

**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 No. 16-32
Facilitate Earthquake-Related)	
Emergency Alerts)	

COMMENTS OF AT&T

AT&T Services Inc. (“AT&T”) hereby submits the following comments in response to the Federal Communications Commission’s (“Commission”) Public Notice¹ in the proceeding captioned above. The Notice seeks comment to help the Commission develop a report to Congress that describes the regulatory and statutory framework for delivery of earthquake-related emergency alerts using the Integrated Public Alert and Warning System (IPAWS).² More specifically, the Commission asks for comment

[O]n technical aspects of IPAWS and its associated alerting systems, as well as other alerting schemes with which the Commission has not previously been involved, in order to build a robust record on potential models for delivering earthquake early warning (EEW) to the entire public in fewer than three seconds.³

AT&T has an extensive history of involvement in the development of the IPAWS and the Wireless Emergency Alert (“WEA”) system. AT&T participated in Commission proceedings that created the regulatory environment for these systems and has taken a leadership role in the long-running and on-going industry standard-setting process that gave birth to these systems. AT&T

¹ Public Safety and Homeland Security Bureau Seeks Comment on Ways to Facilitate Earthquake-Related Emergency Alerts, DA 16-380 (April 8, 2016) (“Notice”).

² Congress requested the report in the Consolidated Appropriations Act, 2016, Pub. L. No. 114-113, 129 Stat 2242 (2015) (2016 Appropriations Act).

³ Notice, p. 1.

also has extensive experience operating wireless networks over multiple services and air interfaces, including second generation Global System for Mobile Communications (“GSM”), third generation Universal Mobile Telecommunications System (“UMTS”), and fourth generation Long-Term Evolution (“LTE”). This extensive experience and knowledge leads AT&T to conclude that the IPAWS and WEA system have no role to play in an EEW system requiring a less than three-second performance metric.⁴

AT&T’s conclusions are supported by a 2015 feasibility study performed by the Alliance for Telecommunications Industry Solutions (“ATIS”) “to evaluate techniques to distribute Early Earthquake Warning (EEW) notifications to the general public through cell phones via the cellular network as a way to complement the California Integrated Seismic Network (CISM).”⁵ The ATIS Study reviewed existing EEW systems in other countries, including Japan, whose Earthquake and Tsunami Warning Service (ETWS) is the only existing system to integrate mass EEW notification distribution through commercial cellular networks.⁶ In that study, ATIS concluded that the delivery of Japanese EEW alerts is subject to congestion delays in the wireless networks and that system latency can result in the alerts arriving too late, especially in the epicenter of the quake.⁷

⁴ This is not to say that the WEA system and IPAWS do not have a role to play *post-earthquake*. For example, a recent FCC Communications Security, Reliability, and Interoperability Committee (CSRIC) report recommended that WEA may be used to provide Emergency Government Information related to an imminent threat alert, such as shelter locations. See, http://transition.fcc.gov/pshs/advisory/csric4/CSRIC_CMAS_GeoTarget_Msg_Content_Msg_Len_Rpt_Final.pdf. Rather, the point is that these existing systems work differently from an EEW alert system and are unsuitable for the transmission of earthquake alerts where speed is of the essence.

⁵ *Feasibility Study for Earthquake Early Warning System*, ATIS-0700020 (2015) (“ATIS Study”), p. 1.

⁶ *Id.* *Survey of Global Earthquake Warning Solutions*, Section 5, p. 10 and following.

⁷ *Ibid.* The Japanese system sends two messages; an initial, short message when a potential earthquake is detected and a second longer message with more information after the quake has struck. The EEW alert under discussion in the Notice would transmit more information more quickly when a potential quake is detected.

ATIS reviewed several existing means by which an EEW alert could be sent, including short message service (SMS), over-the-top smartphone applications, mass notification autodialer systems, and even the IPAWS/EAS/WEA system itself. The ATIS study determined that none could meet the technical requirements demanded.⁸ More specifically, as to the WEA system, ATIS opined that:

Wireless Emergency Alerts (WEA) is designed to provide imminent threat alerts, however the WEA system is not designed for or capable of distributing time-sensitive EEW notifications. An EEW system must support a time-sensitive delivery requirement that is beyond the ability of WEA, where delivery time may be measured in minutes. WEA is appropriate for less-time sensitive alerts providing authorized alerting authorities a means to provide information to citizens, for example in the aftermath of an earthquake. The U.S. Geological Survey (USGS) and ATIS must collaborate to understand the limitations and latencies in the IPAWS/WEA system.⁹

The reasons for the inability of these services to satisfy the technical standards, especially the time-sensitive delivery requirement, are familiar to those who have participated in prior Commission proceedings seeking to augment WEA's capabilities — capacity limitations of existing and legacy wireless networks, latency inherent in the IPAWS and WEA system, and technical limitations in existing handsets and networks.¹⁰

Importantly, ATIS did find that North American standards can be specified to enable LTE cellular networks to broadcast EEW notifications though it did not address the feasibility of three second delivery.¹¹ The point is not that an EEW system cannot be put in place; rather, it is simply that there is no magic bullet that will permit the *immediate* integration of an EEW system into the existing IPAWS/WEA system. New handset and network architecture and solutions must be

⁸ ATIS Study, Section 9 at p. 18 and following.

⁹ ATIS Study at p. 21.

¹⁰ See, e.g., *Improving Wireless Emergency Alerts and Community-Initiated Alerting*, Notice of Proposed Rulemaking, PS Docket No. 15-91, 30 FCC Rcd 1378 (2015).

¹¹ The limitations inherent in 3G and 2G networks make them infeasible for supporting EEW notifications. ATIS Study at p. 2.

standardized, planned, developed, tested, and deployed prior to supporting EEW. These steps involve the coordinated efforts of many state and federal agencies, who must obtain funding for the sensor networks and other infrastructure, scores of carriers and manufacturers, millions of customers, and the deployment of billions of dollars of investment.

It is estimated that it will take about 3-4 years to fully deploy EEW capabilities in wireless networks and begin introducing cell phones which support EEW alerting. This duration starts once the deployment plan and budget for the sensor network and automated decision making framework of the EEW system has been approved. Using the approach of normal market driven cell phone replacement cycles for providing the penetration of EEW capable cell phones among consumers, it estimated that it will take an additional 2-3 years for EEW capable cell phones to represent 80% or more of all cell phones in use.¹²

Realistically, the country is, at a minimum, five to seven years away from an installed EEW network. AT&T believes that the Commission's report to Congress should candidly describe the many hurdles — technical, financial, and political — that have to be overcome to deploy an earthquake alert network in a timely manner. The FCC and Congress can also render valuable service to this project by helping to clear regulatory and bureaucratic roadblocks to the completion of the project and by fostering an environment of cooperation among the diverse stakeholders involved.

¹² *Id.* at p. 21.

CONCLUSION

For the forgoing reasons, AT&T urges the Commission to report to Congress that the IPAWS/WEA systems cannot be adopted to implement an Earthquake Early Warning (EEW) system; the Commission should also describe to Congress the technical, financial, and political problems that have to be overcome to deploy an earthquake alert network in a timely manner. Finally, the Commission should recommend to Congress that the ATIS Study as a basis for moving forward with an Early Earthquake Warning system.

Respectfully submitted.

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