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

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

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 comments in response to the *Public Notice*, released March 28, 2018, in the above-referenced dockets. The *Public Notice* invites interested parties to refresh the record on the feasibility of including multimedia content in Wireless Emergency Alerts (WEA). As the organization that is developing consensus-based technical requirements for WEA, ATIS notes that there remain significant technical issues associated with the transmission of WEA multimedia content.

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 a founding partner and 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.

These comments reflect the view of ATIS WTSC, which 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 text to 9-1-1, coexistence and interference issues, 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 earthquake early warning system (EEWS) broadcast capability.

ATIS WTSC has developed several feasibility studies related to WEA,[1] including:

- *Feasibility Study for Earthquake Early Warning System* (ATIS-0700020)
- *Feasibility Study for LTE WEA Message Length* (ATIS-0700023)
- *Feasibility Study for WEA Cell Broadcast Geo-Targeting* (ATIS-0700027)
- *Feasibility Study for WEA Supplemental Text* (ATIS-0700026)

[1] These studies are available on the ATIS White Paper Repository at http://www.atis.org/01_resources/whitepapers/.

II. Comments

The *Public Notice* seeks to refresh the record in this proceeding, asking specifically whether there is new information or arguments pertaining to the technical feasibility for requiring multimedia content in WEA messages, including the current state of standards development.[2]

ATIS notes that the Commission's existing rules permit the transmission of multimedia content in WEA messages via embedded Uniform Resource Locators (URLs), effective just late last year.[3] ATIS remains concerned with the congestion-related impacts of such embedded URLs as alert originators increase their use of them and more handsets incorporate the capability. However, the use of URLs with appropriate best practices (e.g. well-designed website links) is the only effective means of providing multimedia in WEA today and it would be appropriate to allow stakeholders additional experience with these new capabilities, particularly after 360-character alerts become available to enable alert originators to provide more descriptive text WEAs. ATIS therefore continues to prefer the use of embedded URLs, which allow the provision of up to date multimedia capabilities without the need to modify/upgrade WEA-specific multimedia capabilities whenever new multimedia features are added.

ATIS WTSC notes that there remain technical constraints associated with the transmission of multimedia content in WEA messages outside of embedded URLs. As ATIS has previously noted, the Cell Broadcast Service (CBS) over-the-air interface that is used to transmit WEA messages, is not designed for the transmission of multimedia content. The results of ATIS *Feasibility Study for WEA Supplemental Text* (ATIS-0700026) remain relevant to this matter.

[2] *Public Notice* at p. 2.
[3] 47 C.F.R. §10.441.

This study addressed several aspects of the transmission of multimedia content in WEA messages, including the display of photos and hazard alert symbols and concluded that there remain unresolved technical and/or other considerations that warrant against requiring the inclusion of this content in WEA messages.[4]

- Display of Photos. As noted above, the Cell Broadcast technology used to broadcast text-based WEA messages is not designed to transmit large amounts of data. The amount of data required to transmit even a small "thumbnail" sized picture makes the use of Cell Broadcast technology practically, if not technically, infeasible.
- Display of Hazard Alert Symbols. The inclusion of symbols (e.g., fire, flood, chemical spill, etc.) has been suggested as part of WEA notifications as a way to reinforce the significance of the public emergency that is represented in the text portion of the WEA alert. To ensure that the use of hazard symbols improves the usability and accessibility of an alert, a study of the User Experience Design (UXD) covering the Human-Computer Interaction (HCI) for the mobile user should be undertaken, followed by global standardization. Additionally, the hazard symbols would require a common, internationally agreed upon set of definitions.

Multimedia in WEA messages also will have implications for meeting character limits. In responding to the Commission's September 2016 *Further NPRM* seeking comment on an appropriate maximum size for any WEA multimedia content, ATIS noted that even a relatively small multimedia file would still be too large to transmit in WEA as it would require multiple WEA binary 360-character messages.[5] As explained in the *Feasibility Study for WEA Supplemental Text*, the use of significant numbers of WEA messages to transmit multimedia alerts that require more than 360 characters has potential for disruption of the network.

