

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

General Motors Petition for Partial
Waiver of Real-Time Text Minimum) GN Docket No. 15-178
Functionality Requirements)

Comments of
Telecommunications for the Deaf and Hard of Hearing, Inc. (TDI)
National Association of the Deaf (NAD)
Hearing Loss Association of America (HLAA)
Association of Late-Deafened Adults (ALDA)
Cerebral Palsy and Deaf Organization (CPADO)
American Association of the Deaf-Blind (AADB)
Deaf Seniors of America (DSA)
Deaf and Hard of Hearing Consumer Advocacy Network (DHHCAN)
American Association of People with Disabilities (AAPD)
Disability Rights Education and Defense Fund (DREDF)
National Council on Independent Living (NCIL)
Paralyzed Veterans of America (PVA)
United Spinal Association
Deaf/Hard of Hearing Technology Rehabilitation
Engineering Research Center (DHH-RERC)
Rehabilitation Engineering Research Center on Universal Interface &
Information Technology Access (IT-RERC)

via electronic filing
January 30, 2019

Samuelson-Glushko Technology Law & Policy
Clinic (TLPC) • Colorado Law

Counsel to TDI

Blake E. Reid

Director

Kayla Enriquez

Sarah Rippy

Student Attorneys

blake.reid@colorado.edu

Telecommunications for the Deaf and Hard of Hearing, Inc. (TDI)

Claude Stout, Executive Director • cstout@TDIforAccess.org
PO Box 8009, Silver Spring, MD 20907
www.TDIforAccess.org

National Association of the Deaf (NAD)

Howard Rosenblum, Chief Executive Officer • howard.rosenblum@nad.org
8630 Fenton Street, Suite 820, Silver Spring, MD 20910
301.587.1788
www.nad.org

Hearing Loss Association of America (HLAA)

Barbara Kelley, Executive Director • bkelly@hearingloss.org
Contact: Lise Hamlin, Director of Public Policy, LHamlin@Hearingloss.org
7910 Woodmont Avenue, Suite 1200, Bethesda, MD 20814
301.657.2248
www.hearingloss.org

Association of Late-Deafened Adults (ALDA)

The Hon. Richard Brown (retired), President • ALDAPresident@alda.org
Contact: John Waldo • johnfwaldo@hotmail.com
8038 MacIntosh Lane, Suite 2, Rockford, IL 61107
815.332.1515
www.alda.org

Cerebral Palsy and Deaf Organization (CPADO)

Mark Hill, President • president@cpado.org
12025 SE Pine Street #302, Portland, Oregon 97216
503.512.5066
www.cpado.org

American Association of the Deaf-Blind (AADB)

“The Unstoppable” René G Pellerin, President • info@renetheunstoppable.com
65 Lakeview Terrace, Waterbury Center, VT 05677
802.321.4864
www.aadb.org

Deaf Seniors of America (DSA)

Nancy B. Rarus, President • nbrarus@gmail.com
Alfred Sonnenstrahl, Vice President • alsonny@icloud.com
5619 Ainsley Court, Boynton Beach, FL 33437

Deaf and Hard of Hearing Consumer Advocacy Network (DHHCAN)

Zainab Alkebsi, Chair • zainab.alkebsi@nad.org
8630 Fenton Street, Suite 820, Silver Spring, MD 20910-3803

American Association of People With Disabilities (AAPD)

Helena Berger, President and CEO • hberger@aapd.com
2013 H Street NW, 5th Floor, Washington, DC 20006
www.aapd.com

Disability Rights Education and Defense Fund (DREDF)

Susan Henderson, Executive Director • shenderson@dredf.org
3075 Adeline Street, Suite 210, Berkeley CA 94703
www.dredf.org

National Council on Independent Living (NCIL)

Kelly Buckland, Executive Director • kelly@ncil.org
2013 H Street NW, 6th Floor, Washington, D.C. 20006
www.ncil.org

Paralyzed Veterans of American (PVA)

Heather Ansley, Associate Executive Director for Government Relations
Contact: Lee Page, Senior Associate Advocacy Director • LeeP@pva.org
801 18th St, NW, Washington, D.C. 20006
202.416.7694

United Spinal Association

Alexandra Bennewith, MPA, Vice President • abennewith@unitedspinal.org
1660 L Street NW, Suite 504, Washington DC, 20036
www.unitedspinal.org

Rehabilitation Engineering Research Center on Universal Interface & Information Technology Access (IT-RERC)

