Rehabilitation Engineering Research Center for
Wireless Technologies

VIA ECFS

December 3, 2007

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

Re: *Review of the Emergency Alert System; Independent Spanish Broadcasters Association, the Office of Communication of the United Church of Christ, Inc., and the Minority Media and Telecommunications Council, Petition for Immediate Relief, EB Docket No. 04-296*

Dear Ms. Dortch:

Enclosed for filing in the above referenced Second Report and Order and Further Notice of Proposed Rulemaking proceedings are 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 me via phone (404-385-4640) or e-mail (helena.mitchell@cacp.gatech.edu).

Respectfully submitted,

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Rehabilitation Engineering Research Center for Wireless Technologies
(Wireless RERC)
Executive Director

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Enclosure

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

In the Matter of	)	
	)	
Review of the Emergency Alert System;	)	EB Docket No. 04-296
	)	
Independent Spanish Broadcasters Association, the Office of Communication of the United Church of Christ, Inc., and the Minority Media and Telecommunications Council, Petition for Immediate Relief	)	

COMMENTS OF
REHABILITATION ENGINEEERING RESEARCH CENTER FOR WIRELESS TECHNOLOGIES (WIRELESS RERC)

The Rehabilitation Engineering Research Center for Wireless Technologies (Wireless RERC), hereby submits comments to the S*econd Report and Order and Further Notice of Proposed Rulemaking,* released on July 12, 2007 regarding specific issues identified in the Further Notice of Proposed Rulemaking portion of the above-referenced proceeding.

The Wireless RERC[1] is a research center focused on promoting equitable access to and use of wireless technologies by people with disabilities

[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 paper are those of the authors and do not necessarily reflect those of the U.S. Department of Education or NIDRR.

and on encouraging the application of Universal Design practices in future generations of wireless technologies.

The Wireless RERC focuses its comments on the Further Notice of Proposed Rulemaking reexamination of the proposed methods for ensuring that the Emergency Alert System (EAS) and related emergency information are accessible to persons with disabilities.

FURTHER NOTICE OF PROPOSED RULEMAKING

Non-English Speakers (¶ 72)

Access for non-English speakers to emergency warnings and information is critical for more than 14 million U.S. households. The Wireless RERC supports any efforts that would bring about a multi-lingual EAS solution; especially given that translation technology is available to address this issue.

FCC Rules 11.54 and 11.55 authorize EAS Participants to transmit national, state and/or local emergency messages and announcements in their primary language of operation. Some state EAS Plans designate specific broadcast stations as key EAS stations for serving a particular non-English speaking audience. Other broadcast stations have multiple language formats, broadcasting different languages at different times. The state of Florida EAS plan, for example, contains procedures where non-English alerts

are originated and distributed by state officials. This plan was voluntarily developed and funded by the state of Florida and Federal Emergency Management Agency (FEMA). The Wireless RERC supports this approach and encourages the FCC and FEMA to adopt it nationwide.

The Wireless RERC recommends that the Commission encourage more non-English speaking broadcast stations to provide EAS warnings in the primary language of their audience. This is especially important because 80% of all EAS warnings are originated by National Weather Service (NWS) field offices which currently deliver EAS warnings mostly in English through the audio portion of NOAA Weather Radio. Broadcast station personnel serving non-English speaking audiences, including people with disabilities, should receive training to translate English EAS warnings into the primary language intelligible by non-English speakers. The Wireless RERC also suggests that accurate technical solutions that facilitate the real-time translation of EAS warnings to non-English speakers be integrated into the next generation EAS for deployment in wireless and mobile devices as a service by future EAS Participants.

Persons with Disabilities (¶ 73)

(1) Presentation of the audio feed in text format, and vice-versa.

Disaster instructions for the general population are not equally applicable to people with disabilities. The Wireless RERC proposes that all emergency

messages must be delivered in multiple modalities (visual/ auditory) [2] and presented in formats that are uniformly comprehensible and accessible to persons who are deaf, hard of hearing, blind, or have low vision.[3] Increased use of text messaging must be generally supported, and deployed to accommodate the needs of persons with disabilities.[4] Further, accurate translation of emergency information from audio to text format and vice versa should occur simultaneously. The provisioning of American Sign Language (ASL) through a gateway has been recognized as technically feasible by the Commercial Mobile Services Alert Advisory Committee (CMSAAC).[5]

(2) Making emergency information available to various devices commonly used by persons with disabilities.

