

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

In the Matter of)
)
)
Facilitating the Deployment of Text-to-911 and) PS Docket No. 11-153
Other Next Generation 911 Applications)
)
Framework for Next Generation 911) PS Docket No. 10-255
Deployment)
)
)

**Reply-to Comments of the Rehabilitation Engineering
Research Center on Telecommunications Access and
Consumer Groups**

2014-05-05

1 Introduction

The Telecom RERC (RERC-TA), Telecommunications for the Deaf and Hard of Hearing, Inc. (TDI), the National Association of the Deaf (NAD), the Hearing Loss Association of America (HLAA), the Association of Late-Deafened Adults (ALDA), the Cerebral Palsy and Deaf Organization (CPADO), and the Deaf and Hard of Hearing Consumer Advocacy Network (DHHCAN) – collectively the RERC-TA and Consumer Groups – respectfully offer these reply-to comments on the FNPRM on Over-the-Top (OTT) texting to-9-1-1. The RERC-TA is a joint project of the Technology Access Program at Gallaudet University and the Trace Center at the University of Wisconsin-Madison, in partnership with Omnitor in Sweden. The RERC-TA is funded by the U.S.

Department of Education, National Institute on Disability and Rehabilitation Research, to carry out a program of research and development focused on technological solutions for universal access to telecommunications systems and products for people with disabilities.

In this filing we address some of the questions related to consumer needs and expectations, OTT delivery models, and relay services. The RERC-TA and Consumer Groups are concerned that limiting OTT to 9-1-1 to a CMRS delivery model would perpetuate the limitations of SMS-to-9-1-1, when in fact SMS-to-9-1-1 was intended as an interim, transitional service that would be enhanced over time in the run-up to NG9-1-1.

2 The Importance of OTT Text-to-9-1-1 to Consumers who are Deaf or Hard of Hearing

The RERC-TA and Consumer Groups would like to emphasize the special significance of emergency access via over-the-top texting to people, who are deaf or hard of hearing. Unlike the hearing population in general, many people who are deaf, hard of hearing, or speech-impaired, are unable to fall back to voice calls to 9-1-1, in the event that a text message to 9-1-1 should fail to be delivered. Many of the questions addressed in the FNPRM and the comments must be viewed in a different light because of the absence of the voice call safety net that hearing consumers enjoy. Delivery of OTT messages to 9-1-1 has the potential to be a huge step forward for people with disabilities, but only if appropriate technologies and delivery methods are chosen.

Many commenters suggest that the CMRS delivery model for OTT to 9-1-1 is the only feasible option, at least in the short term, due to the technical challenges associated

with IP-based delivery mechanisms, as well as the technical challenges associated with IP-based geolocation services¹. Although Consumer Groups and the RERC-TA agree that allowing OTT applications to access CMRS-based services for sending text to 9-1-1 is a good first step, which would help hide some of the superficial user interface differences between native SMS applications and OTT services for contacting emergency services, relying on CMRS delivery alone would do virtually nothing to solve the accessibility limitations noted in the Emergency Access Advisory Committee (EAAC) report on text-to-9-1-1², and the voluntary agreement between the four largest wireless carriers, NENA, APCO, and the FCC. In particular, no improvement would be seen in the following use cases where a person with a disability may want to text 9-1-1:

1. The user is roaming, in which case SMS-to-9-1-1 fails – OTT relying on CMRS would run into the same situation. The hearing population at this point has the option of making a voice call to 9-1-1, even while roaming, whereas this option is not available to people with disabilities who are unable to make voice calls.
2. The user has a data-only plan, which does not cover SMS. In this case, the phone will not be able to send SMS, and neither will it be able to deliver an OTT message via CMRS. This is not a contrived scenario: The RERC-TA has witnessed recommendations on social media platforms by

¹ See e.g., the *comments by Media Friends, PS Dockets 11-153 and 10-255, April 4, 2014.*

² *Report of Emergency Access Advisory Committee (EAAC) Subcommittee 1 on Interim Text Messaging to 9-1-1, March 1, 2013.*

http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-319329A1.pdf

consumers who are deaf to forgo the expense of an SMS plan and rely on data alone for their texting needs. The general response to such recommendations was positive, especially considering that many people with disabilities fall into lower income brackets and thus are less able to pay for the cost of a wireless plan than the population in general. Asking such consumers to pay more for an SMS plan just so that they may be able to access emergency services, while hearing consumers can fall back to a voice call even if they do not have a voice plan, violates the principle of functional equivalence.