Gregg Vanderheiden, PhD, Director • greggvander@umd.edu
Trace Research & Development Center • University of Maryland
4130 Campus Drive, College Park, MD 20742

Rehabilitation Engineering Research Center on Technology for the Deaf and Hard of Hearing, Gallaudet University (DHH-RERC)

Christian Vogler, PhD • christian.vogler@gallaudet.edu
800 Florida Avenue NE, TAP – SLCC 1116, Washington, DC 20002

Discussion

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), the American Association of the Deaf-Blind (AADB), Deaf Seniors of America (DSA), the Deaf and Hard of Hearing Consumer Advocacy Network (DHHCAN), American Association of People with Disabilities (AAPD), Disability Rights Education and Defense Fund (DREDF), National Council on Independent Living (NCIL), Paralyzed Veterans of America (PVA), and United Spinal Association (“Consumer Groups”) and the Deaf/Hard of Hearing Technology Rehabilitation Engineering Research Center (DHH-RERC) and the Rehabilitation Engineering Research Center on Universal Interface & Information Technology Access (IT-RERC) respectfully submit these comments in response to the Commission’s Public Notice (“PN”) requesting comment on General Motors’ petition (the “Petition”) in the above-referenced docket to waive real-time text (RTT) interoperability, 911 simultaneous voice and text communications requirements for its autonomous-vehicle ride-hailing service.¹

We applaud GM for taking seriously the accessibility of its ride-sharing service. However, we oppose the Petition because it is either unnecessary or unwarranted, depending on a critical ambiguity in the petition. We also urge the Commission to consider carefully the broader issues of Internet of Things (IoT) accessibility and 911 access implicated by the Petition.

As we understand it, GM’s argument is that its ride-hailing service should be able to use the smartphone-based Chat App as an accessible substitute for the In-Vehicle CSF, which is itself inaccessible to people who are deaf or hard of hearing, and possibly to people with other

¹ *Consumer and Governmental Affairs Bureau Invites Comment on a Petition Filed by General Motors Holding LLC for Partial Waiver of Real-Time Text Minimum Functionality Requirements*, Public Notice (Dec. 26, 2018) (“PN”), <https://docs.fcc.gov/public/attachments/DA-18-1301A1.pdf>; General Motors Petition (Dec. 11, 2018) (“Petition”), <https://www.fcc.gov/ecfs/filing/1211251984697>.

disabilities. The In-Vehicle CSF facilitates communication only with customer service.² Because the In-Vehicle CSF enables communication only between the user and GM personnel and does not support arbitrary calling to the PSTN, GM contends that the In-Vehicle CSF is a non-interconnected VoIP service subject to the Commission’s RTT rules.³ Because the Chat App can only be used to contact GM’s customer service representatives in connection with the ride-hailing service, GM seeks a waiver of the portions of the Commission’s RTT minimum functionality rules targeted at interconnected VoIP services that connect to the PSTN.⁴ GM seeks to waive several of Rule 67.2’s requirements,⁵ including those for RTT-RTT interoperability,⁶ RTT-TTY interoperability,⁷ the ability to transmit and receive RTT communications from PSAPs,⁸; and the ability to send receive voice and text simultaneously in both directions using a single device.⁹

However, the Petition skips straight to arguing the merits of these RTT waiver requests without offering an explanation for why its service implicates and is eligible for the RTT safe harbor in the first instance. The Petition first declares that “non-interconnected VoIP is [advanced communications services] for which accessibility is required.”¹⁰ So far, so good. But it is not clear whether the chat application referenced in the Petition (“Chat App”) is an integral part of the in-car

² *Id.* at 9.

³ The Petition implies that the In-Vehicle CSF might use the PSTN for part of its connectivity. Petition at 6 (“the service does not include *full* Public Switched Telephone Network interconnection” (emphasis added)). Nevertheless, we comment assuming *arguendo* that GM has correctly categorized the In-Vehicle CSF as a non-interconnected VoIP service.

⁴ See Petition at 7-8.

⁵ *Id.* at 8-9

⁶ 47 C.F.R. § 67.2(a).

⁷ 47 C.F.R. § 67.2(b)

⁸ 47 C.F.R. § 67.2(c)(2).

⁹ 47 C.F.R. § 67.2(c)(3).

