

Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of)
)
Petition for Waiver of Rules Requiring Support of) GN 15-178
TTY Technology)
)

ORDER

Adopted: October 6, 2015

Released: October 6, 2015

By the Chiefs, Consumer and Governmental Affairs Bureau, Public Safety and Homeland Security Bureau, Wireless Telecommunications Bureau, and Wireline Competition Bureau:

I. INTRODUCTION

1. By this Order, the Consumer and Governmental Affairs Bureau, the Public Safety and Homeland Security Bureau, the Wireless Telecommunications Bureau, and the Wireline Competition Bureau (Bureaus) of the Federal Communications Commission (FCC or Commission) grant AT&T Services, Inc. (AT&T), a temporary, limited waiver of the Commission’s requirements to support text telephony (TTY) technology on wireless networks to the extent that they use Internet Protocol (IP) technologies. This waiver expires December 31, 2017, or upon the effective date of rules providing for alternative IP-based wireless accessibility solutions, whichever is earlier. Comparable waivers may be granted to other similarly situated applicants that meet the necessary criteria for waiver relief and commit to complying with the conditions stated herein.

2. A TTY is a “machine that employs graphic communication in the transmission of coded signals through a wire or radio communication system” that rely on a legacy transmission technology called 5-level Baudot.¹ Individuals who are deaf, hard of hearing, deaf-blind, and speech disabled began relying on TTY technology in the 1970s as the only means by which they could send and receive text communications over the telephone network.² In response, the Commission has since adopted requirements for TTY technology to be supported by telecommunications and advanced communications services and devices.³

3. On June 12, 2015, AT&T filed a petition requesting that the Commission initiate a rulemaking proceeding to authorize the substitution of a newer form of text communication, real-time text (RTT), as an alternative accessibility solution to TTY technology for use in the IP-based environment.⁴ AT&T simultaneously filed a petition requesting that the Commission temporarily waive the

¹ See 47 C.F.R. § 64.601(a)(33).

² Harry G. Lang, *A Phone of Our Own: The Deaf Insurrection Against Ma Bell* at 1-8, 116-29 (2000).

³ See, e.g., 47 C.F.R. §§ 6.3(b), 7.3(b), 14.21(d), 20.18(c), 64.603. These rules were adopted pursuant to various sections of the Communications Act. See, e.g., 47 U.S.C. §§ 225 (requiring telecommunications relay services), 255 (requiring access to telecommunications products and services), 617 (requiring access to advanced communications products and services).

⁴ Petition of AT&T Services, Inc. for Rulemaking, PS Docket Nos. 11-153, 10-255, WC Docket No. 04-36, CG Docket Nos. 03-123, 10-213 (filed June 12, 2015) (Petition for Rulemaking).

Commission's requirements to support TTY technology for wireless devices and services on Voice over Internet Protocol (VoIP) networks "during the pendency of the rulemaking and until RTT is fully deployed to allow [AT&T] to offer VoIP services that do not reliably support TTY."⁵ AT&T points to a number of limitations characteristic of TTY technology on an IP platform, including "packet loss, distortion caused by echo cancellation and compression techniques, and bandwidth issues," that can impede or prevent the delivery of TTY messages on IP-based networks.⁶ On July 24, 2015, the Commission released a Public Notice inviting comment on both of AT&T's petitions.⁷ With regard to the Petition for Waiver, the Commission sought comment on the merits of waiving the underlying rules for AT&T individually, and in the alternative, for all entities covered by these rules.⁸ This Order addresses AT&T's petition for waiver.

II. BACKGROUND

4. RTT transmits text instantly, allowing each text character to appear on the receiving device at roughly the same time it is typed on the sending device.⁹ AT&T states that RTT "is designed to operate on IP-based networks, [and] will be superior to TTY in every way – transmission speed, latency, reliability, features, privacy, conversation form, and ease of use."¹⁰ Rather than retrofit TTY technology for next generation wireless services, AT&T requests permission to focus on deploying IP-based solutions that will hasten the development of RTT. AT&T further contends that the grant of its requested waiver "would further the TTY-to-RTT transition, bring the benefits of IP-based services, including voice, to the wireless marketplace, and enhance accessibility, without any reduction in current TTY support."¹¹

5. The Commission's rules contain several requirements for compatibility with TTY technology. Section 20.18(c) of the Commission's rules requires covered Commercial Mobile Radio Services (CMRS) providers to be capable of transmitting 911 calls from individuals who are deaf, hard of hearing, or speech disabled, through means other than mobile radio handsets, such as TTY technology.¹² Section 64.603 requires common carriers, including VoIP providers, to offer 711 abbreviated dialing

⁵ Petition of AT&T Services, Inc. for Waiver, PS Docket Nos. 11-153, 10-255, WC Docket No. 04-36, CG Docket Nos. 03-123, 10-213, at 2 (filed June 12, 2015) (Petition for Waiver).

⁶ *Id.* at 5.

⁷ *Request for Comment on Petition for Rulemaking to Update the Commission's Rules for Access to Support the Transition from TTY to Real-Time Text Technology, and Petition for Waiver of Rules Requiring Support of TTY Technology*, GN 15-178, Public Notice, 30 FCC Rcd 7438 (CGB, PSHSB, WTB, WCB 2015).

⁸ *Id.* at 7440.

⁹ Emergency Access Advisory Committee (EAAC), Report on TTY Transition at 6 (Mar. 11, 2013), available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-319386A1.doc (last visited Sept. 22, 2015) (EAAC TTY Transition Report).

¹⁰ Petition for Waiver at 3.

¹¹ *Id.* at 2. In *ex parte* letters filed subsequent to its petition, AT&T urges the Commission to expedite the process of granting this waiver so that "AT&T could offer customers the ability to make voice calls over Wi-Fi." Letter from Linda Vandeloop, AT&T Services, Inc., to Marlene H. Dortch, Secretary, FCC, GN Docket No. 15-178, at 1 (filed Sept. 16, 2015). See also Letter from David L. Talbott, Director, Federal Regulatory, AT&T Services, Inc., to Marlene H. Dortch, Secretary, FCC, CG Docket Nos. 03-123, 10-213, PS Docket Nos. 11-153, 10-255, WC Docket Nos. 04-36, at 1 (filed July 10, 2015).

