PUBLIC NOTICE

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PUBLIC SAFETY AND HOMELAND SECURITY BUREAU SEEKS COMMENT ON WAYS TO FACILITATE EARTHQUAKE-RELATED EMERGENCY ALERTS

PS Docket No. 16-32

COMMENTS DUE: May 9, 2016
REPLY COMMENTS DUE: Jun. 8, 2016

I. INTRODUCTION

On December 18, 2015, Congress enacted the Consolidated Appropriations Act of 2016,[1] which directs the Federal Communications Commission (Commission) to submit a report within nine months of enactment (*i.e.*, by September 18, 2016), that details the regulatory and statutory framework for delivery of earthquake-related emergency alerts using the Integrated Public Alert and Warning System (IPAWS). Specifically, the Act states:

> The FCC shall submit a report to Congress within 9 months of enactment of this act detailing all regulatory and statutory changes that would be necessary to ensure that earthquake-related emergency alerts using the Integrated Public Alert and Warning System and other associated alerting systems can be delivered to and received by the public in fewer than 3 seconds. The report shall include an analysis of signals, cell phone protocols, geographic targeting, and limitations on message length and content, as well as similar parameters associated with the dissemination of alerts by non-wireless providers.[2]

To assist the Commission in developing its report to Congress, particularly given the comprehensive and technical scope of the information requested, the Public Safety and Homeland Security Bureau seeks comment on the issues discussed below. In particular, we seek comment on 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]

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[1] Consolidated Appropriations Act, 2016, Pub. L. No. 114-113, 129 Stat 2242 (2015) (2016 Appropriations Act).

[2] *See* S. Rept. No. 114-097 (2015), included in the 2016 Appropriations Act by reference in the Explanatory Statement Submitted by Mr. Rogers of Kentucky, Chairman of the House Committee on Appropriations Regarding House Amendment No, 1 to the Senate Amendment on H.R. 2029, Consolidated Appropriations Act, 2016. *See* Congressional Record, 114th Congress, First Session, Issue: Vol. 161, No. 184, Daily Edition, December 17, 2015 (*Explanatory Statement*). For the purposes of our discussion below, we refer to an earthquake-related emergency alert that can be delivered to the public within seconds as an "earthquake early warning" or "EEW."

[3] To the extent commenters have provided information that they believe is responsive to the questions presented here in comments to other ongoing Commission proceedings – for example, as to potential improvements to alerting

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II. FRAMEWORK FOR THE DELIVERY OF EARTHQUAKE-RELATED ALERTS USING THE INTEGRATED PUBLIC ALERT AND WARNING SYSTEM

A. The Integrated Public Alert and Warning System (IPAWS)

The IPAWS is the nation's federal alert and warning system and is administered by FEMA.[4] IPAWS receives alerts from state, local, tribal and territorial alerting entities and aggregates them for dissemination over the Wireless Emergency Alert (WEA) system and the Emergency Alert System (EAS), the primary IPAWS alerting platforms and other alert and warning communications mediums.[5] WEA allows authorized federal, state and local government entities to send geographically targeted Presidential, Imminent Threat, and AMBER Alerts to the WEA-capable mobile devices of participating CMS providers' subscribers.[6] The EAS is a national public warning system through which EAS Participants deliver alert and warning messages from authorized entities to their subscribers to warn them of impending emergencies and dangers to life and property.[7] *Figure 1*, below, depicts this IPAWS alerting architecture.

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mechanisms – commenters are encouraged to incorporate those and other relevant filings into this docket by reference. *See, e.g., Improving Wireless Emergency Alerts and Community-initiated Alerting*, Notice of Proposed Rulemaking, 30 FCC Rcd 13781 (2015) (*WEA Fourth NPRM*) (seeking comment on proposed enhancements to Wireless Emergency Alerts); *Use of Spectrum Bands Above 24 GHz For Mobile Radio Services*, Notice of Proposed Rulemaking, 30 FCC Rcd 11878 (2015) (*Spectrum Frontiers NPRM*) (seeking comment regarding uses of spectrum bands above 24 GHz, including for public safety purposes); *Amendment of Part 11 of the Commission's Rules Regarding the Emergency Alert System, Wireless Emergency Alerts*, Notice of Proposed Rulemaking, PS Docket Nos. 15-94; 15-91, FCC 16-5 (2016) (*Alerting Paradigm NPRM*) (considering various potential upgrades to the Emergency Alert System and Wireless Emergency Alerts). By seeking comment on related topics intended to inform our report to Congress, the Commission in no way prejudges the outcome of these or other ongoing proceedings.

