



Rehabilitation Engineering Research Center for
Wireless Technologies

VIA ECFS

April 25, 2011

Marlene H. Dortch, Secretary
Office of the Secretary
Federal Communications Commission
445 12th Street, S.W.
TW-A325
Washington D.C. 20554

Re: Comments on the *Notice of Proposed Rulemaking In The Matter of Implementation of Sections 716 and 717 of the Communications Act of 1934, as Enacted by the Twenty-First Century Communications and Video Accessibility Act of 2010* [CG Docket No. 10-213] *Amendments to the Commission's Rules Implementing Sections 255 and 251(a)(2) of the Communications Act of 1934, as Enacted by the Telecommunications Act of 1996* [WT Docket No. 96-198] *In the Matter of Accessible Mobile Phone Options for People who are Blind, Deaf-Blind, or Have Low Vision* [CG Docket No. 10-145]

Dear Ms. Dortch:

Enclosed for filing in the above referenced Notice of Proposed Rulemaking are the comments of the Rehabilitation Engineering Research Center for Wireless Technologies (Wireless RERC).

Should you have any questions concerning this filing, please do not hesitate to contact via email Dr. Helena Mitchell at helena.mitchell@cacp.gatech.edu.

Respectfully submitted,

A handwritten signature in blue ink, appearing to read "H. Mitchell".

Helena Mitchell, Ph.D.
Executive Director
Center for Advanced Communications Policy
& Principal Investigator, Wireless RERC
Georgia Institute of Technology

Enclosure

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

In the Matter of)	
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Implementation of Sections 716 and 717 of the Communications Act of 1934, as Enacted by the Twenty-First Century Communications and Video Accessibility Act of 2010)	CG Docket No. 10-213
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**Comments of
Rehabilitation Engineering Research Center For
Wireless Technologies (Wireless RERC)**

The Rehabilitation Engineering Research Center for Wireless Technologies (Wireless RERC), hereby submits comments in the above-referenced Notice of Proposed Rulemaking released on March 3, 2011.

The Wireless RERC¹ is a research center focused on promoting equitable access to and use of wireless technologies by people with disabilities, and on encouraging the application of

¹ The Rehabilitation Engineering Research Center for Wireless Technologies (Wireless RERC) is sponsored by the National Institute on Disability and Rehabilitation Research (NIDRR) of the U.S. Department of Education under grant number H133E060061. The opinions contained in this filing are those of the authors and do not necessarily reflect those of the U.S. Department of Education or NIDRR.

Universal Design practices in future generations of wireless technologies. As such, we are pleased that the FCC is seeking comments on how best to implement provisions of the Twenty-First Century Communications and Video Accessibility Act of 2010 (CVAA) in a way that ensures people with disabilities access to equipment, networks and advanced communications services. The Wireless RERC, through its research and development activities, works with people who have disabilities, accessing wireless products and services and gathering their input as to specific accessibility attributes and challenges. This is an ongoing effort conducted through Wireless RERC research initiatives such as the Survey of User Needs (SUN) which is updated annually and provides insights into the accessibility of wireless devices, services and applications. Over the past 5 years more than 2500 people have completed the SUN. Hundreds of people with disabilities have completed additional Wireless RERC surveys on topics that include emergency communications, hearing aid compatibility, and the quality of wireless accessibility information on the Internet. The Wireless RERC commends the FCC in its sustained efforts to garner diverse perspectives and input in the development of the content of rulemakings.

Paragraph 21: Manufacturer responsibility for upgrades to the software (OS, user interfaces, or applications) and accessibility of third party apps.

End-users who buy an accessible device expect manufacturer-provided updates and upgrades to continue to be accessible; these “upgrades” should not be downgrades for end-users with disabilities. Third-party applications that are acquired by the end-user should not be the responsibility of the manufacturer, unless upgrades to system-level software break properly built third-party software.