¹² 47 C.F.R. § 20.18(c).

access to traditional telecommunications relay services (TRS) via a voice telephone or TTY.¹³ Additionally, sections 6.3(b), 7.3(b), and 14.21(d) generally require that telecommunications services and equipment and advanced communication services and equipment be capable of TTY connectability and TTY signal compatibility.¹⁴

6. Commenters to this proceeding uniformly support the grant of AT&T's request for a waiver,¹⁵ albeit some raise concerns about the effective period of the waiver.¹⁶ Consumer Groups point out that because of its limitations, TTY technology is now "sparsely used on IP networks" by the deaf and hard of hearing community, and therefore, this community "is not served by rules mandating support of *only TTY* (without an option for RTT) on IP-based networks."¹⁷ They explain that as IP networks have proliferated, consumers have come to appreciate the advantages of superior accessibility solutions that are native to IP protocol, such as RTT.¹⁸ Likewise, AAPD concludes that a waiver would not reduce TTY access, but rather "expand the availability of innovative calling options for everyone, including those with disabilities."¹⁹ AAPD adds that the IP transition and the movement from TTY technology to RTT will

¹³ See *IP-Enabled Services; Implementation of Sections 255 and 251(a)(2) of the Communications Act of 1934, as Enacted by The Telecommunications Act of 1996: Access to Telecommunications Service, Telecommunications Equipment and Customer Premises Equipment by Persons with Disabilities; Telecommunications Relay Services and Speech-to-Speech Services for Individuals with Hearing and Speech Disabilities; The Use of N11 Codes and Other Abbreviated Dialing Arrangements*, WC Docket No. 04-36, WT Docket No. 96-198, CG Docket No. 03-123 CC Docket No. 92-105, Order and Public Notice Seeking Comment, 22 FCC Rcd 18319, 18320 ¶ 1 (2007). See generally 47 C.F.R. §§ 64.601(1), (15), 64.603; *Use of N11 Codes and Other Abbreviated Dialing Arrangements*, CC Docket No. 92-105, Second Report and Order, 15 FCC Rcd 15188, 15191 ¶ 3 (2000) (*711 Order*). TRS are "telephone transmission services that provide the ability for an individual who is deaf, hard of hearing, deaf-blind, or who has a speech disability to engage in communication by wire or radio with one or more individuals, in a manner that is functionally equivalent to the ability of a hearing individual who does not have a speech disability to communicate using voice communication services by wire or radio." See 47 U.S.C. § 225(a)(3). The Commission adopted 711 dialing access so that TRS users could initiate a relay call, anywhere in the United States, without having to remember and dial different 7- and 10-digit toll free numbers when traveling from state to state. *711 Order*, 15 FCC Rcd at 15191 ¶ 3.

¹⁴ 47 C.F.R. §§ 6.3(b), 7.3(b), 14.21(d). For example, telecommunications, voicemail, and interactive menu services, as well as the equipment used with these services, must be compatible with peripheral devices and specialized customer premises equipment commonly used by individuals with disabilities to achieve accessibility to telecommunications services, if readily achievable. *Id.* §§ 6.3(b), 6.5, 7.3(b), 7.5. Such compatibility is defined to include ensuring TTY connectability and TTY signal compatibility. *Id.* §§ 6.3(b)(3)-(4), 7.3(b)(3)-(4). Similarly, advanced communications services and equipment must ensure TTY connectability and TTY signal compatibility, unless compliance is not achievable. *Id.* §§ 14.20, 14.21(a), (d)(3)-(4).

¹⁵ See Letter from Helena Berger, Acting President and CEO, American Association of People with Disabilities (AAPD) to Marlene H. Dortch, Secretary, FCC (AAPD Comments); Michigan Public Service Commission (Michigan PSC) Comments (filed Aug. 28, 2015); Omnitor AB Comments; Telecommunications for the Deaf and Hard of Hearing Inc. (TDI), American Association of the Deaf-Blind, California Coalition of Agencies Serving the Deaf and Hard of Hearing, Inc., Cerebral Palsy and Deaf Organization, Deaf Seniors of America, Hearing Loss Association of America, National Association of the Deaf, and Rehabilitation Engineering Research Center on Telecommunications Access (collectively, Consumer Groups) Comments; Telecommunications Industry Association (TIA) Comments. Unless otherwise indicated, all comments cited were filed on August 24, 2015, in GN Docket No. 15-178 and addressed both of AT&T's petitions. Additionally, unless otherwise indicated, all reply comments cited were filed on September 9, 2015, in the same docket, and addressed both of AT&T's petitions.

¹⁶ See, e.g., Consumer Groups Comments at 9; AAPD Comments at 1; Michigan PSC Comments at 3, 5.

¹⁷ Consumer Groups Comments at 9 (emphasis in original).

