

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

In the Matter of	)	
Public Safety and Homeland Security	)	
Bureau Seeks Comment on Ways to	)	PS Docket 16-32
Facilitate Earthquake-Related	)	
Emergency Alerts	)	
	)	
	)	

**REPLY COMMENTS OF THE ALLIANCE FOR  
TELECOMMUNICATIONS INDUSTRY SOLUTIONS**

The Alliance for Telecommunications Industry Solutions (ATIS), on behalf of its Wireless Technologies and Systems Committee (WTSC), hereby submits these reply comments in response to the *Public Notice*, released April 8, 2016, in the above-referenced docket. In the *Public Notice*, the Federal Communications Commission (Commission) seeks input to assist in the preparation of a report to Congress on regulatory and technical issues associated with the development of an alerting system to provide earthquake-related notifications to the public. Input is specifically sought on technical aspects associated with the delivery of earthquake early warning (EEW) notifications using the Integrated Public Alert and Warning System (IPAWS) and its associated alerting systems, as well as other alerting schemes. ATIS is pleased to have the opportunity to provide input on the industry’s on-going technical work related to the development of an EEW system (EEWS).

## **I. Background**

ATIS is a global standards development and technical planning organization that leads, develops and promotes worldwide technical and operations standards for information, entertainment, and communications technologies. ATIS' diverse membership includes key stakeholders from the Information and Communications Technologies (ICT) industry – wireless and wireline service providers, equipment manufacturers, broadband providers, software developers, consumer electronics companies, public safety agencies, and internet service providers. ATIS is also the North American Organizational Partner of the Third Generation Partnership Project (3GPP), the global collaborative effort that has developed the Long Term Evolution (LTE) and LTE-Advanced wireless specifications. Nearly 600 industry subject matter experts work collaboratively in ATIS' open industry committees and incubator solutions programs.

ATIS WTSC coordinates, develops and recommends standards and technical reports relating to wireless/mobile telecommunications networks. With active participation from key wireless service providers and manufacturers, WTSC is the primary industry committee within ATIS that focuses on next generation wireless issues, including those wireless issues related to the implementations of LTE in the U.S. WTSC is also the lead on multiple joint industry standards projects, including work on short messaging service (SMS)/multimedia messaging service (MMS) to 9-1-1, coexistence and interference issues, Wireless Emergency Alerts (WEA), and public safety mission critical Push to Talk (PTT) voice interoperation between Land Mobile Radio (LMR) and LTE systems. ATIS WTSC has also been a major developer of standards and specifications related to WEA and are currently examining the technical feasibility of the standardization, development and deployment of a cellular EEWS broadcast capability.

## II. Significant Work Is Underway to Examine Technical Issues Associated with the Standardization, Development and Deployment of EEWS

In the *Public Notice*, the FCC asks questions about the technical requirements for EEWS.<sup>1</sup> ATIS notes that WTSC has been examining technical issues related to the development of an EEWS for some time and in July 2015 published its *Feasibility Study on Earthquake Early Warning System (ATIS EEWS Feasibility Study)*.<sup>2</sup> This study evaluated the feasibility of commercial LTE cellular networks in supporting public earthquake notifications as part of the proposed California EEWS. Among other things, this feasibility study concluded that a cellular wireless broadcast EEWS is a viable concept for the distribution of time sensitive EEW notifications using capabilities on the LTE broadcast channel.<sup>3</sup> This concept has the potential to quickly reach millions of users in an inherently geo-targeted fashion.

The study further concluded that, because deployed cellular networks and wireless phones do not support broadcast-based EEW capabilities, an architecture and technical solution must be developed, standardized, tested, and deployed to support EEW. It is estimated that, once the deployment plan and budget for the sensor network and automated decision making framework of the EEW system has been approved, it will take: (a) at least three to four years to complete standards and fully deploy EEW capabilities in wireless networks, and begin introducing new EEW-capable wireless phones; and (b) approximately five to seven years from the date that the recommendations in the report are implemented before a substantial number of cellular network users will have EEW capabilities in their devices.<sup>4</sup>

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<sup>1</sup> *Public Notice* at pp. 5-6.

<sup>2</sup> *ATIS Feasibility Study on Earthquake Early Warning System (ATIS-0700020)*. This study is available on a complimentary basis from the ATIS Document Center at: <https://www.atis.org/docstore/default.aspx>.

