

Fact Sheet*
What Public Safety Answering Points Should Know about Real-Time Text
PSAP RTT Education Day Event on October 2, 2018

What is Real-Time Text (RTT)?

- RTT is a text-based mode of communication where each text character appears on the receiving device at roughly the same time it is typed on the sending device, allowing for a conversational flow of communication. With RTT, a person on a call does not need to press “send” for the text to reach the other party.
- RTT uses Internet Protocol (IP) technology to deliver texts. This is the same technology that supports Voice over IP (VoIP). This technology also allows text and voice to be transmitted simultaneously during an RTT session.
- While RTT is a reliable and interoperable universal text solution for people who are deaf, hard of hearing, deaf-blind, or have a speech disability, this technology is intended for use by anyone who prefers to use text-based communications.
- RTT is a superior alternative to text telephone (TTY) technology because TTY – a legacy technology from the 1970s – has more limited capabilities and does not work reliably on IP-based devices and networks.

In 2016, the Federal Communications Commission (FCC) amended its rules to allow IP-based wireless carriers and manufacturers to support RTT on IP-based wireless networks and equipment, establish basic guidelines for RTT, and set implementation dates for the transition from TTY to RTT. To support RTT, wireless carriers and manufacturers must enable users to initiate, send, transmit, receive, and display RTT communications in accordance with Commission rules.

RTT Implementation Dates for Wireless Carriers and Manufacturers

- Nationwide wireless carriers that have opted to provide RTT in lieu of TTY were required to provide a downloadable RTT application or plug-in that supports RTT or have RTT capability natively available in at least one handset model by December 31, 2017. As a result, RTT is currently available as follows:
 - AT&T has an RTT application for download on iPhone and Android devices and has RTT natively available on its iPhone handsets running iOS 12.
 - T-Mobile has RTT natively available on its iPhone, LG G6, and Samsung Galaxy Note8 handsets.
 - Verizon has RTT natively available on its iPhone, LG G6, Samsung Galaxy Note9, and moto z³ handsets.

* This Fact Sheet is intended to provide beneficial information to Public Safety Answering Points (PSAPs) about the implementation and availability of real-time text (RTT). It is not intended to replace or supersede any Commission rules. Although we have attempted to cover all parts of the rules that might be especially important to PSAPs, the coverage of this Fact Sheet may not be exhaustive.

- Sprint is not currently offering RTT but has stated that it will begin its transition to RTT as it deploys IP-based calling technologies (e.g., Voice over LTE).
- Manufacturers of handsets that support wireless IP-based voice services and that choose to support RTT in lieu of TTY must implement RTT in all such handsets manufactured on or after December 31, 2018.
- Nationwide wireless carriers opting to support RTT in lieu of TTY must support RTT on all their new wireless devices by December 31, 2019.
- Local and regional wireless carriers choosing to support RTT in lieu of TTY must provide a downloadable RTT application or plug-in that supports RTT or have RTT capability natively available in at least one handset model by June 30, 2020.
- Local and regional wireless carriers choosing to support RTT in lieu of TTY must support RTT on all their new wireless devices by June 30, 2021.

RTT and 911

- Wireless carriers that implement RTT are required to support RTT calls to 911. The options for Public Safety Answering Points (PSAPs) to receive and handle RTT 911 calls will vary depending on each PSAP's technical capabilities.
- PSAPs that are currently able to technically support direct IP-to-IP communications should, from the same technical standpoint, be able to support RTT-to-RTT communications with 911 callers. PSAPs should verify with their vendors whether their call-handling equipment supports RTT-to-RTT communication.
- RTT-to-RTT 911 communications will become more widely available as PSAPs transition to Next Generation 911. In light of the 48 million Americans who are deaf or hard of hearing, we encourage PSAPs to upgrade to NG911 to include RTT-to-RTT capability, which will help ensure accessible emergency communications with individuals with disabilities.
- However, many PSAPs are not currently capable of supporting RTT-to-RTT and remain reliant on TTY technology to receive calls from people with disabilities. The Commission requires wireless carriers who choose to support RTT to make RTT backward-compatible with TTY devices. This will enable PSAPs without RTT-to-RTT capability to use their existing TTY terminals to handle RTT 911 calls.
- Where a wireless carrier delivers RTT 911 calls to a legacy PSAP served by a selective router, the wireless carrier is responsible for converting the calls to TTY before delivering the calls to the selective router. For RTT 911 calls to a legacy PSAP served by an Emergency Services IP network (ESInet), the conversion to TTY is the responsibility of the ESInet provider.
- To expedite the process of preparing PSAPs to handle RTT calls in a transitional environment, PSAPs should consider testing RTT before deployment, as well as training their call-takers. To assist state and local 911 authorities in planning their testing and training activities, the