¹⁸ *Id.* at 5.

represent “major steps forward for Americans with disabilities,” because they will enhance independence, participation in all aspects of society, and access to affordable healthcare and employment.²⁰

7. While not opining on AT&T’s waiver request, CTIA supports initiation of a Commission rulemaking to modify the wireless TTY mandates for CMRS services and equipment, and asks the Commission to allow CMRS providers and manufacturers to use RTT as a solution that complies with the Commission’s wireless TTY rules, along with the flexibility to adopt alternative accessibility solutions for wireless services.²¹ Similarly, Verizon asks the Commission to “clarify its rules to affirm that IP-enabled [RTT] or other successor technologies can serve as an alternative to, and eventually replace, dated text telephony (TTY) technology.”²²

III. DISCUSSION

8. A Commission rule may be waived for “good cause shown.”²³ In particular, a waiver is appropriate where the particular facts make strict compliance inconsistent with the public interest.²⁴ In addition, the Commission may take into account considerations of hardship, equity, or more effective implementation of overall policy on an individual basis.²⁵ Such a waiver is appropriate if special circumstances warrant a deviation from the general rule and such deviation will serve the public interest.²⁶ Applying these standards to the instant petition, we find good cause has been demonstrated to grant AT&T’s request for a temporary waiver of the rules requiring that TTY technology be supported for IP-based wireless services, subject to the conditions set forth in this Order. Specifically, for the reasons set forth below, we are persuaded that the Commission’s underlying goal of ensuring access to telecommunications specifically for individuals with disabilities and more broadly for the general public, will be best served by granting a temporary limited waiver of the Commission’s TTY requirements for these wireless IP offerings.²⁷

9. First, we are persuaded that there are major technical barriers to reliably supporting TTY transmissions over IP networks.²⁸ Even when used with the analog PSTN for which they were designed, TTYs have major limitations. The Commission previously has acknowledged consumers’ belief that TTY technology is “an antiquated technology with technical and functional limitations, including its slow

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¹⁹ AAPD Comments at 1.

²⁰ *Id.* at 1.

²¹ CTIA Comments at 2.

²² Verizon Comments at 1; *see also* TIA Comments at 6 (echoing this position but asking for a “flexible, technology neutral approach to implementation”).

²³ 47 C.F.R. § 1.3.

²⁴ *See Northeast Cellular Tel. Co. v. FCC*, 897 F.2d 1164, 1166 (D.C. Cir. 1990).

²⁵ *See WAIT Radio v. FCC*, 418 F.2d 1153, 1159 (D.C. Cir. 1969) (*WAIT Radio*), *cert. denied*, 409 U.S. 1027 (1972); *Northeast Cellular*, 897 F.2d at 1166.

²⁶ *See Northeast Cellular*, 897 F.2d at 1166.

²⁷ We stress that, because AT&T’s petition seeks a waiver only with respect to IP-based wireless services, we do not need to consider whether a waiver would be justified with respect to wireline IP-based services or non-IP-based wireless services. We clarify this point in light of the potential impact on consumers who rely on TTYs for access via their home and business connections to the wireline PSTN.

²⁸ AT&T lays out in detail these limitations in its rulemaking petition. *See* AT&T Petition for Rulemaking at 6-7. *See also* EAAC TTY Transition Report at 16-18 (noting a greater frequency in transmission errors in TTY communications over IP networks resulting from packet loss, audio compression and echo cancellation).

speed and half duplex mode . . . and its Baudot text encoding standard used in the United States that does not include all of the characters used in modern text communication.”²⁹ When used with IP networks, these problems are multiplied, due in part to “the inability of TTY tones to travel well using IP audio compression, transmission, and packet loss repair techniques without introducing text errors.”³⁰ No party disputes this, and the Consumer Groups concur with AT&T that “TTY . . . can be unreliable or even nonfunctional when used on an IP platform.”³¹

10. There is also general agreement that overall use of TTYs has declined greatly,³² and that TTYs are seldom used on wireless networks.³³ Data available through the Commission’s TRS program confirm that a significant percentage of former TTY users have abandoned their TTYs over the past several years. For example, although TRS providers handled 787,511 interstate minutes of TTY-based TRS in August 2008, they handled only 352,288 minutes in August 2012, and 156,000 minutes in August 2015.³⁴ This downward spiral for TTY-based TRS minutes contrasts with an upward trend for IP-based forms of TRS during the same period, including IP CTS (12 million minutes in August 2015) and VRS (10 million minutes in August 2015).³⁵

²⁹ *Facilitating the Deployment of Text-to-911 and Other Next Generation 911 Applications, Framework for Next Generation 911 Deployment*, Notice of Proposed Rulemaking, PS Docket Nos. 11-153, 10-255, 26 FCC Rcd 13615, 13624 ¶ 26 (2011) (*Text-to-911 NPRM*). TTYs typically transmit at no greater than a 60 word per minute rate. The half-duplex mode that is characteristic of TTYs requires users to take turns sending their communications to each other. See also Verizon Comments at 3 (noting the inability of a TTY to handle more than one direction of text at a time, its slow speed, and its limited character set).

³⁰ *Text-to-911 NPRM*, 26 FCC Rcd at 13624 ¶ 26. Thus, for example, “it is difficult for users to communicate URLs or email addresses.” *Id.*

³¹ Consumer Groups Comments at 8. See also *id.* at 5 (“As IP networks have proliferated, the limitations of TTY have become clear to users on IP networks and they have come to appreciate the advantages of native IP accessibility solutions like RTT.”).

³² See *Implementation of Sections 716 and 717 of the Communications Act of 1934 as Enacted by the Twenty-First Century Communications and Video Accessibility Act of 2010*, Notice of Proposed Rulemaking, 26 FCC Rcd 3133, 3166 ¶ 88 (2011) (noting that a sizeable majority of consumers who previously relied on TTYs for communication are transitioning to more mainstream forms of text and video communications.); Consumer Groups Comments at 5 (explaining that users of TTYs “have largely migrated to newer technologies” since TTYs were first introduced in 1964).

³³ See, e.g., Consumer Groups Comments at 9 (“TTY is sparsely used on IP networks”); Verizon Comments at 4 (noting that “very few customers at all use mobile networks for TTY, opting instead for other communications tools made possible by mobile technologies such as text messaging”); CTIA Comments at 4 & n.10, citing EAAC TTY Transition Report at 11-13 (noting that in 2013, the EAAC estimated wireless TTY usage to be “close to zero” and indicated that overall TTY user is declining by approximately 10 percent each year). See also *Facilitating the Deployment of Text-to-911 and Other Next Generation 911 Applications, Framework for Next Generation 911 Deployment*, PS Docket Nos. 11-153, 10-255, Second Report and Order and Third Notice of Proposed Rulemaking, 29 FCC Rcd 9846, 9854 ¶ 15 (2014) (*Second Text-to-911 R&O*) (noting that the vast majority of people who are deaf, hard of hearing, or speech-disabled “has discarded TTYs or has never acquired or used a ‘mobile’ TTY”); *Facilitating the Deployment of Text-to-911 and Other Next Generation 911 Applications*, Further Notice of Proposed Rulemaking, 27 FCC Rcd 15659, 15702 ¶ 110 (2012) (“new digital technologies, more mobile and less expensive, had caused most TTY users to migrate away from use of these devices as their primary communication mode” by 2002).