¹⁰ Petition at 6-7 (citing 47 C.F.R. §§ 14.10(c) (defining ACS) and 14.21(b) (requiring ACS to be accessible)).

customer service function (“In-Vehicle CSF”) or a separate application that must be operated on a smartphone.¹¹ Either possibility poses fatal problems for the Petition.

On the one hand, if the Chat App is an integral part of the In-Vehicle CSF, then the petition is unnecessary because the petition identifies no reason why the In-Vehicle CSF is not or cannot be made accessible, and the RTT safe harbor of the Commission’s TTY compatibility rules therefore does not apply. If, on the other hand, the Chat App is a separate smart-phone application, the Petition fails to explain why making the In-Vehicle CSF accessible would not be achievable and thereby allow the alternate path of compliance with the TTY compatibility rules or the RTT safe harbor. And even if making the In-Vehicle CSF accessible would not be achievable, GM could only avail itself of the Commission’s RTT safe harbor if it had added RTT functionality to the In-Vehicle CSF itself, as opposed to a separate application that would require people with disabilities to use their own smartphones to use the service on equal terms.

I. If the Chat App is an integral part of the In-Vehicle CSF, the Commission should reject the Petition as unnecessary because the TTY compatibility rules and RTT safe harbor do not apply.

Representatives of some of the Consumer Groups have reached out to GM in an effort to resolve the ambiguity about the nature of the Chat App, and GM representatives have suggested, though not conclusively, that the Chat App may in fact be an integral part of the In-Vehicle CSF—i.e., that a rider can operate the Chat App via the same physical device as the In-Vehicle CSF. That possibility seems at least implicitly contradicted by the Petition, which does not clearly explain the precise operation of the In-Vehicle CSF,¹² and would require clarification and affirmation on the record from GM for the Commission to rely upon it.

¹¹ Compare Petition at 1-2 (describing the In-Vehicle CSF as a “voice channel” and separately describing the Chat App), Petition at 7 (describing the In-Vehicle CSF as a “voice service”) with Petition at 4 (noting the existence of a separate mobile application whose integration with the Chat App is not clear).

¹² *Id.*

However, if the CSF is indeed capable of on-device text messaging and otherwise satisfies the ACS accessibility and usability rules,¹³ the waiver is unnecessary because, the TTY compatibility rules and the RTT safe harbor would not be implicated in the first instance. The RTT safe harbor in Rule 14.21(d)(5)¹⁴ is only implicated for services and equipment that must comply with the TTY compatibility provisions of Rule 14.21(d)¹⁵ under Rule 14.20(a)(3).¹⁶ But Rule 14.20(a)(3) only requires compatibility where *accessibility and usability* are “not achievable” pursuant to Rules 14.20(a)(1) & (2)¹⁷ and 14.21(b) & (c)¹⁸

It is not clear, nor does the Petition explain, why providing a full-featured Real-Time Text application within the In-Vehicle CSF is not sufficient to satisfy the provisions of Rule 14.21(b) & (c), including requirements that equipment and services be operable without hearing¹⁹ or speech.²⁰ More broadly, the Petition does not provide sufficient information about the operation of the In-Vehicle CSF and the Chat App to evaluate without more whether the system is fully compliant with all the requirements of Rule 14.21(b) & (c), including accessibility for riders with other disabilities, and we encourage GM to clarify as much on the record. But the Petition does declare that the Chat App makes the ride-hailing service “accessible,”²¹ and assuming that that is the case, there is no reason to reach the merits of the Petition’s request to waive some of the RTT rules, because the TTY compatibility rules and the RTT safe harbor are not implicated for already accessible and usable devices.

¹³ 47 C.F.R. §§ 14.20(a)(1)-(2), 14.21(b)(1)-(2), (c).

¹⁴ 47 C.F.R. § 14.21(d)(5)

¹⁵ 47 C.F.R. § 14.21(d)

¹⁶ *See* 47 C.F.R. § 14.21(a)(3).

¹⁷ *See* 47 C.F.R. § 14.20(a)(1)-(2).

¹⁸ *See* 47 C.F.R. § 14.21(b) & (c).

¹⁹ 47 C.F.R. § 14.21(b)(1)(iv).

²⁰ 47 C.F.R. § 14.21(b)(1)(ix).

²¹ Petition at 11.

II. If the Chat App is not an integral part of the In-Vehicle CSF, the Commission should reject the Petition because it does not establish that making the In-Vehicle CSF accessible is not achievable.