In some cases, in order to achieve accessibility, as an alternative to embedding the app or software in all devices, the manufacturer may choose to supply software packages or a suite of apps to the end-user for download and installation. Under such circumstances, the manufacturer should ensure that the solution being provided is fully accessible and operational for the device. While this does have a recognizable downside – that is, the need to perform an additional action not required if it was built into the device, the advantage is that it is possible to more quickly alter, adapt and innovate as a discrete downloadable product.

Paragraph 33: Defining “electronic messaging service.”

The Wireless RERC feels that text messaging type functionality inside of most social networking systems falls under the Commission’s definition of “electronic messaging service.” As such, these systems should be accessible in order to allow persons with disabilities the ability to create, send, share and read these messages without having to switch to another program. This is especially important in light of findings of a recent survey by the Wireless RERC. This survey, *Emergency Communications and People with Disabilities: 9-1-1 Communications, Public Alerts, and Social Media*, was conducted from October 2010 through January 2011.² More than 1100 people with disabilities responded to the survey. Findings from responses to the social media questions in the survey reveal that almost two-thirds (63%) of respondents use social media. Twenty-two percent of people with disabilities have received public alerts via social media, and 16% have verified public alerts using social media. The

²Wireless RERC. (2011). *Summary Report on Emergency Communications and People with Disabilities: 9-1-1 Communications, Public Alerts, and Social Media*. Available at http://www.wirelessrerc.org/publications/Emergency%20Communications%20Survey_Summary%20Report_%202011-04-15.doc/view [Working Paper. A comprehensive report will be released later in 2011.]

social media outlet most commonly used by respondents with disabilities is Facebook, with 12% reporting having received a public alert via this channel, and 9% having verified an alert via this channel. Twitter is the second most commonly used (5% and 3%, respectively). Listservs, Yahoo!, YouTube and MySpace fill out the top 6 social media channels used for receiving and verifying public alerts.

The Center for Advanced Communications Policy (CACP) conducted an assessment³ of the top 100 U.S. cities/municipalities (as defined by the U.S. Census Bureau⁴) and all 50 states to determine the rate of usage of social media for dissemination of emergency alerts. Forty-five percent of local governments and 74% of state governments use social media to some extent to provide emergency communications. All of the data were gathered from official city and state web pages. On the local level the sources for the assessment included the websites of police departments, fire departments, and city governments; and on the state level, the Departments of Emergency Management, Homeland Security, and Emergency Management Services. If the use of social media by emergency management and public safety agencies as a communication tool during emergencies increases, it will become ever more pressing to ensure that people with disabilities have equitable access to these platforms.

Although Section 508 is not the subject of this NPRM, per se, we note it has implications to the docket, especially as it relates to electronic messaging services within social media networks. Section 508 of the Rehabilitation Act was created and amended, in part, to ensure that federal

³ Baker, PMA, McMillian, C. (2011). *Emergency Alert Communications and Social Media: An Assessment of Usage in State and Local Government* [Working Paper]

⁴ U.S. Census *Annual Estimates of the Resident Population for Incorporated Places over 100,000 Ranked by July 1, 2009, Population: April 1, 2000 to July 1, 2009*

government information is accessible. According to the rule, “It applies to all federal agencies when they develop, procure, maintain, *or use* [emphasis added] such technology.⁵” This could be interpreted to mean that the *use* of social media platforms by federal agencies to communicate information falls under the scope of Section 508. The inclusion of text messaging functionality in social media services under the Commission’s definition of “electronic messaging services” would assist with federal compliance with Section 508; and further ensure equitable access to information via advanced communications services by people with disabilities.

Paragraph 38: VRS Equipment and Video Conferencing Service.

End-users may not necessarily be aware of the differences between the video capabilities provided by systems such as Skype or Facetime, and those provided by traditional VRS suppliers. We feel consumers’ needs are best met by classifying these services as VRS where possible. In addition, with many mobile phones now supporting real-time video communications, VRS should be available for use on mobile devices.

Paragraphs 63-66: Exemptions.