The Wireless RERC urges that emergency information be made available to the various types of wireless devices which are used by persons with disabilities. In particular, the Wireless RERC is interested in reaching out to the more than 250 million subscribers to wireless services in the

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[2] *Effective Communication of Warnings and Critical Information: Application of Accessible Design Methods to Auditory Warnings*, Markku T. Häkkinen, et al., Proceedings of the 4th International ISCRAM Conference (B. Van de Walle, P. Burghardt and C. Nieuwenhuis, eds.) Delft, the Netherlands, May 2007.

[3] *Saving Lives: Including People with Disabilities in Emergency Planning*, National Council on Disability, pp.12-13, rel'd April 15, 2005. Available at http://www.ncd.gov/newsroom/publications/2005/saving_lives.htm.

[4] *Transitioning Emergency Communications Into The Next Generation,* National Emergency Number Association (NENA) Next Generation Partner Program 2006 Report, p. 4, February 2007.

[5] *See* Record of vote taken at October 3, 2007 Commercial Mobile Service Alert Advisory Committee Final meeting (Final CMSAAC Meeting).

United States.[6] The deaf community has become significant adopters of 2-way text pagers such as the Blackberry.[7] Blind consumers can now purchase cell phones that read Short Message Service (SMS) messages to them. Increased usage of these wireless devices is also noted among the general public. This increased usage suggests that prompt delivery of EAS messages to wireless devices, particularly these newer technologies, are critical information tools for the hearing and visually impaired.

Developments in innovative digital broadcast and wireless technologies are making access to alerts more readily available. Americans rely on their computers, personal digital assistants, car radios, and cell phones to receive information from multiple providers. Datacasting of emergency text and/or audio messages to wireless devices, and reverse 911 calls are critical distribution platforms for alerts to wireless devices. Opt-in registration would allow the user to specify a geographical location via the Federal Information Processing Standards (FIPS) Specified Area Message Encoding (SAME) code. This would target access to emergency information by persons with disabilities using wireless devices.

The Wireless RERC recommends that the FCC require broadcast stations using FM Radio Broadcast Data Service (FM RBDS) subcarriers to deploy that technology to distribute real-time notifications of national, state

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[6] CTIA, "*U.S. Wireless Subscribership Passes 250 Million Mark*", Nov. 13, 2007. Available at http://www.ctia.org/media/press/body.cfm/prid/1724.

[7] *An Investigation of Two-Way Text Messaging Use With Deaf Students at the Secondary Level*, C. Tane Akamatsu*, et. al.*, The Journal of Deaf Studies and Deaf Education, October 19, 2005.

and local emergency situations, weather warnings, homeland security notices, and evacuation instructions with targeted information to persons with disabilities. The deaf and hearing impaired could then receive a FM RBDS signal with the embedded emergency alert, and read the EAS text message on the screen of a wireless device. Certain cell phone handsets currently are equipped with FM chips capable of receiving such emergency alerts.

The FM RBDS is an additional distribution component to the national EAS architecture, and is compliant with the FCC ruling that EAS participants accept alert messages using the open, non-proprietary Common Alerting Protocol (CAP) standard. The CMSAAC recently recognized the value of FM RBDS receivers by adopting an amendment to its recommendations which proposes the inclusion of FM RBDS receivers as "meet[ing] the spirit of the WARN Act." [8]

The Wireless RERC additionally supports the new EAS architecture to allow receipt of emergency alerts via wireless data networks as crucial to serving the needs of people with disabilities. While digital cellular network coverage has increased, many locations, namely underground locations (*e.g.* subway systems) and the interiors of buildings, would be better served by the

[8] *See* Final CMSAAC Meeting. Also, Section 102 (b)(4) of the Warning, Alert and Response Network (WARN) Act states, in pertinent part, that the National Alert System "will transmit alerts across the greatest possible variety of communications technologies, including digital and analog broadcasts…to reach the largest portion of the affected population"

deployment of additional alternative network technologies such as Wi-Max. The Wireless RERC encourages the FCC to adopt procedures which enable users of wireless laptops[9] to receive emergency alerts from Internet Service Providers (ISP) via the expanded EAS architecture. Users of this service would register, and their location would be assigned by the FIPS SAME code. Current and updated emergency information and warnings would then be delivered directly to the user's wireless laptop.

