

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

In the Matter of	)	
	)	
Petition for Waiver of Rules	)	GN Docket No. 15-178
Requiring Support of TTY	)	
Technology	)	

**REPORT**

Competitive Carriers Association (“CCA”)<sup>1</sup> and its members support the Federal Communications Commission’s (“FCC” or “Commission”) continued efforts to facilitate the transition from text telephone technology (“TTY”) to real-time text (“RTT”), or an alternative accessibility solution. To advance this laudable goal, the FCC’s 2016 *Report & Order*<sup>2</sup> extended the waiver granted by the *CCA Waiver Order*,<sup>3</sup> including the expectation that participating members would submit reports detailing their progress toward meeting the FCC’s RTT requirements.<sup>4</sup> CCA hereby submits a sixth Progress Report on behalf of its participating members, with corresponding carrier information in Exhibit A.<sup>5</sup>

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<sup>1</sup> CCA is the nation’s leading association for competitive wireless providers and stakeholders across the United States. CCA’s membership includes nearly 100 competitive wireless providers ranging from small, rural carriers serving fewer than 5,000 customers to regional and national providers serving millions of customers. CCA also represents associate members consisting of small businesses, vendors, and suppliers that serve carriers of all sizes.

<sup>2</sup> *Transition from TTY to Real-Time Text Technology; 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*, Report and Order and Further Notice of Proposed Rulemaking, 82 FCC Rcd 7699 (2016) (“*Report & Order*”).

<sup>3</sup> *Petition for Waiver of Rules Requiring Support of TTY Technology*, Order, DA 16-435 (rel. Apr. 20, 2016) (“*CCA Waiver Order*”). Prior to the *Report & Order*, the Commission granted CCA’s request for a waiver of applicable TTY-related requirements for its members’ IP-enabled wireless services with the same conditions as waivers previously granted to AT&T, Cellular South, and Verizon.

<sup>4</sup> The *CCA Waiver Order* required CCA to file, once every six months “reports detailing participating members’ progress toward implementing RTT.” *CCA Waiver Order* ¶ 18.

<sup>5</sup> On April 20, 2016, CCA filed, on behalf of its participating members, its first Progress Report per

## **I. CCA’S MEMBERS SUPPORT THE DEVELOPMENT OF COMMUNICATIONS ADVACEMENTS FOR ALL CONSUMERS**

As noted in previous Progress Reports, CCA’s participating members strive to implement industry standard capabilities in their 4G LTE wireless networks to support interoperable RTT services or alternative accessibility solutions, where applicable.<sup>6</sup> Based on currently available technology and network architecture, CCA’s members continue to work diligently and invest significant funds to meet these requirements. Specifically, T-Mobile US, Inc. successfully implemented RTT on its 4G LTE network by the December 31, 2017 deadline. Another CCA member, Cellular South, recently explained that the carrier “will initially deploy an application-based over-the-top RTT solution in order to meet the Commission’s transition deadline,” and “plans to negotiate use of a third-party RTT-TTY internetworking gateway that will allow RTT users to communicate with TTY users, including E911 emergency services.”<sup>7</sup> The remainder of CCA’s members are likewise committed to working alongside the FCC, policymakers, and other stakeholders to advance communications services that will result in alternative TTY solutions.

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the requirements imposed in CCA’s *Waiver Order* and the FCC’s *RTT Report & Order*. Additionally, on August 11, 2016, CCA also filed, on behalf of its participating members, a preliminary report with the Commission describing participating members’ initial plans for meeting commitments to develop and deploy RTT or an alternative text-based solution that is accessible, interoperable with other solutions, and backward compatible with TTY technology. *See* Preliminary Report of Competitive Carriers Association, GN Docket No. 15-178 (filed Aug. 11, 2016) (“CCA Preliminary Report”).

<sup>6</sup> Report of Competitive Carriers Association, GN Docket No. 15-178 (filed Oct. 20, 2016) (“First Progress Report”); Report of Competitive Carriers Association, GN Docket No. 15-178 (filed Apr. 20, 2017) (“Second Progress Report”); Report of Competitive Carriers Association, GN Docket No. 15-178 (filed Oct. 20, 2017) (“Third Progress Report”); Report of Competitive Carriers Association, GN Docket No. 15-178 (filed Apr. 20, 2018) (“Fourth Progress Report”); Report of Competitive Carriers Association, GN Docket No. 15-178 (filed Oct. 19, 2018) (“Fifth Progress Report”).

<sup>7</sup> Report of Cellular South, GN Docket No. 15-178 at 2 (filed Dec. 13, 2018).

