APPROVED AND ADOPTED BY THE
DISABILITY ADVISORY COMMITTEE
February 23, 2016

Recommendation of the FCC Disability Advisory Committee
Technology Transitions Subcommittee
February 23, 2016

WHEREAS Real-Time Text (RTT) is a mode of communication that enables real-time transmission of text, for the purpose of a text-based or text-supported conversation between users in which text may be transported alone or in combination with other media in the session, such as voice and video[1], and

WHEREAS the Disability Advisory Committee at the October 2015 meeting has previously adopted a recommendation on Real-Time Text and viewed a demonstration of a particular RTT solution[2]; and

WHEREAS the Twenty-First Century Communications and Video Accessibility Act (CVAA) encourages the "possible phase out of the use of current-generation TTY technology"[3] in favor of "more effective and efficient technologies;" and

WHEREAS the deficiencies of current-generation TTY technology have been noted in the FCC Emergency Access Advisory Committee Report on TTY Transition;[4] and

WHEREAS the Emergency Access Advisory Committee recommendations for an Internet Protocol (IP)-based RTT technology proposed capabilities that included (but were not limited to) the following[5]:

(1) All telecommunication functions that are available to voice-based users of the telecommunication system must also be available to users of RTT (e.g., the ability to transfer a call, the ability to establish multi-point conference calls, the ability to record and retrieve messages from voicemail systems, the ability to access and operate menu-based automated attendant and IVR systems).
(2) The amount of time that elapses between when text is typed by a sender and when it appears on the display of the recipient's device shall not be more than one second greater than the point-to-point latency for voice communication between those two endpoints.

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[1] *See* 3GPP TS 23.226 Global Text Telephony, Stage 2, Version 5, available at: http://www.3gpp.org/ftp/specs/archive/23_series/23.226/
[2] Recommendation of the FCC Disability Advisory Committee Ad Hoc Real-Time Text Subcommittee, October 2015, available at https://www.fcc.gov/general/disability-advisory-committee
[3] *See* Public Law 111-260, 124 Stat. 2751 (2010), § 106(c)(6) *("CVAA")*
[4] *See* Emergency Access Advisory Committee, Report on TTY transition, (March 2013), https://apps.fcc.gov/edocs_public/attachmatch/DOC-319386A1.pdf *("EAAC Report").*
[5] *Id*.

(3) It must be possible to users of RTT to send-and-receive simultaneously. (In other words, users must have the ability to interject a comment or interrupt each other, and not be required to "take turns" or wait for a "GA" prompt before typing.)
(4) It must be possible for RTT to be usable in conjunction with other media as part of the same communication session, for example in order to provide streaming text captions in conjunction with a voice-based telephone call or a video teleconference.

WHEREAS different methods for supporting a RTT function in telecommunication and advanced communications services and equipment have been identified[6]; and

WHEREAS ensuring RTT interoperability among telecommunications and advanced communications services and equipment is an important objective of the Disability Advisory Committee (DAC); and

WHEREAS the method(s) for supporting RTT must be 'achievable'[7]; and

WHEREAS, as new technology emerges for voice communications, additional guidance from the FCC, as part of a rulemaking, is necessary to reflect changing consumer behavior and preferences for the transition from TTY technologies to RTT; and

WHEREAS, the FCC has recognized the limitations of TTY on some wireless networks, while also recognizing the potential of RTT services;[8] and

WHEREAS, the availability of RTT as a native functionality across telecommunications and advanced communications services and equipment is under various stages of development; and

WHEREAS, the DAC has recommended that the FCC initiate a rulemaking to explore the practical and legal questions raised by a transition from TTY technology to RTT or other next-generation text-based communications solutions and its impact on consumers with disabilities, service providers and manufacturers.[9]

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[6] *See* Notes 1 and 4; This recommendation is not intended to address services that are limited to text communications without a voice component. For example, e-mail or other electronic messaging services are not within the scope of this recommendation, but VoIP and interoperable video conferencing communications services are within the scope of this recommendation.
[7] *See* 47 U.S.C. §617 (g).
[8] *See Petition for Waiver of Rules Requiring Support of TTY Technology*, GN Docket 15-178, Order, DA 15-1141, __ FCC Rcd ____ (CGB PSHSB WTB WCB 2015) (*AT&T TTY-RTT Transition Waiver Order*); *See also* Note 3.
[9] Recommendation of the FCC Disability Advisory Committee Ad Hoc Real-Time Text Subcommittee, October 2015, available at https://www.fcc.gov/general/disability-advisory-committee.