The Petition raises the countervailing possibility that the Chat App is a separate mobile application that riders with disabilities must access on their smartphones. Toward that end, the Petition compares the Chat App to an external TTY, arguing that “[h]istorically, TTY support provided accessibility” required by the ACS rules, and that the “ACS rules [now] permit VoIP service providers and equipment manufacturers to support RTT instead of TTY.”²²

But TTY (or RTT) support is *not* the primary means of compliance with the ACS accessibility rules. As noted above, Rule 14.20(a)(1) & (2) require ACS equipment and services to be “accessible to and usable by individuals with disabilities.”²³ Accessibility and usability for ACS equipment and services are defined in Rule 14.21(b) and (c),²⁴ which specify in detail the requirements for “[i]nput, control, and mechanical functions” to be “locatable, identifiable, and operable” by people with disabilities,²⁵ for “information necessary to operate and use the product[s]” to be accessible to people with disabilities,²⁶ and for people with disabilities to “have access to the full functionality and documentation for the product[s].”²⁷ Rule 14.20(b) and (c) do not anywhere permit vendors of non-interconnected VoIP services to satisfy their requirements with a separate smartphone-based RTT application.²⁸

The only circumstance in which Rule 14.20(a)(1) & (2) does *not* apply to covered ACS equipment and services, including non-interconnected VoIP services like the In-Vehicle CSF, is

²² See *id.* at 6-7 & nn.11, 12, & 15 (citing 47 C.F.R. §§ 14.21(b), (d)(5)).

²³ 47 C.F.R. § 14.20(a)(1) & (2).

²⁴ Rule 14.21(a)(3) separately *requires* TTY or RTT functionality, but only for “[w]ireless *interconnected* VoIP services” and not *non-interconnected* VoIP services like the In-Vehicle CSF. See 47 C.F.R. § 14.21(a)(3) (emphasis added).

²⁵ 47 C.F.R. § 14.21(b)(1).

²⁶ 47 C.F.R. § 14.21(b)(2).

²⁷ 47 C.F.R. § 14.21(c).

²⁸ See 47 C.F.R. § 14.20(a)(1) & (2).

where making them accessible is “not achievable.”²⁹ If compliance with the accessibility requirements is not achievable, then Rule 14.20(a)(3) allows vendors to instead comply with the TTY compatibility rules of Rule 14.21(d),³⁰ including the RTT safe harbor in Rule 14.21(d)(5).³¹

However, Rule 14.10(b) sets a high bar for establishing that compliance with the accessibility requirements is not achievable.³² In particular, it requires the Commission to consider:

- “(1) The nature and cost of the steps needed to meet the requirements;”³³
- “(2) The technical and economic impact on the operation of the manufacturer or provider and on the operation of the specific equipment or service in question, including on the development and deployment of new communications technologies;”³⁴
- “(3) The type of operations of the manufacturer or provider;”³⁵ and
- “(4) The extent to which the service provider or manufacturer in question offers accessible services or equipment containing varying degrees of functionality and features, and offered at differing price points.”³⁶

The Petition does not begin to establish a case that making the In-Vehicle CSF accessible is not achievable—nor does it make any explicit declaration to that effect, or mention the words “achievable” or “achievability.” Without any information probative of the achievability of making the In-Vehicle CSF accessible, the Commission cannot even begin to consider whether it would be appropriate to substitute TTY or RTT functionality under Rule 14.21(d).

Moreover, even if the Commission could somehow conclude that it was not achievable for GM to make the In-Vehicle CSF accessible, Rule 14.21(d) does not allow the substitution of smartphone-

²⁹ See 47 C.F.R. § 14.20(1) & (2).

³⁰ 47 C.F.R. § 14.20(a)(3).

³¹ 47 C.F.R. § 14.21(d)(5).

³² 47 C.F.R. § 14.10(b).

³³ 47 C.F.R. § 14.10(b)(1).

³⁴ 47 C.F.R. § 14.10(b)(2).

³⁵ 47 C.F.R. § 14.10(b)(3).

