

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554**

In the Matter of)	
)	
Technology Transitions Policy Task Force)	GN Docket No. 13-5
Seeks Comment on Potential Trials)	
)	
)	

COMMENTS OF AT&T

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INTRODUCTION AND SUMMARY

As the Commission recognized in the *National Broadband Plan*, “the convergence of all communications around IP-based networks and the innovative services those networks support” will bring “extraordinary opportunities to improve American life and benefit consumers”¹ IP networks are far more versatile and efficient than single-purpose networks like the TDM-based PSTN. And IP-based technological convergence also will intensify competition at all layers of the communications ecosystem, both among facilities-based providers of rival broadband platforms and among independent providers of higher-layer IP services.

It is for these reasons that for more than a decade the Commission has viewed encouraging ubiquitous deployment of next generation broadband infrastructure as one of its central missions under the 1996 Act.² To further this mission, the Commission has adopted policies that eschew unbundling requirements and other heavy-handed public utility style regulation of next-generation broadband and wireless services.³ It also has set an “express goal” of facilitating the transition from traditional, TDM-based networks to all-IP networks and services.⁴ Indeed, the Commission’s Technology Advisory Council has recommended that the TDM-based PSTN be retired by 2018.⁵

¹ FCC, *Connecting America: The National Broadband Plan*, at 59 (2010) (“*National Broadband Plan*”).

² See Notice of Proposed Rulemaking, Order and Notice of Inquiry, *Numbering Policies for Modern Communications et al.*, FCC 13-51, ¶ 54 (rel. Apr. 18, 2013) (“*2013 Numbering NPRM*”).

³ See, e.g., Memorandum Opinion and Order, *Petition of AT&T Inc. For Forbearance Under 47 U.S.C. § 160(c) et al.*, 22 FCC Rcd 18705, 18710 ¶¶ 8-10 (2007) (describing how the Commission has refrained from regulating advanced services in order to, among other things, “encourag[e] broadband deployment”); see also *National Broadband Plan* at 3 (2010).

⁴ See Report and Order and Further Notice of Proposed Rulemaking, *Connect America Fund et al.*, 26 FCC Rcd 17663, 17926 ¶¶ 783 (2011) (“*USF/ICC Transformation Order*”) (vowing to “facilitate the transition” away from the TDM-based network and toward the all-IP

That goal is eminently reachable. In fact, the transition from TDM-to-IP based services is irreversibly under way and proceeding apace, spurred by strong consumer demand for mobile and IP services. Already more than 70 percent of residential customers in AT&T's 22-state region have abandoned traditional wireline telecommunications services in favor of next generation alternatives.⁶ But there are steps the Commission can and should take to ensure that this transition is unimpeded by outdated regulations and proceeds seamlessly without consumer disruption. Most importantly, the Commission must sweep away rules that prevent carriers from retiring their legacy networks and services. The Commission has recognized that "requiring an incumbent to maintain two networks" both "reduces the incentive for incumbents to deploy" next-generation facilities and "siphons investments away from new networks and services."⁷ The Commission's rules must reflect that common sense reality. At the same time, the Commission should work with carriers to identify unforeseen challenges to the transition, as well as possible solutions to those challenges. As AT&T has previously explained, the best way to do that is by authorizing limited geographic trials so that real world experience can inform public policy and foster solutions to issues that may arise in the ongoing transition.

Over the past several months, the FCC has taken important steps in that direction. AT&T was pleased that the Commission promptly called for comment on AT&T's proposal for geographic trials to test the transition to all-IP networks and services, and it commended the

network of the future); *id.* at ¶ 1335; *2013 Numbering NPRM* at ¶ 54 ("The Commission has already set its goal to 'facilitate the transition to an all-IP network . . .').

⁵ See Technology Advisory Council, *Status of Recommendations*, at 11, 15-16 (June 29, 2011), <http://transition.fcc.gov/oet/tac/TACJune2011mtgfullpresentation.pdf>.

⁶ See AT&T Comments, GN Docket No. 12-353 at 3 (filed Jan. 28, 2013) (reporting that fewer than 30% of residential households in AT&T's 22-state ILEC region still subscribe to an ILEC POTS service).

⁷ *National Broadband Plan* at 49, 59.

Commission for establishing a Technology Transitions Policy Task Force to “conduct a data-driven review and provide recommendations to modernize the Commission’s policies in a process that encourages the technological transition, empowers and protects consumers, promotes competition, and ensures network resiliency and reliability.”⁸ And, although AT&T has concerns about some aspects of the approach outlined in the Task Force’s latest call for comment, AT&T welcomes the Task Force’s “propos[al] to move forward with real-world trials to obtain data that will be helpful to the Commission” in managing the transition to next-generation networks.⁹

That said, if the Commission hopes to meet the ambitious goal of retiring the nation’s legacy communications network by 2018 in as seamless a fashion as possible, then the Task Force, carriers, and other stakeholders must take more proactive steps. In particular, the Task Force should move forward with AT&T’s proposal to run geographic trials of the transition from legacy, TDM-based networks and services to next-generation, IP-based alternatives. As AT&T has explained and explains further below, the trials would shed light on any issues created by the transition to all-IP architectures. They will also provide a forum for all stakeholders, including communities, industry and government, to come together to identify gaps – in technology, services or policy – and craft solutions to those issues in an environment in which a TDM safety net still is in place. The geographic trials AT&T proposed will provide on-the-ground facts regarding the effects of the transition and would empower the Commission, the industry, and

⁸ “FCC Chairman Julius Genachowski Announces Formation of ‘Technology Transitions Policy Task Force,’” News Release (rel. Dec. 10, 2012), *available at* http://transition.fcc.gov/Daily_Releases/Daily_Business/2012/db1210/DOC-317837A1.pdf; *see also* Public Notice, Pleading Cycle Established on AT&T and NTCA Petitions, GN Docket No. 12-353 (Dec. 14, 2012).

⁹ *See* Public Notice, *Technology Transitions Policy Task Force Seeks Comment on Potential Trials*, GN Docket No. 13-5, at 1 (rel. May 10, 2013) (“Public Notice”).

affected communities to prevent disruptions and consumer harm as the transition moves forward nationwide.¹⁰ In much the same way that the DTV trial in Wilmington, North Carolina highlighted technical issues regarding the digital television conversion, as well as pockets of citizens who required more assistance and education concerning how to make that conversion, these trials will provide similar critical information that will make the TDM-to-IP conversion as smooth and nondisruptive as it can possibly be.

It is unquestionably in the public interest that the Commission initiate these trials because the migration from TDM to IP is not only an identified public policy priority of the Obama Administration, from a technology standpoint it is inevitable. We are well down the road already, and there is no turning back. Indeed, equipment manufacturers have stopped making TDM equipment, and the workforce that has the expertise to support TDM services and equipment is aging. For that reason, the issue is not whether we make the transition but how. And trials can make this inevitable transition as seamless as possible. Accordingly, the Commission should authorize comprehensive, geographic trials without further delay, just as occurred in Wilmington in anticipation of the DTV transition. If we do not begin that effort now, we risk being forced into the emergency-type processes that Verizon has been forced into by Hurricane Sandy, only on a much broader scale.

Unlike the more narrow trials envisioned by the Public Notice, AT&T's proposed all-IP trials would reveal what will happen while TDM is being phased out and, ultimately, when the TDM-based PSTN is shut down completely and all remaining TDM customers are transitioned

¹⁰ See Comments of AT&T, *AT&T Petition to Launch a Proceeding Concerning the TDM-to-IP Transition et al.*, GN Docket No. 12-353, at 2-10 (filed Jan. 28, 2013) (“*AT&T Jan. 28 Comments*”); Reply Comments of AT&T, *AT&T Petition to Launch a Proceeding Concerning the TDM-to-IP Transition et al.*, GN Docket No. 12-353, at 5-11 (filed Feb. 25, 2013) (“*AT&T Feb. 25 Comments*”).

to alternative services, as the broader transition necessarily will entail. Perhaps most importantly, the trials would allow carriers to identify any operational issues posed by transitioning TDM customers to alternative services and to devise solutions that minimize the adverse impact of the transition on those customers. In other words, AT&T's proposed trials are about finding ways to make the transition as transparent and least disruptive as possible for consumers.

Similarly, the trials would allow regulators to identify what federal and state consumer protections are important to retain in the transition period and beyond, and which are not. AT&T continues to believe that public-utility-style regulation of communications providers—whether traditionally classified as “ILECs” or not—will prove unnecessary and counterproductive in the all-IP world. Indeed, such regulation has proven unnecessary to protect the significant majority of consumers who *already* subscribe to cable and wireless services that have never been subject to public-utility-style regulation. But that does not mean that the future will be “regulation free.” For one, general consumer-protection laws will continue to apply, as they do today to all communications providers. And to the extent that other protections may be needed in an all-IP world, AT&T's trials would reveal exactly what those needs might be.

In short, AT&T commends the Task Force for seeking further comment on AT&T's proposal, and it urges the Commission to continue moving forward with geographically limited, all-IP trials. *See* Public Notice at 10. At the same time, AT&T is concerned by certain other proposals discussed in the Public Notice. Although the Commission has raised a number of important issues associated with the TDM-to-IP transition that ultimately must be addressed, most of the specific trials proposed in the Public Notice are unlikely to shed much light on those issues. Instead, as discussed below, the more narrow trials contemplated in the PN on issues such as wireline-to-wireless conversion, IP interconnection, copper retirement, Next Generation-

911 and disability access, would divert resources and attention away from other measures that are more likely to prepare the industry for the challenges it will face in the nationwide transition to all-IP networks and services. However, there is merit to both the proposal for a targeted trial to collect data to improve the Lifeline program and for a trial for testing new technical protocols for telephone number assignment.

