF distribution for RLECs. To promote and accelerate a sustainable IP evolution in rural areas and thereby fulfill the statutory objective of universal service, it is essential the Commission now "connect these dots" in short order and correct its rules to reflect the policies set forth in the body of the *Order*.

As background, the Commission's "no barriers" policy has long enabled RLECs to utilize USF support for the deployment and operation of "multi-use" networks that facilitate the offering of both voice and broadband services.[38] But despite this efficient and forward-looking policy, USF support for RLECs – in the form of High-Cost Loop Support ("HCLS") and Interstate Common Line Support ("ICLS") – is available for a broadband-capable loop only if the customer in question actually purchases POTS on that loop.[39] Thus, where a customer chooses *not* to take POTS on the loop and instead desires to take only broadband, the rules as currently written treat the costs of that loop as regulated special access, such that no USF support is then available with respect to that loop.

In practical terms, this means that a customer's rates for broadband in high-cost areas will *increase* simply because that customer might decide that he or she only wants broadband service and no longer wants to purchase POTS on that line as well. Put another way, and as just one

[37] *See id.* ¶¶ 68 -75.

[38] *Appropriate Framework for Broadband Access to the Internet over Wireline Facilities, et al.*, CC Docket No. 02- 33, *et al.*, Report and Order and Notice of Proposed Rulemaking, 20 FCC Rcd. 14853, 14900-14903, ¶¶ 89-95 (2005). Pursuant to this policy, many RLECs tariff the transmission layer of their broadband Internet access services as a Title II special access service.

[39] *See* 47 C.F.R. §§ 36.621 and 54.901.

example, if an RLEC customer were to announce the desire to take a Vonage-provided IP-enabled voice service "over the top" of a broadband service in lieu of buying POTS from the RLEC, current rules would "reward" that customer for exercising his right to avail himself of a competitive offering and participate in the IP evolution with higher broadband prices due to the loss of universal service support on the loop used to serve this customer. Such a result must be viewed as anti-consumer, anticompetitive, and ultimately antithetical to the very notion of promoting an IP evolution and the goals of the Commission's National Broadband Plan.

Certain commenters, either misunderstanding the proposal in NTCA's petition or finding no universal service cause that can go "un-fought," argue that no USF support should go toward facilitating IP deployment in RLEC networks.[40] Such commenters miss the mark badly. As an initial matter, any argument that USF support should *not* go toward upgrading networks in high-cost areas for broadband and IP-enabled services leads to one of two equally illogical and unpalatable conclusions – that is, either: (1) USF should only be used to support TDM-based networks; or (2) USF support should never be provided, whether for TDM or IP. Fortunately, the Commission has already decided these questions as noted above, finding that USF support *should* indeed be re-oriented to support the offering of voice telephony service and broadband on multi-use networks.

These commenters also miss the mark because they appear to suffer from a fundamental misunderstanding of the dynamics of when USF support can be obtained or lost. In many cases, pursuant to the long-standing "no barriers" policy, USF support *can be and already has been used* to upgrade networks for broadband capability. The rule fix sought in the NTCA petition is not to obtain *permission* to upgrade networks; rather, the rule fix is needed simply to ensure that

[40] *E.g.*, NCTA at 13; CTIA at 8-9; T-Mobile at 8.

rates for services on broadband-capable networks remain reasonably comparable when a customer decides to buy only voice telephony service and/or broadband service, rather than legacy POTS service. Thus, the proposed rule fix in question is forward-looking, pro-competition, consumer-focused, and fully consistent with Commission policies as announced in 2005 and refined in 2011. This proposal offers the Commission perhaps the simplest and most straightforward means possible of promoting and accelerating the IP evolution and achieving the objectives of universal service in high-cost areas served by small rural carriers.

The availability of USF support for middle mile facilities is likewise essential to offer reasonably comparable broadband in high-cost areas. Even with the best possible IP-enabled, broadband-capable networks deployed in the "last mile," if there is insufficient capacity in the middle mile facilities that connect rural areas to distant Internet gateways or if the cost of such capacity is exorbitant, consumers face the risk of receiving substandard and/or expensive broadband. At a time when the average American consumer is connecting at a rate of 7.2 Mbps[41] – and presuming that the average national speed may at least approximate what is needed to achieve "reasonably comparable" speeds as between rural and urban areas – such speeds cannot be sustained in rural areas in the absence of robust (and affordable) middle mile capacity. Particularly, in the wake of intercarrier compensation changes that will make it more difficult over time to maintain transport networks over long distances, the availability of sufficient and predictable support for "middle mile" networks will be critical to ensuring that every American