1. RECOMMENDED, as part of a rulemaking, the FCC should consider under what circumstances telecommunications and advanced communications services and equipment should support RTT as a native function[10], unless such equipment does not support any way to generate, present, receive or display text for other purposes; and

2. RECOMMENDED further, as part of the rulemaking, the FCC should consider how to ensure that a provider of telecommunications or advanced communications services not impede or impair RTT communication, consistent with 47 USC §251(a)(2) and 47 U.S.C. §617(d); and

3. RECOMMENDED further, as part of the rulemaking, the FCC should consider an appropriate transition period for manufacturers and providers of telecommunications and advanced communications services and equipment to support RTT as a native function, if required, and that downloadable applications that provide the RTT functionality should be permitted until the eventual phasing in of native RTT functionality; and

4. RECOMMENDED further, that, in order to ensure RTT-to-TTY interoperability during a transition period as part of the rulemaking, the FCC should consider how transcoding between RTT and TTY should be performed with less than 1% character error rate end to end for all characters that are specified by TIA-825a for emergency and non-emergency calls;[11] and

5. RECOMMENDED further, as part of the rulemaking, the FCC should consider whether legacy state TTY relay services should be upgraded to support RTT+voice interoperability standards; and

6. RECOMMENDED further, as part of the rulemaking, the FCC should consider a TTY sunset period when declining wireline TTY minutes reaches a certain threshold to be determined, while addressing the needs of people who are deaf-blind, speech disabled, and have cognitive impairments as well as for relay services and rural access; and

7. RECOMMENDED further, that newly manufactured and offered wireless equipment and services that support interoperable RTT consistent with Recommendation 4 need not support TTY services and equipment; and

8. RECOMMENDED further, as part of the rulemaking, the FCC should consider how telecommunication and advanced communications services and equipment that support RTT provide the users of RTT (either in isolation or in conjunction with other media) with access to the same telecommunication and advanced communications functions and features that are

[10] Consistent with the CVAA, this should apply to newly manufactured, offered or updated telecommunications and advanced communications services and equipment.
[11] *See* EAAC Report, n3; *and* Detailed Functional and Interface Standards for the NENA i3 Solution, Version NENA 08-003.v1 (and later versions, including NENA-STA-010), available at: https://www.nena.org/?page=i3_Stage3

provided to voice-based users of the services and equipment. Specifically, as part of the rulemaking, the FCC should consider whether RTT equipment and services should support the following features:

a) *initiate* a communication session using the same procedures used in voice telecommunication endpoints on the system (e.g., by manually dialing a phone number or by selecting a number from a directory);
b) *transfer* a communication session using the same procedures used in voice telecommunication endpoints on the system;
c) *initiate a multi-party teleconference* using the same procedures used in voice telecommunication endpoints on the system;
d) send text and receive text simultaneously;
e) intermix voice and text on the same call, including, for example, 'Voice Carry Over' and 'Hearing Carry Over';
f) use messaging, automated attendant, and interactive voice response systems;
g) Caller Identification and similar telecommunication functions; and
h) In order to support users who require voice carry over, and consistent with the recommendation of the US Access Board Telecommunications and Electronic and Information Technology Advisory Committee (TEITAC), voice telecommunication endpoints that have a multi-line visual display be able to receive and display time-synchronized RTT transmissions that associated with active voice communication sessions.

9. RECOMMENDED further, as part of the rulemaking, the FCC should consider whether telecommunication and advanced communications systems can support the use of RTT simultaneously in conjunction with the other Real-Time media supported by the system, ensuring text packets and voice packets can be:
a) Routed via the same network pathways;
b) Use the same 'transport layer' protocol; and
c) Use the same method to reduce point-to-point packet loss

10. RECOMMENDED further, that the DAC encourages the FCC to expeditiously evaluate and examine possible protocols and standards for RTT interoperability; and

11. RECOMMENDED further, the FCC should seek comment on whether existing standards and their variants can be used to support RTT interoperability, as well as seek comment on standards that might need to be developed or modified to support interoperable RTT communications for new and emerging technologies.

12. RECOMMENDED further, the FCC should consider whether to recognize RFC-4103 as a standard that meets the above criteria and can support interoperable RTT communication, while addressing concerns about competing standards impeding RTT interoperability.

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