



Rehabilitation Engineering Research Center on Mobile  
Wireless Technologies for Persons with Disabilities

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**VIA ECFS**

October 29, 2004

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

Re: *Review of the Emergency Alert System, EB Docket No. 04-296*

Dear Ms. Dortch:

Enclosed for filing in the above referenced proceeding pursuant to the Commission's August 12, 2004 Notice of Proposed Rulemaking, are Comments of the Rehabilitation Engineering Research Center on Mobile Wireless Technologies for Persons with Disabilities (Wireless RERC).

Should you have any questions concerning this filing, please do not hesitate to call me.

Respectfully submitted,

Helena Mitchell  
Director  
Rehabilitation Engineering Research Center on Mobile Wireless Technologies for Persons with Disabilities (Wireless RERC)

Enclosure

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

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In the Matter of ) )  
Notice of Proposed Rulemaking ) EB Docket No. 04-296  
Review of the Emergency Alert System ) )  
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Comments of the  
REHABILITATION ENGINEERING RESEARCH CENTER on Mobile Wireless Technologies  
for Persons with Disabilities (WIRELESS RERC)

The Rehabilitation Engineering Research Center on Mobile Wireless Technologies for Persons with Disabilities (Wireless RERC), hereby submits comments in response to the Commission’s Notice of Proposed Rulemaking<sup>1</sup> (NPRM) regarding review of the Emergency Alert System. The Wireless RERC<sup>2</sup> is a research center focusing on promoting universal access to mobile wireless technologies and exploring their innovative applications in addressing the needs of people with disabilities. The Principal Investigator and Director of the Wireless RERC was the former chief of EBS and the EAS modernization to ensure more efficient services and technologies were available to all citizens in times of emergency.

**INTRODUCTION**

This Notice of Proposed Rulemaking (NPRM) is especially significant given the advancements in technology, the role of the Emergency Alert System (EAS) in warning the American public, and the need to ensure that all citizens, including those that are most

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<sup>1</sup> *In the Matter of Review of the Emergency Alert System* EB Docket No. 04-296 (Released August 12, 2004).

<sup>2</sup> The Rehabilitation Engineering Research Center on Mobile Wireless Technologies for Persons with Disabilities (Wireless RERC) is supported by the National Institute on Disability and Rehabilitation Research of the U.S. Department of Education, grant # H133E010804. The opinions expressed in this filing are those of the grantee and do not necessarily reflect those of the U.S. Department of Education.

vulnerable, people with disabilities, are included in any plans to improve the emergency and alerting capabilities of any warning system. The Telecommunications Act of 1996 made provisions to provide persons with disabilities access to tools that would ensure they had access to emergency services. The Americans with Disabilities Act was created to “provide a clear and comprehensive mandate for the elimination of discrimination against individuals with disabilities,”<sup>3</sup> and to ensure “access to public services.”<sup>4</sup> Most recently, Executive Order 13347, required that there be appropriate support and coordination of efforts at various levels of the Federal government to ensure the safety and security of persons with disabilities during natural and manmade emergency situations.<sup>5</sup> It is therefore important for the Commission to be proactive in establishing and supporting emergency communications systems, and in the implementation of emergency preparedness plans to ensure there is effective and timely assistance for persons with disabilities.

## **DISCUSSION**

### Current Effectiveness and Efficiency of EAS in an Age When the Communications Landscape has Evolved<sup>6</sup>

EAS, like EBS in the current communications environment is outdated. This statement was demonstrated in the FCC EBS field tests conducted between 1991 and 1994. The FCC, FEMA, NOAA and the NWS held hearings and focus groups in representative western and eastern states using prototype equipment to examine economic, social and technical factors.<sup>7</sup> The tests confirmed that new generations of digital equipment were capable of digital messaging for

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<sup>3</sup> 42 U.S.C. Section 12101 (b) (1).

<sup>4</sup> 42 U.S.C. Section 12101 (a) (3).

<sup>5</sup> Executive Order: Individuals with Disabilities in Emergency Preparedness, signed by George W. Bush on July 22, 2004

<sup>6</sup> EAS NPRM at ¶ 20.

<sup>7</sup> See Amendment of Part 73, Subpart G, of the Commission’s Rules Regarding the Emergency Broadcasting System FO Docket 91-301 at II. C. Field tests.

emergency alerting regardless of the transmission link or operating environment. The tests further confirmed the significant possibilities of alerting using technologies such as subcarriers, pagers, computers and satellite systems. Deaf and hard-of-hearing persons and vision impaired and blind persons provided important feedback on the delivery of alert messages over various technologies and services. Tests also indicated that manufacturers could offer emergency communications for mobile uses and other configurations.