³⁴ See <http://www.rolkaloube.com/#!formsreports/clzvl> (last visited October 1, 2015).

³⁵ Comparable figures for August 2008 were approximately 70,000 IP CTS monthly minutes and 7.5 million monthly VRS minutes. *Id.*

11. Yet, despite these trends, the record also reflects that some consumers with communications disabilities do continue to rely on TTYs. We have concerns about ensuring the availability of essential connectivity for such consumers. Of particular concern is the extent to which consumers with communications disabilities will be able to access 911 service during the waiver period. Congress has made emergency services a national priority, and the Commission repeatedly has emphasized the critical importance of access to 911 emergency services, including by people with hearing and speech disabilities.³⁶ Thus, while the Commission has recognized that “people who are deaf, hard of hearing, or speech disabled have been consistently migrating away from specialized legacy devices, and towards more ubiquitous forms of text messaging communications,”³⁷ and that “[t]his migration has had the unique benefit of bringing these users into the mainstream of our nation’s communications systems,”³⁸ the Commission also has shared concerns raised by consumers that this transition not leave some people who are deaf, hard of hearing, or speech disabled “without an effective, reliable and direct means of accessing 911 services in the event of an emergency.”³⁹

12. Notwithstanding these concerns, due to the acknowledged limitations of TTY technology and the limited use of wireless networks by TTY users, we expect that the waiver’s impact on the inability of consumers with communications disabilities to access 911 services over IP-based wireless services with their TTYs will be insignificant. A 2013 survey conducted by the Rehabilitation Engineering Research Center on Wireless Access found that only two percent of respondents who were deaf, one percent of respondents with a speech disability, and zero percent of respondents who were hard of hearing had used a mobile TTY to contact emergency services.⁴⁰ Thus, we agree with Verizon that the development of alternative accessibility wireless solutions will not involve a significant shift away from wireless TTY usage for 911 calling⁴¹ and that granting the waiver would be in keeping with the statutory goal of replacing legacy TTY technology with more effective means of accessing 911.⁴² In addition, we agree with commenters that the poor performance of TTY technology in an IP environment – including the packet loss that can reduce the quality of the communication and the compression techniques that can distort TTY tones – can make its use on an IP network not only a frustrating experience, “but also can present a real danger in an emergency.”⁴³

13. Further, we acknowledge that, as AT&T contends, this short-term waiver does not appear likely to impact current TTY capabilities on legacy wireless and wireline networks.⁴⁴ Individuals who are deaf, hard of hearing, deaf-blind and speech disabled will still be able to use TTYs to call 911

³⁶ For example, the Commission repeatedly has recognized the critical importance of access to emergency services in the specific context of TRS. See 47 C.F.R. §§ 64.604(a)(4), 64.605. See also *Misuse of Internet Protocol (IP) Captioned Telephone Service*, Order, 30 FCC Rcd 2934, 2936 ¶ 3 & cases cited at nn.9, 10 (CGB 2014).

³⁷ *Second Text-to-911 R&O*, 29 FCC Rcd at 9853 ¶ 14.

³⁸ *Id.*

³⁹ *Id.*

⁴⁰ CTIA Comments at 4-5, citing John Morris *et al.*, *Wireless Technology Uses and Activities by People with Disabilities* at 34 (2014).

⁴¹ Verizon Comments at 5; see also AT&T Reply Comments at 2, 11 (the waiver would not reduce or impede telecommunications services currently used by people with hearing and speech disabilities).

⁴² See Verizon Comments at 5.

⁴³ Consumer Groups Comments at 6; see also AT&T Reply at 6 (referencing the Consumer Groups Comments).

⁴⁴ Petition for Waiver at 7 (maintaining that, during the waiver period, “no current TTY capabilities will be diminished”).

and make other calls on those networks, and AT&T states there will be no decrease in areas covered by TTY-compatible technologies.⁴⁵ Additionally, where such networks are not available, to a limited extent, other text-based accessibility solutions, including text-to-911 and IP-based forms of TRS, may be used until RTT becomes available.⁴⁶ For these reasons, we find that if granted for a limited duration and under the conditions discussed below, a waiver of the TTY support requirements is unlikely to cause significant harm to consumers who rely on text to access 911 services.⁴⁷

14. Granting the waiver described herein, by contrast, appears likely to create significant long-term benefits for consumers generally, including consumers with disabilities, because it has the potential to encourage the development and wider deployment of VoIP services using wireless technologies, such as Voice over Long-Term Evolution (VoLTE) and Wi-Fi,⁴⁸ together with accessibility

⁴⁵ *Id.*

⁴⁶ We caution, however, that each of these text alternatives has limitations. While continuing to increase in number, to date only a few hundred localities throughout the country offer the ability to send text messages to 911 centers. See “Status of Text-to-911 Deployments – Areas Where Text-to-911 Is Available,” available at <https://www.fcc.gov/text-to-911>; http://transition.fcc.gov/pshs/911/Text911PSAP/Text_911_MasterPSAPRegistry_082715.xlsx (last visited Oct. 5, 2015). Additionally, unlike RTT, which allows for instantaneous and simultaneous direct communication in both directions, all forms of TRS rely on third party communications assistants (CAs) to complete a 911 call. In various Commission proceedings, consumers have asserted, and the Commission has agreed, that because they are an indirect form of communication, “relay services have distinct limitations and are not an acceptable substitute for direct text access once text-to-911 capabilities become available in a jurisdiction.” *Facilitating the Deployment of Text-to-911 and Other Next Generation 911 Applications, Framework for Next Generation 911 Deployment*, PS Docket Nos. 11-153, 10-233, Policy Statement and Second Further Notice of Proposed Rulemaking, 29 FCC Rcd 1547, 1562 ¶ 37 (2014); see also *Second Text-to-911 R&O*, 29 FCC Rcd at 9854 ¶ 16. Among other things, these proceedings revealed consumer concerns about the length of time needed to reach a PSAP through a CA and the possibility that mistakes could be made by a CA during a 911 call.