³⁶ 47 C.F.R. § 14.10(b)(4).

based applications to satisfy Rule 14.20(a)(3). All of the relevant TTY provisions of Rule 14.21(d) require the *equipment itself* to be made compatible with a TTY:

- Rule 14.21(d)(1) requires information and control mechanisms to be accessible via a “cross-industry standard port.”³⁷
- Rule 14.21(d)(2) requires auditory signals to be provided “through an industry standard connector.”³⁸
- Rule 14.21(d)(3) requires non-TTY voice products to “provide a standard non-acoustic connection point for TTYs”³⁹ using non-proprietary signals pursuant to Rule 14.21(d)(4).⁴⁰

Likewise, Rule 14.21(d)(5) only exempts wireless non-interconnected VoIP services from Rule 14.21(d)(3) & (4) where the “services and *equipment* support real-time text” under Part 67.⁴¹

If GM wanted to substitute making the In-Vehicle CSF accessible with the provision of RTT, then, it would have to do so by including RTT support on the *In-Vehicle CSF itself*. Nothing in the rules allows substituting a separate smartphone-based Chat App. Doing so would not only require users with disabilities to provide their own equipment to make the underlying CSF accessible, but to connect to customer service agents using their own out-of-band wireless data services. As a result, we would then urge the Commission to deny the Petition and decline to address the requests for waiver from the RTT rules on the grounds that GM’s service is not architected in a way that is compatible with the RTT safe harbor.

If GM’s Chat App is not an integral part of the In-Vehicle CSF, granting the requested waiver from the RTT rules for the Chat App is a doubly moot point because GM has not established that making the In-Vehicle CSF accessible would not be achievable⁴² or offered a plausible explanation

³⁷ 47 C.F.R. § 14.21(d)(1).

³⁸ 47 C.F.R. § 14.21(d)(2).

³⁹ 47 C.F.R. § 14.21(d)(3).

⁴⁰ 47 C.F.R. § 14.21(d)(4).

⁴¹ See 47 C.F.R. § 14.21(d)(5).

⁴² As noted above, there is some possibility GM has *already* succeeded in making the In-Vehicle CSF, obviating the application of the TTY compatibility rules and RTT safe harbor.

for how requiring a separate smartphone-based app complies with Rule 14.21(d)(5). We urge the Commission to reject the Petition accordingly, and to defer any decision-making about the appropriate standards for such a waiver unless and until it is presented with a non-interconnected VoIP service that legitimately establishes qualifications for the RTT safe harbor. Obligations under the RTT rules include critical accessibility functions such as interoperability, 911 accessibility, and simultaneous voice and text communications,⁴³ and establishing a precedent for their waiver risks placing people with disabilities at significant risk in emergency situations, and the Commission should not take such a step on the basis of an effectively non-existent record.

III. The Petition raises broader issues about IoT accessibility and 911 issues that warrant more careful deliberation and the development of a broader record.

Finally, we remind the Commission that it is critical that all people with disabilities, including those who are deaf or hard of hearing and those who have speech disabilities, are able to access cutting-edge IoT services, and it is critical that the Commission address these issues carefully and proactively. Indeed, the Commission's Disability Advisory Committee (DAC) has specifically recommended that the Commission:

[E]ngage . . . industry, government, research, and consumer stakeholders . . . to encourage efforts to raise awareness among these stakeholders about the need for IoT products and services with direct user interaction features, or IoT-powered services intended to offer modes or capabilities for user interaction, to be implemented consistent with universal design principles to the extent achievable, and also provided with capabilities for interfacing with assistive and accessible technologies [and] see[k] the recommendations of various industry, government, research, and consumer stakeholders about the accessibility benefits and challenges of IoT products and services within the Commission's purview for people with disabilities and identify possible solutions for maximizing those benefits and overcoming those challenges."⁴⁴

⁴³ See generally 47 C.F.R. § 67.2.

⁴⁴ Disability Advisory Committee, *Recommendation to the Commission on Internet of Things* (Dec. 6, 2016), <https://www.fcc.gov/disability-advisory-committee>.

It is especially critical for the Commission to consider these issues as non-interconnected service operators position themselves to effectively serve as relay operators between their users and 911. For example, GM's service apparently contemplates that its customer service agents will initiate calls to public safety answering points (PSAPs) on behalf of all of its users, including those with disabilities, and apparently to relay communications from its users to 911 call-takers.⁴⁵ We are concerned about the extent to which GM's agents will be properly trained to locate the correct PSAP, and quickly and accurately convey information from users, including users with disabilities, in life or death situations, and whether it makes sense for GM agents to play an intermediary role in those communications rather than constructing a system that directly connects users to 911 call-takers.

However, these are issues beyond the scope of the Petition and likely better addressed in the context of a comprehensive effort to address 911 access via non-interconnected services. Thus, we recommend that the Commission reject the Petition on the grounds described above.

⁴⁵ Petition at 8.