It has been documented at the FCC during the field tests that the capability to receive alerts over various technologies was and is possible. Persons with disabilities have a right to receive alerts in their most applicable and commonly used modality.

EAS as currently constituted does not take advantage of appropriate technological advances. The Wireless RERC agrees with the Media Security and Reliability Council (MSRC) and the Partnership for Public Warning (PPW) that EAS needs to be upgraded not replaced. Moreover the PPW makes a valid point that any system design should take advantage of the existing EAS infrastructure.<sup>8</sup> A main problem that needs to be resolved is communications with responsible federal, state and local public safety agencies due to channeling systems, frequency assignments and base equipment that is not compatible or which is complicated by proprietary systems and jurisdictional politics. Emergency alerts must be effective and allow all means of communications to be coordinated.

#### Federal/State Program Responsibility<sup>9</sup>

The Wireless RERC agrees with MSRC in the importance of a national, uniform, all-hazard risk communications warning process that would best meet the needs of the public,

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<sup>8</sup> EAS NPRB at ¶ 21.

<sup>9</sup> EAS NPRM at III.B.

including people with varied types of disabilities.<sup>10</sup> We believe it is important to keep the FCC, DHS, FEMA and NOAA involved in the implementation of EAS. We propose that for EAS to better serve the public, common parameters shared on common platforms would help increase the emergency communications capabilities of the FCC, FEMA, NOAA and the NWS during national, state and local emergency situations. With the establishment of the Interagency Coordinating Council on Emergency Preparedness and Individuals with Disabilities, the DHS must take the lead to ensure that there is accessibility to emergency warnings by persons with disabilities. We believe that each agency has a distinct and important role to contribute to the success of the Council and to an improved EAS, which would be -- DHS as the lead agency; FEMA to continue its important role in mitigation and recovery; NOAA to remain in charge of weather and natural disaster activations and implementation; and the FCC to ensure compliance and enforcement of the EAS rules and regulations.

The Wireless RERC supports efforts that would require EAS at the state and local level to be mandatory as part of an overall public emergency notification system. As the NPRM points out, the primary role of EAS is as a national public warning system.<sup>11</sup> At the state and local levels use of EAS as a warning system is encouraged, but remains voluntary. We would join with those parties that assert voluntary participation in EAS alerts impairs the credibility of the entire EAS.<sup>12</sup> EAS is currently used at the state and local level by conscientious entities to deliver public warnings, issue severe weather notifications, and communicate information to avert disasters and save lives. More recently it has been used for Amber alerts.

The Commission should adopt rules that require filing of state and/or local EAS plans and establish guidelines for the structure of plans.<sup>13</sup> State Emergency Communication

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<sup>10</sup> EAS NPRM at ¶ 22.

<sup>11</sup> EAS NPRM at ¶ 2-3.

<sup>12</sup> EAS NPRM at ¶ 24.

<sup>13</sup> EAS NPRM at ¶ 25.

Committees (SECCs) and Local Emergency Communication Committees (LECCs) have proven that they can develop workable plans that serve states and communities during the more than 500-1000 incidents a year when the system has been activated. SECCs and LECCs are the appropriate structure for generating the EAS plans. During the late 1980's and early 1990's the FCC brought together State and Local chairs to discuss ways to improve emergency alerts and emergency preparedness. During those discussions, it was noted that the best SECCs and LECCs had the more organized, detailed and current plans. The chairs verified that having proper plans ensured emergency personnel were better equipped to follow the official steps during an emergency, including knowledge of what agencies and personnel to contact, detailed activation and operation plans and how best to ensure safety of life and property.

Mandatory plans, along with periodic training, would help ensure that officials are better prepared during emergencies. We urge that these plans include knowledge on how best to assist individuals with disabilities during emergency evacuations whether in the workplace, institutions, housing developments or other locations. There should further be mandatory education of public safety, SECCs, LECCs, and emergency personnel to ensure there is an understanding of the accessibility concerns of people with disabilities. Periodic updates at least every other year should be required, as officers change, stations are bought and sold, technologies are converged, and emerging technologies are adopted.