[41] *See,* Joan Engebretson, Akamai Sees Big Jump in U.S. Internet Connections Above 10 Mbps, telecompetitor, (Jan. 23, 2013), http://www.telecompetitor.com/akamai-sees-big-jump-in-u-s-internet-connections-above-10-mbps/.

will have reasonably comparable access to broadband and thus be able to participate meaningfully in the IP evolution.[42]

B. The Commission Should Confirm that: (1) IP Interconnection Between Carriers for the Exchange of Traffic Subject to Section 251 and 252 is Governed by Those Same Sections, and (2) Carriers Can Recover Their Costs Pursuant to the Act in Supporting IP-Enabled Services that Provide Quality Assurances in Routing Voice and Other Mission-Critical Data on Something More Than a "Best Efforts" Basis.

The record indicates widespread support for the proposition that the Commission must deal with the rights and obligations that govern IP interconnection and recovery of costs associated with exchange of traffic through such interconnection.[43] As NTCA noted, the Commission can accelerate the continuing IP evolution by eliminating the regulatory uncertainty surrounding IP interconnection and confirming that all interconnection for the exchange of traffic that is subject to sections 251 and 252 is likewise governed by those sections, regardless of the technology that is used to achieve the interconnection. Put another way, with the Commission just having determined in the past 18 months – largely at the urging of AT&T and Verizon – that sections 251 and 252 confer jurisdiction over and permit it to set rates for the exchange of *all* traffic with local exchange carriers (including traffic traditionally classified as access traffic or intrastate in nature),[44] it logically and necessarily follows that interconnection for the exchange

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[42] NECA and OPASTCO at 8; NRIC at 8; WTA at 22. *See also*, WC Docket No. 10-90, Initial Comments of NECA, NTCA, *et al.*, at 24; Moss Adams Companies at 21-22; NASUCA, et al. 27-28; Western Associations at 11-12; Nebraska Rural Independent Companies at 81; USTelecom at 5-6 (filed Jan. 18, 2012).

[43] *E.g.*, NECA and OPASTCO at 3; NRIC at 5-7, 37; WTA at 18; Granite at 43.

[44] *Order* ¶¶ 760-762. For purposes of clarification, this is not to say that the Rural Associations concur with the manner in which the Commission took jurisdiction over and established a bill-and-keep rate for all such traffic. But having done so, there is no logical basis to conclude that the rates for the exchange of such traffic would be governed by sections 251 and 252 but all other terms and conditions for such traffic exchange would be "commercial" in nature and fall outside of regulation.

of all such traffic must also be governed by that statute. Indeed, this same reasoning can and must apply with equal force to interconnection for the exchange of IP-enabled traffic – with the Commission having "brought all VoIP-PSTN traffic within the section 251(b)(5) framework,"[45] the terms and conditions for interconnection to exchange all such traffic must necessarily fall within that same statutory framework.

The apparent underlying assumption in the AT&T petition that the conversion to IP will eliminate the need for core interconnection regulation is thus mistaken as a matter of law and misguided as a matter of policy. To the contrary, the transition to IP-based networks will continue to require regulation to ensure that well-known, time-tested "ground rules" are present to address disputes or market failures. Examples provided in the NTCA petition and elsewhere herein highlight the significant – and already-occurring – risks of disconnection or disruption that arise in the absence of thoughtful and clear regulatory structures.[46] Indeed, as Public Knowledge has noted, while a retransmission consent dispute could present real dangers to public safety if it denies access to emergency messaging, many times it simply preludes a viewer from watching a favorite program.[47] By contrast, if a lack of interconnection or interoperability between core communications networks arises and precludes the completion of voice calls, this introduces serious risks to public safety. A regulatory backdrop that defines the "contingency plan" in the event of disputes or market failures is essential to a well-functioning communications market.

Clarifying that sections 251 and 252 apply would not be exclusionary provisions to keep out information service providers, but rather a reasonable policy to create a level competitive

[45] *Order* ¶ 933.

[46] NTCA Petition at 7, notes 12, 13.

[47] Public Knowledge at 6.

playing field and to minimize opportunities for regulatory arbitrage. As commenters recognize, AT&T is misguided in its assertion that the Commission should eliminate basic requirements that affect the ability of competitors to operate efficiently in the interconnected voice market. NTCA, and the vast majority of other commenters, recognize instead that section 251 rights, obligations and protections are central to the efficient operation of that market.