Wireline to wireless. AT&T applauds the Task Force for recognizing that wireless-only products and services will play an important role in the transition to all-IP networks. *See* Public Notice at 8-9. Indeed, the voluntary migration of many customers to wireless-only voice and data communication already is well underway. In the future, however, wireless IP services will be the *only* option for some AT&T consumers who live in hard-to-reach areas where it is no longer economically feasible to maintain existing TDM-based wireline services,¹¹ much less deploy wireline IP networks and services. Such consumers will be transitioned from TDM wireline voice services and offered next-generation wireless LTE IP services that provide robust voice and data capabilities. These new LTE IP services will far outpace those available to such consumers today, but there also will be challenges to overcome (such as how to support alarm systems and health monitors). Thus, it is essential to conduct a *realistic* trial to identify and resolve such issues so that the nationwide transition from TDM to IP services takes place as

¹¹ As the Commission has long recognized, incumbent carriers historically relied on a web of implicit subsidies (from business to residential, long distance to local, and urban to rural) to fund universal service and, in particular, provide low-cost telecommunications services to consumers in such hard to reach areas. With the advent of local exchange competition in 1996, and the migration of a significant majority of consumers to wireline and wireless alternatives over the ensuing 17 years, those subsidies have evaporated. As a consequence, maintaining existing wireline services in those areas is no longer possible absent massive government subsidies that neither the Commission nor the states have shown any inclination or ability to provide.

seamlessly as possible. In particular, it is critical that any trial of the migration to wireless-only services be structured with the assumption that the migration is both mandatory and permanent.

Of course, there will be some consumers that do not want change, as there were during the transition from analog to digital television and the analog cellular sunset. But, as in those earlier transitions, the Commission cannot allow a small minority of consumers to hold back progress. And a voluntary regime, or one that allowed consumers to “switch back” to wireline services, will not accurately reflect the role that wireless-only IP services will play in the all-IP world. Instead, the Commission should test the effects of the wireline-to-wireless migration through AT&T’s comprehensive, all-IP trials, which would employ LTE IP services in portions of wire centers where wireline IP services cannot feasibly or economically be deployed.

VoIP interconnection. AT&T believes that trials of so-called “VoIP interconnection” are unwarranted. There is no doubt that interconnection in an all-IP environment raises important technical and competitive issues. But until certain technical issues common to the industry (such as the development of the ENUM numbering database) are resolved, there will be no destination architecture for IP-to-IP interconnection that could be tested, and thus the trial of VoIP interconnection as envisioned in the Public Notice would not yield useful or relevant information regarding the transition. As AT&T has explained, such issues are properly addressed through reliance on market forces and, where necessary (as with the creation of a numbering database), through the industry’s collaborative efforts.¹² Moreover, because interconnection arrangements in an all-IP world will not be based around LATA (or even state) boundaries and will not respect artificial distinctions between “local” and “long-distance”

¹² See Comments of AT&T, *Connect America Fund et al.*, WC Docket Nos. 10-90 *et al.*, at 9-34 (filed Feb. 24, 2012); Reply Comments of AT&T, *Connect America Fund et al.*, WC Docket Nos. 10-90 *et al.*, at 9-25 (filed Mar. 30, 2012); *AT&T Feb. 25 Comments* at 13-40.

services, and are highly unlikely to be limited to “voice,” running geographically limited trials of IP-based interconnection makes little sense.

Public Safety – NG911. Similarly, the proposed “accelerated” trial of an “all-IP” NG-911 service would also be premature because standard-setting bodies are still developing the standards defining the interconnection between originating IP networks and ESInets.¹³ Given the importance of emergency services to the public, even during a trial of new services, it is important to ensure the standards have been completed to work out any interoperability issues before beginning a trial. However, the initial standards defining this interconnection are not expected to be completed until early 2014, and the subsequent vendor product development is likely to take another 12-18 months. This means that the standards and implementing products would not be ready for trial until mid-to-late 2015. Putting the “trial cart” before the “standards horse” would risk stranding some NG-911 investments, for PSAP and provider alike, as well as injecting unnecessary delay in the ultimate rollout of the standard-compliant service. The Commission thus should await completion of the work of the standards-setting bodies and the follow-on implementation by vendors before undertaking an all-IP trial.

Copper Retirement. There is also no reason to conduct a trial on “issues related to copper retirement,” including a trial in which an ILEC sells some or all of its copper loops to a competitive LEC.¹⁴ The Commission’s existing copper retirement rules have functioned well for nearly a decade, and the Public Notice fails to identify any “issues” that would warrant a trial. Certainly, the transition to an all IP-network is not such an issue. To the contrary, that transition reinforces the need to permit AT&T and other ILECs to continue to use their best business

¹³ Emergency Services Interconnection Forum (ESIF) Issue Number 81 – Applying 3GPP Common IMS to NG9-1-1 Networks (Stage 2 & 3) Specification.

¹⁴ Public Notice at 11.

judgment to efficiently operate their networks – including, where necessary, retiring obsolete and inefficient TDM-based copper facilities.

Disability access. The IP transition should foster new and innovative solutions to address disability-related needs. At the same time, there may be IP compatibility issues with certain existing assistive devices that must be addressed. AT&T is committed to working with the disability community in the planning and execution of any geographic trials to identify persons with disabilities in the trial areas, to educate them about the trial and the transition, and to devise solutions (including through the use of emerging assistive technologies) to any issues that may arise during the transition to all-IP services. Again, AT&T believes that the best way to uncover these issues and address them quickly and effectively is as part of AT&T’s geographic all-IP trials.

Lifeline. In contrast, AT&T would support targeted trials focused on improving the Lifeline program, provided those trials do not simply duplicate the Commission’s low-income broadband pilots or otherwise impede further progress on Lifeline reform. There clearly is significant room for improvement in the Commission’s low-income support mechanisms, and AT&T has long supported the reform of the Lifeline program. Although the Commission already has the ability to improve the Lifeline program without a trial -- especially through the pending rulemaking on proposed improvements – a focused trial that includes the features AT&T describes would provide the Commission with additional data for modernizing the Lifeline program

Number Assignment. AT&T would also support a trial to test new technical protocols and procedures for assigning telephone numbers. In particular, a trial to determine new protocols and/or procedures for assigning telephone numbers on a less-than-one-thousands block basis

(and, ideally, on as-needed/just-in-time basis) that is open to carriers and VoIP providers would enable the Commission to improve the number assignment process itself and more efficiently allocate scarce numbering resources. These improvements, in turn, will also help facilitate the transition from TDM-to-IP networks and services.

In sum, AT&T commends the Task Force for moving forward with real-world trials designed to hasten the coming technology transition, and AT&T is committed to playing a key role in that process. To that end, in Part I below, we explain in detail the elements that will be encompassed by AT&T's comprehensive proposal for all-IP trials, and we explain why the Commission should proceed with such trials as soon as possible. Then, in Part II, we identify concerns with the more narrow technology trials contemplated by the Public Notice and explain why AT&T's proposal is a more effective means of achieving the Commission's stated goals. Finally, in Part III, we explain why the Commission should proceed with targeted trials aimed at improving the Lifeline program and the telephone number assignment process, and describe features that the Commission should incorporate to conduct those trials successfully.

DISCUSSION

I. THE COMMISSION SHOULD ADOPT AT&T'S PROPOSED FORMAT FOR THE TDM-TO-IP TRIALS.

As AT&T has detailed in its prior submissions, the on-going transition to all-IP networks and services is delivering enormous benefits to consumers.¹⁵ As a result, consumers are driving

¹⁵ See Petition, *AT&T Petition to Launch a Proceeding Concerning the TDM-to-IP Transition*, GN Docket No. 12-353 (filed Nov. 7, 2012) (“*AT&T Petition*”); Comments of AT&T, *AT&T Petition to Launch a Proceeding Concerning the TDM-to-IP Transition et al.*, GN Docket No. 12-353, at 2-10 (filed Jan. 28, 2013) (“*AT&T Jan. 28 Comments*”); Reply Comments of AT&T, *AT&T Petition to Launch a Proceeding Concerning the TDM-to-IP Transition et al.*, GN Docket No. 12-353, at 5-11 (filed Feb. 25, 2013) (“*AT&T Feb. 25 Comments*”); see also *National Broadband Plan* at 59 (citing the “extraordinary opportunities to improve American life and benefit consumers” brought about by technological convergence around all-IP networks).

that transition, as they increasingly choose to replace legacy services with IP alternatives. That will continue. The question before the Commission is not *if* that transition will take place but *how*. AT&T’s proposed all-IP trials will provide valuable insights that will help ensure that this transition is as seamless as possible. It will enable consumers, the industry, and the Commission to identify and address any operational issues – anticipated and unanticipated -- that might arise as a result of the transition, and to design solutions to those issues in a much more timely manner than would be possible without these trials. In the words of Alcatel-Lucent, the trials will be a “key step in understanding the approach to a network-wide PSTN sunset program.”¹⁶ By identifying and resolving potential problems in limited geographic areas, the proposed trials will help prevent significant disruptions throughout the country as a whole during the transition away from the PSTN.