Exemptions must be carefully examined to ensure they are not being abused in any manner and they should be of a limited time; one year seems appropriate with a reapplication process that requires a stronger burden for renewal. Small rural carriers might have justified reasons for not being able to always have the latest accessible products due to exclusivity agreements with larger carriers with which they might have limited room for negotiation.

⁵ U.S. Access Board. *Electronic and Information Technology Standards: An Overview*. Available at <http://www.access-board.gov/sec508/summary.htm>

Paragraph 83: Harmonization of Section 716 and Section 255 rules based on the Access Board Draft Guidelines.

From a policy perspective, a key problem in the adoption of wireless technologies, in general, as noted in previous Wireless RERC findings⁶ was legislative and regulatory barriers. This was also echoed in subsequent policy research with expert stakeholders^{7 8}. The regulatory process can be complex both from the viewpoint of rulemakers, as well as from the regulated; in this respect, harmonizing Sections 716 and 255 can reduce both the potential for misunderstanding as well as the regulatory cost of compliance. The Access Board's proposed rules have been fairly widely disseminated and therefore, it can be argued, that there is a good deal of awareness of the proposed rules. We believe that given this condition it would be appropriate if the FCC adopted parallel language toward the objective of consistency. Places in which the draft ICT guidelines are silent, can be addressed specifically by enhancement of the adopted language. Conversely, the broader approach used by the Access Board in the definition of usability,⁹ has utility, and we encourage adoption of pertinent language of the Access Board's draft ICT guidelines.

Paragraph 88: Ensuring compatibility in the context of advanced communications services and the relevance of TTY.

⁶ Wireless RERC. (2003). *Policy and Regulatory Assessment - Factors Influencing Adoption of Wireless Technologies: Key Issues, Barriers and Opportunities for People with Disabilities*. Available at <http://www.wirelessrerc.org/publications/policy-briefs/factors-influencing-adoption-of-wireless-technologies-key-issues-barriers-and-opportunities-for-people-with-disabilities.html/>

⁷ Baker PMA, Moon NW (2008) "Wireless technologies and accessibility for people with disabilities: findings from a policy research instrument." *Assistive Technology*. 2008 Fall;20(3):149-56.

⁸ Baker PMA, Moon NW (2010). "Policy development and access to wireless technologies for people with disabilities: results of policy Delphi research," *Universal Access In The Information Society* 9(3) pp 227-237

⁹ Federal Communications Commission. (2011). *Notice of Proposed Rulemaking In The Matter of Implementation of Sections 716 and 717 of the Communications Act of 1934, as Enacted by the Twenty-First Century Communications and Video Accessibility Act of 2010* [CG Docket No. 10-213] *Amendments to the Commission's Rules Implementing Sections 255 and 251(a)(2) of the Communications Act of 1934, as Enacted by the Telecommunications Act of 1996* [WT Docket No. 96-198] *In the Matter of Accessible Mobile Phone Options for People who are Blind, Deaf-Blind, or Have Low Vision* [CG Docket No. 10-145]. Released March 3, 2011. P.33

TTY is old technology, and keeping it functioning on modern wireless and wired communications networks has been very expensive. However, the Commission needs to balance the cost savings of a TTY phase-out against potential loss of access to 911 by people with disabilities.

Findings of the Wireless RERC survey previously mentioned, *Emergency Communications and People with Disabilities: 9-1-1 Communications, Public Alerts, and Social Media*, indicate that more than 2/3 of survey participants had contacted emergency responses services at least once, for a total of more than 1000 calls.¹⁰ The survey sample included people ages 18-91, with all types of disabilities, including sensory, physical and cognitive disabilities. Nearly half (47%) were made via landline phone, while more than 1/3 (34%) were made via cell phone. The remaining calls were placed via TTY or other assistive telecommunications devices. Six percent were made specifically via TTY. Respondents were asked how they would prefer to contact emergency services. Voice calls via landline or cell phone were preferred by most, each was chosen by 59% of respondents as a preferred way to contact emergency services. Thirty-three percent of participant's identified text based messaging (text messages, email or instant messaging) as a preferred way to contact emergency services. Five percent preferred to make 9-1-1 calls via TTY, and 14% listed video relay services as a way they want to contact 9-1-1.

