

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

In the Matter of:)	
)	
Wireless Emergency Alerts)	PS Docket No. 15-91
)	
Amendment of Part 11 of the Commission's)	PS Docket No. 15-94
Rules Regarding the Emergency Alert System)	
)	

REPLY COMMENTS OF CTIA

CTIA respectfully submits these reply comments in response to the Public Notice seeking comment on the feasibility of including multimedia content in Wireless Emergency Alert (WEA) messages.¹

I. INTRODUCTION.

CTIA and its member companies have consistently supported the development, use, and evolution of the WEA system, which has become a critical, life-saving tool within the national emergency alert and warning system. Recent emergency situations, including unprecedented hurricane, flooding, and wildfire events, have demonstrated the important role of WEA as a tool to timely disseminate emergency information to millions of wireless consumers.² At the urging of the alerting community, Participating CMS Providers and manufacturers are taking significant steps to enhance WEA consistent with the Commission's recent Orders, including enabling the

¹ *Parties Asked to Refresh the Record on Facilitating Multimedia Content in Wireless Emergency Alerts*, PS Docket Nos. 15-91, 15-94, DA 18-302 (rel. Mar. 28, 2018) (*WEA Multimedia Public Notice*).

² See e.g., FCC, Remarks of Zenji Nakazawa at The International Institute of Communications Telecommunications and Media Forum (May 25, 2018) *available at* <https://docs.fcc.gov/public/attachments/DOC-351006A1.pdf> ("Deployed in 2012, these text-like messages, which are accompanied by a noise and vibration and delivered to mobile devices, have been used over 36,000 times to warn the public of emergencies like tornadoes or wildfires.").

use of embedded references to deliver multimedia content. In fact, the Commission identified the inclusion of embedded references in WEA messages “as the most critical” to the public safety community among the many improvements to WEA that have been implemented over the last few years.³

While CTIA agrees with the comments in response to the *WEA Multimedia Public Notice* that demonstrate the importance of multimedia content to emergency alert and warning information, the record suggests that alert originators are not consistently or widely using embedded references to expand the capabilities of WEA to support multimedia content within the intended design and purpose of WEA. Further, the record demonstrates the significant technical and operational challenges of directly supporting multimedia content within WEA messages that would require fundamentally restructuring the WEA system.

For these reasons, further dialogue and technical evaluation among alert originators and the wireless industry are necessary before the Commission moves forward to determine whether WEA messages can or should directly support multimedia content. Further, CTIA encourages the Commission and Federal Emergency Management Agency (FEMA) to develop best practices that incent alert originators to fully utilize WEA’s existing capabilities, including using embedded references to deliver multimedia content. As the alert originator community will continue to expect more of WEA, CTIA and its member companies look forward to further discussions with the alert originator community to evaluate technically feasible ways to continue enhancing WEA to support the evolving public safety mission.

³ *Wireless Emergency Alerts; Amendments to Part 11 of the Commission’s Rules Regarding the Emergency Alert System*, Report and Order and Further Notice of Proposed Rulemaking, 31 FCC Rcd 11112, 11132 ¶ 35 (2016) (2016 WEA Report and Order and FNPRM).

II. THE RECORD DEMONSTRATES A NEED FOR THE COMMISSION TO ENCOURAGE ALERT ORIGINATORS TO USE NEW WEA TOOLS, SUCH AS EMBEDDED REFERENCES, TO ENHANCE THE PUBLIC SAFETY MISSION.

CTIA and its member companies agree with comments from the alert originator community that the availability of multimedia content, such as images of maps, photos, or videos, can further enhance the public safety mission of WEA.⁴ The record also demonstrates, however, that including multimedia content within a WEA message presents significant technical challenges, as well as policy tradeoffs that could delay the timely delivery of WEA messages.⁵ For these reasons, alert originators and the public safety community have consistently advocated for WEA messages to support embedded references to deliver multimedia content.