Understanding these issues will be, of necessity, an iterative process. That is, after all, the principal benefit of a trial. But certain information should be included in any plan for an all-IP geographic trial. Each plan should set forth the geographic area in which the trial would take place, the specific TDM-based services to be discontinued in that area, the alternative wireless and wireline IP-based services that will be available post-discontinuance, other competitive alternatives that customers can purchase, and any other information deemed relevant by the

¹⁶ See Comments of Alcatel-Lucent, *AT&T Petition to Launch a Proceeding Concerning the TDM-to-IP Transition et al.*, GN Docket No. 12-353, at 18 (filed Jan. 28, 2013); see also, e.g., Comments of the Information Technology Industry Council, *AT&T Petition to Launch a Proceeding Concerning the TDM-to-IP Transition et al.*, GN Docket No. 12-353, at 1-2 (filed Jan. 28, 2013) (explaining that the proposed trials will “streamline the transition by determining how to facilitate it more broadly in an organized and orderly process from a technical point of view and will reveal very useful information on the policy issues that must be addressed to facilitate the transition from TDM to IP”); Comments of NCTA, *AT&T Petition to Launch a Proceeding Concerning the TDM-to-IP Transition et al.*, GN Docket No. 12-353, at 9 (filed Jan. 28, 2013) (stating that the trials could be useful in “identify[ing] issues that might arise for incumbent LEC customers, as well as for incumbent LEC competitors and their voice customers”).

provider relating to the public interest benefits of the proposed trial. The plans would also identify, where necessary, any legacy regulatory obligations that would need to be eliminated or forborn from prior to the trial. Importantly, after the Commission approves a trial plan, the carrier in question would be free to discontinue services in accordance with the terms of the plan without further Commission action, although customers would of course be notified prior to discontinuance so that they can switch to alternative services. Further detail on what AT&T intends to include in its trial plan is set out below. AT&T proposes that all similar plans for geographic trials include this same information to permit customers and other providers to plan for the trial.

Wire center information. Each carrier plan should identify with specificity the geographic area(s) affected by the carrier's proposed trials. As AT&T has explained, the proper geographic scope of such trials is an ILEC wire center, and the Public Notice recognizes that there is "general support" for that approach in the record. *See AT&T Petition* at 20; Public Notice at 9. The plans should identify all TDM-based services provided in that wire center (including local, long-distance, and dedicated services), as well as the current demand count for such services, which should be further broken down between retail (both residential and business) and wholesale customers. The plan should also provide information regarding the current availability of IP-based services in the wire center, including wired and wireless broadband services. Finally, it should include general demographic data regarding the chosen wire center.

Discontinued services and identification of alternatives. An essential part of each plan will be specifying precisely which services are to be discontinued as part of the trial, so that carriers and their customers can begin to prepare. The trial plan should also identify alternative IP-based "successor" products that are already available to replace specific TDM-based services

or that will become available prior to discontinuance of such services, along with a timetable regarding their availability.

Carriers should provide further information regarding each discontinued service that varies depending on the particular customer segment affected (residential, business, or wholesale). For *all such segments*, the plan should contain the above information regarding the current demand for discontinued services and the IP-based “successor” products or other competitive alternatives that are or will be available. The plan should also include information about any TDM-to-TDM migrations that might be necessary in advance of the transition to all-IP services in order to ensure a seamless transition.¹⁷ In addition, the plan should detail the customer-notification process that the carrier will use before shutting down TDM-based services, including the dates on which customer notice will be provided and particular services will be grandfathered (*i.e.*, new orders for such services will no longer be accepted) and then discontinued.

The trial plans also should contain information that will enable *wholesale customers* to prepare for the trials. Many ILEC services are purchased on a wholesale basis by CLECs, IXCs, and others. The trial plans therefore should explain how wholesale purchasers and their customers will be affected by the transition. For retail and business customers, that information should include the wholesale services being discontinued and the IP-based “successor” products or other competitive alternatives available in the market. The plans should also include the demand count for each wholesale service being discontinued.

¹⁷ For example, it may be necessary in some cases to migrate customers from TDM facilities or services in the trial wire center to those in another wire center in order to fulfill existing contractual commitments without disrupting or delaying the trial for other customers and services.

Finally, carriers' plans also should contain information to allow *interconnecting providers* to prepare for the trials. Some carriers that do not purchase wholesale services from ILECs nonetheless rely on interconnection with ILECs to provide service to their customers. Thus, each carrier's trial plan should also include general information about the interconnection arrangements, for both local interconnection and switched access, that might be affected. That information would include the timing of such changes and alternative interconnection arrangements that are available.

Network changes. As part of the proposed plan, carriers should include information concerning any physical or other changes to their networks that are contemplated in the transition. Such changes might include, for example, replacing the feeder part of the copper network with fiber. In order to facilitate an orderly transition, the plans would also detail whether the carrier intends to keep a TDM switch running after the transition for a period of time and any plans to turn down TDM switches entirely.

Other Public interest considerations. Under AT&T's proposal, the trial plans submitted by carriers would also explain in detail other information that implicates important public interest considerations. The information provided should include, for example, the carrier's description of how E9-1-1 services will be provided to both PSAPs and end-users. It should also include information of interest to the disability community, such as how TTY and TRS services (or alternatives) will be provided over next-generation networks and whether new or additional CPE is required. AT&T is firmly committed to working with the disability community to find solutions to these and other issues, including through targeted outreach and specialized customer service via AT&T's National Center for Customers with Disabilities.

The proposed plans should also include information regarding how the provider will deal with specialized services. For example, AT&T will work to develop solutions for customers with medical and alarm services that currently depend on wireline TDM service. The same is true for services provided to customers involved in critical infrastructure, such as the FAA, public safety and national security agencies.

Reports and evaluation. The detailed submissions should also contain plans for how the carrier intends to gather data related to the trials and periodically inform the FCC and pertinent state commissions regarding the progress and impact of the transition. Such data should include the number of customers that have responded (or not) to carrier notifications, the number of customers that have already been transferred to alternative services, and the number of customers that still must be transitioned.

Identification of counterproductive regulatory obligations. As AT&T has explained, legacy regulatory obligations often impede a carrier's ability to transition to next-generation products and services.¹⁸ For example, federal and state service obligations may preclude a carrier from retiring its TDM-based network, and a host of other obligations (such as the remaining equal access and dialing parity requirements) either make no sense or are infeasible to comply with in an all IP-world. AT&T will not belabor that point here. However, it is important for the detailed plans submitted by carriers to identify such obligations, and for the Commission to eliminate them prior to the start of the trial.

AT&T is currently developing a comprehensive plan that encompasses each of the elements identified above. That plan will provide an executable blueprint for all-IP trials in

¹⁸ See *AT&T Petition* at 11-20; *AT&T Jan. 28 Comments* at 8-10.

specific wire centers. In the meantime, AT&T welcomes this opportunity to share its thoughts on the appropriate framework for those trials.

II. SEVERAL OF THE NARROWER TRIALS PROPOSED IN THE PUBLIC NOTICE WOULD SHED LITTLE LIGHT ON THE KEY CHALLENGES ARISING FROM THE TDM-TO-IP TRANSITION.

The Public Notice identifies a number of important issues associated with the TDM-to-IP transition that ultimately must be addressed. Nevertheless, most of the specific trials proposed in the Public Notice are unlikely to shed much light on those issues. To the contrary, and as discussed below, the more narrow trials contemplated in the PN on issues such as wireline-to-wireless conversion, IP interconnection, Next Generation-911, copper retirement, and disability access, would divert resources and attention away from other measures that are more likely to prepare the industry for the challenges it will face in the nationwide transition to all-IP networks and services. In each of those cases the more effective and efficient way to deal with those concerns is through the comprehensive trials AT&T has proposed.

A. The Commission Should Explore Wireline-to-Wireless Issues in the Context of AT&T's Proposed All-IP Trials

AT&T commends the Task Force for recognizing the important role that wireless products and services will play in the ongoing transition to all-IP networks. And AT&T agrees that carriers and the Commission should carefully “evaluate the customer experience when customers are transitioned from wireline to wireless voice and broadband services,” as some customers with a wireless-only option necessarily will be as part of the broader TDM-to-IP transition. Public Notice at 8. However, AT&T is concerned that the Public Notice misunderstands what the role of wireless will be in areas where wireline service is no longer an option, and therefore what shape any “trials” of the transition to such a wireless-only option must

take. Migrating some customers—on a mandatory basis—to a robust wireless LTE product in portions of wire centers where wireline IP services are unavailable will simply be one part of the broader transition to all-IP networks and services. AT&T thus believes that the proper way to test the migration of some customers to wireless services is by instituting its comprehensive proposal for all-IP wire center trials, with wireless LTE IP services as simply one component of those trials.

Several aspects of the Task Force’s “wireless-only” proposal warrant comment. *First*, the Public Notice asks whether—as part of the trial—consumers should be given the option of *either* wireline or wireless services, with any customer “migration” to wireless-only service being purely voluntary. *See* Public Notice at 9. But this is already the status quo. Consumers are already voluntarily migrating to wireless-only services in large numbers. As the latest figures from the Centers for Disease Control show, “[n]early two in every five American homes (38.2%) had only wireless telephones ... during the second half of 2012,” and that number continues to grow.¹⁹ Moreover, providers such as AT&T currently market CMRS services “intended as a replacement for a customer’s existing [wired] services.”²⁰ Thus, a voluntary wireline-to-wireless trial would reveal nothing new. Rather, to be meaningful, the trial must grapple with the fundamental fact that in the future all-IP environment, some customers—primarily in areas where it is cost-prohibitive to extend robust wireline broadband services—will *only* have the option of purchasing such wireless IP services. Thus, any trial designed to test the TDM-to-IP transition must allow for the mandatory migration of customers where next-

¹⁹ *See* Stephen J. Blumberg & Julian V. Luke, Centers for Disease Control and Prevention, *Wireless Substitution: Early Release of Estimates From the National Health Interview Survey, July—December 2012*, at 1 (2013), available at <http://www.cdc.gov/nchs/data/nhis/earlyrelease/wireless201306.pdf>

²⁰ Public Notice at 9; *see, e.g.*, AT&T Wireless Home Phone, <http://www.att.com/shop/wireless/devices/att/wireless-home-phone-silver.html#fbid=7fs5rUqe6Nv>.

generation, wireless IP products are the only option in order to identify the issues (and potential solutions) that will arise from a transition from wireline-to-wireless services.