## **II. CCA’S MEMBERS CONTINUE TO ADDRESS OBSTACLES TO RTT DEPLOYMENT**

Coordination among wireless providers, consumers, and a variety of industry stakeholders will help facilitate the successful implementation of RTT and alternative accessibility solutions. While CCA’s members work diligently to provide advanced communications services for all consumers, certain obstacles remain including network upgrades and standards-setting procedures. In particular, a carriers’ ability to achieve RTT deployment and comply with the additional requirements set forth in the *Report & Order* is largely dependent on other participants in the wireless ecosystem, including but not limited to standards bodies and Original Equipment Manufacturers (“OEMs”).<sup>8</sup> To that end, the Alliance for Telecommunications Industry Solutions (“ATIS”) has set industry standards for RTT development, which represents one step toward achieving the deployment of alternative accessibility solutions like RTT. These standards were published and made available to providers as a path to enable the network upgrades necessary to support these enhancements.

At the same time, however, devices that integrate ATIS’s specification must be available to all carriers to support interoperable RTT deployment. CCA has repeatedly highlighted that its members do not have the same access to devices as the largest carriers – they often receive the latest devices 12-to-24 months later.<sup>9</sup> And many of CCA’s members, especially those serving

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<sup>8</sup> See, *supra*, note 6.

<sup>9</sup> See, Petition for Waiver, or in the alternative, Request for Extension of Time of Competitive Carriers Association, PS Docket No. 15-91 (filed August 16, 2017) (“CCA WEA Petition”). See also, letter from Rebecca Murphy Thompson, EVP & General Counsel, CCA, to Marlene H. Dortch, Secretary, FCC, PS Docket No. 15-91 at (filed Oct. 6, 2017) (“CCA WEA Roadmap Letter”) (noting, “rural and regional carriers are often delayed as long as twelve months in receiving the requisite equipment needed to provide consumers with the latest services and devices.”); and letter from Christopher Nierman, Director, Federal Regulatory Affairs, GCI, to Marlene H. Dortch, Secretary, FCC, PS Docket No. 07-114 at 2-3 (filed July 28, 2010).

rural and remote areas, are still transitioning from legacy networks to newer technologies. As a result, costs often are magnified for CCA's members, who have fewer resources and a limited ability to influence equipment design and development. Despite these complications, participating members continue to work with vendors and other providers to meet RTT deployment timeframes and capabilities.

### **III. CONCLUSION**

CCA's members are actively engaged in identifying solutions to expeditiously deploy alternatives to TTY, including RTT. This transition remains contingent on a variety of factors outside of many CCA members' control, including resource constraints, standards-setting processes, manufacturer development and rollout, and third-party capabilities. The remainder of CCA's sixth Progress Report, including carrier-specific information filed on behalf of its members, is attached as Exhibit A.

Respectfully submitted,

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Attachments: Exhibit A - Participating CCA Member Progress Reports

# **EXHIBIT A**

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**CCA Carrier Members Not Yet Deploying an Alternative Accessibility Solution;**  
**Timing Undetermined**

The majority of CCA's participating members are committed to continued exploration of an alternative accessibility solution but have not yet made plans to deploy IP-based wireless services in the initial relevant timeframe by June 30, 2020. Each CCA carrier member listed below will update the Commission on progress as necessary. As noted in the attached Report, many of CCA's participating members are rural and regional carriers unable to influence the equipment marketplace and, therefore, are not currently involved in deploying RTT. CCA's carrier members also are dependent on availability of affordable devices, manufacturer cycles, and vendor capabilities. CCA and its members look forward to continued collaboration with industry stakeholders to meet the FCC's accessibility goals.

Consistent with obligations defined in the FCC's *RTT Report & Order* and the *CCA Waiver Order*, CCA's participating carrier members commit to implementing industry standard capabilities in networks to support interoperable solutions when they begin to deploy an alternative accessibility solution. Likewise, when CCA's participating carrier members begin to offer IP-based wireless services, they commit to implementing industry standard capabilities in their networks to support interoperable RTT solutions and backward capability with TTY. Carriers also will ensure that 911 calls are delivered in accordance with the applicable obligations to transmit 911 calls to appropriate PSAPs or emergency authorities. CCA's members remain actively engaged with CCA to stay informed of educational and industry efforts to implement RTT, and to ensure accessibility compliance. A list of participating CCA carrier members that have opted-in to CCA's TTY waiver and that seek to meet these commitments when they begin to deploy an alternative accessibility solution is below.