Moreover, AT&T wrongly conflates IP-to-IP interconnection and the regulation of interconnected VoIP services specifically for the exchange of 251/252 traffic *between carriers* with regulation of "information services" and the Internet.[48] The pure transmission and exchange of content between two networks falls squarely within the definition of telecommunications and the Commission's regulatory purview. As the Associations have noted,[49] the Commission has repeatedly found that from the perspective of the end user, interconnected VoIP services are indistinguishable from traditional telecommunications services no matter the technology used. Such services are therefore "like one another" and cannot

[48] AT&T at 11.

[49] *See* NECA and OPASTCO at 10, notes 17, 18. *See also, e.g., IP Enabled Services*, WC Docket No. 04-36, Report and Order, 24 FCC Rcd. 6039 (2009) ¶ 12 ("interconnected VoIP service is functionally indistinguishable from traditional telephone service."); *Implementation of the Telecommunications Act of 1996: Telecommunications Carriers' Use of Customer Proprietary Network Information and Other Customer Information*, CC Docket No. 96-115, *IP-Enabled Services*, WC Docket No. 04-36, Report and Order and Further Notice of Proposed Rulemaking, 22 FCC Rcd. 6927 (2007) ¶ 56 ("the services of a wireline carrier, a wireless carrier, or an interconnected VoIP provider, . . . from the perspective of a customer making an ordinary telephone call, are virtually indistinguishable."). *See also, Assessment and Collection of Regulatory Fees for Fiscal Year 2007*, MD Docket No. 07-81, Report and Order and Further Notice of Proposed Rulemaking, 22 FCC Rcd. 15712 (2007) ¶ 18 ("interconnected VoIP providers offer a service that is almost indistinguishable, from the consumers' point of view, from the service offered by interstate telecommunications service providers.")

rationally be subject to different regulatory structures.[50] The Commission's authority to regulate IP interconnection is beyond dispute.

At the same time, it is essential to apply the statutory regime faithfully in every respect, and to avoid over-reaching in having that framework carried far beyond its intended and express purpose. For example, several CLECs were vocal in comments about the need for the Commission to confirm SIP interconnection is subject to sections 251 and 252 and argued for ensuring competitive access to last mile facilities.[51] However, as the Commission is well aware, section 251(c) is not an absolute interconnection right. First, presuming that one keeps reading section 251 beyond subsection (c), one finds that section 251(f) contains exemptions, suspensions and modifications of interconnection obligations. In confirming that IP-based interconnection is subject to sections 251 and 252, the Commission should make clear that all of the applicable provisions of interconnection under section 251 apply with equal force to IP-to-IP interconnection. Second, the Commission's rules and orders – and those of state commissions too – interpreting and implementing sections 251 and 252 confirm that interconnection and access rights apply only to existing networks.[52] Thus, the Commission should ensure that a requesting carrier's rights with respect to IP interconnection are limited to those situations in

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[50] *See e.g., American Tel. & Tel. Co. (DDS)*, Final Decision & Order, 62 FCC 2d 774 (1977) ¶ 75a, *aff'd*, *American Broadcasting Cos. v. FCC*, 663 F.2d 133, 139, n.9 (D.C. Cir. 1980). A finding that two services are "like" one another based on customer perception would appear to preclude arguments that one is entitled to differential regulatory treatment. *See, e.g., The Offshore Tel. Co. v. South Central Bell*, Memorandum Opinion and Order, 2 FCC Rcd 4546 (1987) ¶ 32, citing *American Trucking Associations, Inc. v. FCC*, 377 F.2d 121, 130 (D.C. Cir. 1966), cert. denied 386 U.S. 943 (1967) ("The statutory prohibition against unjust discrimination extends to different treatment for like services under like circumstances … .").

[51] *E.g.*, Comptel at 7,11; Cbeyond, *et al*. at 6, 33; XO at 4-5.