Second, the Public Notice appears to contemplate that customers will be allowed to “switch back” to wired products “after” the trial ends. Public Notice at 9. Again, this misunderstands how properly designed all-IP trials should function. As the Commission has recognized, the transition to all-IP networks and services is well underway, and once all carriers have transitioned, there will be no turning back. Any trials of aspects of that transition should therefore focus on how to migrate customers from legacy to next-generation services, including wireless-only IP services where appropriate, identifying any problems and issues arising during that transition, and finding *solutions* to those problems. Importantly, this is actually the consumer-friendly approach. By making clear that the switch to a wireless IP option is mandatory and irrevocable, the Commission will prompt both the industry and consumers to identify any issues early in the transition, in the controlled environment of a trial, and to address those issues head-on, rather than simply turning back.²¹ This is essential, because turning back will not be an option during the actual transition when wireline TDM networks are shut down entirely, and any trial that assumes TDM options remain available will thus teach us little.

Third, the Public Notice suggests that a trial of the transition to wireless-only products should occur at the “wire center level.” *Id.* To the extent the Public Notice intends this to mean that all customers within a wire center would be migrated to wireless services, this misstates the

²¹ This is not to say that customers in the trial wire centers will be cut over to wireless or other services before such issues are resolved. For example, AT&T already has identified the compatibility of health monitoring devices with wireless services as an issue, and would not expect customers using such devices to be required switch to wireless IP service (in areas where wireless IP services ultimately will be the only option) until that issue is resolved. We recognize that there may be similar compatibility issues that will have to be resolved before a wireless-only option can be implemented, and intend to use the trial to identify and address such issues.

role that wireless-only services will play in the transition to all-IP networks. As AT&T envisions it, that transition involves migrating all customers to IP-only services, for both voice and data. In most cases, that will mean carriers deploying *wired* IP services to some if not all areas within individual wire centers. However, in some areas within individual wire centers, there is unlikely to be a business case for building out wired IP services *even* with universal service support (or at least the limited support currently contemplated)—a fact that the Commission recognized when it created a remote areas fund to extend non-terrestrial-based broadband alternatives to certain high-cost areas.²²

As part of the broader all-IP transition, AT&T therefore intends to offer consumers living in such areas robust LTE *wireless* IP voice and broadband services. Those services generally will be far superior to the TDM services currently available. As the Public Notice itself remarks,

²² Report and Order and Further Notice of Proposed Rulemaking, *Connect America Fund et al.*, 26 FCC Rcd 17663, 17675 ¶ 30 (2011). In fact, AT&T has analyzed the cost to provide voice service in high-cost areas using the CostQuest Broadband Access Tool (CQBAT) and the Commission's brownfield principles. Based on AT&T's analysis, we estimate that it will cost over \$3.5 billion/year to provide voice telephony service to approximately 4.8 million locations that are in price cap carrier areas where there is no unsubsidized competitor currently providing service. These areas likely will be eligible for Connect America Fund (CAF) Phase II support but that support mechanism is capped at \$1.8 billion/year. Additionally, there are about 4.2 million locations in price cap carrier areas where the cost to provide voice service exceeds the cost benchmark but where some unsubsidized competitor is already providing service. Based on the analysis, the estimated cost to provide voice telephony service in these areas – which are not likely to be eligible for CAF Phase II support given the presence of an unsubsidized competitor – is \$2.7 billion/year. Finally, the Commission has proposed to set aside at least \$100 million/year for its Remote Areas Fund. Using the CQBAT, AT&T estimates that it will cost over \$2.5 billion/year to provide voice telephony service to the approximately 830,000 locations in these remote, price cap carrier areas where there is no unsubsidized competitor currently providing service. We provide these figures to illustrate that the Commission simply will not have sufficient high-cost support available to enable a price cap carrier to maintain wired services to all of the locations in these areas. In short, the analysis shows that, for millions of households in price cap carriers' territories, price cap carrier-provided wireline voice service simply will not be an economical alternative going forward. We note that AT&T's model runs using CQBAT are CQBAT Licensed Materials and the Property of CostQuest Associates, Inc. These materials are intended for use only in conjunction with the analysis of the Federal USF System and its reform. Any other use without permission is strictly prohibited.

therefore, “the move to wireless-only networks . . . could enable improved voice quality and reliability and broadband investment in areas not likely to be served in the near future with wireline technology, or at higher speeds than existing wireline offerings.” Public Notice at 8. But because the transition to wireless-only IP services will occur only in the highest cost portions of wire centers, any trials used to test that transition should enable providers to use those services in such a manner, and should avoid mandating that carriers deploy such services using arbitrary geographic boundaries, such as an entire wire center.

The Commission can best address the above issues by moving forward with AT&T’s proposal for comprehensive all-IP trials. As explained in greater detail above, AT&T envisions that carriers’ proposals for such trials would identify the services to be retired during the trial as well as the replacement services that will be available, and the trials themselves will be used to identify any issues raised by the transition and identify concrete solutions to those issues. In some cases, the replacement services will be wireless-only products, just as they will be when the industry transitions to all-IP networks as a whole. Adoption of AT&T’s proposed trials would therefore allow carriers and the Commission to collect data about the transition to all-IP services, including IP wireless services, in an environment that most closely approximates the form that the overall transition will take.

B. A Trial of VoIP Interconnection is Unwarranted.

The Public Notice correctly recognizes the importance of “VoIP interconnection” (*i.e.*, exchanging voice traffic in native Internet protocol formats), which will be essential to complete the transition from TDM to IP networks and services. It thus proposes to conduct a trial for VoIP interconnection in a few geographic markets to gather “real-world data on the *need* and *scope* for technical or industry standards for the exchange of voice traffic in Internet protocol

formats.”²³ But in identifying this as the purpose of such a trial, the Public Notice effectively puts to rest any question that the proposed trial is necessary or appropriate. Indeed, as the comments cited in the Public Notice itself demonstrate,²⁴ the *need* for industry and technical standards to address longer term structural issues associated with VoIP interconnection already is well-recognized and is being addressed. More to the point, stakeholders from across the industry, including AT&T, already have begun the important work of developing those necessary standards. Accordingly, especially in view of its backward-looking focus on the Commission’s potential role managing the underlying agreements, the VoIP interconnection trial envisioned in the Public Notice would serve no useful purpose, nor would it yield any useful or relevant information regarding the transition.

Before discussing the proposed trial in detail, we first address certain misconceptions concerning VoIP interconnection that appear to underlie the proposal. A case in point is a statement that purports to differentiate between “interconnection for voice (and possibly other real time services) using Internet protocols” and “general peering and interconnection for layer-3 IP data services.”²⁵ This statement may simply reflect the Task Force’s intent to exclude peering issues from the proposed trial, which is appropriate, but to the extent it reflects an assumption that IP-enabled voice traffic and IP-enabled data traffic will be neatly divisible from all other IP traffic in all cases and carried over separate and distinct physical networks, that assumption is simply incorrect. As AT&T has described in prior comments,²⁶ when the IP transition is complete, there no longer should be two sets of physical networks and interconnection locations

²³ Public Notice at 3 (emphasis added).

²⁴ See *id.* at 4 and n. 17 (citing Feb. 24, 2012 comments of CenturyLink, Verizon and Google in WC Docket No. 10-90).

²⁵ *Id.*

²⁶ See, e.g., AT&T’s reply comments in GN Docket No. 12-353, filed on February 25, 2013.

for IP-enabled traffic, one for “voice” and one for “the Internet.” Rather, the IP networks that carry VoIP traffic, whether “managed” or “over-the-top,” may in reality be the same -- or significantly overlap -- physical networks that underlie the Internet, which is simply the conceptual aggregate of its many constituent IP networks.

In the same vein, the Public Notice’s proposal to conduct VoIP interconnection trials in specific geographic markets (see Public Notice at 5) fails to reflect IP network engineering principles, and the lessons learned from the existing Internet peering and transit environment. As AT&T has explained in prior comments, interconnection arrangements for the exchange of VoIP traffic in an all-IP environment will likely utilize a similar broad geographic scope as existing peering and transit arrangements for the exchange of Internet traffic because, again, the physical networks carrying “voice” and “data” traffic will continue to converge.²⁷ In addition, given the amount of traffic being exchanged between IP networks, it is more efficient to maintain fewer interconnection points across a wider geographic area, with much larger levels of interconnection capacity between networks at each exchange point.

Thus, unlike interconnection for TDM voice traffic, VoIP Interconnection will almost certainly not respect LATA (or even state) boundaries; instead, while the specific arrangements between individual IP networks may vary, it will involve the exchange of traffic over broader regional, national, or global areas and at perhaps only a handful geographic locations across the country (or the globe). Indeed, the broad geographic scope and competitive nature of IP-to-IP interconnection, undergirded by a dynamic market for peering and transit, explains why regulation has never been necessary to ensure such interconnection on the Internet, even between

²⁷ Transit customers will likely exchange voice traffic at a transit POP location of their choice, and there likely will be more of these types of locations than the locations where backbone providers exchange traffic – again, just as there are today for other types of Internet traffic.

ISPs of radically differing size.²⁸ Given this, a trial that effectively would restrict IP interconnection within a locally-defined geographic area would inject artificial inefficiencies and unhelpful limitations into these arrangements.

