

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

In the Matter of)	
)	
Technology Transitions)	GN Docket No. 13-5
)	
USTelecom Petition for Declaratory Ruling That)	WC Docket No. 13-3
Incumbent Local Exchange Carriers Are Non-)	
Dominant in the Provision of Switched Access)	
Services)	
)	
Policies and Rules Governing Retirement Of)	RM-11358
Copper Loops by Incumbent Local Exchange)	
Carriers)	

PETITION FOR RECONSIDERATION OR CLARIFICATION OF THE
NATIONAL TELECOMMUNICATIONS AND INFORMATION ADMINISTRATION

Pursuant to section 1.429 of the Commission’s rules, the National Telecommunications and Information Administration (NTIA), as the President’s principal adviser on domestic and international telecommunications policies, and on behalf of federal agency purchasers of telecommunications services, respectfully petitions the Commission to reconsider or to clarify certain parts of its *Second Report and Order (Second Report)* in the above-captioned proceeding.¹ NTIA and the federal government fully support the “tech transition” and we applaud the Commission for the leadership shown in the *Second Report*. The framework the

¹ Technology Transitions, et al., *Declaratory Ruling, Second Report and Order, and Order on Reconsideration*, ¶¶ 60-194, GN Dkt. No. 13-5, et al., FCC 16-90 (rel. July 15, 2016) (*Second Report*). A summary of the decision was published in the Federal Register on September 12, 2016, 81 Fed. Reg. 62632, <https://www.gpo.gov/fdsys/pkg/FR-2016-09-12/pdf/2016-20215.pdf>.

Commission sets out is a thoughtful and reasonable approach to allow the transition to continue while minimizing harmful impact on customers.

Federal government agencies, however, face some particular challenges as customers of telecommunications services. Federal users are different from many other customers given the budget and procurement challenges they face and the mission-critical activities they perform for the public benefit. To address these circumstances, NTIA requests that the Commission:

(1) clarify whether, if at all, or under what circumstances, services such as T1 and Integrated Service Digital Network (ISDN) fall within the meaning of “legacy voice service”; (2) reconsider its interoperability protection requirement to define a list of “low speed modems” and create a presumption that devices that use such modems are entitled to interoperability protection; (3) prescribe limited testing requirements for small carriers; and (4) use its “public interest” review of carriers’ section 214 discontinuance applications to promote greater information exchange and more cooperative planning between carriers and their federal customers about network transitions, to reduce the potential impact such transitions may have on critical government operations.

I. INTRODUCTION

As noted, the federal government fully supports the ongoing transition of the Nation’s communications infrastructure from wired networks based predominantly on circuit switching and time-division multiplexing (TDM) to multimedia wired and wireless networks increasingly using the Internet Protocol (IP). By producing a more reliable, resilient, and flexible communications system, the transition can fuel growth in over-the-top content, applications, and

services that will drive the U.S. digital economy for decades to come, and as well as improve the communications capabilities of federal agencies.²

The transition needs to be as smooth and seamless for residential, business, and government users as possible. For federal users, the transition must not disrupt or hamper the performance of mission-critical activities, of which safety of life, emergency response, and national security are the most prominent examples.³ The Commission has recognized this from the very beginning of this proceeding, emphasizing that the transition “must allow for the continuation of legacy TDM-based networks and services for such critical governmental systems until it is proven that other solutions can meet system requirements for the performance of safety of life and national security missions.”⁴ We appreciate the Commission’s clear sensitivity to these concerns, and in this petition we only seek focused changes to address particular aspects of the *Second Report* that have significant potential impacts on federal operations.

In a July 2015 letter to the Commission, NTIA described some of the challenges that federal agencies face in trying to maintain critical services in the face of a network transition. Given the multiplicity and geographical extent of many agencies’ operations, they can convert their networks and services only in stages and only after considerable planning, prioritizing, and

² See Letter from Lawrence Strickling, NTIA, to Chairman Tom Wheeler, at 1, GN Dkt. No. 13-5 (July 29, 2015) (NTIA Letter), available at <https://ecfsapi.fcc.gov/file/60001119091.pdf>.

³ See, e.g., National Security Presidential Directive 51/Homeland Security Presidential Directive 20, *National Continuity Policy*, May 9, 2007; Executive Order 13618, *Assignment of National Security and Emergency Preparedness Communications Functions*, July 6, 2012.