⁴⁷ Although AT&T’s petition focuses primarily on the need for a waiver with respect to *mobile* wireless services, AT&T’s reply comments mention that among the benefits of a waiver are that “wireless local loop calling could be deployed in rural areas where it may not be economical to provide traditional wireline service.” AT&T Reply Comments at 4. We note that, in the event that wireless local loop services are deployed to replace existing wireline service, rather than to serve unserved areas, the change could have an impact on TTY users. Accordingly, we clarify that nothing in this Order waives or otherwise limits AT&T’s obligations under section 214(a) of the Act, pursuant to which “[n]o carrier shall discontinue, reduce, or impair service to a community, or part of a community, unless and until there shall first have been obtained from the Commission a certificate that neither the present nor future public convenience and necessity will be adversely affected thereby.” 47 U.S.C. § 214(a). In evaluating an application for discontinuance authority under section 214(a), the Commission considers, among other things, the existence, availability, and adequacy of alternatives to the service to be discontinued. See *Verizon Telephone Companies Section 63.71 Application to Discontinue Expanded Interconnection Service Through Physical Collocation*, WC Docket No. 02-237, Order, 18 FCC Rcd 22737, 22742 ¶ 8 (2003). The Commission has proposed and is seeking comment on “criteria against which to measure what would constitute an adequate substitute for retail services that a carrier seeks to discontinue, reduce, or impair in connection with a technology transition (e.g., TDM to IP, wireline to wireless).” *Technology Transitions et al.*, GN Docket No. 13-5 *et al.*, Report and Order, Order on Reconsideration, and Further Notice of Proposed Rulemaking, FCC 15-97, ¶ 202 (rel. Aug. 7, 2015) (internal quotation marks omitted). These proposed criteria include, among others, PSAP and 9-1-1 service; service for individuals with disabilities, including compatibility with assistive technologies; device and service interoperability, including interoperability with vital third-party services (through existing or new devices); and coverage. *Id.* ¶ 208.

⁴⁸ For example, according to AT&T, deployment of technologies such as VoLTE can increase network speed and efficiency and allow consumers to make voice calls in areas where wireless or wireline service may be unavailable or limited. AT&T Reply Comments at 4. Moreover, AT&T claims that “improved spectral efficiency” will be enhanced by enabling deployment of VoLTE without the need to deploy overlapping Global System for Mobile (continued....)

technologies that can enable the use of such technologies by people with disabilities.⁴⁹ As AT&T explains, “incent[ing] service providers to more generally expand broadband deployment . . . will increase broadband access for the public at large giving *persons who [have communications disabilities] increased access to IP relay services*,”⁵⁰ and “will spur demand for—and therefore development of—new features.”⁵¹ Moreover, we are persuaded that technologies that offer alternatives to TTYs, such as RTT, have the potential to greatly enhance accessibility without the major limitations of TTYs. The record contains considerable support for the potential benefits that RTT can offer as an accessibility solution in the IP environment because, unlike TTY technology, “RTT is a native IP technology designed for today’s packet-switched network environment”⁵² and can offer communication using text and voice simultaneously.⁵³ Thus, generally there appears to be a high expectation that RTT will achieve greater accessibility, functionality, and reliability than legacy TTY devices.⁵⁴

15. There is also support in the record to this proceeding that IP-based RTT will facilitate the transition to next generation 911 for people with disabilities.⁵⁵ Recognizing the limitations of TTY technology for emergency access, in the Twenty-First Century Communications and Video Accessibility Act (CVAA), Congress sought recommendations from a federal advisory committee for the “possible phase-out of the use of current-generation TTY technology to the extent that this technology is replaced with more effective and efficient technologies and methods to enable access to emergency services by individuals with disabilities.”⁵⁶ In its 2011 report, the committee chartered for this purpose, the Emergency Access Advisory Committee (EAAC),⁵⁷ acknowledged the need for a TTY replacement that would be more suitable for IP-based text communications.⁵⁸ A subsequent EAAC Report, undertaken by an EAAC subcommittee specifically established to explore a transition away from TTY technologies, recognized RTT as a possible and preferred substitute for TTY technology.⁵⁹ Whereas attempts to accommodate the use of TTYs on wireless IP networks may cause only “frustration and a potential danger

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communication (GSM) or Universal Mobile Telecommunications Service (UMTS, or 3G) coverage. AT&T Reply Comments at 5 (citations omitted).

⁴⁹ See Consumer Groups Comments at 5 (describing RTT as “a superior accessibility solution on IP networks”).

⁵⁰ AT&T Reply Comments at 4 (emphasis in original).

⁵¹ Petition for Waiver at 6.

⁵² Petition for Rulemaking at 5.

⁵³ Consumer Groups Comments at 6 (RTT “allows speech to be intermixed with text”). In its accompanying Petition for Rulemaking, AT&T also asserts that RTT is “less resource-intensive than TTY because it uses low-bandwidth transmissions” and that deployment of RTT may result in reduced use of relay services and thus reduced reliance on the Interstate TRS Fund. Petition for Rulemaking at 9.

⁵⁴ See generally Verizon Comments at 1; Consumer Groups Comments at 5.

⁵⁵ See, e.g., Verizon Comments at 1.