Another, and related, misconception is that a trial may be necessary to determine whether, and if so how, providers would negotiate an agreement to exchange IP voice traffic -- and, in particular, to determine whether a Section 251 regulatory framework should be applied to those negotiations.²⁹ This again flies in the face of experience and the realities of today's unregulated marketplace for IP services. Notwithstanding (or more likely because of) the lack of statutory or regulatory obligations and oversight, the Internet's constituent networks (large and small) have reached efficient interconnection agreements anyway. Unregulated peering and transit arrangements (over which millions of over-the-top VoIP calls are exchanged every day) have succeeded for over twenty years in propelling the phenomenal growth of the Internet, and there is absolutely no reason to believe that this process will not continue as providers transition from TDM to IP.

This highlights yet another foundational problem with the Public Notice's concept of an IP interconnection trial -- specifically, the notion of the Commission administering a trial in a subject area in which its authority is, at best, dubious. As AT&T previously has explained in several proceedings,³⁰ not only are there sound policy reasons for the Commission to refrain

²⁸ See, e.g., Michael Kende, *The Digital Handshake: Connecting Internet Backbones*, FCC OPP Working Paper No. 32, at 15-32 (2000) (discussing market characteristics that ensure competitive equilibrium in the peering and transit marketplace), http://transition.fcc.gov/Bureaus/OPP/working_papers/oppwp32.pdf.

²⁹ See Public Notice at 5-6.

³⁰ For a fuller treatment of these issues, see AT&T's FNPRM comments and reply comments in WC Docket Nos. 10-90 *et al.* (filed Feb. 24, 2012 and Mar. 30, 2012). See also AT&T's reply comments in GN Docket No. 12-353, filed on February 25, 2013.

from extending the statutory and regulatory interconnection obligations applicable in the TDM world to IP-enabled services, imposing such obligations would be contrary to law. For example, because the “interconnection” provisions in the Communications Act apply only to “common carriers” (section 201) or “telecommunications carriers” (section 251), the Commission cannot regulate interconnection between two IP networks under any provision of Title II because retail providers of VoIP and other IP-based services are properly classified as “information service” providers and are therefore *not* “telecommunications carriers” or “common carriers.” Similarly, a party requesting interconnection under Section 251(c)(2) must be doing so for the purpose of providing “telephone exchange service and exchange access.” But because VoIP is an indivisibly interstate, interexchange-type service,³¹ it does not fall within the statutory definitions of either “telephone exchange service” or “exchange access.” Accordingly, conducting a trial of IP interconnection under the Commission’s auspices – including a trial in which the parties “negotiate pursuant to the existing section 251/252 framework”³² – presumes legal authority that simply does not exist.

There are thus fundamental legal and policy reasons not to proceed with a Commission-supervised trial of IP interconnection. But even if these issues could be satisfactorily resolved, a trial would still be a distraction rather than an enabler of VoIP Interconnection. A number of providers already have established interconnection arrangements for VoIP traffic, and more are likely coming soon, driven by consumer demand. These arrangements will better inform the

³¹ See AT&T FNPRM Comments at 38; First Report and Order, *Implementation of the Local Competition Provisions in the Telecommunications Act of 1996*, 11 FCC Rcd 15499, 15598-99 ¶ 191 (1996) (“*Local Competition Order*”); Memorandum Opinion and Order, *Vonage Holdings Corporation Petition for a Declaratory Ruling Concerning an Order of the Minnesota Public Utilities Commission*, 19 FCC Rcd 22404, 22415-16, 22423-24 ¶¶ 20, 31 (2004), *aff’d*, *Minn. PUC v. FCC*, 483 F.3d 570 (8th Cir. 2007).

³² Public Notice at 5.

Commission than any geographically limited, artificial trial about what, if any, actions might be necessary to facilitate and encourage progress toward the industry-wide VoIP interconnection standards and arrangements that will be necessary to complete the TDM-to-IP transition.

Indeed such efforts are a necessary prerequisite to any meaningful trial of IP interconnection. For example, for VoIP interconnection to occur on an industry-wide basis, rather than through *ad hoc* bilateral arrangements as is the case today, the industry will have to develop a universally accessible ENUM-type system that, as SS7 signaling networks and tandem switches disappear, will enable different VoIP providers to find one another's customers as efficiently as TDM-based carriers can find one another's customers today via conventional numbering databases. The development of this ENUM-database is a critical predicate to the ability of the industry to scale IP interconnection. And the industry, including AT&T, is fully involved in working cooperatively to resolve the myriad issues associated with establishing that database. An expanding number of providers, including ILECs, CLECs, cable companies, and wireless providers, are working on proposals for using the NPAC (*i.e.*, the local number portability database of record) and NPAC administrator to provide this function, and have begun discussions to initiate a trial later this year. The artificial trial proposed in the Public Notice thus is unnecessary, and would only distract from this essential work.

Similarly, the industry needs to develop higher-layer *interoperability* standards so that, for example, differences in VoIP providers' codecs (described in the Public Notice (at 5) as "media formats") will not prevent customers of one interconnected VoIP provider from communicating with those of another.³³ That issue, too, already is being addressed by the industry. The International Telecommunication Union ("ITU"), for example, already has defined

³³ A codec (short for "coder-decoder") is a program that, in this context, determines how an analog voice sound will be represented by a stream of digital data.

standards for base codecs, and the Internet Engineering Task Force (“IETF”) has defined Real Time Protocol (RTP) payloads. And other standards bodies and fora, including 3GPP, ATIS, and the i3 forum, are working on further definition of parameter option profiles. These profiles – essentially, refinements of industry standards -- will define the mandatory and optional codecs that will be supported on the network-to-network interface (NNI), and refine key parameters (including packetization period, P-Time, A-law and μ -law, bit-rates and modes). These other standards bodies also are working on general guidelines aimed at providing default rules for codec choices and transcoding responsibilities, which are intended to be incorporated into providers’ bilateral interconnection agreements.

And the same is true for developing the standard for Session Initiation Protocol (“SIP”)-based traffic exchange. The IETF already has defined the base SIP for exchanging voice traffic in RFC 3261 and RFC extensions. Other standards bodies, including 3GPP, ATIS, and the i3 Forum, are working on further definition of standard’s profiles. ATIS has defined standards for PSTN-to-IP interworking, and IP-to-IP interconnection, including the *IP Network-to-Network Interface (NNI) Standard for VOIP* (ATIS-1000009). This standard addresses the IP NNI for VoIP between providers, and supports the exchange of VoIP traffic by defining: (1) Interconnection architecture; (2) Session Initiation Protocol (SIP) call/session control signaling; (3) signaling and media transport; (4) Quality of Service (QoS); (5) association between call control and media control; and (6) mandatory SIP URIs to be supported. ATIS-100009 was initially published in 2006, and is currently being updated (revised) to support multimedia services.

In each of these cases, multi-stakeholder industry working groups already are working diligently to develop the common standards and technical specifications that are essential to the

scaled, industry-wide deployment of IP voice interconnection, and the limited geographic-based trial proposed in the Public Notice at best would provide a distraction from, and at worst would derail, these efforts. That is not to say, however, that the Commission has no role to play here. Certainly, the Commission should closely monitor the progress of these industry-groups and, where necessary, act to facilitate agreement on standards, especially for those solutions that continue to rely on numbering resources, which are subject to the Commission's oversight authority. Moreover, and as AT&T previously has advocated, the Commission could significantly advance the IP transition by establishing a date by which carriers would no longer have an obligation to interconnect via TDM.³⁴ But a geographically limited trial of IP interconnection alone –and not as part of the more comprehensive trial proposed by AT&T-- especially at this time and as contemplated in the Public Notice, would not advance the ball, and in fact could impede the important work being done. The Commission thus should refrain from initiating any such trial.

C. A Trial of Next Generation 911 Service in an All-IP Environment Should Not Be Commenced at This Time.

The Public Notice seeks comments on a possible trial that would deploy an “all-IP” NG-911 service on an accelerated basis for a number of geographic areas where public safety authorities are ready to deploy NG-911 for one or more PSAPs.³⁵ However, in view of the essential standards work that remains to be accomplished to facilitate the successful deployment

³⁴ See AT&T's Comments in GN Docket No. 09-47 (Dec. 21, 2009) (<http://apps.fcc.gov/ecfs/document/view?id=7020354036>), and AT&T Comments in WC Docket 10-90 (Feb. 24, 2012) (<http://apps.fcc.gov/ecfs/document/view?id=7021866084>).

³⁵ Public Notice at 7.

of NG-911 service in the all-IP ecosystem, any trial – much less an “accelerated” trial – is premature.

Given the importance of emergency services to the public, even during a trial of new services, it is critical to ensure the standards have been completed to work out any interoperability issues before beginning a trial. Putting the “trial cart” before the “standards horse” would risk stranding some NG-911 investments, for PSAP and provider alike, as well as injecting unnecessary delay in the ultimate rollout of the standard-compliant service. In this case, those standards are far from complete. In particular, the process in which standard-setting bodies are developing the standards defining the interconnection between originating IP networks and Emergency Services Internet Protocol Networks (ESINets) is continuing, and not anticipated to be completed until early next year.³⁶ Once those initial standards are completed, vendor development can commence. But that process is expected to take another 12-18 months. Taken together, the necessity for first establishing standards and then implementing them through vendor product development means that a trial of NG-911 could not begin before mid-2015 at the earliest, and possibly even later than that.

For its part, AT&T is committed to support its PSAP customers in any future trial, as AT&T has long partnered with Public Safety in the deployment of ESINets. AT&T was fully engaged in the development of the NENA i3 standard that established the foundation for the NG-911 network and additional services that it can support. Since that time, AT&T has been active in the development and deployment of ESInet networks with several PSAP customers and has worked through the transition steps to interconnect originating networks through legacy network gateways. In addition, AT&T is actively working to implement the standards to support Text-to-

³⁶ Emergency Services Interconnection Forum (ESIF) Issue Number 81 – Applying 3GPP Common IMS to NG9-1-1 Networks (Stage 2 & 3) Specification.