[52] The U.S. Court of Appeals for the Eighth Circuit declared long ago that section 251(c)(2) requires access "only to an incumbent's LEC's existing network – not to a yet unbuilt superior one." *Iowa Utilities Bd. v. FCC*, 120 F.3d 753, 813 (8th Cir. 1997).

which both parties– the requesting carrier and the carrier receiving the request – have already deployed IP trunking capabilities at the designated point(s) of interconnection. To provide for direct IP-to-IP interconnection, carriers will need to deploy IP-enabled switching equipment along with other facilities to exchange, transport and convert traffic.[53] While some RLECs and other carriers may have deployed such facilities, others have not. As noted above, it is well established that a requesting carrier cannot force an ILEC to upgrade its facilities or deploy new functionalities to accommodate interconnection requests under sections 251 and 252. The same regulatory framework should apply to interconnection that occurs via new technologies such as IP.[54]

Finally, several parties voiced opposition to the proposition of cost recovery for IP interconnection suggested by the NTCA petition.[55] It is important to clarify what is intended – and what is not – by that proposal. The proposal is not, as has been asserted, about derailing any transition with respect to minutes of use- based ICC switched access.[56] Instead, the cost recovery concept raised in the NTCA petition would ensure that carriers have the ability to

[53] As part of the proposed "smart regulation" review, the Commission should consider the extent to which interconnection rights and duties should be made mutual as an increasing number of networks evolve to IP. For example, if another party has deployed an IP network and an RLEC wishes to obtain access to that other party's network on reasonable and nondiscriminatory terms through an IP interconnection arrangement, the Commission should examine the application of sections 251 and 252 in such circumstances as well.

[54] This is not to suggest RLECs are reluctant to upgrade network facilities to IP technology. To the contrary, as the Rural Associations have pointed out, such deployments are ongoing. *See*, *e.g.*, NECA and OPASTCO at 4-5; WTA at 6-10. Continued expansion of such deployments requires, however, that companies have a reasonable opportunity to recover the costs of investing in and maintaining new facilities. Similarly, carriers should not be forced to scrap older technology that remains "used and useful" without the ability to recover remaining sunk investments.

[55] *E.g.*, NCTA at 12-13; Cox at 15-16; Sprint at 2-3.

[56] Although the Rural Associations disagree with the Commission's approach to such reform, that is an issue being debated at this point in other venues, and is not the point of the proposal in the NTCA petition.

recover costs pursuant to and consistent with the Act in deploying specialized services that enable IP interconnection. For example, rather than letting all mission-critical and latency-sensitive traffic, such as HD voice, depend solely upon "best efforts" public Internet networks, a provider such as an RLEC might make available IP-enabled special access services to facilitate such connections. The public interest benefit of such an approach would be that, consistent once again with the need to ensure transparency and equal access in critical communications markets, such connections would be available to all comers on a nondiscriminatory basis pursuant to tariff. Furthermore, this approach would provide incentives for carriers to invest in IP-enabled networks with the knowledge that in making specialized services available pursuant to tariff, the terms and conditions of compensation would be lawful and well-defined. Thus, the proposal suggested in the NTCA petition may require further development and discussion as to its implementation, but it should be a relatively noncontroversial concept in that it would facilitate higher-quality transmission of traffic in the IP-enabled world on a transparent and nondiscriminatory basis.

IV. CONCLUSION

As shown above, the Commission should carefully distinguish and separate technical from deregulatory "trial runs." Whereas the technical experiences of a broad and diversified sample of carriers that are deploying IP technology can provide federal and state regulators with useful data, regulatory reviews are better conducted separately in the broad-based and comprehensive manner outlined in NTCA's "smart review" proposal. In particular, there is no reason to move forward on AT&T's vague "trial run" proposal until sufficient detail is available to enable regulators and interested parties to develop and agree upon clear definitions, goals and measurement techniques. Even then, such trials should be limited to technical matters and take

place in conjunction with the broader and more comprehensive "smart regulation" review recommended by NTCA. A broad cross-section of commenters agree the Commission should employ a measured and practical approach to the IP transition, one that evaluates specific regulations in light of statutory standards.

The record also supports immediate action by the Commission to re-orient its universal service policies to support key components of broadband-capable, IP-enabled networks in high-cost areas. The Commission should also confirm that IP interconnection arrangements between carriers for the exchange of traffic subject to section 251 and 252 is governed by those same sections, and that carriers can recover their costs pursuant to the Act in supporting IP-enabled services that provide specific quality assurances in routing voice and other mission-critical data.