The Wireless RERC supports a carefully crafted plan to phase-out the use of TTY in both Section 716 and Section 255. However, this plan needs to have several key components. (1)

¹⁰ Wireless RERC. (2011). *Summary Report on Emergency Communications and People with Disabilities: 9-1-1 Communications, Public Alerts, and Social Media*. Available at http://www.wirelessrerc.org/publications/Emergency%20Communications%20Survey_Summary%20Report_%202011-04-15.doc/view [Working Paper. A comprehensive report will be released later in 2011.]

Early inclusion of disability rights organizations to ensure community support for such a plan.

(2) The phase out plan must provide a way to contact 9-1-1 via text in advance of the nationwide rollout of NG9-1-1, which is still several years from deployment. (3) As TTY users often have very low income, any needed new equipment should fall under federal provisions for assistive technology replacement and end-users should receive training and support from appropriate state agencies.¹¹ Once an operable system is in place to allow users to contact 9-1-1 via text, then a TTY phase out is a viable plan.

While the need for TTY support is still necessary, we don't suggest waiting for full support for real time text under NG9-1-1 to begin phase out of TTY under Section 255. Currently, many speech and hearing disabled users have no way to contact 9-1-1 from mobile devices. A plan can be put in place to provide transition to a system using gateways and emulation software to allow compatibility with existing Public Safety Answering Points (PSAPs) while NG9-1-1 rollout commences.

Paragraph 108: Interoperable video conferencing services.

The Wireless RERC agrees with the Access Board proposal that products that provide video conversations provide sufficient quality and fluidity for real-time video conversation. However, we have a caveat. In a wireless environment, wireless bandwidth will vary greatly depending on network load, location of the consumer, distance to a cell-tower, etc. In these cases, the quality will potentially degrade below the quality and fluidity mandated by the Access Board. The video stream, although lowered in quality, may still be sufficient for some measure of communications,

¹¹ For example, the North Carolina Department of Health and Human Services Division of Services for the Deaf and the Hard of Hearing. See <http://www.ncdhhs.gov/dsdhh/services/telecommunications.htm>

just as a voice call that is breaking up due to network issues is often better than no call at all.

Mobile video conversations services need to be tested given reasonable network performance, knowing degradation is possible.

Many video conferencing systems, such as Skype, use radically different technologies than the technology used in existing VRS systems. Mandating full interoperability between all providers of video conference solutions can be an unreasonable burden on the market and therefore can have the potential to stifle innovation. A middle ground might be to require equipment manufacturers covered by Section 716 rules to provide an interoperable video conference client, while allowing third-party applications that are not interoperable to co-exist on the hardware.

Paragraph 143: Ensuring Internet browsers on mobile phones are accessible to and usable by individuals who are blind or have a visual impairment.

This is a critically important obligation imposed by Section 718. Not requiring mobile web browsers to be accessible to users who are blind or have a visual impairment could deprive consumers of the ability to access many important functions on their devices. Although some manufacturers, such as Apple, focus more on the use of applications to access information and services on phones, others, such as HP, focus on the web browser. This is an area where the Commission should set the bar high and require robust solutions to this problem.

In closing, the Wireless RERC wishes to emphasize the importance of accessibility across the range of disabilities and across industry. The outcomes from this NPRM will benefit both people with disabilities and industry by reducing regulatory uncertainty through the

harmonization of current and proposed accessibility rules, clearly defining the technologies/services that are covered under the CVAA, and updating important sections of the rules to ensure compatibility with current advanced communications modalities being used by people with disabilities. This will ensure that rules and regulations are modern and relevant. It will elevate the ease of compliance, the usability of the end products and benefit all stakeholders, especially those often not considered in issues relevant to their own well-being – people with disabilities.

Respectfully submitted,



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Dated this 25th day of April 2011