911 so that it can be seamlessly integrated into existing NG-911 networks. However, all of this work could be put at risk by a premature trial. Accordingly, the Commission should move cautiously here and await completion of the work of the standards-setting bodies and the vendors' work that would follow in its wake before undertaking an all-IP trial of NG-911 services.

D. Copper Retirement Is Not an Appropriate Subject for a Trial.

The Public Notice also asks whether the Commission should conduct a trial on “issues related to copper retirement,” including a trial in which an ILEC sells some or all of its copper loops to a competitive LEC.³⁷ It should not. The copper retirement rules have functioned well for nearly a decade, and the Public Notice fails to identify any “issues” that would warrant a trial.

To be sure, some CLECs claim that the existing rules permit ILECs to subvert competition by denying them access to facilities they purportedly need to serve their customers, and thus they have urged the Commission to suspend and replace the existing rules with broad and intrusive requirements that would second-guess ILEC decisions about how best to operate and manage their networks. But these CLECs have offered no factual support for their claims, nor could they. Experience under the existing rules confirms that they work, and that copper retirement has not adversely affected competition. Nor has copper retirement harmed individual competitors (including the CLECs urging a change in the rules); in any event, the Commission itself has long recognized that protecting competitors, as opposed to competition, is not a legitimate public policy objective. Indeed, notices of network changes – including notices of copper retirement – have rarely been opposed, and, in the few instances where they have, concerns regarding such changes have been resolved by the parties. For example, as US Telecom noted in a recent filing, during calendar year 2012 AT&T and the other two largest

³⁷ Public Notice at 11.

ILECs filed a total of 89 network change notifications pursuant to the Commission's rules, *and not a single objection was filed in connection with any of these.*³⁸ In fact, since 2007 AT&T has followed the established network modification and notification rules to replace or retire copper facilities in several hundred instances throughout our ILEC footprint – again, all of these have been without objection. Clearly, real-world experience under the existing rules does not suggest any need for a trial, much less a change in the existing rules.

The transition to an all IP-network does not alter this conclusion. To the contrary, it reinforces the need to permit AT&T and other ILECs to continue to use their best business judgment to efficiently operate their networks. Indeed, in order to effectively manage the operational challenges and complexities inherent in the transition to all-IP networks, ILECs must be free to superintend their networks and to retire network elements that have been rendered anachronistic, that are under-utilized, that no longer perform optimally or reliably, or that are uneconomical to maintain and operate. Subjecting those practices to a trial, or otherwise modifying the existing rules, could significantly delay or compromise the transition.

Nor is a trial necessary. As AT&T noted in its comments in the pending Copper Retirement Rulemaking docket, AT&T is now carefully studying alternatives for providing access to retired copper facilities.³⁹ Because there may be market-based solutions that preserve ILECs' control over their networks while also addressing any legitimate concerns regarding the future accessibility of retired copper, the Commission should allow AT&T, and other ILECs, to complete internal analyses before considering any "trial" of that concept.

³⁸ Comments of the United States Telecom Association, *In the Matter of Mpower, et al., Request to Refresh the Record and Take Expedited Action to Update Copper Retirement Rules*, WC Dkt. 12-353 and RM-11358 (March 5, 2013), at 3.

³⁹ See AT&T's Comments, Docket Nos. WC 12-353 and RM-11358 (filed March 5, 2013).

E. Disability Access Issues Should be Addressed Through AT&T’s Proposed Wire Center Trials Rather than a Separate Trial Focused Solely on Such Issues.

AT&T has long recognized the critical importance of meeting the communications needs of persons with disabilities, and ensuring that its network and services are accessible. That not only is the right thing to do but also mandated by Sections 255 and 716 of the Communications Act,⁴⁰ and the Commission implementing rules,⁴¹ which require network providers to deploy accessible networks for covered services, such as voice, electronic messaging, and video conferencing. AT&T thus is committed to focusing on accessibility issues and working with the disabled community during and after the transition from TDM to all IP-based networks and services.

However, the most effective way to examine those important issues associated with providing access to next generation IP networks and services to the disabled community is through the wire center trials AT&T has proposed, not to conduct separate and far more limited disability trials. AT&T’s proposed trials will advance the goal of the Task Force to obtain “real-world” data concerning the impact of the transition on customers with disabilities and functional limitations,⁴² because it will consider those issues within the context of the entire real-world transition, rather than in an artificial, stand-alone context. It also would provide a more diverse cross section of the population of persons with disabilities, including both those who are

⁴⁰ 47 U.S.C. §§ 255, 617 (2011). *See also* 47 U.S.C. §251(a)(2) (2011) (“Each telecommunications carrier has the duty . . . not to install network features, functions, or capabilities that do not comply with the guidelines and standards established pursuant to section 255 or 256 of this title.”)

⁴¹ 47 C.F.R. §§ 6.5(c), 6.9, 7.9, 14.20(a)(4), (5).

⁴² Public Notice at 1 (“The Technology Transitions Policy Task Force (Task Force) proposes to move forward with real-world trials to obtain data that will be helpful to the Commission.”).

affiliated with disability organizations and those who might not be. And, lastly, it would allow the Commission to consider the impact of the transition on customers with varying degrees of disabilities and functional limitations and on various solutions for providing access for those customers. The results of these trials also would allow the Commission to evaluate whether further accessibility testing or trials are required based upon real data.

The IP-transition should foster new and innovative solutions to address disability related needs, such as the speech-to-text software tested by Ofcom.⁴³ Although many assistive technologies have been developed to work over TDM networks, the IP revolution, including the use of cloud-based software solutions and IP connectivity, has the potential to deliver far more robust assistive technology solutions to persons with disabilities than the TDM network alone could ever deliver. The benefit of point-to-point video that can support sign language and cloud based processing speeds for speech-to-text and text-to-speech applications can open information access to people with a range of disabilities.

Persons with disabilities have unique needs in making the IP transition. They may not be reachable by traditional means due to limited connectivity, lack of access to information services and reliance on alternative communications and media. They also may be difficult to identify. In fact, with a few exceptions, AT&T's business records do not identify whether a customer has a disability. They also often rely on specialized assistive technologies designed for TDM networks. AT&T plans to engage with experts, consumer organizations, and disability organizations to reach out to the disability community, while securing the privacy of individuals

⁴³ See Ofcom, A Study Into the Effectiveness of Speech-To-Text as an Assistive Tool in VoIP Communications, <http://stakeholders.ofcom.org.uk/market-data-research/other/policy-related-research/usabilityresearch/research/speech-to-text-voip/> (last accessed May 7, 2013). Ofcom is the independent regulator and competition authority for the communications industries in the United Kingdom.

within that community, and to provide knowledge of assistive technologies. AT&T also will benefit from its internal expertise about assistive technologies. These efforts will allow AT&T to identify potentially impacted technologies, assess compatibility with IP networks, and address other accessibility issues.

AT&T's focus for the proposed wire center trials will be on how best to transition all of its customers, including those with disabilities, to IP-based services, and believes this approach will best service the needs of the disability community as well as the needs of persons without disabilities. AT&T's trial philosophy focuses on identifying issues that require resolution prior to the transition from TDM service to an IP successor service, identifying or developing solutions to those issues, and completing the transition only when those issues are resolved. The complexity of the IP transition and other unknowns make it likely that additional issues will arise during the trial implementation. However, that is the purpose of a trial—to identify unexpected issues prior to full scale deployment. The comprehensive real-world trials proposed by AT&T, and not the more limited trial contemplated in the Public Notice, are clearly the most efficient and effective means of identifying those issues and developing the data for addressing them.

III. THE PROPOSED LIFELINE AND NUMBERING TRIALS HAVE MERIT.

A. A Lifeline Trial Could Provide Valuable Information Regarding Ways to Improve Access to Communications Services for Low-Income Americans.

The Public Notice also asks whether the Commission should “have a trial that focuses on how to improve access to communications services for low-income Americans,” as well as “trials to collect data on ways to further improve [the] Lifeline program.” *See* Public Notice at 11-12. AT&T believes that there is significant room for improvement in the Commission's low-income support mechanisms, and it thus has long supported reform of the Lifeline program. As a consequence, AT&T would support targeted trials focused on Lifeline, provided those trials do

not simply duplicate the Commission’s low-income broadband pilots or otherwise impede further progress on Lifeline reform. We offer our suggestions on how the Commission might structure such a trial below.

As an initial matter, however, we emphasize that the Commission could improve the Lifeline program today without having to conduct any trials. The Commission already has a pending rulemaking on proposed improvements to the program.⁴⁴ The comment cycle in that proceeding closed over a year ago and the record is complete. That rulemaking included proposals to: establish a national Lifeline eligibility database; require all Lifeline providers to obtain direct reimbursement from the Universal Service Fund (Fund) when they provide Lifeline discounts to consumers; and create a new, voluntary, universal service designation – Lifeline Provider – that is de-linked from the ETC designation.⁴⁵ Combined, these changes would make the Lifeline program less susceptible to waste, fraud, and abuse, and, at the same time, likely increase the number of service provider options available to Lifeline-eligible consumers. AT&T has addressed these issues at length in its comments and we do not repeat those arguments here.⁴⁶ However, we encourage the Commission to implement the foregoing proposals without further delay.