⁴ Technology Transitions, et al., *Order, Report and Order and Further Notice of Proposed Rulemaking, Report and Order, Order and Further Notice of Proposed Rulemaking, Proposal for Ongoing Data Initiative*, 29 FCC Rcd 1433, 1448, ¶ 42 (2014) (*Tech Transition Order*). The quoted language concerned the need to condition any proposed carrier network transition experiments, among other things, on the carrier’s commitment to protect essential communications services. That condition is even more important where a carrier proposes to discontinue permanently an existing service as part of a technology transition.

testing.⁵ Further, the uncertainties of the appropriations process and the strictures of procurement rules significantly hinder agencies' ability to upgrade networks, facilities, and services on pace with carriers.⁶ They are thus particularly vulnerable to unanticipated and accelerated network changes.

The "adequate replacement" framework defined in the *Second Report* moderates these challenges in important ways. By establishing clear standards for comparing the features and performance characteristics of new services with those of existing services, the framework provides greater assurance that federal agencies and other customers will not be adversely affected by the discontinuance of a TDM-based offering. Further, because compliance with the framework is a prerequisite to obtaining streamlined review of discontinuance applications for certain services,⁷ agencies face somewhat less risk of losing a legacy service unexpectedly or before they have adequate time to prepare. The Commission can enhance these beneficial features of the "adequate replacement" framework by clarifying the scope of the "legacy voice services" to which the framework applies, and by expanding the range of devices that must remain interoperable with a replacement service.

That framework does not fully address the challenges that the ongoing network transition creates for federal agencies. For example, carrier applications to discontinue "legacy data services" are still eligible for streamlined review and automatic grant under section 63.71 of the Commission's rules,⁸ raising the specter of unexpected or unplanned changes in a large segment

⁵ NTIA Letter at 3.

⁶ *Id.* at 2.

⁷ *Second Report*, ¶ 64.

⁸ *Id.* (new framework applies to proposed discontinuance of legacy voice services; "[f]or any other domestic service for which a discontinuance application is filed, section 63.71(e) of our

of services used by federal agencies. Additionally, even if compliance with the framework reduces concerns that a change in service may result in a loss in performance, features, or functionalities, it does not resolve the planning, budgeting, and procurement challenges for federal agencies arising from the network transition. NTIA requests that the Commission address those concerns by adjusting its overarching public interest evaluation of discontinuance applications, as discussed below, to foster increased consultation and cooperation between carriers and their federal agency customers about the timing and potential effects of planned network changes.

Again, we strongly support the ongoing network transition and want it to continue apace with the least delay or interference arising from federal needs and mission-critical functions. We think, however, that the transition – and the carriers themselves – would be poorly served if over the coming years federal agencies were to have to repeatedly rush to the Commission on an expedited basis to seek to prevent harm to critical federal functions that would flow from particular carrier requests to discontinue service. Instead, through this petition, we seek to create a collaborative and focused dialogue among all involved to ensure that both the transition and federal functions supported by telecommunications services can continue in a healthy manner, and with increased clarity and consistency for all parties.

rules . . . shall continue to govern automatic grant procedures”).

II. THE COMMISSION SHOULD CLARIFY THE TERM “LEGACY VOICE SERVICE”

The “adequate replacement” framework adopted in the *Second Report* applies only to the discontinuance of a “legacy voice service” as part of a technology transition.⁹ The Commission does not define that term, except to say that it does not include “legacy data services”¹⁰ and that it “generally refer[s] to a time-division multiplexed (TDM) circuit-switched voice service running on copper loops.”¹¹ At times, the Commission seems to equate legacy voice services with plain old telephone service (POTS).¹² At other times, it suggests that there may be TDM-based voice services that are not “legacy” services.¹³ To address this ambiguity, we ask the Commission to clarify the scope of the term “legacy voice service” to reduce uncertainty about the number of carrier discontinuance applications that may be entitled to streamlined processing.

Federal agencies are especially concerned about the classification of their T1 and ISDN services, used predominantly for voice communications. The National Aeronautics and Space Administration (NASA), for example, currently uses T1 voice service with channel-associated signaling (T1 CAS) for mission network connections to the public switched telephone network (PSTN) and ISDN for linking their corporate network to the PSTN. This T1 service was

⁹ *Id.*

¹⁰ *Id.* n.173.

¹¹ *Id.* ¶ 89.

¹² *Id.* ¶ 96 (“[t]o understand how performance [of a replacement service] could differ significantly from a legacy voice service, it is important to understand the fundamental differences between circuit-switched networks used for most traditional plain old telephone service (POTS) and services utilizing IP networks”).