3. The user is deaf or hard of hearing and has another disability, such as a motor disability, or low vision. The RERC-TA has witnessed accounts by affected consumers, who have stated that they use tablets for their communication needs, including texting, because they are larger than phones and much easier to use for people with such disabilities. Unfortunately, even though they provide mobile data connectivity, the tablets do not provide an SMS option, and relying on CMRS for OTT delivery will thus exclude tablets from contacting emergency services, and by extension people who are not able to use wireless phones due to their small size. Moreover, users will expect to be able to text 9-1-1 based on their experience with existing OTT services available on tablets, which already let the user text to ten-digit SMS numbers.
4. The same tablet scenario also applies to seniors who age into hearing loss. We find that many are comfortable with tablets – not only do they find

them more user-friendly than smart phones, aging adults sometimes also have dexterity issues as well as vision issues. They can manipulate the text to be able to accommodate these other disabling conditions as well as hearing loss.

OTT delivered via the IP network in conjunction with geolocation services would do much to address the three above-mentioned problem situations for people with disabilities. The RERC-TA and Consumer Groups acknowledge that it may take longer than December 31, 2014, to make this option available, but in light of what is at stake for people with disabilities, there must be an obligation for OTT providers, in collaboration with wireless carriers and geolocation services, to work on solutions that enable text message delivery over IP networks and do not exclusively rely on CMRS. The FCC should set a realistic but firm timetable with deadlines toward this goal.

Verizon remarks that LTE-based IP-enabled texting would do much to address the shortcomings of SMS to 9-1-1 and CMRS-based delivery mechanisms, and suggests that OTT providers take steps to address compatibility with future IP-based delivery mechanisms³. The RERC-TA and Consumer Groups agree with this suggestion, but caution that future availability of NG9-1-1 and IP-based services cannot be used as a justification for avoiding needed improvements to accessing emergency services today. The same kind of argument – that NG9-1-1 and other next-generation services would be coming soon – has been brought up in the past to oppose SMS-to-9-1-1 and delay the roll-out of any texting-based solutions. There is too much at stake for consumers with

³ See *Comments of Verizon and Verizon Wireless, PS Dockets 11-153 and 10-255, April 4, 2014.*

disabilities to live with this kind of uncertainty. In the absence of a firm timetable for implementation of next-generation services *and* PSAP readiness for NG9-1-1, OTT providers cannot be released from their obligation to make their texting services accessible now.

In the meantime, for as long as OTT services rely on CMRS for text delivery to 9-1-1, a good first step would be for the OTT apps to access the phone's geolocation API and send the phone's best estimate of the user's current location in an automated follow-up text message to the PSAP after the initial 9-1-1 contact – to save time and reduce the potential for the user spelling out the wrong location to the PSAP. For the long-term, however, the RERC-TA and Consumer Groups fully support the goal of providing Phase II location information to PSAPs during text-to-9-1-1 sessions, and applaud efforts by CSRIC IV to address this issue.

In the interest of full access to 9-1-1 nationwide for people with disabilities, it is also important that OTT delivery mechanisms do not complicate the picture for PSAPs, many of which are strapped for funds. In particular, a PSAP that is able to receive text-to-9-1-1 messages according to the Joint ATIS/TIA Native SMS to 9-1-1 Requirements and Architecture Specification (J-STD-110)⁴, via standalone IP-based interfaces, via NG9-1-1 equipment, or via TTY gateways, should not be required to make additional investments

⁴ See *Alliance for Telecommunications Industry Solutions and Telecommunications Industry Association (ATIS/TIA), Joint ATIS/TIA Native SMS to 9-1-1 Requirements and Architecture Specification, J-STD-110 including J-STD-110.a & J-STD-110.01 (March 2013); ATIS/TIA, Joint Press Release, ATIS/TIA Guidelines Enable Interim Nationwide Text to 9-1-1 Solution (Dec. 3, 2013), <http://www.atis.org/PRESS/pressreleases2013/120313.asp> (announcing release of implementation guidelines for the standard).*

to receive OTT messages. To the extent that this would require revisions to J-STD-110, the RERC-TA and Consumer Groups ask that OTT providers, ATIS, and TIA work collaboratively to achieve this goal.

3 Relay Services

The FCC also asks whether IP relay service providers should offer OTT services for contacting 9-1-1; in the event that a PSAP supports direct text-to-9-1-1 messages, the OTT application is envisioned to pass the messages through to the PSAP; otherwise, the app is envisioned to make a relay call to 9-1-1.

The RERC-TA and Consumer Groups are categorically opposed to this proposal and do not believe that it would serve the best interests of consumers who are deaf, hard of hearing or speech-impaired. First, it would take pressure off the players and stakeholders who otherwise would be responsible for providing emergency access to all Americans, irrespective of disability – in direct contravention of the obligations under the Title II of the ADA, which espouses the principle of direct access to emergency communications. The mere existence of relay services already has been used in the past to suggest an “easy way out” for emergency access for people with disabilities, rather than ensuring that networks and services are accessible to all⁵.

