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

Alliance for Telecommunications Industry Solutions

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SUMMARY

The Alliance for Telecommunications Industry Solutions (ATIS) and its members support the Federal Communications Commission's (Commission) efforts to promote the accessibility and availability of Wireless Emergency Alert (WEA). In these comments, ATIS provides input on the feasibility of, and technical issues associated with, the Commission's proposals regarding WEA accessibility and performance on behalf of ATIS' Wireless Technology and Systems Committee (WTSC).

Language Support. ATIS WTSC supports the Commission's goal of exploring machine translations as a method of making WEA more accessible but is not in a position to comment on whether machine translation technologies are mature enough at this time to be used for WEA translations. ATIS WTSC believes that language support that is more widely accessible than embedded links should be explored and developed and acknowledges that mobile devices having the capability to perform translations is the most logical, technically feasible, and scalable solution available. ATIS WTSC expresses no opinion on the set of languages to be translated but believes that providing support for the 13 most commonly used languages is reasonable given the need to ensure accuracy of machine translations.

If machine language translation technologies are pursued for this purpose, ATIS WTSC urges the Commission to extend statutory liability protections to participating Commercial Mobile Service Providers (CMSPs), mobile device equipment manufacturers, operating system providers, and translation software developers consistent with the WARN Act liability protections.

While ATIS WTSC agrees that a device-based spoken term (i.e., "earthquake") or short phrase (i.e., "thunderstorm warning") representing the event, and a symbol and/or infographic display to represent the event, along with the WEA text, can improve accessibility of the WEA message, it notes that additional standards, design, development and stakeholder collaboration are needed before that functionality could be implemented.

ATIS WTSC also supports the use of text-to-speech functionality for WEA text but notes that while some devices support this today, this functionality is not available on all mobile devices.

Multimedia Content. ATIS WTSC maintains that an AO-provided embedded link in the WEA message is the only feasible way to provide multimedia content and does not support the addition of multimedia content in the WEA broadcast because these increase capacity requirements and negatively impact WEA performance reliability and latency.

ATIS WTSC supports the idea of making preinstalled standard infographics available on mobile devices. ATIS WTSC believes that measures to support triggering of the display of pre-installed symbols or infographics are technically feasible but will require changes to the standards and ecosystem.

Integrating WEA More Seamlessly into People's Lives. ATIS WTSC recommends that a study of all potential use cases for the "silent alert," along with the pros/cons of a silent alert, be undertaken prior to any decision to move forward with design and implementation. ATIS WTSC believes that the transmission of WEA messages, at the alerting authority's option, without

triggering the audio attention signal and the vibration cadence could be technically supported but would require extensive design and development work. Consideration should also be given to the fact that this option could make WEA less effective, especially in the case of "life-saving" alerts which often require immediate action.

ATIS WTSC does not believe that subscribers should have the option to turn off WEA's audio attention signal and vibration cadence for all alerts until a study of all potential use cases is performed and more information is gathered on the impact of WEA effectiveness based on the number of users that might opt out of the attention-getting signals, even for Imminent Threat alerts.

ATIS WTSC supports public awareness, but urges caution concerning extensive amounts of testing that may reach the public, possibly resulting in more consumer opt-outs. ATIS WTSC also notes that there is no feasible way to "reset" the current user settings to increase reception for these public awareness exercises and cautions on overwriting consumer choice. ATIS WTSC believes that effective use of the State/Local WEA Test, with volunteers instructed how to activate the State/Local WEA Test, can be effective for end-to-end WEA testing.

Promoting Transparency about WEA Availability and Performance. ATIS WTSC has strong reservations regarding the utility of WEA performance minimums to improve WEA reliability and effectiveness, as well as the technical feasibility of applying such performance minimums to each WEA message. It is unclear to ATIS WTSC how any additional performance data could be used to modify any aspect in any part of the end-to-end system.

ATIS WTSC recommends that stakeholders, including FEMA and the AO community, work together to identify and address any concerns or questions related to WEA performance. Education on the technical nature and radio frequency (RF) characteristics of WEA should aid in providing AOs a better understanding of WEA. ATIS WTSC remains convinced that the State/Local WEA Test remains the best way to instill confidence in WEA and for AOs to gain a better understanding of how WEA works.