Respectfully submitted,

NATIONAL EXCHANGE CARRIER ASSOCIATION, INC.
By: /s/ Richard A. Askoff
Richard A. Askoff
Its Attorney
Teresa Evert, Senior Regulatory Manager
80 South Jefferson Road
Whippany, NJ 07981
(973) 884-8000

NATIONAL TELECOMMUNICATIONS COOPERATIVE ASSOCIATION
By: /s/ Michael R. Romano
Michael R. Romano
Senior Vice President - Policy
Joshua Seidemann, Director of Policy
4121 Wilson Boulevard, 10th Floor
Arlington, VA 22203
(703) 351-2000

WESTERN TELECOMMUNICATIONS ALLIANCE
By: /s/ Derrick Owens
Derrick Owens
Vice President of Government Affairs
317 Massachusetts Avenue N.E.,
Ste. 300C
Washington, DC 20002
(202) 548-0202

By: /s/ Gerard J. Duffy
Gerard J. Duffy
Regulatory Counsel for
Western Telecommunications Alliance
Blooston, Mordkofsky, Dickens, Duffy & Prendergast, LLP
2120 L Street NW
Suite 300
Washington, DC 20037
(202) 659-0830

EASTERN RURAL TELECOM
ASSOCIATION
By: /s/ Jerry Weikle
Jerry Weikle
Regulatory Consultant
5910 Clyde Rhyne Drive
Sanford, NC 27330
(919) 708-7404

February 25, 2013

Attachment A

Statement of Richard Shockey

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
	)	
AT&T Petition to Launch a Proceeding Concerning the TDM to IP Transition	)	GN Docket No. 12-353
	)	
	)	
Petition of the National Telecommunications Cooperative Association for a Rulemaking To Promote and Sustain the Ongoing TDM to IP Evolution	)	

STATEMENT OF RICHARD SHOCKEY

My name is Richard Shockey. I am the principal of Shockey Consulting located in Fairfax County Virginia. I am also the Chairman of the Board of Directors of the SIPForum an industry promotion group for the Session Initiation Protocol [SIP] which is the principal technical standard for the Ongoing TDM to IP Evolution.[1]

At the request of the National Telecommunications Cooperative Association, National Exchange Carriers Association, Inc. and the Western Telecommunications Alliance, I wish to clarify and expand on comments I have made before the Commission in several filings involving the Vonage Petition[2] and the Technology Transitions Task Force,[3] and in live testimony at Commission headquarters during the Public Switched Telephone Network Transition Workshop in December 2011.[4] Specifically, I wish to reemphasize the enormous technical challenges

[1] Views contained in this document are purely those of Mr. Shockey and do not necessarily represent the views of the SIPForum its member companies and participants.

[2] *See* Comments of Shockey Consulting, CC Docket No. 99-200 (filed Sept. 4, 2012), http://apps.fcc.gov/ecfs/document/view?id=7022009347 (Shockey Comments)

[3] *See* Letter from Richard Shockey, Shockey Consulting, to Marlene H. Dortch, FCC, GN Docket No. 13-5 (filed Jan. 16, 2013), http://apps.fcc.gov/ecfs/document/view?id=7022105978 (Technical Transitions Task Force Ex Parte)

[4] *See* http://www.fcc.gov/events/public-switched-telephone-network-transition-0

envisioned in the TDM to SIP/IP Evolution and that these issues should be considered, to the extent possible, separately from the underlying policy and economic questions, irrespective of whether a proposed trial should be approved. A national transition of our public switched telephone network to new underlying technologies needs a national consensus-driven *technical plan* among *all* industry stakeholders developed in parallel to resolution of regulatory and policy questions.

I congratulate AT&T and NTCA on bringing these important topics to the forefront of public discussion. Both AT&T and NTCA recognize the consensus in the industry that the existing TDM technology that underpins virtually the entire real time communications system in the United States is increasingly unsustainable, is in desperate need of updating and upgrading, as many of its components have aged well beyond their engineering-designated End of Life. A national system of IP networks and SIP/IP interconnection would have clear and demonstrable benefits to consumers and enterprises. Both AT&T and NTCA also understand that existing regulatory structures and obligations may need a comprehensive review and reform in connection with this technological evolution, changing market conditions, and rapid changes in consumer preferences and desires. Virtually all enterprise phone systems are now SIP based. Nearly 50% of all mobile phones in the network are smart phones capable of advanced services, but those services cannot be deployed nationally since the TDM based PSTN is still the default network.