¹³ *Id.* n.419 (interoperability requirement applies to “lines traditionally used to provide voice service within the definition of legacy voice service”). *See also* Technology Transitions, et al., *Report and Order, Order on Reconsideration, and Further Notice of Proposed Rulemaking*, 30 FCC Rcd 9372, 9374, ¶ 3 (2015) (need, during a transition, to protect consumers who “have not yet voluntarily migrated from plain old telephone service (POTS) and other legacy services”).

developed and deployed more than 50 years ago, using digital transmission circuits, TDM, and digital signaling to convey multiple channels of voice traffic over circuit-switched copper loops. NASA's ISDN is also a TDM-based, digital, circuit-switched service, developed more than 20 years ago, and designed to deliver voice, video, and data services over copper loops.¹⁴ NASA uses T1 CAS services exclusively for voice communication and uses ISDN services for both voice and video communications. Given the importance of T1 and ISDN services to NASA and other federal customers, NTIA respectfully requests that Commission provide more guidance as to the meaning of "legacy voice service" by clarifying: (1) If T1 CAS and ISDN services are used primarily or exclusively to carry voice traffic, are they legacy voice services?; (2) If so, does that result hold regardless of what level of non-voice traffic is transmitted?; and (3) How do the development/deployment dates for T1 CAS and ISDN bear on the determination whether they are "legacy" services?

III. THE COMMISSION SHOULD EXPAND THE LIST OF LOW-SPEED MODEM DEVICES ENTITLED TO INTEROPERABILITY PROTECTION

The Commission properly recognizes that a network transition should not compromise the performance of devices that many customers have long used with legacy voice services.¹⁵ It has therefore concluded that, to constitute an "adequate replacement" for a legacy service, a new

¹⁴ ISDN Basic Rate Interface (BRI) service, offered over standard copper POTS lines, provides two 64 kbps bearer channels and one 16 kbps data channel. ISDN Primary Rate Interface (PRI) service in North America, which is commonly provided via T1 circuits, offers twenty-three 64 kbps bearer channels and one 64 kbps data channel. The ISDN bearer channels can be used for voice, data, and video, while the data channel is commonly used to provide out-of-band signaling for the associated voice traffic. *See, e.g.,* ISPFast, *A Technical Coverage of Primary Rate Interface (PRI)* (Mar. 5, 2014), <http://ispfast.com/a-technical-coverage-of-primary-rate-interface-pri/>; Brad Dunsmore and Toby Skandier, *Integrated Services Digital Network Primer*, Cisco Press (Oct. 18, 2002), <http://www.ciscopress.com/articles/article.asp?p=29737&seqNum=5>.

¹⁵ *Second Report*, ¶ 157.

carrier offering must be interoperable, until 2025, with an initial list of “widely adopted low-speed modem devices – in particular, fax machines, home security alarms, medical monitoring devices, analog-only caption telephone sets, and point-of-sale terminals.”¹⁶ The Commission explains its decision to preserve – at least initially – the interoperability of only five classes of devices by citing the challenges of identifying such devices and the costs of assuring interoperability for them.¹⁷

Although NTIA appreciates those difficulties, to prevent unintended consequences the Commission should expand the list of interoperable devices by focusing on the *modem functionality* associated with those devices. For example, one class of devices on the Commission’s initial list – fax machines – are equipped with a variety of different modems that comply with industry standards, such as the International Telecommunication Union’s “V-series” for modems used with public switched networks (*e.g.*, V.21, V.22, V.32, V.34, V.90, and V.92).¹⁸ As indicated below, many devices not on the initial list, including peripheral equipment

¹⁶ *Id.* ¶ 159. The Commission recognized that its initial list of “protected” devices “may not be fully inclusive of all applications and functionalities that are significantly valued by stakeholders.” The Commission has therefore directed its Office of Engineering and Technology (OET) to “seek comment and, based on the record developed, propose additions to” the initial list. *Id.* ¶ 160. NTIA believes that the OET process might be a useful means for federal agencies to preserve the interoperability of critical premises devices and applications. Nevertheless, the OET may not begin for some time (three months after the as yet undetermined effective date of the Commission’s decision). *See id.* ¶ 161. Further, the criteria that OET must use to determine whether to add a new device to the initial list may not fully accommodate the specialized needs of federal agencies. *Id.* ¶ 162. As a result, the OET process is, at best, an incomplete substitute for expansion of the initial list of protected devices.

¹⁷ *Id.* ¶ 160.

¹⁸ *See* ITU-T, *ITU-T Recommendations by series – V series: Data communications over the telephone network*, <http://www.itu.int/itu-t/recommendations/index.aspx?ser=V>. *See also* The Network Encyclopedia, *V series*, <http://thenetworkencyclopedia.com/entry/v-series/>. The ITU-T has also established a V.34 fax standard that is derived from V.34 data modem standard. *See* GAO Research, *Introduction to V.34 High-Speed Fax*,

commonly found in federal agency networks, use the same modem capabilities to collect information or convey instructions over the PSTN to remote devices. If the goal is to preserve the interoperability of in-place peripheral devices in the face of network change, there is good reason to believe that the initial list is too small.