In fact, many commenters effectively advocated for the Commission to mandate that Participating CMS Providers support embedded references. For example, APCO supported the inclusion of embedded references into WEA messages that would “permit public safety alert originators to incorporate by reference more information, such as specific guidelines or multimedia contained on their websites, and thereby make more effective use of WEA.”⁶ Similarly, TDI and others explained that embedded information would “enhance the quality and utility of WEA messages as an essential means of distributing emergency information to the deaf

⁴ See, e.g., Comments of Big City Emergency Managers, *et al.*, PS Docket Nos 15-91, 15-94, at 1 (filed May 29, 2018) (BCEM Comments); Comments of Telecommunications for the Deaf and Hard of Hearing, Inc., *et al.*, PS Docket Nos 15-91, 15-94, at 2-4 (filed May 29, 2018) (TDI Comments); Comments of the New York City Emergency Management Department, PS Docket Nos 15-91, 15-94, at 2-5 (filed May 29, 2018) (NYCEM Comments).

⁵ See, e.g., Comments of the Alliance for Telecommunications Industry Solutions, PS Docket Nos 15-91, 15-94, at 3-5 (filed May 29, 2018) (ATIS Comments); Comments of AT&T Services, Inc., PS Docket Nos 15-91, 15-94, at 3-5 (filed May 29, 2018) (AT&T Comments).

⁶ Comments of APCO, PS Docket No. 15-91, at 6 (filed Jan. 13, 2016).

and hard of hearing community.”⁷ The Vail Public Safety Communications Center also noted that allowing embedded references “would greatly enhance our efforts to provide assistance to our citizens in emergency situations.”⁸

In response to this strong support from alert originators, the Commission required Participating CMS Providers to support embedded references to deliver multimedia content within WEA’s intended design and capabilities.⁹ In adopting embedded references requirements, the Commission stated that this enhancement “will dramatically improve WEA’s effectiveness” and highlighted that “the public safety community views this change as the most important among all those we consider in this proceeding”¹⁰ Importantly, the Commission noted that embedded references “transform the scope of WEA from a character-limited text message service to a multimedia-enabled, comprehensive disaster response resource[.]”¹¹

However, CTIA observes that the comments in response to the *WEA Multimedia Public Notice* are largely silent on the steps alert originators are taking to harness WEA’s embedded reference capabilities to deliver multimedia content to the public today. To CTIA’s knowledge, despite the strong advocacy about the need for embedded references, widespread adoption of this capability by alert originators has not occurred within WEA.

⁷ Comments of Telecommunications for the Deaf and Hard of Hearing, Inc., *et al.*, PS Docket Nos 15-91, at 6-7 (filed Jan. 13, 2016).

⁸ Comments of the Vail Public Safety Communications Center, PS Docket No. 15-91, at 1 (filed Dec. 15, 2015).

⁹ 2016 WEA Report and Order and FNPRM at ¶ 29.

¹⁰ 2016 WEA Report and Order and FNPRM at ¶¶ 36, 80.

¹¹ *Id.* at ¶ 27.

CTIA agrees with the Commission and alert originator community about the importance of multimedia content to emergency alert and warning information, and embedded references expand the capabilities of WEA to support multimedia content within the intended design and purpose of WEA. Given that the record suggests WEA may not currently be utilized to its full potential, it would be premature for the Commission to consider additional changes to WEA, especially one that would challenge the fundamental design and purpose of WEA. For this reason, the Commission should work with FEMA to encourage alert originators to use all of the tools available within WEA today, including embedded references.

To further this goal, CTIA and its member companies will support the Commission, FEMA, and alert originators' efforts to develop best practices and methods for effectively utilizing WEA's existing capabilities, including embedded references. For example, best practices will help alert originators to determine how to maximize multimedia content underlying embedded references to appropriately size the content for a mobile wireless experience to avoid mobile wireless data network congestion, as well as maintain WEA as a secure platform.¹² Even further, the record suggests that alert originators may not have a consistent awareness of WEA's existing and forthcoming capabilities.¹³ For this reason, the Commission and FEMA also should

¹² See, e.g., FCC, Communications Security, Reliability, and Interoperability Council V, Working Group 2, Emergency Alerting Platforms, WEA Security Sub-Working Group, Final Report at 7, 24 (noting the "significant security threat" from virus-infected links).