Of course the Telecommunications industry has gone through complicated technical transitions many times before. Indeed, the entire structure of the industry has undergone radical transformation since the passage of the 1996 Act. But the current transition may be the most complex ever attempted. I do note some commenters have provided engineering insight into some of the complex technical issues raised by this transition. But more work needs to be done in this area, and it is not clear these discrete and complex technical issues can, or even should, be decided in the context of an omnibus FCC regulatory proceeding.[5] The Telecommunications

[5] *See* Comments of XO, GN Docket No. 12-353 (filed Jan. 28, 2013), http://apps.fcc.gov/ecfs/document/view?id=7022113762

industry is extremely diverse with ILEC's, RLECs, CLEC's, VoIP providers, cable operators and mobile operators. Still, by default in most cases, all of these providers exchange voice traffic using technically obsolete TDM networks. Each segment of the industry may have specific engineering views on how SIP interconnection might work. It is clear the first task is for the industry as a whole is to come to some consensus.

AT&T proposes a "trial" of next generation services including the retirements of existing TDM facilities and offerings. Trials of new technologies are a good thing, and the ultimate retirement of existing TDM and SS7 equipment is inevitable. But AT&T has not made any concrete technical or engineering proposal on exactly what new services it proposes to offer or what aspects of the PSTN it intends to retire, nor is it clear how this 'trial' would ultimately resolve any technical or operational issues in the network. In fact none of the commenters, including AT&T's opponents, have any plan whatsoever to describe how SIP/IP interconnection would work "On the Wire"[6] irrespective of possible obligations under Title II of the Act.

Of course there has been considerable deployment of SIP/IP interconnection among carriers on a private bi-lateral basis. Nothing in the existing regulations prevents this. Yet I find it surprising that a company such as AT&T with vast technical resources and intimate understanding of both the TDM and SIP worlds would dramatically propose such a trial without putting on the table some form of detailed technical plan of how such trial would actually take place. The AT&T trial proposal reminds me of Donald Rumsfeld, former Secretary of Defense,

> "[A]s we know, there are known knowns; there are things we know we know. We also know there are known unknowns; that is to say we know there are some things we do not know. But there are also unknown unknowns -- the ones we don't know we don't know."[7]

[6] By "on the wire" I mean commonly accepted technical specifications and standards that actually govern how communications protocols are executed over the national network infrastructure.

[7] *See generally* http://en.wikipedia.org/wiki/There_are_known_knowns.

WHAT IS AT&T PROPOSING?

- Where are the requirements, goals and objectives?
- What is to be tested? What services?
- Who is to participate?
- How are Quality of Service issues going to be addressed?
- How are stakeholders to be notified?
- Are there impacts to the Public Safety 9-1-1 networks?
- Must ES 9-1-1 using the NENA i3 plan be adequately deployed in the trial region?
- If there is a trial what is the expected output?
- How is success or failure defined?
- How is the "technically feasible point of SIP Interconnection to be discovered?
- Wire center? What is a wire center these days? Surely we are not talking about an ILEC owned and operated facility?
- How will the trial deal with 8XX calls?
- SMS? Is this trial only between AT&T and landline carriers? Many Cable Operators offer SMS to the TV.
- What aspects of SS7 have to remain available in the trial?
- Will providers be able to directly connect via IP/SIP to AT&T's mobile networks?
- How does that output feed into further technical regulatory discussions?

AT&T seems to suggest that these issues cannot be resolved unless the underlying policy/ regulatory environment is resolved. I reject that notion. These are orthogonal issues that must be resolved in parallel. It is useful to reemphasize here, there is nothing in the existing state or federal regulations that prohibit AT&T from entering into a private bi-lateral agreements for the exchange of SIP/IMS traffic right now. If there are such regulations it would be helpful to point them out.

These questions are not intended to criticize AT&T for putting forward the concept of a trial. AT&T has done the telecommunications industry and Commission a great service by even the most minimal suggestions for a trial. It should be troubling, however, that such a trial could be sanctioned without some concrete technical documentation on the table supported by the industry *as a whole* and not AT&T specifically.

The Commission should realize we now have a Two Track Discussion

The Commission must, in my judgment, consider the structural separation of important policy and regulatory issues from the underlying technical architecture that the transition from TDM to IP will require. To be clear, complex policy and economic questions cannot be resolved in a vacuum from the underlying technical and engineering challenges, and it is equally true that the rules and policy objectives set by regulators are important to understand in scoping the technical challenges. But the Commission should consider how to take a comprehensive look at each aspect of the problem – technical and regulatory – separately and see what challenges can be resolved *before* racing off to trial.