<sup>3</sup> *ATIS EEWS Feasibility Study* at p. 16-18.

<sup>4</sup> *ATIS EEWS Feasibility Study* at p. 21.

Representatives from ATIS and its WTSC also met in February 2016 with representatives from the California Office of Emergency Services (CalOES) and Department of Conservation (CalDoC), California Institute of Technology (Caltech), the U.S. Geological Survey (USGS) and University of California, Berkley, to discuss EEWS technical and operational requirements. During the meeting, ATIS WTSC representatives provided an overview of the assumptions and recommendations from the *ATIS EEWS Feasibility Study* and discussed the technical requirements for an EEWS.

Furthermore, ATIS WTSC has initiated work to collaborate with CalOES, Caltech, USGS, and other EEWS stakeholders on the development of a North American requirements and high-level architecture specification for an LTE-based EEWS. This effort is expected to address: use cases; end-to-end system requirements for dissemination of EEW notifications over LTE; end-to-end system architecture; mobile device behavior requirements; security considerations; and analysis of existing standards to determine if there are gaps that should be addressed. This deliverable is expected to be published in early 2017.

ATIS acknowledges that the completion of this EEWS work will extend beyond the statutory deadline of September 18, 2016, for the Commission to provide its report to Congress on the regulatory and statutory framework for the delivery of EEW notifications using IPAWS. While diligent efforts will be made to expedite this work, additional time is necessary to collaborate with relevant stakeholders to understand EEWS requirements, examine existing and future platforms/technologies and the limitations thereof, and comprehensively evaluate end-to-end technical issues. ATIS respectfully requests that the Commission allow the industry to continue this effective public-private collaborative effort and not to develop regulatory mandates

or requirements at this time. ATIS will update the Commission on its EEWS work as it progresses.

### **III. WEA Is Not Capable of Delivering Messages Within Three Seconds**

In the *Public Notice*, the Commission asks about the use of IPAWS for EEW notifications. The *ATIS EEWS Feasibility Study* evaluated a number of technologies, including the WEA component of IPAWS, as well as legacy (i.e., 2G, 3G) cellular technology, auto-dialer systems, SMS and over-the-top smartphone apps, and concluded that none of these technologies could meet the anticipated technical requirements for EEWS.<sup>5</sup> WEA, for example, supports the delivery of notifications within minutes but is not designed or capable of distributing notifications within the much shorter (i.e., seconds-long) requirement for timely EEW notifications. ATIS' conclusion on this matter is supported by several commenters.<sup>6</sup>

While ATIS believes that WEA is not a viable EEWS option, ATIS and its members welcome ongoing collaboration with USGS to understand the limitations and latencies in the IPAWS system.<sup>7</sup>

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<sup>5</sup> *ATIS EEWS Feasibility Study* at p. 18-21.

<sup>6</sup> See Comments of Kybernetix LLC at p. 2., Comments of CTIA at p. 7, Comments of AT&T Services, Inc. at p. 3.

<sup>7</sup> *ATIS EEWS Feasibility Study* at p. 22.

#### **IV. Alternative EEWS Technologies Warrant Additional Study**

ATIS notes that some commenters have proposed alternative technologies beyond IPAWS and/or LTE cellular broadcast technologies to support the EEWS. Kybernetix LLC, for example, raised the possibility of including television tuner cards mounted on cell towers to receive alerts from an Advanced Television Systems Committee (ATSC) 3.0 broadcast.<sup>8</sup> ATIS believes that these proposals warrant additional study to determine the technical feasibility of using these alternative systems to meet the requirements for the delivery of timely EEW notifications. ATIS further believes that, regardless of which underlying technology(ies) or platform(s) the EEWS uses, it is vital that the EEWS be based on consensus-based, industry standards and not on proprietary systems.

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<sup>8</sup> Comments of Kybernetix at p. 2.

## VI. Conclusion

As explained in these comments, there is significant work within the industry to evaluate the technical requirements and architecture associated with the development and deployment of EEWS. This work is a collaborative effort among key stakeholders, including wireless service providers, vendors, state and federal agencies and universities. ATIS respectfully requests that the Commission allow the industry to continue this effective public-private collaborative effort and not to develop regulatory mandates or requirements at this time.

Respectfully Submitted,



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June 8, 2016