[4] *See* INTEGRATED PUBLIC ALERT & WARNING SYSTEM, https://www.fema.gov/integrated-public-alert-warning-system (last visited Feb. 11, 2016).

[5] *See id.* The IPAWS Open Platform for Emergency Networks (IPAWS-OPEN) is an IP-based system that allows for efficient integration of Common Alerting Protocol (CAP)-based alerting platforms such as WEA with the IPAWS infrastructure. *See id.* CAP messages contain standardized fields that facilitate interoperability between and among devices, and are backwards-compatible with the EAS Protocol. *See* 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; Randy Graham Petition for Rulemaking, EB Docket No. 04-296, *Fifth Report and Order*, 27 FCC Rcd 642, 648 ¶ 10 (2012) (*Fifth Report and Order*). Under the EAS Protocol, an EAS alert uses a four-part message: (1) preamble and EAS header codes (which contain information regarding the identity of the sender, the type of emergency, its location, and the valid time period of the alert); (2) audio Attention Signal; (3) audio message, if included by the alert originator; and (4) preamble and "end of message" (EOM) codes. See 47 C.F.R. § 11.31(a).

[6] *See*, *e.g.*, 47 C.F.R. § 10.450 (geo-targeting); 47 C.F.R. § 10.400 (classification of WEA messages). The Commission created the WEA system in 2008 pursuant to the Warning, Alert and Response Network (WARN) Act. *See* WARN Act, Title VI of the Security and Accountability For Every Port Act of 2006, Pub. L. No. 109-347, 120 Stat. 1884 (2006) (WARN Act). Under the Commission's WEA rules, participating Commercial Mobile Service (CMS) providers can voluntarily deliver timely and accurate emergency alerts to subscribers' mobile devices. *See* 47 C.F.R. § 10, *et. seq*.

[7] The primary purpose of the EAS is to provide the President with "the capability to provide immediate communications and information to the general public at the national, state and local levels during periods of national emergency." 47 C.F.R. § 11.1. The EAS also is used to distribute alerts issued by state and local governments, as well as weather alerts issued by the National Weather Service (NWS). The Commission, FEMA, and the NWS implement the EAS at the federal level. EAS Participants include analog radio and television

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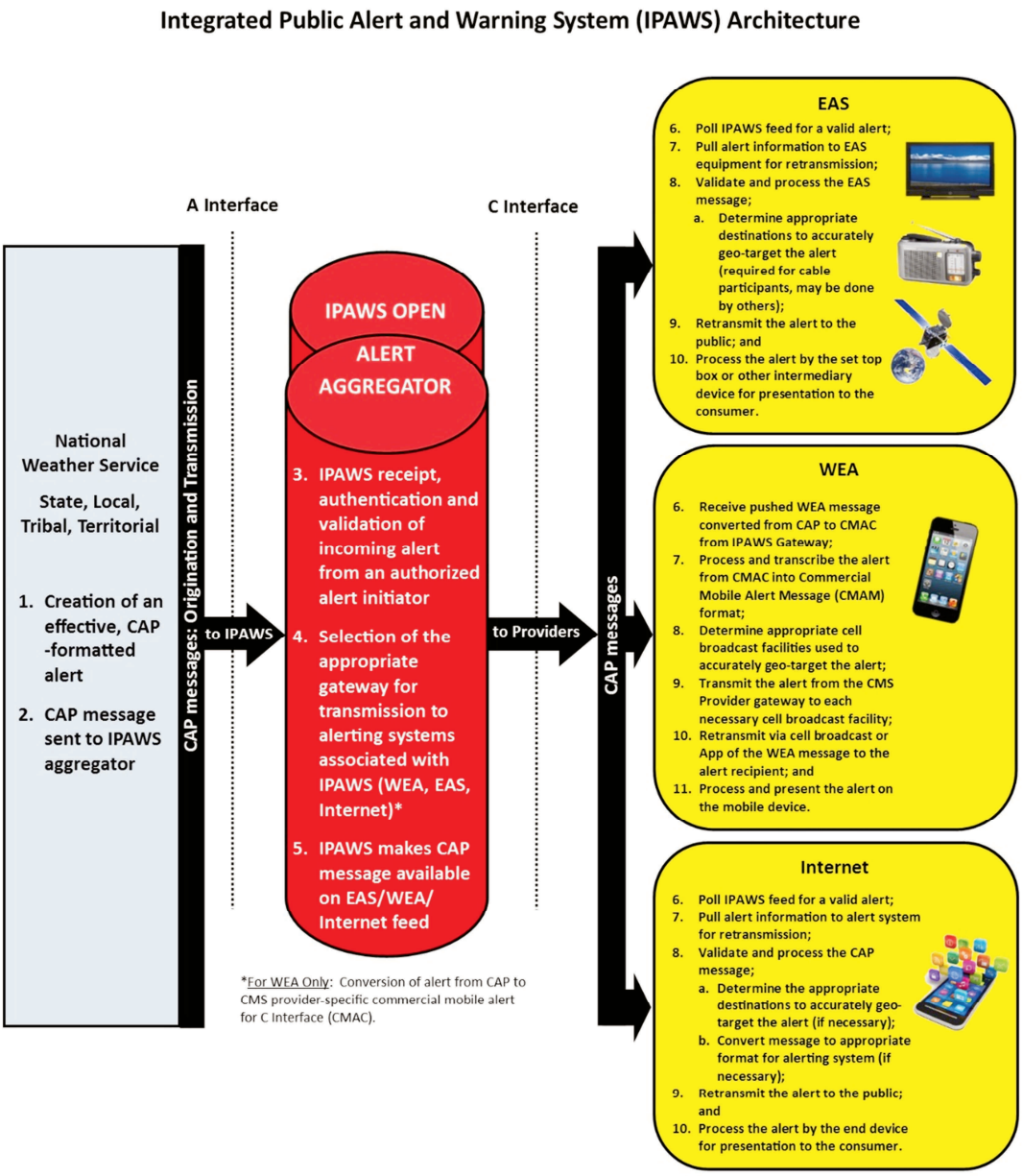