The current PSTN and TDM networks are a monstrous, complex set of moving parts that is often difficult to understand, even for the most technically proficient. The infamous Bellcore/Telcordia "Notes on the Network" is a mind-numbing 1300 pages.[8] The Session Initiation Protocol is not one specification, rather it is nearly 100+ IETF RFC's [9] and still counting. There are literally hundreds of technical documents that compose the 3GPP IP Multimedia Subsystem [IMS] superset of SIP specifications now in active deployment. [10] Technical standards are often open to "interpretation," which often necessitates detailed clarification through rigorous testing and documentation.

[8] http://telecom-info.telcordia.com/site-cgi/ido/docs.cgi?ID=SEARCH&DOCUMENT=SR-2275&

[9] http://www.packetizer.com/ipmc/sip/standards.html

[10] http://www.3gpp.org/specifications

We do not yet have technical consensus on how to proceed.

Moreover, as I noted in my filing on the Vonage petition,[11] I am aware of at least 6 different technical profiles for what is often referred to as the Network to Network Interface [NNI] from a variety of standards development organizations that describe how SIP/IMS interconnection should work on the wire. ATIS-PTC, CableLabs, 3GPP, GSMA, i3Forum for international call traffic, and the ITU-T all have "standards." As noted in the white paper that included with my remarks on the Vonage petition, these profiles may be mutually incompatible or even technically out of date. Different segments of the industry are using different profiles.

The Commission, in my judgment, should therefore not proceed too far with regulatory decision-making and trial authorization until an ***Open Multi-Stakeholder Consensus Driven Process*** can produce some reasonable technical profile, goals, requirements and objectives for the national PSTN transition. Perhaps if AT&T were to provide more detail regarding its plans for the technical aspects of its trial, a consensus group could quickly review those and find those reasonable for purposes of such a trial or provide comments about why certain aspects of those plans do not make sense from a technical or engineering perspective. But until AT&T does so, we are operating from a blank slate, without any details to help drive decisions or even just evaluate the scope of the trial. In the end, "data driven decision-making" can only succeed if first the industry develops a consensus-driven technical plan that ultimately feeds into demonstrable field evidence, that in turn ultimately becomes deployable "best practices".

The Central Role of Numbering in any Technical Transition or Trial Plan

I note several times in my previous filings on the Vonage Petition and Technical Transitions, the issues surrounding numbering and the structure of the existing Numbering Databases are essential to any technical planning exercise for a TDM to SIP/IP transition, irrespective of whether any trial is sanctioned.[12] During AT&T's trial, would the existing numbering databases LERG/NPAC be used to identify suitable points of interconnection? Is the industry going to

[11] Shockey Comments, Attach. at 7.

[12] *Id.* at 3, Attach. at 9; Technical Transitions Task Force Ex Parte at 2.

simply exchange Excel files among participants? I submit that is not going to scale. The industry and the Commission should quickly review some of the proposals to the North American Numbering Council [NANC] on IP fields in the Number Portability Administration Center.[13] The potential use of the NPAC as an authoritative source of data for SIP/IP interconnection, even for a trial, has profound policy and economic implications to the industry that none of the current commenters in this proceeding have yet addressed.

It might be instructive for the Commission to look at several previous and existing Technical Transitions to better understand and outline a successful path forward.

In my judgment one of the best examples of a successful technical architecture, functional specification and plan for transition is the NENA i3 architecture for NG 9-1-1.[14] The Federal Communications Commission, The Department of Transportation, Department of Homeland Security and Congress are expending enormous efforts to bring this vision to reality. This initiative may provide the best model of how the Open Multi Stake-Holder Consensus Driven Process should work for the classic critical infrastructure transition envisioned by the TDM to IP Evolution.

It should also be obvious by now that the issues involving TDM to IP Transition and those involving the Transition to NG 9-1-1 are utterly inseparable and that an industry wide technical planning exercise is crucial to both efforts. It is, therefore, reasonable to conclude that the NENA i3 initiative may represent an appropriate model for the TDM to SIP/IP Transition.

I have been personally involved in these complex multi-stakeholder technical discussions. I was the Chair of the SIPForum technical task group that delivered the SIPConnect Specification that defined a "profile" of the SIP based PBX to Service Provider network interface. [15] Though the underlying SIP standards were well known it was clear that their interpretation required additional study and documentation in order to make the interface actually work on the wire.

[13] http://www.npac.com/lnpa-working-group/nanc-change-orders

[14] http://www.nena.org/?page=i3_Stage3

[15] http://www.sipforum.org/sipconnect

Even now, the technical profile for SIP based PBX to service provider interfaces has required further validation and testing and the SIPForum has sponsored SIPConnect,[16] a live Open Process that is developing a conformance testing program to validate the underlying technical assumptions in the SIPConnect 1.1 Recommendations.