⁵⁶ Twenty-First Century Communications and Video Accessibility Act of 2010, Pub. L. No. 111-260, 124 Stat. 2751, Title I, § 106 (Oct. 8, 2010); Pub. L. 111-265, 124 Stat. 2795 (2010) (Oct. 8, 2010) (making technical corrections to the CVAA); see also CTIA Comments at 6-7 (referencing this provision of the CVAA).

⁵⁷ The CVAA specifically directed the creation of the EAAC to provide the Commission with recommendations to ensure disability access to next-generation 9-1-1 emergency services. CVAA, § 106(c).

⁵⁸ EAAC Report and Recommendations at 31 (Dec. 6, 2011), available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-312161A1.doc (last visited Sept. 30, 2015).

⁵⁹ EAAC TTY Transition Report at 14-15 (listing limitations of TTY technology), 37-40 (listing the findings and recommendations).

in an emergency situation for persons who are deaf or [hard of hearing],”⁶⁰ providing limited relief from such requirements is likely to expedite deployment of IP-based accessibility solutions such as RTT, which promise greatly improved access for such consumers.

16. An additional RTT benefit cited by commenters to this proceeding is that this technology requires no external assistance device, because consumers can “conduct conversations using the functionality native to their mobile devices, or with a standard Bluetooth keyboard.”⁶¹ The Consumer Groups point out that this will eliminate the need to purchase a “cumbersome TTY device” and that it makes RTT “a highly mobile accessibility solution.”⁶² Finally, consumers generally favor RTT over many other forms of text messaging because with RTT “the recipient can immediately read the sender’s text as it is written, without waiting,” allowing for a conversational flow of communication.⁶³

17. *Waiver Conditions.* We conclude, therefore, that the particular facts involved in the application of TTY requirements to IP-based wireless services make strict compliance with such requirements inconsistent with the public interest⁶⁴ and that a limited waiver of the requirements will promote more effective implementation of overall policy in these particular circumstances.⁶⁵ However, we do not take lightly the consequent lack of access to innovative IP-based wireless technologies that will occur during the waiver period as a result of the initial roll-out of these technologies to the general public. As a general matter, we believe that it is preferable to address the needs of people with disabilities prior to, rather than after, the deployment of communications innovations, to prevent leaving such individuals behind as the general public moves on to benefit from innovative technologies.⁶⁶ Given that consumers who currently rely on TTYs will lose their ability to access next-generation wireless networks for the duration of the waiver,⁶⁷ we find it necessary to impose certain conditions on the grant of the waiver. The conditions described below, as well as the reasons for imposing them, are similar to those adopted by the Commission in earlier orders waiving the TTY requirements for emergency calling with respect to digital wireless services.⁶⁸

⁶⁰ AT&T Reply Comments at 6.

⁶¹ Petition for Rulemaking at 9 (noting that this makes RTT less expensive and easier to use, because no external assistance device is needed unless the user is deaf-blind or needs special accommodations). *See also* AAPD Comments at 1; Verizon Comments at 4 (stating that a requirement for wireless providers to deliver TTY calls would force the “continued use of devices compatible with dated TTY devices, rather than allowing integrated or software based solutions on the mobile handset.”)

⁶² Consumer Groups Comments at 5 (noting their expectation that RTT will be available on smartphones, tablets, and any other Internet-connected device that has a keyboard and a screen).

⁶³ EAAC TTY Transition Report at 6; *see also* Consumer Groups Comments at 6.

⁶⁴ *Northeast Cellular*, 897 F.2d at 1166.

⁶⁵ *WAIT Radio*, 418 F.2d at 1159.

⁶⁶ Efforts in the 1990s to obtain TTY compatibility with wireless services proved challenging once these services had been rolled out to the general public. Repeated delays in achieving such compatibility presented frustration for consumers who were deaf and hard of hearing, who were left without a mobile means of accessing wireless services generally, and emergency services for as long as eight years. *See* Karen Peltz Strauss, *A New Civil Right: Telecommunications Equality for Deaf and Hard of Hearing Americans* at 385-400 (2006). By the time a wireless TTY compatibility solution was developed, few consumers who were deaf and hard of hearing found such a solution to be practicable, having already begun their migration to pagers and other forms of text messaging. *Id.* at 396, 398.

⁶⁷ *See* Consumer Groups Reply Comments at 7, 9.

⁶⁸ *See, e.g., Revision of the Commission’s Rules To Ensure Compatibility with Enhanced 911 Emergency Calling Systems*, CC Docket No. 94-102, RM-8143, Memorandum Opinion and Order, 12 FCC Rcd 22665 (1997) (1997 (continued....))

18. First, to ensure that public safety is not compromised pending the waiver period, within thirty days of the effective date of this Order and throughout the waiver period, we require AT&T to apprise its customers, through effective and accessible channels of communication, including via AT&T's website, billing statements, promotional materials, communications with national consumer organizations, and other effective means of communications, that (1) TTY technology will not be supported for calls to 911 services over IP-based wireless services;⁶⁹ and (2) there are alternative PSTN-based and IP-based accessibility solutions for people with communication disabilities for such calls. As part of meeting clause (2) of this condition, to the extent that AT&T begins to make RTT available, it must ensure that all 911 calls made by persons seeking emergency assistance using this technology are delivered in accordance with the obligations of all telecommunications carriers, including wireless carriers, to transmit 911 calls to the appropriate PSAP or local emergency authority.⁷⁰ The required notice must be prominently placed and in plain language on AT&T's website and in the materials described above. It must further include a listing of text-based alternatives to 911, including, but not limited to, TTY capability over the PSTN, various forms of PSTN-based and IP-based TRS,⁷¹ and text-to-911 (where available). The provision of this information is necessary to ensure that, during the waiver period, there is no expectation on the part of consumers with disabilities that TTY technology will be supported by IP-based wireless services, and to ensure that these consumers know that alternative accessible telecommunications options exist.