Expanding the list of protected devices would provide certainty and other benefits to federal agencies and other users. Many federal agencies use standardized dial-up modem devices that are critical to agency operations, but are not included in the Commission's initial list. For example, the Federal Aviation Administration (FAA) and National Weather Service (NWS) have deployed more than 1,000 weather sensors that are maintained by use of V-series modems.¹⁹ The sensors directly support the nation's air traffic system and other critical federal functions. The Bonneville Power Administration (BPA) uses computers supported by 56 kbps modems (V.90 and V.92) to interrogate utility meters in the field so that BPA can perform transmission network maintenance and properly bill usage. NASA personnel also use a variety of ITU-standard modems to support mission operations.²⁰

To preserve the interoperability of critical devices used in federal agency operations, NTIA urges the Commission to reconsider its decision to limit the initial interoperability requirement to the five devices named. The Commission should instead define a list of low speed modems that will be entitled to interoperability protection when used on a standalone basis. It should then facilitate expansion of its initial list of protected devices by creating a

<http://www.gaoresearch.com/V34Fax/V34Fax.php>.

¹⁹ Technicians use a variety of ITU standardized modems, including V.21 (300 kbps), V.22 (2.4 kbps), V.32 (9.6-19.2 kbps), and V.34 (28.8-33.6 kbps) to perform diagnostic and maintenance operations on this wide-area sensor network.

²⁰ NASA personnel employ a variety of modems, including V.90, and V.92 modems for network monitoring, diagnostics, and troubleshooting.

presumption that any peripheral device that uses embedded modems with such capabilities should be entitled to interoperability protection. We support the Commission's decision to preserve the interoperability of a fax machine that uses a particular modem capability, but we urge that similar protection be accorded to other devices that use that same capability.

Defining a list of low-speed modems and creating an interoperability presumption for peripheral devices with such modem capabilities would not present the same challenges and potential costs that the Commission feared would accompany any attempt to identify and to protect additional devices. To limit the range of modems covered, the Commission could preserve interoperability only for dial-up equipment that complies with the ITU's V-series standards. As for how to define "low-speed," the Commission should consider limiting the protected class to dialup modems, such as those supporting transmission speeds of 56 kbps or less.²¹

IV. THE COMMISSION SHOULD PRESCRIBE LIMITED TESTING REQUIREMENTS FOR SMALL CARRIERS

In the *Second Report*, the Commission generally imposed testing requirements on technology transition-related discontinuance applicants, including submission and public posting of detailed test plans and testing results associated with those applications.²² In recognizing the need to balance the benefits and burdens of effective replacement service testing, the Commission excused carriers who comply with testing requirements as part of a successful discontinuance application from testing requirements for subsequent applications involving

²¹ According to one manufacturer, most current modems transfer data at speeds up to 56 kbps, which would correspond to ITU V.90 or V.92. See USRobotics, *Point of Sale (POS)* (undated), <http://support.usr.com/education/modem-point-of-sale.asp>.

²² See *Second Report*, ¶¶ 106-109 and Appx. B.

substantially similar service.²³ The Commission also exempted certain small carriers from testing requirements, reasoning that testing would impose an unreasonable burden on such carriers.²⁴

Although we support the Commission’s desire to reduce burden on small carriers, many federal agencies, including the Department of Defense, the FAA, and the NWS, have installations in areas served by those carriers. Services provided by small carriers often support mission-critical functions of the federal agencies, and it is essential that any change in communications facilities and services – even by small providers – be made only with appropriate testing.²⁵ NTIA therefore requests that the Commission modify slightly the small carrier testing exemption. The Commission should continue to allow small carriers to forego testing if they (1) demonstrate the applicability of relevant test plans and tests results of carriers who are successful discontinuance applicants, and (2) incorporate by reference such testing information in small carrier applications involving substantially similar services. Alternatively, small carriers could address testing issues during their technology transition planning discussions with federal customers, as outlined below. These steps will promote better information sharing and dialogue, and will increase the likelihood that small carriers’ next-generation infrastructure will provide “reliable, robust, and redundant support” for critical federal agency operations.²⁶

²³ *Id.* ¶ 110

²⁴ Specifically, the Commission exempts from the testing requirements carriers with 100,000 or fewer subscriber lines in the aggregate. The exemption would not apply to small rate-of-return carriers that are affiliated with price cap carriers. *Id.* ¶ 111, n.297.