¹³ See Comments of Santa Barbara County Office of Emergency Management, PS Docket Nos. 15-91, 15-94, at 1-2 (filed May 29, 2018) (urging the Commission to take "immediate action" on WEA character, language and geo-targeting issues); *but see, generally 2016 WEA Report and Order and FNPRM; and Wireless Emergency Alerts; and Amendments to Part 11 of the Commission's Rules Regarding the Emergency Alert System*, FCC 18-4, 15-94, Second Report and Order and Second Order on Reconsideration (2018).

develop educational tools and best practices to ensure alert originators are aware of WEA's capabilities, including geo-targeting, testing, and message content.

As alert originators incorporate embedded references to provide multimedia content into their WEA practices and procedures, CTIA and its member companies expect that alert originators will find that the existing WEA system offers significant opportunities to enhance their mission to alert and warn the public about emergencies. CTIA and its member companies stand ready to support the Commission and FEMA's educational and best practice efforts.

III. THE RECORD CONFIRMS THAT ADDITIONAL DIALOGUE IS NECESSARY TO DETERMINE WHETHER AND HOW WEA CAN FURTHER SUPPORT MULTIMEDIA CONTENT.

The record demonstrates that including multimedia content within a WEA message presents significant technical challenges and tradeoffs that may result in the delay of WEA message delivery. Specifically, ATIS observes that the Cell Broadcast Service over-the-air interface used to transmit WEA messages was not designed for the transmission of multimedia content.¹⁴ ATIS further notes that it has examined the transmission of multimedia content in WEA messages and “concluded that there remain unresolved technical and/or other considerations that warrant against requiring the inclusion of this content in WEA messages.”¹⁵ AT&T also explains that, because cell broadcast technology is optimized for text, it would be “extremely challenged to support multimedia messages—even smaller files like static photos, much less video files.”¹⁶

¹⁴ ATIS Comments at 3.

¹⁵ *Id.* at 4.

¹⁶ AT&T Comments at 4.

Though some commenters suggest that WEA should include multimedia content within messages because consumers are increasingly using multimedia content on commercial mobile wireless services,¹⁷ the record demonstrates that WEA operates in a completely different fashion than commercially available mobile wireless services.¹⁸ As CTIA previously noted, WEA messages are transmitted over a shared broadcast control channel with limited bandwidth that is primarily used to provide critical system information to a mobile device to gain access to the wireless network.¹⁹ For example, information transmitted over the broadcast control channel is used to support cell-site handoffs and set up voice or data communications, among other functions. Although the limitations of the broadcast control channel constrain the size of a WEA message, a consumer who clicks on an embedded reference within a WEA message can now access multimedia content via the same high bandwidth point-to-point data channels used for commercial mobile wireless services.²⁰ Thus, the use of embedded references in a WEA message aligns with consumer expectations of commercial messaging services.

¹⁷ See, e.g., NYCEM Comments at 2-3; APCO Comments at 2. Notably, FEMA IPAWS' comments suggest that "it is technically feasible to require multimedia content in WEA messages." See Comments of FEMA IPAWS Program Office, PS Docket Nos. 15-91, at 1 (filed May 23, 2018). However, that reference appears to be focused on the inclusion of "*links* to images, audio files and web content" to deliver multimedia content through IPAWS' C-Interface. (emphasis added)

¹⁸ AT&T Comments at 3-5; ATIS Comments at 3-5.

¹⁹ See e.g., Comments of CTIA, PS Docket Nos. 15-91, 15-94, at 6 (filed May 29, 2018) (CTIA Comments).