#### EAS Structure Issues<sup>14</sup>

The Wireless RERC suggests that mandatory participation in EAS will help resolve some of the questions about structure, especially those concerns related to unattended stations

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<sup>14</sup> EAS NPRM at III.C.

forwarding only select EAS codes.<sup>15</sup> In today's environment, more codes are needed to make alerts more efficient.<sup>16</sup> Furthermore, comprehensive state and local implementation plans can identify weaknesses in the relay chain and address these in the most effective and efficient manner. We encourage the Commission to foster expansion of alert transmission over new technologies, including satellite services and the Internet. We further recommend that the FCC replicate earlier field tests in cooperation with industry, public safety agencies, organizations, and users with disabilities to gain a better understanding of how today, persons with disabilities obtain emergency communications and alerts.

We support the Common Alerting Protocol (CAP) as one technical solution for simultaneously transmitting emergency alerts through different communications networks. CAP has been adopted as a standard by the Organization for the Advancement of Structured Information Standards (OASIS). With CAP, the reach of EAS alerts can be expanded beyond broadcast media to alternative public alert mechanisms which is often better suited for people with disabilities. Any method to increase the wider distribution of EAS messages will be an improvement to the system, especially for persons with disabilities.

#### Expanding EAS Requirements to Other Services<sup>17</sup>

The Wireless RERC supports the adoption of rules that would extend to other digital broadcast media. Digital would increase efficiency and provide access to other sources. For example, interoperability features could reach cellular, PCS, satellite and other technologies that might emerge. There are some entities that are already providing digital emergency services.

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<sup>15</sup> We defer to other commenters the questions about requiring equipment upgrades for new EAS codes.

<sup>16</sup> See Wireless RERC discussion on § 79.2 and EAS Rules Part 11.

<sup>17</sup> EAS NPRM at III.D.

And as the field test in the early 1990's verified, the cost to develop the appropriate chip was negligible for manufacturers.

Expansion of EAS to other digital broadcasting methods<sup>18</sup> is important to meet the needs of persons with disabilities, as well as all Americans. National level alerts should be required on all broadcast media, analog or digital, terrestrial, cable, or satellite. On systems where implementation of state and local alerts is technically straightforward, such as digital television (DTV), alerts should be required. We encourage the FCC to study methods to support state and local emergency messages on satellite based systems, such as DBS and DARS, and to mandate this if a reasonable technical approach can be developed. Expanding EAS to satellite radio services may be crucial in reaching out to people with vision disabilities, for whom radio is especially important. As satellite radio expands in service across the country, more and more citizens will be out of touch with traditional EAS, especially in rural or underserved areas.

The Wireless RERC supports efforts that would require DTV broadcasters to transmit EAS messages on all program streams.<sup>19</sup> EAS messages are too important to risk missing because a person was tuned to the wrong channel. Requiring IBOC DAB broadcasters to transmit EAS messages on both the analog and digital signal makes sense for the same reason. The FCC should consider requiring transmission of the EAS message text on the RBDS signal so that a person with a hearing impairment could see the message on a screen.

#### Alternate Public Alert and Warning Mechanisms

During the 1990's field tests, the results showed that a public warning system was capable of reaching people involved in a variety of different activities ranging from listening to car radios, home television and radio stations received over cable, stereo systems, computers and

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<sup>18</sup> EAS NPRM at ¶ 29.

<sup>19</sup> EAS NPRM at ¶ 30.

compact disc players. The prototype warning systems were able to reach everyone, regardless of their communications device or whether that device was turned on or off. These earlier tests prove that if public alerting could be done a decade ago, the possibilities for using such devices are even more critical today as Americans increasingly utilize their computers, personal digital assistants, cable, and car radios to receive information. We remind the FCC that the Consumer Electronics Association Public Alert Receiver and the NOAA Weather Radio have automatic turn on and off features. We would strongly support any FCC efforts to require this feature be added to new devices in the event of a serious emergency transmission. As noted earlier, the cost to manufacturer the chip was negligible.

The Wireless RERC urges that expansion of EAS to other types of devices is essential to provide emergency information to persons with disabilities. Unfortunately, the Commission's previous action mandating a digital standard<sup>20</sup> has not yet increased public alert mechanisms to their full potential. In particular, the Wireless RERC is interested in reaching out to the more than 169 million subscribers to wireless services in the United States.<sup>21</sup> The deaf community has become significant adopters of 2-way text pagers such as the Blackberry. Blind consumers can now purchase cell phones that read SMS messages to them. Increased usage of these devices is also noted among the general public and therefore the Commission needs to develop a way to quickly send EAS messages to these sorts of devices, which in some cases are even more critical information tools for the hearing and visually impaired.