ATIS also does not believe that staggering the transmission of multimedia WEA message segments would mitigate potential network congestion concerns and facilitate delivery of this content. As ATIS has said previously, the staggering of multimedia message segments will

[4] *ATIS Feasibility Study for WEA Supplemental Text* (ATIS-0700026), Section 5.5.1.
[5] ATIS Comments to the September 2016 *Further NPRM* in PS Docket No. 15-91, PS Docket No. 15-94, p.7.

negatively impact the timely delivery of the complete message.[6] The technical feasibility of such an approach would also require additional study within standards organizations.

There are also significant technical challenges that make it infeasible to break a multimedia file into multiple 360-character (or equivalent) messages. Setting aside transmission delay-related issues (which are not insignificant), WEA does not support reassembly of multiple messages into a multimedia file. Currently, devices can only display the contents of a WEA message, and there is no mechanism to reassemble messages across multiple alerts. Furthermore, this reassembly cannot be done at the application layer because the content of SIB12 is not passed to the application layer. If the SIB12 contents were to be passed to the application layer, there would be serious security risks. Additionally, attempts to use SIB12 to render a multimedia file could overload this resource, which in turn could delay the transmission of WEA text alerts. It should also be noted that increasing the number of segments for the WEA message will also increase the probability that a message segment will not be received, thereby further increasing the transmission delay as the device would have to wait until the cycle of WEA message segments are repeated until it receives a rebroadcast of the missed segment. Finally, efforts to reassemble multimedia file transmitted via multiple WEA messages would require new standards, the development of which would further strain the already overtaxed subject matter experts who remain focused on other priorities such as device-based geo-targeting.

ATIS recommends that the Commission carefully consider, and allow the industry to develop approaches to mitigate, possible cybersecurity challenges associated with the transmission of multimedia content before any new multimedia requirements could be

[6] ATIS Comments to the September 2016 *Further NPRM* in PS Docket No. 15-91, PS Docket No. 15-94, at p. 7.

implemented.

ATIS further notes that the previously-identified challenges associated with Evolved Multimedia Broadcast Multicast Service in LTE (eMBMS) remain.[7] Unlike CBS, which was not designed for the transmission of multimedia content, eMBMS could, in theory, permit the broadcasting of multimedia content. However, while CBS is ubiquitously deployed, it should be noted that the market for eMBMS has not developed at least in part due to its complexity. Significant technical work also remains in order to be able to utilize eMBMS for WEA, as eMBMS was originally designed for linear programming multimedia (e.g., television or movie presentations). This work includes necessary enhancements to the underlying standards to enable the multimedia use envisioned by public safety that could be accommodated by eMBMS. Efforts to make WEA-related modifications to eMBMS standards would take significant time. Furthermore, implementation of eMBMS would require deployment of new underlying network capabilities and significant changes to service providers' networks; ATIS continues to strongly believe that the marketplace and consumer demand should dictate whether and when to make such significant upgrades.

Finally, ATIS reminds the Commission that the industry is already focusing substantial resources to enhance WEA through late 2019 at the earliest. As ATIS explained in its January 23, 2018, *Ex Parte* in this proceeding, just to implement the Commission's device-based geo-targeting requirements, there are approximately 25 industry standards that would need to be developed or modified, including impacts to WEA standards efforts in progress from previous Commission rule changes (including the Commission's September 2016 *Report and Order* and November 2017 *Order on Reconsideration*). Additional work to develop technologies and

[7] ATIS Comments to the November 2015 *Notice of Proposed Rulemaking*, filed January 13, 2016.

implement any new multimedia requirements would complicate these ongoing efforts across the ecosystem, from alert originators to service providers to device manufacturers, be counterproductive and could slow the industry's work. Frequent enhancements to WEA add additional complexity to support older devices, interoperability, and backwards compatibility.

III. Conclusion

ATIS appreciates the opportunity to provide its further input to the *Public Notice* and urges the Commission to consider the technical challenges associated with the transmission of multimedia content in WEA messages.

Respectfully submitted,

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