Figure 1: IPAWS and Associated Alerting Systems Architecture

In addition to EAS and WEA, "[e]xisting state or locally owned and operated warning systems — can be configured to receive alerts from [IPAWS-OPEN]."[8] For purposes of the Commission's report to

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providers, wired and wireless cable television, DBS, DTV, SDARS, digital cable and DAB, and wireline video systems. *See* 47 C.F.R. § 11.11(d).

[8] INTEGRATED PUBLIC ALERT & WARNING SYSTEM OPEN PLATFORM FOR EMERGENCY NETWORKS, https://www.fema.gov/integrated-public-alert-warning-system-open-platform-emergency-networks (last visited Jun. 19, 2015). For example, IPAWS has the ability to deliver CAP-formatted alerts to other associated alerting platforms such as sirens, highway signs, or emergency telephone notification systems. *See* FEMA, IPAWS-OPEN

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Congress, we seek information on what, if any, other alerting systems the Commission should consider as "associated alerting systems" to the IPAWS. Commenters should supply specific technical data supporting their conclusions.

B. EEW Three-Second Delivery Analysis

1. IPAWS System Analysis

As the prior discussion and *Figure 1* indicate, IPAWS aggregates and then distributes alerts to different systems, each of which has its own individual technical infrastructure. We seek information regarding how differences in alerting infrastructure and delivery methodologies affect incremental and overall system latencies and delays. To properly define the scope of our inquiry, we seek comment on the extent to which our analysis of the feasibility of delivering earthquake early warnings requires an analysis of each step in the alert generation and dissemination process for each type of alert (*e.g.*, WEA and EAS), in order to identify and, to the extent feasible, reduce or eliminate any delays or latencies. We also seek information concerning whether, in addition to signals and cell phone protocols, there are additional parameters associated with the dissemination of alerts, such as factors associated with broadcast and Internet messaging, that the report should include in its analysis.

Figure 1 also provides, in the enumerated functions within each section of IPAWS, a detailed view of the IPAWS architecture to illustrate the potential delivery path for EEW creation and dissemination using the IPAWS infrastructure. We seek comment on whether *Figure 1* accurately capture the different steps that would be involved in the delivery of an EEW using IPAWS, and if not, what additional or other steps should be included.