Broadcasting or multicasting of text messages to wireless devices, reverse 911 calls, or other systems could be used to notify users of wireless devices, hopefully through an opt-in system where a user could specify their location via the FIPS SAME code. This would not only increase access to emergency information to persons with disabilities but to all consumers using

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<sup>20</sup> *First Report and Order*, 10 FCC Rcd.

<sup>21</sup> CTIA Semi-Annual Wireless Industry Survey, June 2004.

wireless devices. Expanding EAS to include cellular wireless networks would dramatically increase the effectiveness of EAS as a public alert and warning system. We believe the Commission would be able to establish rules and regulations to effectively balance the public safety and consumer interests at stake. In addition, careful planning must be undertaken to ensure that this vital functionality does not interfere with emergency uses of the limited spectrum available for wireless communications.

We support the expansion of EAS to include alerts via wireless data networks. While cellular network coverage is increasing dramatically, many locations are more appropriately served by Wi-Fi networks, including underground locations such as subway systems and the interiors of many buildings. We encourage the Commission to establish mechanisms to enable users with wireless laptops to be alerted of emergency information transmitted through EAS. Users could register for the service by providing their location (FIPS SAME code), and relevant alerts could be directed via the Internet to the user. Public safety agency employees would be allowed to connect to the network on their laptops and handheld computers for public safety uses.

#### Public Warning and Alerts for Individuals with Disabilities<sup>22</sup>

The Wireless RERC recognizes the efforts of the FCC to ensure public warnings and alerts are provided to people with disabilities. However, the FCC's commitment to serving the needs of persons with disabilities through EAS needs to be strongly enforced through the issuing of increased base forfeiture fines on entities that do not adhere to the EAS rules and regulations. The Wireless RERC hopes that any changes to EAS will only increase the ability of persons with disabilities to receive emergency information in a timely manner. Although newer technologies

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<sup>22</sup> EAS NPRM at III.F.

are evolving we support the continued need for enforcement of existing mandates to provide information on televisions in both audio and video form.

Section 79.2 and EAS rules Part 11<sup>23</sup>

Section 79.2 and EAS rules need to be more closely aligned to ensure that there are no discrepancies in providing emergency information to blind and low vision, deaf, hard of hearing individuals and a growing senior population. For example, Section 79.2 specifies particular triggering events and methods for emergency transmittal which is separate from those required by EAS. We recommend that EAS incorporate Section 79.2 that specifies particular triggering events and methods for emergency transmittal and expand to include alternative media and reduce the number of exemptions of programs and providers. Section 79.1, closed captioning of video programming needs to be revisited because there are presently thirteen criteria by which programs and providers can be exempt. Having this number of exemptions, has the potential to weaken any system that might be a bridge to emergency communications, particularly by persons with disabilities.

We recommend strengthening of Part 11.11 (e) regarding voluntary participation, and further comment that it should be made mandatory if it is considered a primary or secondary alerting level. Part 11.31 (d) and (e) should be expanded to include SECC and LECC chairs in small communities or a local emergency coordinator i.e., DHS officer. Under Part 11.47 regarding optional use of other communication methods and systems (a) subcarrier use should be mandatory as that is often the primary method that vision impaired individuals use, and (b) other technologies and public safety providers should be more clearly defined. We recommend expanding Part 11.51 (d) and (g) regarding EAS code via visual messages and attention signal

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<sup>23</sup> EAS NPRM at ¶ 38.

transmission to make it mandatory if the event is deemed high alert. Under Part 11.54, regarding EAS operation during National level alerts, (b) (5 and 6) needs to have instructions expanded to provide more detailed information such as that provided under Section 73.1250. Within Part 11.55 (c) (4) the issue of creating accessibility of programming should be examined and revised accordingly. Under 79.2 (a) (2) “manmade actions” need to be added to the end of the sentence.

#### Benefits of Digital and Alternative Technologies for Persons with Disabilities<sup>24</sup>

While the focus of the NPRM is generally on digital broadcasting, the Wireless RERC believes that wireless devices such as cellphones and other digital communications devices hold the potential to increase the ability of the EAS to reach the widest possible target audience. We suggest that it would be prudent to craft policy approaches that increase the diffusion of these devices to all users, especially people with disabilities. As the Commission considers expanding EAS to other technologies in an increasingly wireless world, it needs to ensure that people with hearing and sight disabilities can have access to emergency information via these devices.