(3) Providing emergency messages in multiple formats to meet the needs of persons with disabilities.

The consistent support by the Wireless RERC of the Common Alerting Protocol (CAP)[10] as a standard messaging protocol for the next generation digitally-based EAS comports with the Organization for the Advancement of Structured Information Standards (OASIS) adoption of the CAP standard, and with the CMSAAC recommendations to the FCC citing the CAP standard as the format for emergency alerts. The CAP provides a comprehensive technical solution for transmitting audio and text emergency alerts over multiple communications platforms to wireless devices. The Wireless RERC believes that the CAP containing the audio, text and video components of an emergency message must be accessible for receipt by wireless devices, mobile

[9] The Wireless RERC recognizes there are different technologies in play in "wireless laptops", such as infrared, Bluetooth, WiFi, cellular and WiMax (enhanced cellular).
[10] The Wireless RERC filed comments on January 23, 2006 in the November 2005 *First Report and Order and Further Notice of Proposed Rulemaking* in *EB Docket No. 04-296* supporting the adoption of the CAP as the common messaging protocol for a future digitally-based alert system.

telephones and personal digital assistants frequently used by people with visual and auditory disabilities. Also, the official adoption of CAP by FEMA should be expedited, possibly by mandating a specific deadline to FEMA in order to ensure timelier deployment.

Until the CAP format is fully implemented, the FCC should support the use of alternative emergency message distribution protocols, such as the Emergency Digital Information Service (EDIS) network in California. The California EDIS network delivers image and sound emergency messages for reception by email and by wireless devices, such as pagers. The EAS/National Weather Service (NWS) SAME format is another example of a protocol which contains two minutes of audio and key emergency message elements in digital text.

Other Local Official Alerts (¶ 74)

To date, very few statewide EAS alerts have been recorded. EAS alerts are predominately local, and mainly consist of NWS alerts. The Wireless RERC supports the FCC's recent ruling that each state Governor be authorized to initiate the declaration of state, local and/or geo-targeted emergency alerts. The Wireless RERC proposes that the director of the respective state Emergency Management Agency should be designated as the Governor's Authorized Representative (GAR), and also be authorized to activate EAS alerts upon the behalf of a state when its Governor is unable to

do so. Additional originator codes for state governors and for their designees should be adopted and added in Section 11.31(d) of the FCC Rules. The state EAS plan should also list the types of EAS alerts to be transmitted. These provisions should be explicitly described in each state EAS Plan that is submitted to and approved by the FCC.

Emergency messages from local, county, tribal and other state governmental entities should originate from one state source with the mandated state code. The state source should be the clearinghouse for all alerts in a state. The source and its connectivity to EAS participants should be identified in the state EAS plan. The source personnel should be trained in developing messages in languages prevalent to the populace of the state.

The increased needs to communicate security and emergency information to the general public suggest that additional codes are needed to make alerts more effective, informative and useful. For example, the CMSAAC will recommend a new code for "radiological hazard warning", and possibly, one for "avoid hazard." [11]

Interaction between Part 11 and Section 79.2 of the FCC Rules.

The Wireless RERC requests that the FCC harmonize its updated Part 11 rules by revising the provisions of Section 79.2 to require video programmers to consistently close caption the audio format of both regularly

[11] *See* Final CMSAAC Meeting.

scheduled programming and emergency alerting information to be fully understandable by people with varying auditory disabilities.