With reference to *Figure 1*, we seek comment on the appropriate points in the IPAWS alert dissemination process from which we should measure latency. Would it be appropriate to measure latency from the moment the alert is received by the IPAWS A-interface to the moment it is delivered to an end user? We seek comment on this approach. Commenters that wish to offer alternatives should do so with specificity. Such alternatives could include measuring from the moment that a seismic sensor detects seismic activity of sufficient severity to merit an EEW,[9] from the time that the alert is received by the IPAWS-OPEN alert aggregator, or from the time the alert is received at the gateway of the disseminating entity (*e.g.*, CMS providers or EAS Participants).[10]

For each potential demarcation point, including and in addition to those specified here, we seek comment on the relative benefits and weaknesses of beginning to measure EEW delivery time from that point. In addition, we seek comment on the effect that each particular starting point would have on the technical feasibility of delivering EEWs to the public in fewer than three seconds.

Based on the enumerated steps presented in *Figure 1*, we seek information on the following:

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Platform for Emergency Networks, Fact Sheet, http://www.fema.gov/media-library-data/1450108232296-68778bd35d59abc4040aaef3efc04d64/IPAWS-OPEN_Fact_Sheet_2016.pdf (last visited Feb. 9, 2016).

[9] D.D. Given, *et al*., Technical Implementation Plan for the ShakeAlert Production System - An Earthquake Early Warning System for the Western United States, United States Geological Survey 12 (2014) (*USGS Report*)

[10] *See Figure 1*, number 4.

- How long would it would take an alert originator to generate an EEW and transmit it to IPAWS? Would publicly available latency figures for Internet backbone providers be sufficient to estimate the transmission time from the alert initiator to the alert aggregator?[11]
- How long does it take IPAWS to authenticate and validate an alert?
- How long does it take IPAWS to process an alert before it is ready for retransmission to associated alerting systems?
- How long does it take a CMS Provider to transmit an alert to an end user's mobile device from the time it receives the alert at its alert gateway? Responses to this question should include
    - an analysis of all alert distribution systems, including without limitation those that are cell broadcast- or app-based, that are responsible for alert dissemination via WEA.
    - an analysis of whether members of the public in rural and underserved areas would experience greater delays in the delivery of WEA EEWs. Such analysis should include whether there are any earthquake-prone areas in which there are no CMS Participants that have agreed to provide WEA.
    - an analysis of whether customers of prepaid services or services provided by resellers currently receive WEA alerts, and of whether they would experience greater delays in the delivery of EEWs.
    - an analysis of whether a consumer using a Wi-Fi (provider, enterprise, or non-affiliated) only mobile device would receive a WEA EEW message, and if so, whether such users would experience greater delays in the delivery of EEWs.[12]
- How long does it take an EAS Participant to receive a CAP-formatted alert from IPAWS?
- How long does it take an EAS Participant to deliver a CAP-formatted alert received from IPAWS to the public?
- How long does it take an EAS Participant to transmit an EAS Protocol-formatted alert to the public through the broadcast-based "daisy chain" architecture?[13]
- Are there members of the public in earthquake-prone areas who receive neither EAS nor WEA alerts? To the extent that this is the case, are there other alerting systems associated with IPAWS that can deliver earthquake alerts to such segments of the public?
- What formats, signals, cell phone protocols, and standards would be necessary at each of the steps involved in providing an EEW alert to the public and how do they impact the time required to

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[11] *See*, *e.g.*, INTERNETTRAFFICREPORT, www.internettrafficreport.com (last visited Feb. 4, 2016).

[12] This analysis should include any EEW-delivery delays that customers may experience from using mobile devices that provide only Wi-Fi calling or data (or both).

[13] The broadcast-based EAS is a hierarchical alert message distribution system through which an alert message originator at the local, state or federal level encodes (or arranges to have encoded) a message in the EAS Protocol. If an alert originator, such as the NWS, initiates an alert using the EAS Protocol, it is transmitted from one EAS Participant to another in a process that is often referred as the "daisy chain." *See* 47 C.F.R. § 11.31. For a detailed explanation and illustration of the broadcast-based EAS architecture, *see* Federal Communications Commission Public Safety and Homeland Security Bureau, Strengthening the Emergency Alert System (EAS): Lessons Learned from the First Nationwide EAS Test 3 (2013), *available at* http://www.fcc.gov/document/strengthening-emergency-alert-system (last visited Oct. 6, 2014) (*EAS Nationwide Test Report*), at 6-8.

deliver an EEW to the public?[14] Do the existing CAP and EAS Protocol frameworks provide alert originators with sufficient flexibility to issue follow-up messages about earthquakes?