Survey Lifeline-eligible consumers. The Commission should survey current Lifeline subscribers (or low-income consumers more generally) to obtain data regarding their communications needs and preferences. Approximately 13 million low-income consumers, out

⁴⁴ *Lifeline and Link Up Reform and Modernization*, WC Docket No. 11-42 et al., Report and Order and Further Notice of Proposed Rulemaking, 27 FCC Rcd 6656, ¶¶ 399-506 (2012) (*Lifeline Reform Further Notice*).

⁴⁵ *See id.*, ¶¶ 399-413, 452-61, 502-04.

⁴⁶ AT&T *Lifeline and Link Up Reform* Comments, WC Docket No. 11-42 et al. (filed April 2, 2012); AT&T *Lifeline and Link Up Reform* Reply Comments, WC Docket No. 11-42 et al. (filed May 1, 2012).

of the 31 million who are eligible, obtain Lifeline benefits, yet the Commission knows very little about them.⁴⁷ Among other things, the Commission does not know: why Lifeline-eligible consumers opt not to obtain Lifeline-supported service; how low-income consumers use their Lifeline-discounted voice service; whether such consumers subscribe to other non-Lifeline voice services, either wireline, wireless, or VoIP; why these consumers chose their Lifeline-discounted service over other available services (e.g., why they chose wireless over wireline service); whether, and at what frequency, do Lifeline or low-income consumers also subscribe to other, non-voice services, like broadband and multi-channel video programming; whether these consumers had voice service of any kind before being enrolled in Lifeline; and, whether they would continue to subscribe to their current offering if the Lifeline discount was reduced or eliminated. In its *Lifeline Reform Further Notice*, the Commission sought comment on what is the appropriate Lifeline discount amount for voice telephony service and other issues.⁴⁸ In order to make informed decisions on these matters, the Commission first should seek answers to the foregoing questions, and potentially many others, to learn more about the communications needs of low-income consumers. It also should seek information regarding: the number of communications devices in an average low-income consumer's household (subsidized and unsubsidized); the average usage for all of the household's various voice devices; and the average amount such consumers pay each month for all of their communications services (e.g., broadband, wireless, wireline).

⁴⁷ See, e.g., *Statement of Julie A. Veach, Chief, Wireline Competition Bureau, Federal Communications Commission Before the Subcommittee on Communications and Technology, Committee on Energy and Commerce, U.S. House of Representatives*, at 3 (April 25, 2013), available at <http://docs.house.gov/meetings/IF/IF16/20130425/100759/HHRG-113-IF16-Wstate-VeachJ-20130425.pdf> (chart indicating that, as of March 2013, there were approximately 13.2 million Lifeline subscribers).

⁴⁸ *Lifeline Reform Further Notice* at ¶¶ 462-73.

To ensure uniformity in the administration of such surveys and increase the consumer response rate, AT&T recommends that the Commission retain a vendor to conduct the survey on its own behalf. Based on its experience with the duplicate resolution process, AT&T has found that consumers respond at higher rates to communications sent on behalf of the Commission than they do to those sent from AT&T.

Trial Lifeline vouchers. AT&T recommends that the Commission conduct a limited trial of the use of electronic vouchers (or e-vouchers) to subsidize eligible low-income consumers' purchase of voice or broadband services, or a bundle that includes such services. None of the Commission's Lifeline broadband pilots are testing the use of vouchers and thus an e-voucher trial would not duplicate any of the trials already in progress. We further recommend that such a trial be conducted separate from any other trial discussed in the Public Notice.

As we envision such a trial, a consumer would use the Lifeline voucher to obtain eligible services from any participating service provider, regardless of whether the provider is an ETC.⁴⁹ In the trial area, all newly-eligible Lifeline consumers, as well as existing Lifeline consumers who seek to change service providers or obtain Lifeline-discounted broadband service, would be required to use e-vouchers. Existing Lifeline consumers who seek no change to their current service provider or plan would be unaffected by the trial.

Under this proposal, participating service providers would not determine consumer eligibility for the program; instead, the relevant government agency or its vendor would make that determination, and then it or some other authority (e.g., USAC) would provide qualified consumers with the e-voucher. Lifeline-eligible consumers then would provide the e-voucher to any participating service provider online, over the phone, or in person. The Commission and/or

⁴⁹ See, e.g., *AT&T Lifeline and Link Up Reform Comments* at 19-22 (explaining why the statute does not require Lifeline providers to be ETCs).

USAC would have to establish some simple means for the participating service provider to verify the authenticity of a customer's e-voucher, which would be unique to that particular individual, prior to providing discounted service to the customer. The Commission and/or USAC also would have to develop a tracking tool (or, possibly, use the National Lifeline Accountability Database) to ensure that consumers do not attempt to use an e-voucher with more than one service provider. Participating providers would decide which of their eligible offerings, at their standard terms and conditions, would be available for the trial⁵⁰ and would be reimbursed by USAC for having provided discounted service.

Conducting such a trial would enable the Commission to evaluate several key reforms that seem essential to the future of the Lifeline program. Among other things, the Commission could review the participation of non-ETCs in the Lifeline program (e.g., did the trial increase service provider participation and thus provide Lifeline-eligible consumers with more communications choices) and whether relying on public entities or their vendors to determine program eligibility reduces errors and fraud. Additionally, the Commission could evaluate whether an e-voucher-based system makes it easier for consumers to obtain their discounts and increases the efficiency and accuracy of the Lifeline provider reimbursement process.

B. The Commission Should Use a Trial to Test New Technical Protocols and/or Procedures for Assigning Telephone Numbers.

AT&T also would support a numbering technology trial to test new technical protocols and procedures for assigning telephone numbers. In particular, we encourage the Commission to sponsor a trial to determine what new protocols and/or procedures would be necessary to assign

⁵⁰ This means, among other things, that if a Lifeline consumer participating in the trial terminates service prior to the expiration of any service term (because, for example, the consumer is no longer eligible for the Lifeline benefit or because the consumer changes providers), the service provider may assess the customer any otherwise applicable charges.

telephone numbers (TNs) on a less-than-one-thousands-block basis (and ideally on an as-needed/just-in-time basis). We further encourage the Commission to open the proposed trial both to carriers and VoIP providers. Such a trial would enable the Commission to improve the process for assigning telephone numbers, and more efficiently allocate scarce numbering resources. It also would help facilitate the transition from TDM to all-IP networks and services, promote competition, and address state commission concerns about number exhaust and the creation of new NPAs. We offer our suggestions for how the Commission should conduct such a trial below.

1. The Commission Should Conduct a Numbering Trial that Builds on Existing Databases, Numbering Administrators, and Processes.

The trial we propose should build on the existing numbering databases, administrators, and processes to determine what new protocols and/or procedures would be necessary to assign telephone numbers (TNs) on a less-than-one-thousands-block basis (and ideally on an as-needed/just-in-time basis). In particular, the trial should rely on the existing Number Portability Administration Center (NPAC) database, which would require the cooperation of Neustar, Inc. (Neustar), which serves as both the Number Pooling Administrator (PA) and the administrator of the NPAC.⁵¹ The trial should seek to incorporate the Just-in-Time (JIT) inventory concept to the allocation of numbering resources,⁵² and thus to distribute TNs on an individual basis—*i.e.*, “individual telephone number (ITN) pooling”⁵³—in lieu of one-thousands blocks.

⁵¹ Neustar manages the NPAC under contract with the North American Portability Management, LLC (NAPM).

⁵² The JIT inventory concept is based on having “the right material, at the right time, at the right place, and in the exact amount,” without the safety net of inventory. *See* [http://en.wikipedia.org/wiki/Just-in-time_\(business\)](http://en.wikipedia.org/wiki/Just-in-time_(business)).

⁵³ *Numbering Resource Optimization, Report and Order and Further Notice of Proposed Rulemaking*, 15 FCC Rcd 7574, 7675-76 (2000) (*First NRO Order*).

Under the proposed trial, the PA would create a JIT Administrator function for numbering resources.⁵⁴ The JIT Administrator would have its own Service Provider ID (SPID) or would use the PA's SPID to obtain numbering blocks that could then be distributed on an individual, just-in-time basis to carriers and VoIP providers (either directly, to the extent they have obtained a waiver to obtain direct access to numbers, or through their numbering partners) using the number porting process. Thus, for example, if a VoIP provider needed a TN, it would submit a request to port the TN from the JIT Administrator just as if the JIT Administrator were an Old Local Service Provider (OLSP), as defined in the NANC number porting process flows.⁵⁵ Acting as the OLSP, the JIT Administrator would port the TN to the interconnected VoIP provider's numbering partner (or to the VoIP provider itself if it was authorized to obtain direct access to numbers) in the role of the New Local Service Provider (NLSP), using an appropriate location routing number (LRN).⁵⁶ Once the TN was assigned and activated, inbound calls to the TN would be routed to the VoIP provider just as ported TNs are routed today. And, if the number is disconnected, the TN would "snap back" to the JIT Administrator.⁵⁷ In short, the process we propose would build on the existing LNP process to assign numbers on an individual basis. See Attachment A, "Just-in-Time Trial Proposal," diagram.

⁵⁴ Under the trial, the PA could either create a separate JIT entity for this purpose or it could simply adopt the JIT functions as part of its role as the PA. Either way, the trial envisions a JIT Administrator database that could be populated with TNs, preferably TNs from contaminated blocks, which would further improve numbering resource optimization.

⁵⁵ As with the original ITN pooling concept, the JIT Administrator would be the third-party administrator that coordinates the allocation of the individual numbers to a particular service provider with the NPAC. See *First NRO Order* at 7676.

⁵⁶ In addition to an LRN used today to route numbers on the PSTN, a service provider supporting IP interconnection might also populate one of the NPAC uniform resource identifier (URI) fields with information for IP interconnection routing. Service providers are currently in informal discussions about how to use the NPAC URI fields to support IP interconnection and routing.