²⁰ But see, Comments of Digital Broadcasting technologies, LLC, PS Docket Nos. 15-91, 15-94, at 5-9 (filed May 29, 2018) (suggesting a technology solution it believes will enable multimedia for WEA). CTIA notes that DBT has misstated and mischaracterized the issues associated with use of a control channel for delivery of WEA messages. The limitations of the control channel are not related to data rates being too slow but that the cell-broadcast service of WEA uses control channel resources that are shared and are not designed for the delivery of non-text information. See CTIA Comments at 8. Participation in ATIS will allow DBT to discuss suggestions for technology solutions with mobile wireless network and WEA experts.

Further, the Commission and alerting community should be wary of compromising the proper functioning of the control channel to support the delivery of multimedia content within a WEA message. Overloading the control channel to deliver multimedia content within a WEA message could lead to significant technical issues for the network, including potentially denial of service to all communications from overloading of the network, failed handoffs as a mobile device moves through the network, and failures to set up the data or voice communication. These issues can be further exacerbated in the immediate aftermath of sending a WEA message to warn consumers of an imminent threat as those consumers attempt to take action using commercial mobile wireless services (*e.g.*, calling or texting family and friends, using social media to communicate with neighbors, etc.).

Comments in the record also highlight that alert originators have differing perspectives on the policy tradeoffs related to latency of WEA message delivery that may result from embedding multimedia content within a WEA message. For example, the National Center for Missing and Exploited Children wants the delivery of AMBER Alert messages via WEA to remain reliable and error-free, and believes that embedded references should be helpful for multimedia.²¹ By contrast, NYCEM reaffirmed its position that “the public would benefit from WEA-transmitted multimedia content even if such content was delivered with a slight delay following the text portion of the WEA message. In many cases, even a delay of several minutes from transmission to delivery of WEA-transmitted multimedia content would still allow for markedly improved alert and warning messages.”²² As CTIA noted in its initial comments,

²¹ Comments of the National Center for Missing and Exploited Children, PS Docket No. 15-91, at 2 (filed May 29, 2018).

²² NYCEM Comments at 5.

embedding multimedia content within WEA messages could result in delayed message delivery.²³ The Commission should consider whether the differing perspectives and priorities of alert originators can be reconciled to justify a requirement to support multimedia content within a WEA message.²⁴

In light of the technical and operational issues raised in the record, further dialogue and technical evaluation among alert originators and the wireless industry are necessary before the Commission moves forward to determine whether WEA messages can and should directly support multimedia content. For example, further discussion is required to evaluate:

- whether the existing WEA architecture could be modified to support delivery of multimedia content, and to what extent support for multimedia content within WEA messages would lead to delays in delivery (or failure of a message to deliver), and whether such delays can be mitigated or may be acceptable in certain circumstances;
- whether other technologies can be harnessed for delivery of multimedia content within WEA messages and what standards efforts would be necessary, including evaluation of deployment considerations; and
- whether and how 5G could be used to enhance WEA, given that 5G non-standalone deployment will continue to rely upon the existing 4G LTE network for delivery of WEA, and standalone 5G plans to utilize existing cell broadcast technology for WEA.

²³ See CTIA Comments at 9-11 and AT&T Comments at 4-5.

²⁴ See, FCC, White Paper, *The Capacity of the Integrated Public Alert and Warning System to Deliver Sensor-Based Earthquake Early Warnings: An Engineering Analysis* (Dec. 5, 2016) (suggesting that early earthquake warning alerts distributed over WEA should be accomplished within three seconds).

IV. CONCLUSION.

WEA has become a pillar of the Americas' public safety infrastructure with a proven life-saving ability to timely distribute emergency alert and warning information to wireless consumers. As significant progress has been made and will continue through next year to enhance the WEA system, CTIA stands ready to work with the Commission and FEMA to develop best practices that encourage alert originators to fully utilize WEA's existing capabilities, including using embedded references to deliver multimedia content. As the alert originator community will continue to expect more of WEA, CTIA and its member companies look forward to further discussions with the alert originator community to evaluate technically feasible ways to continue enhancing the utility of WEA to achieve the evolving public safety mission.

Respectfully Submitted,

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