- Do any or all of the steps in the IPAWS alerting process tree need to be accomplished via machine-to-machine communication, *i.e.*, without human intervention, in order for the public to receive earthquake-related alerts in less than three seconds?
- Are there any additional parameters or technical specifications that would be helpful for the Commission to understand and analyze in order to satisfactorily present system requirements for an EEW platform capable of delivering earthquake-related information to the public in fewer than three seconds?

Whereas current alerting paradigms treat alerts relating to earthquakes in a similar manner to other types of alerts,[15] we observe that the United States Geological Survey (USGS) is developing an EEW system ("ShakeAlert") that would focus specifically on alerting in connection with earthquakes and leverage the California Integrated Seismic Network (CISN) to rapidly alert the public.[16] Research for the development of appropriate decision modules and detection algorithms is currently underway, and USGS identifies funding as their primary impediment to full network deployment.[17] USGS and FEMA posit that USGS could become an authorized alert originator through FEMA IPAWS, and leverage that alert aggregator to disseminate EEWs to the public.[18] We seek comment on the viability of the USGS position as an option for providing IPAWS with the capability of delivering earthquake-related emergency information to the public in fewer than three seconds (*e.g.*, the best option, one of several comparable options, the only feasible option, an infeasible option)? We also seek specific comment on any technical issues associated with integrating ShakeAlert with IPAWS, and how such an integration might be

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[14] For example, Transport Layer Security (TLS), Public Key Infrastructure (PKI) and Transmission Control Protocol (TCP) are used for Internet transmission, Global System for Mobile Communications 7 (GSM-7) is used for wireless transmission of text, and Data Over Cable Service Interface Specification (DOCSIS) is used for cable transmission. TLS is a protocol that ensures privacy between communicating applications and their users on the Internet. When a server and client communicate, TLS ensures that no third party may eavesdrop or tamper with any message. TLS is the successor to the Secure Sockets Layer (SSL). *See* Definition of TLS, PCMag Encyclopedia, http://www.pcmag.com/encyclopedia/term/52944/tls (last visited Mar. 2, 2016). PKI is a set of roles, policies, and procedures needed to create, manage, distribute, use, store, and revoke digital certificates and manage public-key encryption. *See* Definition of PKI, PCMag Encyclopedia, http://www.pcmag.com/encyclopedia/term/49333/pki (last visited Mar. 2, 2016). TCP is a protocol that enables two hosts to establish a connection and exchange streams of data. TCP guarantees delivery of data and also guarantees that packets will be delivered in the same order in which they were sent. *See* Definition of TCP/IP, PCMag Encyclopedia, *See* Definition of PKI, PCMag Encyclopedia, http://www.pcmag.com/encyclopedia/term/52614/tcp-ip (last visited Mar. 2, 2016). GSM-7 is a 7-bit message encoding standard, defined in the GSM 03.38/ 3GPP 23.038. *See* ETSI, Digital Cellular Telecommunications System (Phase 2+); Alphabets and Language-specific Information (GSM 03.38 version 7.2.0 Release 1998), https://www.etsi.org/deliver/etsi_ts/100900_100999/100900/07.02.00_60/ts_100900v070200p.pdf (last visited Mar. 2, 2016). DOCSIS is an international telecommunications standard that permits the addition of high-bandwidth data transfer to an existing cable TV (CATV) system. *See* Definition of DOCSIS, PCMag Encyclopedia, http://www.pcmag.com/encyclopedia/term/41635/docsis (last visited Mar. 2, 2016). *See also supra* note 7 (defining CAP, an alert configuration protocol).

[15] *See, e.g.*, 47 C.F.R § 11.31(e) (the EAS rules contain the event code "EQW" for earthquake.)

[16] *USGS Report* at 4.

[17] *See USGS Report* at 4, 6 (stating that a detection module "uses estimates of source parameters and uncertainties [determined by the algorithms] to calculate, update, and report the most probable earthquake location and magnitude").

[18] *See USGS Report* at 14.

leveraged to create a nationwide EEW system. We note that the Alliance for Telecommunications Industry Solutions (ATIS) recently released a study evaluating the feasibility of using LTE cellular networks in supporting public earthquake notifications in connection with USGS' work on the CISN.[19] ATIS concluded that while it is feasible to develop an EEW system using the 4G LTE cell broadcast network, it would not be feasible to implement an EEW system within the framework of existing alerting systems (*i.e.*, IPAWS and its associated alerting systems, EAS and WEA), on legacy (*i.e.*, 2G and 3G) networks, or via short message service (SMS) or over-the-top (OTT) smartphone apps.[20] We seek comment on ATIS's assessment and on any changes to the existing EAS and WEA systems that would be necessary in order to make sensor-based EEW alerts feasible.