Second, texting is incompatible with the real-time communication model of IP Relay applications. The call flow, and the flow of the conversation, between having a

⁵ See e.g., the recommendations by ATIS on interim non-voice emergency services, which suggested IP Relay as a solution, rather than direct text access, *ATIS 0000026:2011 Atis Interim Non-Voice Emergency Services (Ines) Report And Recommendations, December 2011*.

conversation via text messages and via an IP Relay operator are nothing alike. The user interfaces on the client side are different, too, with IP Relay apps providing a split screen-style interface, and text messaging apps providing a turn-based interface. If an IP Relay user calls 9-1-1 via the IP Relay app, and expects to be greeted with the familiar split screen interface and a communications assistant picking up the call, being presented with a turn-based text messaging style interface and conversation would be highly unexpected. In the stress of an emergency, where it is more important than ever to have familiar means of communication, throwing the unexpected at the user is dangerous, and also runs counter to the everyday communication principles laid out by the EAAC Survey⁶, as well as the EAAC Report and Recommendations⁷.

However, IP-based relay services (including video relay services) that provide a VoIP call path to 9-1-1 via the relay service provider's network, instead of routing the voice portion of the call through the carrier network (as IPCTS currently does), should take steps to ensure that their smartphone client apps use the geolocation APIs of the mobile devices. These apps should pass on the location information to the relay provider, who then should use it to route the call to the appropriate PSAP through the relay operator's telecommunication service provider. While not a replacement for direct emergency communications, doing so would mitigate some (but not all) of the worst problems of routing mobile relay calls to 9-1-1. The RERC-TA and Consumer Groups

⁶ *Emergency Access Advisory Committee Survey Review & Analysis, June 21, 2011.* <http://www.fcc.gov/cgb/dro/EAAC/EAAC-REPORT.pdf>

⁷ *Emergency Access Advisory Committee Report and Recommendations. January 26, 2012.* http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-312161A1.pdf

would like to stress that nothing in these comments should be construed as an endorsement for relay services as the primary means for contacting 9-1-1.

4 Education

The RERC-TA and Consumer Groups believe that in making the rollout of text-to-911 successful, there needs to be consumer education and outreach. Consumers need to understand what text-to-911 can and cannot do. This is especially true for deaf and hard of hearing consumers who may be especially reliant on text-to-911 as they cannot make voice 911 calls. It is critical that this education and outreach, while important for all Americans, should make a special effort to reach out to deaf and hard of hearing people. This effort should include public information briefings in American Sign Language, captioned videos, and other accessible materials, circulated through the networks of national organizations serving deaf and hard of hearing people, and also local organizations and agencies working with deaf and hard of hearing people. The Consumer Groups are sometimes contacted by people who think that text-to-911 is widely available and is 100% reliable. These misconceptions need to be corrected and the community needs to understand the capabilities and limits of text-to-911.

5 Conclusion

Lives are at stake for the millions of people with hearing and speech disabilities, who need full and equal access to emergency services. OTT to 9-1-1 forms a critical piece of providing full access, and the FCC should ensure that it is implemented as expeditiously as possible. CMRS-based delivery alone is not enough, and would merely perpetuate the

technical and operational limitations of SMS, while doing nothing to move the vision of accessible 9-1-1 services forward, as envisioned for NG9-1-1. For full access, IP-based OTT delivery must be supported. The RERC-TA and Consumer Groups respectfully urge the FCC to set firm but realistic deadlines toward this goal.

Respectfully submitted,

/s/ Christian Vogler

On behalf of the RERC on Telecommunications
Access⁸ and Consumer Groups:

Christian Vogler, Ph.D.
Co-PI, RERC on Telecommunications
Access
Director – Technology Access Program
Gallaudet University
800 Florida Avenue, NE, SLCC 1116
Washington DC 20002

Howard A. Rosenblum
Chief Executive Officer
National Association of the Deaf
8630 Fenton Street, Suite 820
Silver Spring, MD 20910

Anna Gilmore Hall
Executive Director
Hearing Loss Association of America
7910 Woodmont Avenue, Suite 1200,
Bethesda, MD 20814

Cheryl Heppner
Vice Chair
Deaf and Hard of Hearing Consumer
Advocacy Network
3951 Pender Drive, Suite 130
Fairfax, VA 22030

Gregg C. Vanderheiden, Ph.D.,
Co-PI, RERC on Telecommunications Access
Director, Trace R&D Center
University of Wisconsin-Madison
1550 Engineering Drive, 2107 ECB
Madison, WI 53706-1609

Claude L. Stout
Executive Director
Telecommunications for the Deaf and Hard of
Hearing, Inc.
8630 Fenton Street, Suite 121
Silver Spring, MD 20910

Dave Litman
President
Association of Late-Deafened Adults
8038 Macintosh Lane, Suite 2
Rockford, IL 61107

Mark Hill
President
Cerebral Palsy and Deaf Organization
12025 SE Pine Street Apartment # 302
Portland, OR 97216

⁸ The contents of these comments were developed with funding from the National Institute on Disability and Rehabilitation Research, U.S. Department of Education, grant number H133E090001 (RERC on Telecommunications Access). However, those contents do not necessarily represent the policy of the Department of Education, and you should not assume endorsement by the Federal Government.