The introduction of Local Number Portability is also useful to consider. Though LNP was a technology mandate of the Telecommunications Act of 1996, the Commission carefully crafted its Orders to accept input from industry engineering forums that developed the underlying technical standards that are now ubiquitous. LNP ultimately gave telecommunications providers endless advantages in network operations far beyond the creation of more ubiquitous competition. The formal abstraction of the name (phone number) from underlying network address (Local Routing Number) now is the central architectural foundation for the TDM to SIP/IP Transition (Uniform Resource Indicators) and the promise of new and more advanced service offerings in the public network.

Lastly the Commission should look with a fresh eye to its uniquely successful Digital Television Transition.[17] In hindsight it is hard to believe the whole process actually worked. Careful planning and solid technical specifications preceded formal regulatory policy changes. Industry wide technical committees developed the standards and ultimately fed them into the regulatory process.

Conclusions

The Commission and the industry as a whole should recognize that a two-track approach to the TDM to SIP/IP Transition represents the sensible path forward. The existing discussions of policy, regulatory and economic framework for such a transition should be separated, to the extent reasonably possible, from a parallel technology discussion focusing on delivering the kind of classic engineering specifications or technical profiles that will allow all participants in the

[16] http://www.sipforum.org/content/view/400/288/

[17] http://en.wikipedia.org/wiki/Digital_television_transition_in_the_United_States

process to understand what must actually go "On the Wire" and represent a framework for any trial ultimately proposed.

Such a purely technical planning exercise is best done outside the context of, but still coordinated with, a Commission omnibus proceeding. To be clear once again, complex policy and economic questions cannot be resolved in a vacuum from the underlying technical and engineering challenges, and it is also true that the rules and policy objectives set by regulators are important to understand in scoping the technical challenges. But in the end engineering issues are best resolved by engineers. Regulators and the telecommunications industry will need a forum that is as neutral as possible, that is not driven or dominated by one segment of the industry, and that brings together *all* of the relevant technical experts from every aspect of the telecommunications industry: Price Cap ILECs, RLECs, CLECs, VoIP companies, Cable and Mobile, to reach consensus on a truly national technical specification for TDM to IP Transition and to use that effort to plan appropriate trials. Such a forum of *all industry participants, without domination by any one participant or sector* could also be very helpful in the exchange of "best practices" between service providers who are already exchanging SIP/IP traffic. It would also permit providers to begin a careful study of possible gaps in the map of carrier-neutral Internet Exchange Points [IXP's], where smaller carriers would eventually interconnect with larger providers. The work of this forum could then logically feed back into the regulatory process (and also understand core requirements from the regulatory process) in arriving at the best possible outcome from both a public policy perspective and an engineering perspective.

Engineering experts from the vast telecommunications supplier community should be invited to participate and are essential. If such a neutral forum can be established, appropriate engineering task groups should be chartered to look at every aspect of the transition and make appropriate technical recommendations. Such task groups should operate using the classic Open Multi-Stakeholder Consensus-Driven Process that has propelled IP Technology around the world. Within reason, discussions, including mailing lists should be open. Federal and State regulators should be invited to observe and all work product made freely available *without cost.* Documentation on critical infrastructure transitions must be made freely available to all stakeholders. The discussion at hand is the full transformation of the real-time communications

infrastructure of the United States which is absolutely critical to the United States economy. The FCC cannot be a party to any process that closes off critical documentation from stake holders.

The Commission should recommend the type of process that produced NENA i3, the DTV Transition, and even Local Number Portability as well as countless technical standards from such organizations as the IETF, IEEE and others noted above.

I'm at the disposal of the Commission and staff if there are any further questions.

Sincerely,

Richard Shockey
Shockey Consulting
2427 Silver Fox Lane
Reston, Virginia 20191
Voice +1 703 593 2683
E Mail richard@shockey.us

CERTIFICATE OF SERVICE

I hereby certify that a copy of the Associations' Reply Comments was served this 25th day of February, 2013 by electronic filing and e-mail to the persons listed below.

By: /s/ Elizabeth R. Newson
Elizabeth R. Newson

The following parties were served:

Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, SW
Washington, DC. 20554

Best Copy and Printing, Inc.
Room CY-B402
445 12th Street, SW
Washington, DC 20554
fcc@bcpiweb.com