19. Second, once every six months, AT&T shall file a report with the Commission, and also inform its customers, through the same channels set forth above, regarding its progress toward and the status of the availability of new IP-based accessibility solutions, such as RTT.⁷² Such reports shall include, but not be limited to, information on the interoperability of AT&T's selected accessibility solution with the technologies deployed or to be deployed by other carriers and service providers, as well as the backward compatibility of such solution with TTYs. The information on such capabilities of AT&T's IP-based accessibility solutions, including RTT, must include a showing of AT&T's efforts to ensure delivery of 911 calls to the appropriate PSAP.⁷³ Additionally, AT&T must continue to coordinate with PSAPs on implementing text-to-911 service. To the extent there are obstacles to achieving

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Commission Waiver Order); Order, 12 FCC Rcd 20224 (WTB 1997) (*1997 WTB Waiver Order*); Order, 14 FCC Rcd 694 (WTB 1998) (*1998 WTB Waiver Order*).

⁶⁹ See generally *1997 Commission Waiver Order*, 12 FCC Rcd at 22695 ¶ 60 (“Carriers whose systems are not compatible with TTY calls must make every reasonable effort to notify current and potential subscribers that they will not be able to use TTYs to call 911 with digital wireless devices and services.”).

⁷⁰ See 47 C.F.R. §§ 64.3000, 64.3001. See also *infra*, n.71.

⁷¹ The Commission has approved various types of TRS, including TTY-to-voice, speech-to-speech relay service, captioned telephone relay service, IP relay service, and video relay service. See *Telecommunications Relay Services and Speech-to-Speech Services for Individuals with Hearing and Speech Disabilities, Waivers of iTRS Mandatory Minimum Standards*, Report and Order, Order, Declaratory Ruling, and Further Notice of Proposed Rulemaking, 29 FCC Rcd 10697, 10698-701 (2014), for a description of each of these services. Because some of these relay services operate over the PSTN while others utilize IP-based technologies, collectively, they can provide a wide range of telecommunications options for persons with disabilities during the temporary waiver period. Although such indirect access to 911 via a CA is not as effective as direct communications access (see n.46, *supra*), as noted above consumers also will continue to have such direct access through their TTYs to make 911 calls over PSTN-based and IP-based wireline services.

⁷² See *1997 Commission Waiver Order*, 12 FCC Rcd at 26264, 22695-96 ¶¶ 59, 63-64 (requiring quarterly status reports providing, among other things, “information regarding the problems associated with TTY access through digital wireless systems, proposed technical solutions, and steps taken to achieve the proposed technical solutions”).

⁷³ See *supra*, ¶ 18.

interoperability with other providers' solutions and compatibility with TTYs, the report shall describe such obstacles in detail, state what steps are being taken to overcome them, and provide an estimated timetable for the successful deployment of accessibility solutions.⁷⁴ The first of these reports shall be due to the Commission on April 6, 2016.

20. *Waiver Duration.* We next must determine an appropriate duration for the waiver. AT&T requests that the waiver remain in effect during a Commission rulemaking proceeding on RTT and until RTT is deployed.⁷⁵ However, Consumer Groups caution that “a waiver potentially limits the accessibility solutions available on next-generation [wireless] voice networks,”⁷⁶ and that “consumers can be left without access to either TTY or RTT during the waiver period.”⁷⁷ For this reason, Consumer Groups urge that any waiver granted should be limited to “only what is absolutely necessary for carriers to implement RTT on the networks being deployed,”⁷⁸ and they ask the Commission to consider setting a date certain by which it is expected that RTT will be widely available on IP networks. The waiver would “terminate on the later of that date or the date when the proposed RTT rules become effective.”⁷⁹ AAPD also warns against permitting a waiver of “indefinite duration.”⁸⁰ In response, AT&T agrees that a specific waiver end-date is reasonable, and proposes expiration of the waiver “on December 31, 2017, and the effective date of the TTY to RTT transition, if later.”⁸¹

21. Based on AT&T's expectation that interoperable RTT will be widely available on December 31, 2017,⁸² we conclude that it is in the public interest for the waiver granted herein to expire on the sooner of that date or upon the effective date of rules providing for alternative IP-based accessibility solutions, whichever is earlier.⁸³ We are persuaded, based on the information provided by AT&T, that this is a reasonable amount of time to deploy an accessible alternative solution on IP wireless networks to TTY technology. This end date will ensure that the Commission's rules are not waived indefinitely, will encourage expeditious deployment of RTT, and will allow a reasonable period for the Commission to consider any appropriate modifications of its rules in light of the expected deployment of RTT.⁸⁴

⁷⁴ For example, if applicable, such report should include the percentage of AT&T's network that is to be covered by a successful solution at each stage of the timetable.

⁷⁵ Petition for Waiver at 4.

⁷⁶ Consumer Groups Comments at 9.

⁷⁷ Consumer Groups Reply Comments at 7.

⁷⁸ Consumer Groups Comments at 9 (also noting that “[i]mplementations of RTT technologies are already widely available”).

⁷⁹ Consumer Groups Reply Comments at 7.

⁸⁰ AAPD Comments at 1.

⁸¹ AT&T Reply Comments at 3.

⁸² *Id.* at 3, 9.

⁸³ We reject the suggestion of the Michigan PSC that a waiver be granted only after the completion of a rulemaking proceeding on the theory that allowing a waiver is “premature without additional information.” Michigan PSC Comments at 5. We agree with AT&T that this would negate the purpose of the waiver to not impede the development and deployment of IP-based wireless technologies by forcing compliance with outdated TTY technology. See AT&T Reply Comments at 3.

⁸⁴ In the event that any rules promulgated to replace TTY with RTT or other accessibility technologies to be used in wireless IP networks are not in effect by that date, the Commission may, upon motion or *sua sponte*, extend this expiration date as necessary.