We also observe that Japan's Earthquake and Tsunami Warning System (ETWS) appears to be the only EEW service in the world that integrates mass EEW communications with cellular networks.[21] What technical processes and procedures would be necessary to develop an EEW capability for the United States modeled after the ETWS using IPAWS? Are modifications necessary to adapt the ETWS model to the United States? Are there other EEW services being developed that we should examine?

Finally, we seek comment on other examples that we could potentially use to address any technical or other issues involved in reporting to Congress the steps that will be needed to ensure that IPAWS and the associated alerting systems are capable of delivering earthquake-related emergency alerts that can be received by the public in less than three seconds.

2. Geographic Targeting, Message Length and Costs

We seek comment on earthquake alert geographic targeting, message length and content, and costs:

- What is the optimal mode of geo-targeting an EEW?[22] Are different geo-targeting modes necessary for the different alerting platforms? The ATIS Study assumed that that the appropriate method of geo-targeting an EEW would be "a circle specified by the estimated surface location of

[19] Feasibility Study for Earthquake Early Warning System (ATIS-0700020), at 9 (July 2015), *available at* https://access.atis.org/apps/group_public/download.php/24638/Feasibilitystudy-for-earthquake-early-warning-system.pdf (last visited Feb. 29, 2016) (*ATIS Study*).

[20] *See ATIS Study* at 24, 26.

[21] ETWS uses a network of over 4,000 seismic detectors to sense and confirm seismic activity (P-waves) generated by an earthquake in advance of the more destructive, but slower waves (S-waves). *See ATIS Study* at 11, 15. The data produced by these sensors is automatically aggregated and analyzed by a central earthquake alerting authority, the Japan Meteorological Agency (JMA), which determines whether an earthquake of sufficient severity to warrant an early warning is occurring. *See ATIS Study* at 15. If so, ETWS automatically sends a short alert directly to the communications provider gateway that indicates whether earthquake tremors, tsunami waves, or both are imminent. *See ATIS Study* at 15. The communications provider then uses its network to disseminate the alert to the public in four to ten seconds. *See ATIS Study* at 15. After the primary notification has reached the public, ETWS then issues a secondary notification in a less time-sensitive manner that can contain a larger amount of information designed to assist the public in taking effective protective action. *See ATIS Study* at 15.

[22] "Geo-targeting" alerts refers to the ability of an alerting platform to direct an alert to a geographic area that matches that desired by the alert originator. *See* CSRIC IV, Working Group Two, Wireless Emergency Alerts, Geo-targeting, Message Content and Character Limitation Subcommittee, Final Report 8 (2014), *available at* https://transition.fcc.gov/pshs/advisory/csric4/CSRIC_CMAS_Geo-Target_Msg_Content_Msg_Len_Rpt_Final.pdf (last visited Jun. 9, 2015)

the epicenter and an associated radius."[23] If so, how large or small a radius can be specified using currently existing geo-targeting techniques, and how large or small a radius is generally appropriate in the EEW context? Would circle-based geo-targeting be appropriate and feasible for EAS, WEA, and other alerting platforms?

- Alternatively, if a complex polygon would be the most appropriate method of describing the alert area for an earthquake in some scenarios, to what extent would the transmission of complex polygon coordinates implicate message delivery latency?[24]
- To what extent would the effectiveness of the concentric circle or polygon approach be affected by the type, quality or availability of WEA, EAS or other IPAWS-based alerting services in an area to which an EEW would be sent?
- To what extent, if at all, would our current geo-targeting rules need to be amended in order to facilitate optimal EEW geo-targeting for both EAS and WEA?[25]
- Would existing message length limitations (two minutes for EAS messages and 90 characters for WEA messages) have an effect on the ability to deliver EEWs?[26] What changes, if any, would be desirable and necessary to deliver the best possible EEWs? What changes would adequately support effective EEWs?
- Would it be appropriate to alert the public of an imminent earthquake via a rapid primary message that contains the minimum information necessary to move the public to take protective action, followed by a secondary message that contains more information about the earthquake?[27] If so, what types of information should be included in the primary and secondary messages? For example, should the location of emergency medical centers, places to get clean water, *etc.*, be included in a secondary message?
- Should EEWs be repeated or periodically updated in order to ensure receipt by all potentially affected members of the public? If so, for how long and with what periodicity?
- What one-time and annual costs would be implicated by either updating current alerting platforms to support earthquake alerting, or by creating a new alert and warning platform built specifically for this purpose?[28]