ATIS WTSC recognizes and supports the Commission's goal to ensure that all WEA-capable mobile devices within a target area receive alerts intended for them. However, ATIS WTSC notes that WEA, like any other RF-based system, faces anomalies outside the Participating CMSP's control that may result in some devices not receiving the WEA broadcast. ATIS WTSC further notes that, while the Participating CMSPs broadcast WEAs such that they reach 100% of the target area if the provider has coverage in 100% of the Alert Area, some mobile devices may not have coverage and thus not receive the alert.

ATIS WTSC notes that it is not possible for Participating CMSPs to ensure that mobile devices present alerts within five minutes on 99% of WEA-capable mobile devices that have not opted out from receiving the alert and are within the target area. Likewise, one second from receipt of the WEA at the Participating CMSP alert gateway is not an appropriate benchmark for the percentage of mobile devices that already have a location determination at the time they receive a WEA and therefore need to engage in limited additional processing before presenting the alert message.

ATIS WTSC does not believe that the WEA device-based geofencing standards are deficient, as receipt of a WEA message does not necessarily prompt geofencing-capable mobile devices to obtain a current location fix. ATIS WTSC notes that the ATIS Wireless Emergency Alert (WEA) 3.0 Operational Considerations for Commercial Mobile Service Providers (CMSPs) document encourages the use of current location.

ATIS WTSC notes that there is no way for CMSPs to gather performance data from consumer devices as there is no reverse reporting path in WEA due to the nature of the Cell Broadcast System (CBS). It is also not currently possible for WEA-capable mobile devices to know whether they are receiving the first WEA broadcast or a later WEA broadcast. ATIS WTSC notes that there would be privacy implications associated with the automatic reporting of WEA performance information from WEA-capable mobile devices.

ATIS WTSC disagrees that a WEA database should be established to collect WEA election and performance information.

Timeline. ATIS WTSC notes that CSRIC VIII discussed the proposals in the *FNPRM* and produced timelines but did not have sufficient opportunity for in-depth consideration. In addition, each enhancement timeframe was considered only in isolation. CSRIC VIII recommended that ATIS WTSC work with other stakeholders to provide further input within six months for the Commission's consideration for inclusion in any future proposed rulings. ATIS approved a work item in April of this year to evaluate timelines and is expected to be complete in December 2023. This limits the ability of ATIS WTSC to provide additional information on the timelines for the proposals. ATIS WTSC notes that all proposals in the *FNPRM* require multi-stakeholder collaboration and/or studies. This pre-design work must take place before design and standardization can be started.

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COMMENTS OF THE ALLIANCE FOR TELECOMMUNICATIONS INDUSTRY SOLUTIONS

The Alliance for Telecommunications Industry Solutions (ATIS) hereby submits these comments in response to the *Further Notice of Proposed Rulemaking* (*FNPRM*), released April 21, 2023, in the above-referenced dockets. In the *FNPRM*, the Federal Communications Commission (Commission) seeks input on proposed rule changes to make Wireless Emergency Alerts (WEA) more accessible, to establish WEA performance measures and to provide greater transparency to alerting stakeholders. ATIS and its members support the Commission's efforts to promote the accessibility and availability of WEA. In these comments, ATIS provides input on the feasibility of, and technical issues associated with, the Commission's proposals regarding WEA accessibility and performance.

I. Background

ATIS is a global standards development and technical planning organization that develops technical and operational standards for the Information and Communications Technologies (ICT) sector. ATIS' diverse membership includes key stakeholders, including wireless, wireline, and VoIP 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 4G Long-Term Evolution (LTE) and 5G New Radio (NR) wireless specifications.

Nearly 600 industry subject matter experts work collaboratively in ATIS' open industry committees. ATIS' Wireless Technologies and Systems Committee (WTSC) develops wireless radio access, system, and network solutions related to wireless and/or mobile services and systems, including WEA. ATIS WTSC continues to enhance solutions necessary to support WEA. These efforts are spearheaded by ATIS' WTSC WEA subcommittee.

II. Comments

A. Making WEA More Accessible

1. Language Support

In the *FNPRM*, the Commission proposes to require Participating Commercial Mobile Service Providers (CMSPs) to take steps to ensure that their subscribers' WEA-capable mobile devices have the capacity to translate English-language alert messages that they receive into the 13 most commonly used spoken languages in the U.S. as identified by the Commission by use of machine translation technologies.[1] ATIS WTSC supports the Commission's goal of exploring machine translations as a method of making WEA more accessible. ATIS WTSC notes that, while language support for WEA beyond English and Spanish is currently available via the use of embedded links in WEA messages, ATIS WTSC is only aware that New York City is currently utilizing that functionality.