⁵⁷ See *Telephone Number Portability, Second Report and Order*, 12 FCC Rcd 12281, 12326-327 para. 79 (1997).

2. The Commission Will Have to Work with Neustar and Industry Bodies to Conduct an Effective Numbering Trial.

Multiple parties will need to participate in the trial for it to succeed. These include the Commission itself, the PA, and any VoIP providers (and, to the extent necessary, their numbering partners) and carriers that volunteer to participate in the trial. The Commission also could seek input from the North American Numbering Council's (NANC) Local Number Portability Administration - Working Group (LNPA-WG) and the ATIS Industry Numbering Committee (INC), both of which have received presentations related to the JIT process.

The Commission obviously would need to sanction the trial, and also should oversee and evaluate it. Additionally, however, the Commission will need to determine whether the existing agreement with the PA is sufficient to cover all aspects of the PA's role in the trial and, if it is not, to authorize any changes to the agreement to cover any trial-related additional duties.

The PA will need to determine how best to set up the JIT Administrator—either as a separate entity or as a separate function within the PA's operations—and to provide the JIT Administrator the JIT SPID. The PA will also have to populate the JIT Administrator database with TNs for use in the affected rate centers, notify the industry of JIT resources, and develop and communicate the administrative processes for obtaining access to JIT numbering resources.⁵⁸

We recommend that the Commission consult and collaborate with the LNPA-WG and the INC during the trial. If the trial leads to a permanent JIT number resource process for ITN pooling or for allocating numbering resources during the TDM-to-IP migration, the LNPA-WG may need to develop best practices for service provider interaction with the JIT Administrator. And the INC may need to develop temporary JIT guidelines similar to those developed for p-

⁵⁸ Because the trial will be an extension of the existing LNP process, there will not be any changes to the NPAC or the procedures surrounding it—other than adding the JIT SPID to the NPAC.

ANI administration.⁵⁹ Any such INC guidelines can always be upgraded and improved post-trial if the JIT Administrator numbering distribution process becomes permanent.

3. The Cost of the Proposed Numbering Trial Likely Will Be Low, but the Potential Benefits Will Be High.

The proposed trial likely will require some upfront funding to cover the costs of planning and making any necessary changes to existing numbering databases and number resource allocation protocols and processes, such as establishing the JIT Administrator. And trial participants likely will incur some costs in operationalizing a new internal porting-in process involving an entity that is not actually an OLSP. But these costs should be minimal insofar as the proposed JIT process builds on existing numbering databases and processes. Moreover, if the Commission decides not to permanently adopt the JIT process at the conclusion of the trial, there would be no post-trial administration costs to revert to existing practices and procedures. Because the trial TNs will be ported to trial participants like any other TNs, the use and ultimate disposition of those trial TNs will be covered by existing numbering rules and processes.

On the other side of the coin, the potential benefits of the trial are substantial. Because the proposed JIT process easily could be segued into a permanent process for all providers, it could operate in tandem with the existing numbering resource distribution process over the next few years as providers complete the transition from TDM to all-IP networks and services. And by distributing numbering resources on an as-needed basis, the process will operate far more efficiently, ameliorating concerns regarding numbering and NPA exhaust that arise because of hoarding or simply due to the inefficiencies of the current thousands-block number pooling

⁵⁹ See Alliance for Telecommunications Industry Solutions (ATIS), P-ANI ADMINISTRATION GUIDELINES, ATIS-0300089 (March 8, 2013).

process.⁶⁰ In short, the JIT process we propose for a numbering trial would create a more efficient mechanism for number resource distribution by building on existing numbering databases and industry porting processes that, post-trial, could be quickly expanded to include additional providers and function as a bridge between the TDM world of today to the all IP world of tomorrow.

CONCLUSION

The Commission should authorize without further delay the comprehensive, geographic trials that AT&T has proposed to address the transition from legacy, TDM-based networks and services to next-generation, IP-based alternatives. In doing so, the Commission should reject the piecemeal, issue-specific trials contemplated in the Public Notice concerning the wireline-to-wireless transition, IP interconnection, Next Generation-911, copper retirement, and disability access. However, there is merit to pursuing targeted trials aimed at improving the Lifeline program and the telephone number assignment process, and the Commission should conduct such trials with the features recommended by AT&T.

Respectfully submitted,

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⁶⁰ As the Commission noted in the NPRM section of the *VoIP Numbering Trial Order*, some states have raised concerns about number exhaust within NPAs if interconnected VoIP providers are allowed direct access to numbering resources associated with non-pooling rate centers. See *VoIP Numbering Trial Order* para. 26. This proposed trial, which provides for INT pooling, would address those concerns.

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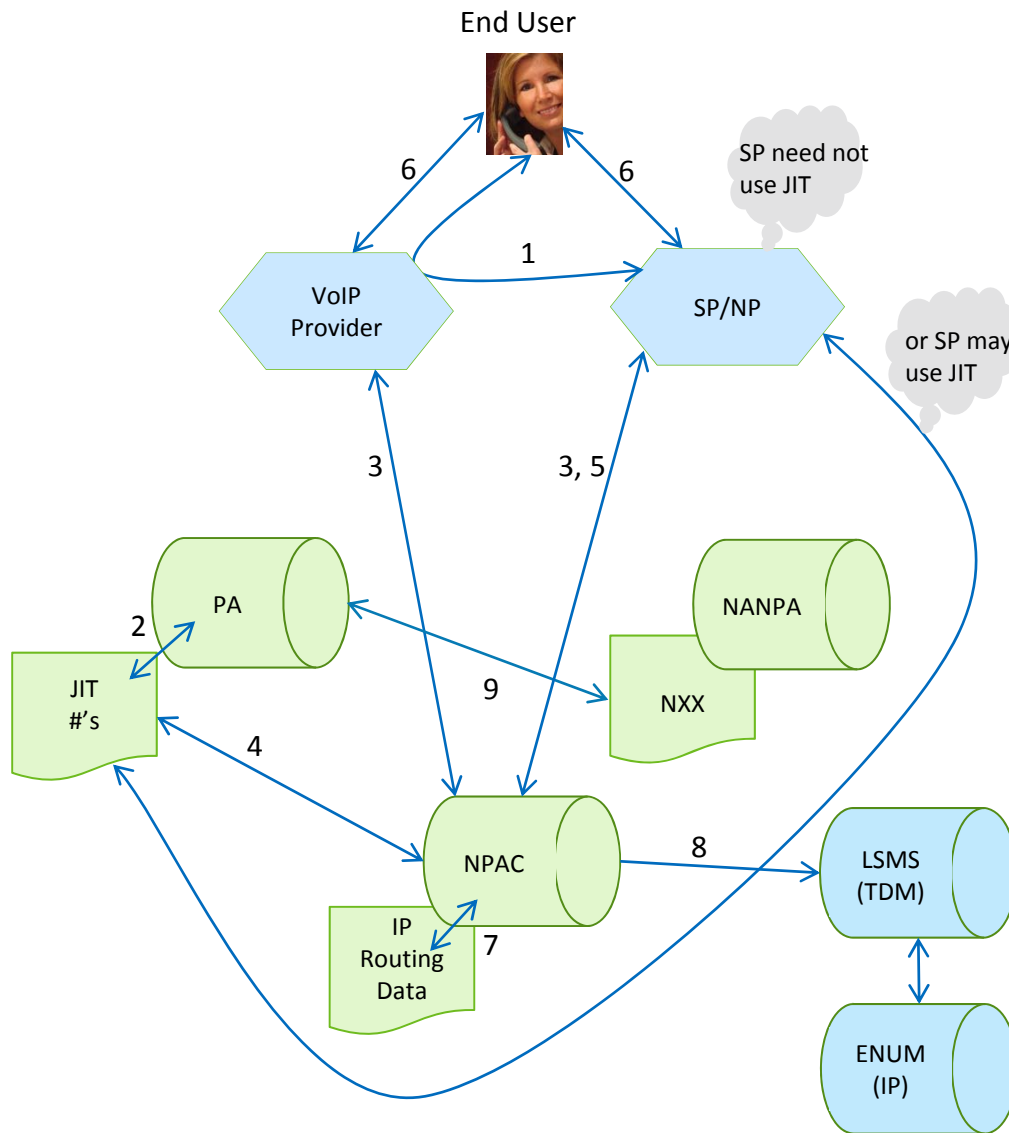
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ATTACHMENT A

Just-in-Time Trial Proposal



Method

1. VoIP Provider (VP) uses existing service provider (SP) today as Numbering Partner (NP) or self-provisions with direct numbering resources with own TDM presence, if certified/licensed
2. JIT Administrator (JIT) receives number pool blocks using own SPID
3. VP/SP ports in JIT number, with JIT as Old SP, designating LRN and potentially URI
4. JIT either concurs (approves) or denies the port, based on VP/SP authorization
5. Upon port activation, inbound calls route through PSTN to SP/VP
6. VP/SP associates number with end user to deliver service
7. NPAC provides routing database for both TDM (LRN) and IP routing (URI)
8. NPAC downloads records to connected LSMS databases including URIs for population of ENUM databases for IP routing in service provider networks where applicable
9. JIT uses +10% contaminated blocks, where possible

Notes:

- Designed to allow current NPAC user (SP) to gain JIT numbers, as well as VP under FCC VoIP trial
- JIT could be separate entity, but combined for efficiency with PA
- Disconnected JIT numbers return to JIT inventory
- JIT will report (NRUF) usage on JIT blocks, not VP/SP

NP=Numbering Partner, or SP; SPID=Service Provider ID; URI=Universal Resource Identifier; NRUF=Numbering Resource Utilization & Forecast report