While a range of possibilities exist to increase the potential access to digital and mobile wireless devices, the Wireless RERC has identified three key approaches -- policy/regulatory interventions, market mechanisms, and outreach/awareness approaches to achieving this objective. (1) We support the use of policy and regulatory interventions to encourage the development of new devices and reinforce the importance of technologies being flexible and useable by all people. For instance, expanded applicability of Section 508 would support the development and procurement of accessible information technology in all public entities, including state, county and local governments and schools. (2) In parallel, markets can be encouraged to deliver additional innovative devices. Accessible wireless telecommunications

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<sup>24</sup> EAS NPRM at ¶ 39.

technologies have long been thought of as a very specific product designed for a very small fraction of the population – namely, those persons who have disabilities. Millions of U.S. residents who had previously attributed their difficulty or inability to perform certain tasks to minor physical deficiencies may have some degree of disability under definitions supported by the Census Bureau. Further, the aging of the American population will drive the increase in the total number of people in the United States with disabilities. Not only are there more potential disabled consumers than previously thought, but manufacturers must also realize that accessible technologies can also benefit the non-disabled public at large. (3) Lastly, because of the inefficient dissemination of information regarding available accessible wireless telecommunications technologies, products and methodologies continue to be a barrier to the effective delivery, usage and understanding of such aides. Outreach and awareness are vital to successful utilization. Increased efforts at education and dissemination to unknowledgeable, potential beneficiaries of wireless telecommunications technologies, products and methodologies could increase the reach of the EAS.

## OTHER ISSUES

### Training

If mandatory plans are required then periodic training must also be required to help ensure that officials are better prepared during emergencies. The Wireless RERC recommends that there should be mandatory education and training of public safety, SECCs, LECCs, and emergency personnel on best practices for assisting individuals with varied disabilities during emergency evacuations whether in the workplace, institutions, housing developments or other locations. In addition, emergency personnel need knowledge and understanding of the effective and varied communications systems that can reach and improve the exit time of deaf, hard of hearing, blind and low vision individuals during emergencies. Periodic updates at least every

other year should be required to ensure that new developments are reflected in any training or emergency communications operational plans.

Some initial research indicates that the general public is not always sure about what an EAS alert means.<sup>25</sup> Persons with disabilities face additional barriers during times of emergency such as evacuation routes that can accommodate motorized wheelchairs and visual and audible alerts that clearly describe the action needed to get to safety. Education bulletins and regional workshops that bring together at risk persons would help to reduce confusion, increase confidence in emergency personnel and allow both communities to discuss realistic rapid response measures to help save lives.

Capabilities and resources of organizations can be leveraged to facilitate research, business and academic collaboration on important training and education modules. The Commission should continue to sponsor public hearings and summits on emergency preparedness issues and people with disabilities. For example, a hearing to solicit input from users and manufacturers on optimal device configurations for turn on and off features that would not impose undue burdens on the manufacturers or increase new device costs for the consumer. Marketing the capabilities and benefits of accessible wireless technologies has been problematic for both producers and users alike, yet critical for diffusion of these technologies.

We encourage the DHS's Interagency Coordinating Council on Emergency Preparedness and Individuals with Disabilities, including the FCC, to explore and create ways in which Federal investment in product research and development, in conjunction with the development of voluntary standards can help address problems of public safety technology incompatibility. A policy and regulatory agenda placing an emphasis on development of new applications of

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<sup>25</sup> Informal sampling of graduate students in several communications courses.

telecommunications technologies to improve EAS offers the potential for increased protection and safety for people with disabilities.

### Enforcement

The base amount of forfeiture should be increased. The funds could be used to offset the small operator costs to install EAS equipment. We do not believe that any operator should be exempt from EAS. Exemption would put the operator's specific audience at risk if an EAS alert was issued and the member of the audience had no other mechanism for receiving notification.

In closing, the Wireless RERC commends the FCC for undertaking this important review of EAS, in particular public warning and the benefits of technologies to better assist persons with disabilities during emergencies. By increasing mandatory participation in EAS for newer technologies; more closely aligning Section 79.2 and Part 11 of the EAS rules; more strictly enforcing fines for non compliance; and addressing the importance of education and training, EAS can provide important life saving information to safeguard the lives of persons with disabilities, as well as all Americans.

Respectfully submitted,

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*In consultation with*

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(Helena Mitchell is the former FCC Chief of the Emergency Broadcast System and The Emergency Alert System)

Dated this 29th day of October, 2004