Assessing EAS Operation (¶ 75)

In assessing EAS Operations, we support additional testing of the EAS and CAP; station certification for compliance with the EAS requirements; and evaluation of how well the system performs after an alert has been triggered. The Wireless RERC, however, is most concerned with how the EAS operations will impact people with disabilities.

The FCC and FEMA should use available technologies to develop a system to collect, track and tabulate CAP and EAS/SAME messages, and EAS tests. This system will afford an assessment of the effectiveness of the origination, distribution and receipt of alerts before, during and after disasters. The results will supply valuable information on the areas to be fixed, modified or discarded. An example of such a system is the NWS website which tabulates all of its watches and warnings as they are issued by their field offices.

The Wireless RERC recommends that the FCC ensure that operating procedures and systems to inform persons with disabilities about emergencies and evacuation instructions are contained in state EAS Plans. These emergency management plans should provide specific guidance on the best methods to employ when assisting individuals with disabilities during

emergency evacuations. Emergency and public safety personnel knowledgeable about accommodating people with disabilities would contribute significantly to recovery versus loss of life. Chairs of the State Emergency Communications Committees (SECCs) and Local Emergency Communications Committees (LECCs) verified that establishing proper emergency plans ensured that emergency personnel were better equipped to follow the official steps during an emergency, including knowledge of what agencies and personnel to contact, available detailed activation and operation plans and how best to ensure safety of life and property.[12]

State agencies authorized to service the community of people with disabilities should be identified and listed in these state EAS Plans. The same agencies should be integrated into the LECCs and SECCs as part of overall emergency management planning. States and localities in the development phase of establishing their emergency management plans can refer to existing state EAS Plans submitted to and approved by the FCC as guidance on best practices for administering the delivery of emergency information to the general public and particularly to people with disabilities.

The affiliation of the broadcast networks with regional and state programmers will facilitate the distribution of state and local emergency messages under the new EAS. This arrangement corresponds with the former Emergency Broadcast System (EBS) in which 34 radio and television

[12] See www.fcc.gov website, Enforcement Bureau, EAS Rules and Regulations, and SECC and LECC 1990's EBS chair meetings.

broadcast stations, cable programmers, wire services and common carriers voluntarily participated by delivering emergency messages to the public. The Wireless RERC recommends that the FCC and FEMA jointly support a similar collaborative partnership amongst networks and programmers for the delivery of local alerts under the new EAS.

The Wireless RERC supports revisiting the legal, practical and performance standards criteria considered by the FCC in its assessment of EAS operations. Federal assistance is lacking for the SECCs and LECCs to develop workable state and local emergency communications plans. Resources for workshops, planning guidance, training of emergency management officials and personnel, testing, equipment, and post-disaster assessment are needed.

The SECC should be an appointed and integral party of any Federal advisory committee to act as an expert source for relevant state inputs into EAS planning and operations, and of course, the committee should maintain experts who are representatives from the disabled community. The annual EAS Summit sponsored by the National Alliance of State Broadcaster Associations (NASBA) is an excellent example of such an effort.

The Wireless RERC recommends that the FCC, FEMA and NWS partner to recommence the full implementation of the standards and procedures outlined in a previous 1981 Memorandum of Understanding

(MOU). That MOU was the cornerstone for the development of hundreds of state and local EBS plans.

The Wireless RERC suggests that the FCC consider, during the station license renewal process, the documented public service activities of a broadcast station, such as its participation in (1) emergency management planning and training exercises; (2) the SECC; (3) the transmission of emergency alerts in multiple languages; (4) the integration of people with disabilities in emergency management/communications planning, exercises and simulations; and (5) the ongoing education of station personnel responsible for emergency communications in emerging technologies capable of providing accessible emergency communications to people with disabilities. The FCC should grant license renewal credit to non-English speaking stations which provide emergency alerts in the language of their audience.

In closing, the Wireless RERC commends the FCC in its continual efforts to develop the next-generation EAS into a comprehensive national network comprised of innovative technologies capable of delivering emergency messages in multiple formats for receipt by the various devices used by both the general public, and more specifically, by people with disabilities.

Respectfully submitted,

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Dated this 3rd day of December 2007