[1] *FNPRM* at ¶11.

The Commission seeks comment on the accuracy of machine translation technologies.[2] ATIS WTSC is not in a position to comment on whether machine translation technologies are mature enough at this time to be used for WEA translations, but notes that the Federal Emergency Management Agency (FEMA) and others have expressed reservations about the exclusive use of machine translations in emergency situations.[3] ATIS WTSC also notes that variations in translation capabilities would be expected because different software may be used across devices, OEMs, and operating systems (OSs). ATIS WTSC believes that imperfections and variations could be tolerated if the goal is for the WEA translation to be sufficiently accurate to convey the intent of the WEA message so that citizens can take appropriate protective action. With some training on the part of the Alert Originators (AOs) in crafting WEA messages that can be translated effectively by software, improved translation accuracy might be possible. ATIS WTSC recommends that, should device-based translations be used for WEA, public education would be needed to explain that messages are being translated via software and may not always be accurate or consistent. This may help minimize consumer confusion in the case of imperfect translations.

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[2] *FNPRM* at ¶14.

[3] *See, e.g.*, Federal Emergency Management Agency, Integrated Public Alert and Warning System (IPAWS) TIP #13: Alerting in Spanish (May 3, 2019), *available at* https://www.fema.gov/sites/default/files/2020-08/ipaws-tips_may-2019.pdf ("machine and web-based translations [of emergency alerts into Spanish] are generally not advised unless reviewed by a Spanish speaking individual") (last visited on July 21, 2023); Sofia Quaglia, *Death by Machine Translation?*, SLATE (Sept. 21, 2022), https://slate.com/technology/2022/09/machine-translation-accuracy-government-danger.html (last visited on July 21, 2023). Similarly, machine language translation providers themselves have noted potential limitations of machine translations. *See, e.g.*, Apple Inc., Translation & Privacy, https://www.apple.com/legal/privacy/data/en/translation/ (Sep. 12, 2022) (last visited on July 21, 2023) ("Translate should not be relied on in circumstances where you could be harmed or injured, in high-risk situations, for navigation, or for the diagnosis or treatment of any medical condition."), Google Cloud, Cloud Translation, Attribution Requirements, https://cloud.google.com/translate/attribution (last visited July 21, 2023)(requiring websites using Google translate to make disclaimers and recommending that websites disclose that "[r]easonable efforts have been made to provide an accurate translation, however, no automated translation is perfect nor is it intended to replace human translators").

ATIS WTSC believes that language support that is more widely accessible than embedded links should be explored and developed and acknowledges that mobile devices having the capability to perform translations would be the most logical, technically feasible, and scalable solution available. This approach is a more user-friendly solution and could present the WEA with less delay than other solutions, such as providing embedded links that would have a greater dependency on data connectivity and server load and would require AOs to translate the WEA and post the translations to a web page accessible by the embedded link. Device-based translation would be ubiquitous throughout all jurisdictions, unlike the proposal of providing embedded links, and would not depend on AOs' dedicating resources responsible for translations into the 13 languages. For consumers, this would mean more consistent access to WEA in their preferred language, whether they are home or travelling.

In the *FNPRM*, the Commission seeks comments on whether it has identified the correct set of languages to support.[4] While ATIS WTSC expresses no opinion on the set of languages, it believes that providing support for the 13 most commonly used languages besides English is reasonable given the need to ensure accuracy of machine translations. A limit of 13 languages would allow CMSPs and device vendors to test a well-defined list of supported language translations against common phrases used by AOs in the English version of alerts to attempt to promote translation accuracy.

The Commission asks about whether the preferred language, or the preferred language as well as English, should be presented to the user.[5] While it is technically possible with device development to have the user choose one option or the other during WEA setup on their device, it is preferable to continue to provide the English version of the alert along with the preferred

[4] *FNPRM* at ¶13.
[5] *FNPRM* at ¶12.

language version of the alert (as is done today with English and Spanish) even when device translation is used. There are many reasons why this is a good idea, including:

(1) To comply with the WARN Act,[6] which requires an English version of an alert;[7]
(2) To assist with any user-suspected translation errors by allowing users to compare/contrast the English version with the preferred language version of the alert to assist in the user in verifying the accuracy of the preferred language translation; and
(3) To address the use of words in an alert for which translation is not desired (such as the name of the street or other geographic location). Providing both the English and preferred language versions of the alert allows users to double-check street names and other words which may not need or benefit from translation.