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[23] *ATIS Study* at 21. The area to which an alert is geo-targeted is specified by a geocode, circle or polygon. *See* 47 C.F.R. § 10.450 ("A Participating CMS Provider must transmit any Alert Message that is specified by a geocode, circle, or polygon to an area not larger than the provider's approximation of coverage for the Counties or County Equivalents with which that geocode, circle, or polygon intersects."); *see also* 47 C.F.R. § 11.31(c) (stating that the EAS Protocol includes the location code "PSSCCC" to indicate the geographic area affected by the EAS alert).

[24] The transmission of coordinates may be necessary to enable devices to geo-fence a more broadly targeted warning. *See WEA Fourth NPRM*, 30 FCC Rcd at 13802, para. 39.

[25] *See* 47 C.F.R. § 10.450; 47 C.F.R. § 11.31(c).

[26] *See* 47 C.F.R. § 10.430 (90-character limit for WEA); 47 C.F.R. § 11.33(a)(9) (two-minute duration limit for non-presidential EAS).

[27] *See ATIS Study* at 15; *see also WEA Fourth NPRM*, 30 FCC Rcd at 13792-93, para 18-19 (proposing to adopt "Emergency Government Information" as a new classification of WEA message, and seeking comment on whether it should be used as a secondary message in support of Imminent Threat Alerts).

[28] *See USGS Report* at 2 (stating that FEMA estimates earthquakes cost the country $5.3 billion annually). USGS estimates that full deployment of ShakeAlert would entail an initial capital investment of $38.3 million, and an annual cost of $16.1 million in order to, *inter alia*, replace sensor equipment that has a 10-year operational life. *USGS Report* at 8, 18. These costs are posited *in addition* to current project funding. *See id.*

- Are there any additional costs that would be implicated by enabling the low-latency earthquake alerting implicated by our congressional mandate?
- Are the implementation timeframes posited by USGS and ATIS for the development of an EEW system consistent with the three-second model required in the Congressional Report?[29]

Is there any additional information that would contribute to a full and responsive report to Congress? Commenters are welcome to supply any relevant technical data or legal and regulatory analyses.

C. Regulatory and Statutory Analysis

The Commission has traditionally exercised jurisdiction to regulate public alerts and warnings, specifically the EAS,[30] and WEA,[31] through Sections 151, 152, 154(i), 154(o), 301, 303(b), (g) and (r), 303(v), 307, 309, 335, 403, 544(g), 606, 613, 615 and 1302 of the Communications Act of 1934, as amended; Sections 602(a), (b), (c), (d), (f), 603, 604, and 606 of the WARN Act; and the Twenty-First Century Communications and Video Accessibility Act of 2010.[32] Are there other statutes and regulations that we should consider in our report to Congress? We seek comment on whether any of these statutory and regulatory provisions would need to be amended in order to implement, in conjunction with other federal and state authorities, an IPAWS-based EEW system capable of delivering EEW alerts in fewer than 3 seconds. We observe that under the WARN Act and the Commission's Part 10 rules, participation in WEA is voluntary for CMS providers.[33] In order for a nationwide EEW system to be effective, does alerting need to be available everywhere, and if so, on which platforms? Further, as technology evolves and as consumers view content through different means, do existing statutory and regulatory provisions address the primary modes in which consumers may access alerts?

III. FILING INSTRUCTIONS

Pursuant to sections 1.415 and 1.419 of the Commission's rules, 47 CFR §§ 1.415, 1.419, interested parties may file comments in the above-captioned dockets and on or before the dates indicated on the first page of this document. Comments may be filed the using the Commission's Electronic Comment Filing System (ECFS). *See Electronic Filing of Documents in Rulemaking Proceedings*, 63 FR 24121 (1998).

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[29] *Compare USGS Report* at 19 (positing that it would take three years to hire personnel, build production infrastructure, and test and certify this already partially developed system to the point of issuing public notifications) *with ATIS Study* at 6, 26-27 (estimating that it would take approximately ten years to achieve eighty-five percent deployment of earthquake alerting capabilities in mobile devices).

[30] 47 C.F.R. § 11.1, *et seq.*

[31] 47 C.F.R. § 10.1 *et seq*.