**Agri-Valley Communications, Inc. d/b/a Agri-Valley Services**

**Americell PA-3, LP d/b/a Indigo Wireless**

**ATN International, Inc., and affiliates**

**Carolina West Wireless, Inc.**

**Cellular Network Partnership d/b/a Pioneer Cellular**

**Central Louisiana Cellular, LLC d/b/a Cellular One**

**Cross Wireless, LLC and its affiliate Cross-Valliant Cellular Partnership, d/b/a Bravado Wireless**

**East Kentucky Network, LLC d/b/a Appalachian Wireless**

**FTC Communications, Inc.**

**GCI Communication Corp.**

**Inland Cellular, LLC**

**Kentucky RSA #3 Cellular General Partnership;**

**Kentucky RSA #4 Cellular General Partnership;  
Cumberland Cellular Partnership, collectively Bluegrass Cellular**

**Missouri RSA 5 Partnership d/b/a Chariton Valley Wireless Services**

**NE Colorado Cellular, Inc. d/b/a Viaero Wireless**

**Nex-Tech Wireless, LLC**

**Northwest Missouri Cellular Limited Partnership d/b/a NorthwestCell**

**Nsighttel Wireless, LLC d/b/a Cellcom**

**Panhandle Telecommunication Systems, Inc. d/b/a PTCI**

**Pine Belt Cellular, Inc. d/b/a Pine Belt Wireless**

**RSA 1 Limited Partnership;  
Iowa RSA 2 Limited Partnership, collectively Chat Mobility**

**Rural Independent Network Alliance LLC**

**Shenandoah Telecommunications Company, Inc. d/b/a Shentel**

**Southern Communications Services, Inc. d/b/a Southern Linc**

**Texas 10, LLC d/b/a Cellular One**

**Thumb Cellular, LLC**

**Triangle Communication System, Inc.**

**United Wireless Communications, Inc.**

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The remainder of CCA’s participating carrier members that opted-in to CCA’s TTY waiver are listed below. Pursuant to the *CCA Waiver Order*, each carrier provides an update on its progress and status to developing and deploying its selected accessibility solution(s) including information on interoperability with the technologies deployed or to be deployed by other service providers, backward compatibility with TTYs, and efforts to ensure delivery of 911 calls to the appropriate PSAP or emergency authority. CCA and its members look forward to ongoing collaboration with the FCC and industry to promote accessibility for all consumers.

### **Sprint**

<u><b>Question</b></u>	<u><b>Member Answer</b></u>
Please provide company identification information, including whether you operate under a d/b/a.	Sprint Corporation on behalf of its brands Sprint, Sprint Prepaid, Boost Mobile, Virgin Mobile USA and Assurance Wireless (hereinafter “Sprint”).
Please provide specific evidence of your progress and status toward developing and deploying an alternative accessibility solution to TTY, if any.	Sprint has developed a cross-departmental team that meets regularly to discuss an accessible RTT solution. This project-focused team includes representatives from Sprint’s Network, Product, Device, Accessibility, Legal/Regulatory and Standards organizations. The team monitors closely the work within the industry standards bodies to ensure Sprint’s ultimate solution will comport with these standards to ensure seamless interoperable communications as well as backwards compatibility. Sprint enabled RTT functionality in network and has successfully tested RTT-to-RTT communications in lab and in production testing. Recently, Sprint successfully enabled RTT on iOS devices running v12.2.
Please provide <i>an estimated timetable</i> of your plans to develop and deploy an alternative accessibility solution to TTY, if applicable.	Sprint continues to develop and test RTT functionality, and it is on-track to meet its goal of deploying RTT in conjunction with or in advance of Sprint’s commercial deployment of VoLTE. Sprint has enabled VoLTE in a development environment in limited markets and on a limited number of beta devices. This “soft launch” is designed to assess network and device functionality before the nationwide commercial launch of VoLTE at a later

	<p>date, to be determined. Use of VoLTE by testers is voluntary and requires a handset software upgrade and several other steps to opt-in to test VoLTE service. The upgraded, beta devices support TTY over CDMA. Sprint is also testing RTT on iOS devices v12.2 in the same limited VoLTE markets.</p> <p>NOTE: Sprint supports now and will continue to support TTY compatibility ubiquitously across its CDMA Circuit Switched voice network until that network is retired or decommissioned. Until such time, all CDMA capable handsets will continue to support TTY compatibility.</p>
<p>Please provide information on interoperability with the technologies deployed or to be deployed by other service providers. Have you encountered obstacles to achieving interoperability? If so, please describe your efforts to overcome these barriers.</p>	<p>The IETF RFC 4103 standard is being relied upon by OEMs in the design of device and network elements to ensure RTT interoperability across carrier platforms. Sprint has performed carrier interoperability testing in advance of its release of RTT. In addition to testing, successful interoperability is also contingent upon carrier roaming/IMS peering arrangements. Sprint is actively working with multiple other wireless carriers to develop and test carrier interoperability for RTT.</p> <p>Sprint continues to monitor carriers and OEMs that have deployed RTT to gain insights on successful network/device implementation. In addition, Sprint device engineering has executed extensive testing with multiple other wireless carrier devices to ensure successful interoperation of existing Sprint TTY compatibility support with the transcoded RTT to TTY functionality of those other carriers.</p>
<p>Please describe your efforts to ensure backward compatibility with TTYs. Have you encountered obstacles to achieving backward compatibility with TTY technology? If so, describe your efforts to overcome these barriers.</p>	<p>Initial lab testing of RTT-TTY transcoding has been largely successful; additional testing is being conducted in Sprint's production environment to ensure backwards compatibility with mobile and landline TTY.</p>