Commission encourages carriers to inform these authorities of the carrier timetables for transitioning from TTY to RTT. The Commission also encourages state and local governments to conduct such testing and training in consultation with consumers, and to share the results with other jurisdictions, to facilitate the transition.

- When a PSAP has taken the necessary measures to receive RTT communications, it may submit a request to a wireless carrier for the delivery of RTT following the same process as a request for delivery of text-to-911. If requested by a PSAP, a wireless carrier must begin delivering RTT communications in an RTT format within six months after the request.

RTT-TTY Conversion and Limitations of RTT-TTY Communications

- RTT supports 911 calls to PSAPs using TTYs by converting RTT text characters to the audio tones that activate the PSAP's TTY equipment. However, PSAP TTY equipment may not work the same way in all scenarios.
- When a PSAP uses a TTY to receive a 911 call originated by an RTT user, the communication session may be limited by the PSAP's TTY capabilities as follows:
 - The session will require turn-taking by the 911 caller and the PSAP telecommunicator, because only one person at a time can send text on a call using TTY technology.
 - The communication will be limited to characters that work with TTYs, and the TTY device may receive a "missing symbol" signal for RTT characters, such as "@" and other symbols that cannot be converted from RTT to TTY.
 - The RTT-TTY communication may involve slower transmission times compared to an RTT-RTT conversation.
- In an RTT-TTY session, the PSAP telecommunicator receiving the call as a TTY call may not know whether the caller used TTY or RTT to originate the call, and the caller may not know that the telecommunicator is using a TTY. In this situation, the telecommunicator may need to advise the caller that the PSAP is using a TTY.
- Because RTT supports simultaneous text and voice, an incoming RTT call may appear to a legacy PSAP as a "silent" 911 voice call, and the text portion of the call may not appear unless the telecommunicator queries the silent call with TTY tones. Thus, it is important that legacy PSAPs make querying of silent 911 calls with TTY tones a standard practice.

RTT-to-911 and SMS-to-911

- Many PSAPs have the ability to receive text-to-911 communications from callers using SMS (Short Message Service).
 - PSAPs may receive SMS messages over TTY, over a web browser or interface, or directly over an IP-based network.
- There are important differences between SMS and RTT:
 - In SMS, the user types a message and then sends it, and users take turns; in RTT, each character is sent as it is typed, and both users can text simultaneously.
 - SMS solely supports texting; RTT supports simultaneous text and voice.

- Because of the differences between SMS and RTT, PSAPs may receive RTT messages differently from SMS messages, and may need to use different operational procedures to handle them.
- Options available to PSAPs for handling RTT and SMS will depend in part on the method they have chosen for receiving SMS (TTY, web browser, or direct IP) and the capabilities of their call-handling equipment. PSAPs should consult with their vendors as to the options available to them for handling SMS and RTT.
 - PSAPs that receive SMS texts over TTY may also receive RTT messages over TTY, but RTT messages will have different characteristics.
 - PSAPs using web browser solutions for SMS texts to 911 will likely still receive RTT messages over their TTYs because web browser solutions for receiving SMS texts are generally not configured to receive RTT.
 - PSAPs receiving SMS texts over direct IP may be able to use the same IP interface to receive RTT messages. This may require a software upgrade to their network and/or call-handling equipment.
 - PSAPs upgrading to NG911 should include provisioning for SMS and RTT in their upgrade plans.

Further Resources

- FCC Real-Time Text Webpage
 - www.fcc.gov/real-time-text
- Consumer Guide
 - Real-Time Text: Improving Accessible Telecommunications
<https://www.fcc.gov/consumers/guides/real-time-text-improving-accessible-telecommunications>
- Compliance Guide
 - Transition from TTY to Real-Time Text Technology
<https://www.fcc.gov/document/transition-tty-real-time-text-technology>

Questions?

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