22. *Scope of Covered Entities.* A number of commenters urge that the waiver be extended to all entities covered by the rules.⁸⁵ While we acknowledge the potential public interest benefits of extending the waiver to all covered entities in order to expedite the deployment of wireless IP-based accessibility solutions,⁸⁶ we conclude that additional information as to whether other service providers require a waiver of the TTY obligations during their rollout of IP-based wireless technologies, along with a commitment by such carriers to develop and deploy accessible text alternatives to TTY technology by the conclusion of the waiver period, is necessary in order to justify a broader waiver.⁸⁷ Instead, we will consider requests from similarly situated providers seeking a similar waiver of the TTY requirements. Any carrier or service provider that seeks the benefit of such waiver, therefore, should file a request describing the wireless services it provides, explaining the difficulties it has encountered or expects to encounter in providing connectivity to TTY devices over wireless IP networks, stating the extent to which it expects that it will be able to deploy accessible text alternatives to TTY technology by December 31, 2017,⁸⁸ and committing to compliance with the reporting requirements and other conditions stated herein. We expect to look most favorably upon petitions for waiver that also specify with sufficient particularity the following: (1) What steps the carrier is taking or intends to take to ensure that the accessibility text alternatives that it intends to deploy will be accessible to people with communication disabilities, interoperable with other IP-based wireless text services, and backward compatible with TTYs; and (2) well-documented timetables and milestones regarding the implementation of these capabilities.⁸⁹ We anticipate that all conditions imposed by this Order with respect to AT&T will also apply to waivers granted to other parties.

23. In conclusion, we believe that AT&T has made a persuasive case to waive temporarily the Commission's rules requiring that TTY technology be supported for AT&T's IP-based wireless services. We agree with commenters that the waiver described herein is unlikely to reduce TTY wireless access, but rather "will expand the availability of innovative calling options for everyone, including those with disabilities."⁹⁰ We expect that any negative impact that a waiver might have on communications access by consumers with communications disabilities will be small, if any. While TTYs would not be supported for IP-based wireless systems over the next 2 years, the harm to consumers is not expected to be significant because of the generally declining use of TTYs by such consumers and the fact that TTY technology already has proven to be fairly unreliable in the IP environment. The record thus supports a finding that enforcement of TTY support requirements with respect to IP-based services would impose

⁸⁵ For instance, Omnitor AB supports granting a waiver applicable to all carriers because "[e]qual conditions would encourage rapid fulfillment of the waiver conditions." Omnitor AB Comments at 7. AAPD and TIA also support broad application of the waiver. According to AAPD, grant of a waiver to all carriers will "allow the most innovative IP based accessibility solutions to be developed and brought to market as quickly as possible." AAPD Comments at 1. *See also* TIA Comments at 6.

⁸⁶ *See generally* AAPD Comments at 1; Omnitor Comments at 7; TIA Comments at 6.

⁸⁷ We note that according to AT&T, various other wireless service providers, including T-Mobile and Sprint, already have begun to offer VoIP services. AT&T Reply Comments at 5. Given the limitations of TTY technology in a wireless IP network as enumerated in the record of this proceeding, the extent to which such providers are in compliance with our TTY obligations remains unclear. It would not be appropriate to grant a waiver to such entities without receiving further explanation from such entities about their current and future plans for meeting the accessibility needs of people with communications disabilities in an IP wireless environment.

⁸⁸ To the extent that an applicant believes it will require a longer waiver period, it should provide a detailed justification for such additional period.

⁸⁹ 1998 *WTB Waiver Order*, 14 FCC Rcd at 696 ¶ 11 (WTB 1998).

⁹⁰ *See* AAPD Comments at 1-2.

significant burdens on carriers and service providers, while offering very limited, unreliable benefits to consumers and the public interest. In light of the technical difficulties of supporting TTY technology for wireless IP services and AT&T's commitment to deploy improved accessibility solutions for such services, we find that considerations of hardship and equity warrant the grant of a waiver in these special circumstances.⁹¹ We thus grant the temporary waiver requested by AT&T subject to the specific conditions set forth above, until December 31, 2017, or upon the effective date of rules providing for alternative IP-based wireless accessibility solutions, whichever is earlier. This waiver does not impact or cover requirements for the support of TTY technology for any wireline services or wireless services not offered on an IP network.

IV. ORDERING CLAUSES

24. Accordingly, IT IS ORDERED that, pursuant to the authority contained in sections 4(i), 4(j), 225, 255, and 617 of the Communications Act of 1934, as amended, 47 U.S.C. §§ 154(i), 154(j), 225, 255, 716, and sections 0.91, 0.131, 0.141, 0.191, 0.291, 0.361, 0.392, 0.331, and 1.3 of the Commission's rules, 47 C.F.R. §§ 0.91, 0.131, 0.141, 0.191, 0.291, 0.361, 0.392, 0.331, 1.3, this Order is ADOPTED.

25. IT IS FURTHER ORDERED that the Petition for Waiver, filed by AT&T Services, Inc. on June 12, 2015, IS GRANTED to the extent described herein.

26. IT IS FURTHER ORDERED that the temporary waiver of sections 6.5, 7.5, 14.20, 20.18(c), and 64.603 of the Commission's rules, 47 C.F.R. §§ 6.5, 7.5, 14.20, 20.18, 64.603, and any other Commission rules that require support of TTY technology as an accessible solution for VoIP networks, SHALL BE EFFECTIVE upon release, and SHALL EXPIRE December 31, 2017, or upon the effective date of rules providing for alternative IP-based accessibility solutions, whichever is earlier.

27. To request materials in accessible formats (such as Braille, large print, electronic files, or audio format), send an e-mail to fcc504@fcc.gov or call the Consumer & Governmental Affairs Bureau at (202) 418-0530 (voice) or (202) 418-0432 (TTY). This Order can also be downloaded in Word and Portable Document Formats (PDF) at <http://www.fcc.gov/cgb/dro/trs.html#orders>.

FEDERAL COMMUNICATIONS COMMISSION

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Rear Admiral, USN (ret)
Chief, Public Safety and Homeland Security Bureau

Roger Sherman
Chief
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⁹¹ See *WAIT Radio*, 418 F.2d at 1159; *Northeast Cellular*, 897 F.2d at 1166.

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