<p>To the extent a participating CCA member begins to make RTT available, it must ensure that all 911 calls using this technology are delivered in accordance with the obligation to transmit 911 calls to the appropriate PSAP or local emergency authority. Please describe your efforts to ensure delivery of 911 calls to the appropriate PSAP, if applicable.</p>	<p>Sprint has performed testing of RTT-to-911 prior to production deployment. RTT-TTY transcoding is of paramount importance because the vast majority of PSAPs will likely not have upgraded to support RTT. Sprint has confirmed that calls placed on its network to 911 using RTT are being properly transcoded to TTY and delivered to the appropriate PSAP. Sprint has verified this functionality in cooperation with PSAPs using “live” calls.</p>
<p>Please provide information related to “ongoing coordination with other carriers working to develop RTT, educational efforts regarding RTT, and implementation plans that will facilitate RTT.”</p>	<p>Sprint participates in industry standards bodies involved with RTT development, including notably, two ATIS committees: the Wireless Technology and Systems Committee (WTSC), and the Packet Technologies and Systems Committee (PTSC). Sprint works with CCA and CTIA on a variety of outreach/educational activities related to RTT. And, Sprint has posted information on its website to educate consumers about RTT.</p>

**United States Cellular Corporation**

<b><u>Question</u></b>	<b><u>Member Answer</u></b>
Please provide company identification information, including whether you operate under a d/b/a.	United States Cellular Corporation (“U.S. Cellular”), its Subsidiaries and Affiliates (collectively referred to as “USCC”).
Please provide specific evidence of your progress and status toward developing and deploying an alternative accessibility solution to TTY, if any.	U.S. Cellular continues to take steps toward achieving an accessible RTT solution. A project team, consisting of technical experts, network planners, and a device specialist, was identified to review and evaluate relevant use cases that will frame the design and implementation of a full RTT solution, native to the network. Network architecture design and planning is being contemplated to support use cases that mimic a real-world environment of accessibility services and features. The cases cover interoperability, backwards compatibility with TTY, and 911 calls to the appropriate PSAP or Public Safety termination point. Furthermore, USCC is reviewing Over the Top options as a potential RTT solution.
Please provide <i>an estimated timetable</i> of your plans to develop and deploy an alternative accessibility solution to TTY, if applicable.	USCC is committed to achieving RTT network readiness within the relevant FCC timeframe. Analysis of the scope, use cases, and reference architecture continues to be evaluated in anticipation of USCC’s evolving project plan and milestones to deliver RTT on or before the FCC requirement to do so.
Please provide information on interoperability with the technologies deployed or to be deployed by other service providers. Have you encountered obstacles to achieving interoperability? If so, please describe your efforts to overcome these barriers.	The IETF RFC 4103 is considered a critical component toward making RTT interoperability functional across commercial platforms. USCC is evaluating the RFC 4103 transport protocol for incorporation into an accessible RTT solution. USCC actively has inquiries into the device OEMs to determine their timelines and roadmaps regarding RTT-enabled handsets and their interoperability with RTT solutions, and continues to evaluate partner roaming scenarios with the enhanced functionality that VoLTE networks allow. As many interoperability standards

	are still in the nascent stage, USCC is monitoring RTT implementation among some of the larger carriers and determining how any associated architecture may play into its solution.
Please describe your efforts to ensure backward compatibility with TTYs. Have you encountered obstacles to achieving backward compatibility with TTY technology? If so, describe your efforts to overcome these barriers.	USCC is continuing to evaluate dedicated architecture and design that will support industry standards capabilities for TTY backwards compatibility, such as accessibility to 911 emergency services, TRS support, and peer-to-peer call sessions.
To the extent a participating CCA member begins to make RTT available, it must ensure that all 911 calls using this technology are delivered in accordance with the obligation to transmit 911 calls to the appropriate PSAP or local emergency authority. Please describe your efforts to ensure delivery of 911 calls to the appropriate PSAP, if applicable.	USCC presently has not deployed RTT but intends to do so with a standards-based approach supporting 911 call compatibility to PSAP destinations.
Please provide information related to “ongoing coordination with other carriers working to develop RTT, educational efforts regarding RTT, and implementation plans that will facilitate RTT.”	USCC collaborates with the two major wireless carrier industry trade associations in response to the FCC’s “Transition of TTY to RTT” FNPRM and also monitors participating carriers’ RTT progress reports for implementation plans. USCC anticipates that educational materials concerning RTT will be posted on its own customer-facing website and further cross-referenced on industry association websites as implementation becomes more imminent.