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July 11, 2016

Ex Parte

Ms. Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

**Re: Ways to Facilitate Earthquake-Related Emergency Alerts
PS Docket No. 16-32**

Dear Ms. Dortch:

On July 7, 2016, Nneka Chiazor and the undersigned of Verizon met via teleconference with the following staff of the Commission's Public Safety and Homeland Security Bureau: Rasoul Safavian; Steven Carpenter; and David Munson. The attendees discussed several of staff's questions on issues relating to development and deployment of an earthquake early warning (EEW) system.

EEW Message Delivery and the Wireless Emergency Alert (WEA) System. Verizon agrees with CTIA and others that three-second latency is not currently achievable and that the WEA system is not the appropriate platform to deliver EEW alerts.¹ Verizon currently anticipates retiring its legacy CDMA/1X network by the end of 2019,² so any EEW system would necessarily be limited to the company's LTE network. LTE network components used to deliver WEAs are connected through IP-enabled networks and protocols rather than the public Internet to enable rapid delivery in most cases. Delivery speeds at any given time, however, are necessarily affected by overall network performance and capacity constraints. And transmitting messages from an eNodeB (cell site) to a handset is necessarily affected by the RF environment, and by the cell site's need to communicate with handsets in the area to set up the broadcast *prior to actually broadcasting* so the handset can receive the alert. Finally, service providers can only speak to their own transmission capabilities; additional time would lapse between the detection of an earthquake by a designated government agency or other entity and the delivery of the information to the wireless provider's network.

¹ See CTIA Comments, PS Docket No. 16-32, at 4-9 (May 9, 2016); AT&T Comments, PS Docket No. 16-32, at 3-4 (May 9, 2016); ATIS Reply Comments, PS Docket No. 16-32, at 5.

² See Verizon, *Ex Parte* Letter in PS Docket No. 15-91, at 2 (April 7, 2016).

EEW System Implementation. The 5-7 year implementation period described in ATIS’s 2015 Feasibility Study for an alternate stand-alone end-to-end EEW system is a reasonable estimate at this time. That period appropriately accounts for the need for additional standards and development work necessary for service providers, handset manufacturers, and the government agencies with whom industry would need to partner in order to implement an EEW system, testing at the cell sector level before an EEW system could be reliably launched and sale of EEW-capable handsets to consumers.³ Verizon notes that many issues associated with implementing such a system in the United States, including the use of control channels (i.e., System Information Blocks or “SIBs”), the appropriate length and content for EEW messages,⁴ and the appropriate timing settings at the cell site for cell broadcast transmission for EEW messages, would be appropriate subjects for standards development. In that regard, ATIS itself recently initiated such an effort as a follow-up to its 2015 Feasibility Study.⁵ It is through that process, and subsequent discussions with third party vendors, that service providers would be able to determine, for example, whether a new EEW system could be reliably and efficiently implemented through an additional software load at the Broadcast Message Center, a stand-alone platform serving earthquake-prone regions, or some other method.

Existing 3GPP Standards. As the 2015 Feasibility Study explained, release 8 of the 3GPP standard for Cell Broadcast Service included the Earthquake and Tsunami Warning System (ETWS) protocols for Japan.⁶ The ETWS method dedicates SIB 10 and 11 for primary and secondary notifications, respectively, and the ATIS 2015 Feasibility Study indicates that it achieves a latency threshold in Japan that is lower than the applicable 3GPP and ATIS standard for WEAs in the United States (although significantly higher than 3 seconds).⁷ But the ETWS transmission method has not been incorporated into US standards, networks or devices. While there are WEA event codes for earthquakes and tsunamis, SIB 12 is used for those alerts (like all WEA messages) and U.S. service providers do not use SIB 10 or 11 for EEW purposes.

³ See ATIS, *Feasibility Study for Earthquake Early Warning System*, ATIS-0700020 (July 2015) (2015 Feasibility Study); AT&T Comments at 4.

⁴ Staff inquired whether the “time stamp” appearing on an alert at the handset could be configured to show the second as well as the hour and minute. That information would probably be technically feasible, but information concerning the burden, cost and timing of that feature should be obtained from handset manufacturers.

⁵ See ATIS Press Release, *ATIS Advances Earthquake Early Warning System* (June 30, 2016), at <http://campaign.r20.constantcontact.com/render?m=1119303485487&ca=c440bd74-802f-4bb0-8c95-b9f02896f529>.

⁶ ATIS 2015 Feasibility Study at 24.

⁷ See *id.* at 11-12, 24-25.

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This letter is submitted in accordance with Section 1.1206(b) of the Commission's rules, 47 C.F.R. § 1.1206(b). Please contact the undersigned if there are questions concerning this filing.

Sincerely,

A handwritten signature in blue ink that reads "Robert Morse". The signature is written in a cursive style with a large initial "R" and "M".

cc: Rasoul Safavian
Steven Carpenter
David Munson