[32] For the EAS, the Commission has previously relied on 47 U.S.C §§ 151, 152, 154(i), 154(o), 301, 303(b), (g) and (r), 303(v), 307, 309, 335, 403, 544(g), 606, 613, 615 and 1302. For WEA, the Commission has also cited The Warning, Alert and Response Network (WARN) Act, WARN Act §§ 602(a), (b), (c), (d), (f), 603, 604, and 606, to support related rulemaking. Both the EAS and WEA conform to other relevant statutes. *See Twenty-First Century Communications and Video Accessibility Act of 2010*, Pub. L. No. 111-260 and Pub. L. No. 111-265. For a more detailed discussion of legal authorities relating to EAS and WEA, see the *Alerting Paradigm NPRM* at 71-72, paras 184-86.

[33] *See* WARN Act, Pub. L. No. 109-347, 120 Stat. at 1885; 47 C.F.R. § 10.210 (WEA participation election procedures for CMS providers).

- Electronic Filers: Comments may be filed electronically using the Internet by accessing the ECFS: http://fjallfoss.fcc.gov/ecfs2/.
- Paper Filers: Parties who choose to file by paper must file an original and one copy of each filing. If more than one docket or rulemaking number appears in the caption of this proceeding, filers must submit two additional copies for each additional docket or rulemaking number.
- Confidential Materials: Parties wishing to file materials with a claim of confidentiality should follow the procedures set forth in section 0.459 of the Commission's rules. Confidential submissions may not be filed via ECFS but rather should be filed with the Secretary's Office following the procedures set forth in 47 C.F.R. Section 0.459. Redacted versions of confidential submissions may be filed via ECFS.

Filings can be sent by hand or messenger delivery, by commercial overnight courier, or by first- class or overnight U.S. Postal Service mail. All filings must be addressed to the Commission's Secretary, Office of the Secretary, Federal Communications Commission.

- All hand-delivered or messenger-delivered paper filings for the Commission's Secretary must be delivered to FCC Headquarters at 445 12th St., SW, Room TW-A325, Washington, DC 20554. The filing hours are 8:00 a.m. to 7:00 p.m. All hand deliveries must be held together with rubber bands or fasteners. Any envelopes and boxes must be disposed of before entering the building.
- Commercial overnight mail (other than U.S. Postal Service Express Mail and Priority Mail) must be sent to 9300 East Hampton Drive, Capitol Heights, MD 20743.
- U.S. Postal Service first-class, Express, and Priority mail must be addressed to 445 12th Street, SW, Washington DC 20554.
- People with Disabilities: To request materials in accessible formats for people with disabilities (Braille, large print, electronic files, audio format), send an e-mail to fcc504@fcc.gov or call the Consumer and Governmental Affairs Bureau at (202) 418- 0530 (voice), (202) 418-0432 (tty).

The proceeding this Notice initiates shall be treated as a "permit-but-disclose" proceeding in accordance with the Commission's *ex parte* rules.[16] Persons making *ex parte* presentations must file a copy of any written presentation or a memorandum summarizing any oral presentation within two business days after the presentation (unless a different deadline applicable to the Sunshine period applies). Persons making oral *ex parte* presentations are reminded that memoranda summarizing the presentation must (1) list all persons attending or otherwise participating in the meeting at which the *ex parte* presentation was made, and (2) summarize all data presented and arguments made during the presentation. If the presentation consisted in whole or in part of the presentation of data or arguments already reflected in the presenter's written comments, memoranda or other filings in the proceeding, the presenter may provide citations to such data or arguments in his or her prior comments, memoranda, or other filings (specifying the relevant page and/or paragraph numbers where such data or arguments can be found) in lieu of summarizing them in the memorandum. Documents shown or given to Commission staff during *ex parte* meetings are deemed to be written *ex parte* presentations and must be filed consistent with rule 1.1206(b). In proceedings governed by rule 1.49(f) or for which the Commission has made available a method of electronic filing, written *ex parte* presentations and memoranda summarizing oral *ex parte* presentations, and all attachments thereto, must be filed through the electronic comment filing system available for that proceeding, and must be filed in their native format (*e.g.*, .doc, .xml, .ppt, searchable .pdf). Participants in this proceeding should familiarize themselves with the Commission's *ex parte* rules.

For further information, please contact Gregory Cooke, Associate Chief, Policy and Licensing Division, Public Safety and Homeland Security Bureau, (202) 418-2351 or by email at Gregory.Cooke@fcc.gov.