²⁵ See NTIA Letter at 2.

²⁶ *Tech Transition Order*, 29 FCC Rcd at 1446, ¶ 38.

V. THE COMMISSION SHOULD USE ITS “PUBLIC INTEREST” REVIEW OF DISCONTINUANCE APPLICATIONS TO ENCOURAGE GREATER COMMUNICATION BETWEEN CARRIERS AND FEDERAL AGENCIES

Although the forgoing clarifications and changes to the “adequate replacement” framework will provide some important additional protection for federal customers, they do not address the over-arching, long-term challenges that the ongoing technology transition raises for federal agencies. As noted in our July 2015 letter, federal agencies must make budgetary and technical plans far in advance to convert or adapt their networks, systems, and services to new infrastructure.²⁷ Given agencies’ far-flung operations and budget constraints, they also must make choices about the order in which modifications to their installations are addressed. Implementation of those plans, moreover, typically requires multi-year expenditures. Given the vagaries of the appropriations process and the constraints of procurement regulations, federal agencies cannot be expected to quickly expand or redirect their current technology plans. For all of these reasons, federal agencies’ ability to maintain mission-critical services and activities may suffer significantly if they are not sufficiently aware of carriers’ plans for network enhancements and evolution.

To protect the public interest, the Commission must ensure that carriers provide information to federal agencies, including the direction and pace of any network changes, so that agencies are able to plan and fund the service, equipment, and systems upgrades needed to maintain critical operations without interruption. Carriers should inform agencies – consistent with the need to protect confidentiality of sensitive information – about their upgrade plans, including reasonable advance notice about changes to those plans. In response, government

²⁷ NTIA Letter at 3.

agencies should discuss their communications needs with carriers, including the potential effects of the carriers' plans on government operations. The parties should then work cooperatively toward mutually acceptable solutions. This process serves the twin goals of maintaining the continuity of mission-critical agency services while allowing technology transitions to proceed apace.

The Commission should increase communication and cooperation between carriers and federal agencies through its overarching public interest review of carriers' section 214 discontinuance applications. It employs a five factor balancing test to determine whether proposed service discontinuance would be in the public interest.²⁸ The outcome of any information exchange and discussions between carriers and federal agencies could assist the Commission in addressing the second and third of those factors – the continuing need for the service and particular facilities to be discontinued.²⁹ The Commission should therefore require carriers to state in their section 214 discontinuance applications (1) whether and to what extent

²⁸ The five factors are: (1) the financial impact on the carrier of continuing the service at issue; (2) need for the service; (3) need for the particular facilities in question; (4) increased charges for alternative services; and (5) the existence, availability, and adequacy of alternative services. *Second Report*, ¶ 62. The adequate replacement framework adopted in the *Second Report* pertains only to the fifth factor. *See id.* ¶ 64.

²⁹ *See id.* ¶ 62. As noted, the fourth factor in the Commission's public interest analysis considers "increased charges for alternative services." *Id.* The Commission has stated that "affordability has always been – and will continue to be – a critical component of [its] determination as to whether a particular discontinuance request" is in the public interest. *Id.* ¶ 175. It has also stated that it "will not place a [discontinuance] application on streamlined processing if there is a material increase in price for the replacement service as compared to the service to be discontinued." *Id.* ¶ 176.

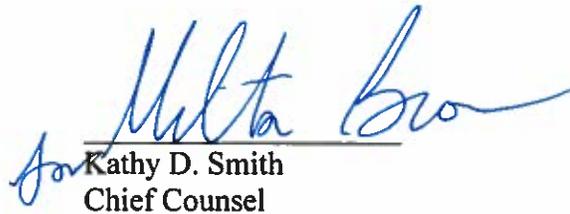
NTIA's July 2015 letter noted that "the minimum service level offered for an IP-enabled service may be considerably higher than" the "voice-grade or 64 kilobits per second digital services" that federal agencies use for many deployments. NTIA Letter at 3. In such cases, a transition from TDM to IP-based networks may result in a significant price increase for federal users. Any such increase should raise concerns under the affordability factor.

they have discussed the proposed network or service change with affected federal customers, and (2) what actions they have taken or what plans, if any, they have made to ensure the continuity of mission-critical agency communications networks, systems, and services. The Commission would then be able to use that information to assess a federal agency's claim of a continuing need for the service or facilities to be discontinued.

VI. CONCLUSION

For the foregoing reasons, NTIA respectfully requests that the Commission reconsider or clarify certain rules adopted in its *Second Report* as detailed above.

Respectfully submitted,



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