If machine language translation technologies are pursued for this purpose, statutory liability protections should be extended to participating CMSPs, mobile device equipment manufacturers, operating system providers, and translation software developers consistent with the WARN Act liability protections.[8] Once rules are adopted and liability protections extended, ATIS WTSC would update its Mobile Device Behavior specification to include the user expectations of device-based machine language translation prior to the start of development and implementation, and equipment manufacturers would need to evaluate if legacy mobile devices in the marketplace today have the capability to support machine language translation, or if new devices would be required.[9]

ATIS WTSC believes there are several ways to improve the accuracy of machine language translations. As noted above, AO training for the development of WEA messages that can be

[6] Warning, Alert and Response Network (WARN) Act, Title VI of the Security and Accountability for Every Port Act of 2006, 120 Stat. 1884, § 602(a), codified at 47 U.S.C. § 1201, et seq., § 1202(a) (2006) (WARN Act).
[7] 47 U.S.C. §1202(c)(4). The WARN Act required the Commission to consider recommendations regarding "the technical capability to transmit emergency alerts by electing commercial mobile providers to subscribers in languages in addition to English, to the extent practical and feasible."
[8] The WARN Act's limitation of liability for harm resulting from emergency alerts applies to only to "[a]ny commercial mobile service provider (including its officers, directors, employees, vendors, and agents)" that transmits emergency alerts." 47 U.S.C. § 1201(e)(1).
[9] Wireless Emergency Alert (WEA) 3.0 Mobile Device Behavior (MDB) Specification (ATIS-0700036.v003 (October 2021)) This document is available from: https://www.techstreet.com/atis/standards/atis-0700036-v003?product_id=2240017.

translated effectively by software is one way to improve translation accuracy. The identification of common phrases and terminology in WEA messages through collaboration across operating system providers, device vendors, equipment manufacturers, FEMA, and the AOs has the potential to improve machine language accuracy for use with WEA. The Message Design Dashboard for Wireless Emergency Alerts underway at CTG University at Albany and supported by FEMA may also prove to be valuable in this effort by standardizing WEA message elements.[10] Additional recommendations from the Eighth Communications Security, Reliability, and Interoperability Council (CSRIC VIII), discussed in more technical detail below, have the potential to further assist in the comprehension of WEA messages.[11] These include displaying symbols (e.g., tornado symbol) or infographics (e.g., Drop, Hold and Cover for earthquakes) on the device, and using a spoken term or phrase that describes the event in the user's preferred language. These enhancements would impart more immediate understanding of the context for the event, enhancing understanding of the WEA and actions to be taken.

The Commission seeks comment on alternative approaches to promoting multilingual WEA, including the approach used by some jurisdictions, such as New York City, in which a link is provided in WEA messages to a web page with pre-scripted translations in additional languages based on the needs of the population that the jurisdictions serve.[12] As noted above, the embedded link approach can introduce greater delays than machine translation on the device due to the need of the user to click on the link to access the server, with possibly lengthy delays if the server is not capable of handling a large portion of the users receiving the embedded link who click it within a short period of time. In addition, each AO would be required to support an

[10] https://www.ctg.albany.edu/projects/mdd/
[11] CSRIC VIII Report on WEA Application Programming Interface (March 2023).
[12] *FNPRM* at ¶16 (describing the Notify NYC app, which presents the English-language WEA message and a link to 13 other pre-scripted translations).

embedded link in the WEA message along with the associated web page containing the translations. While New York City has the resources and staff to translate WEAs into American Sign Language (ASL) and other languages, this approach would be difficult to support nationwide across all AO jurisdictions. Consumers will experience inconsistencies when traveling throughout the U.S. and could be confused and frustrated with inconsistent or nonexistent support of their preferred language because some jurisdictions would not have resources to do translations or support a server or may themselves require the use of machine language translation to create the web page content. If the embedded link approach is used, it is important to note that the decision to use URLs for additional language support is a decision made exclusively by the AO; participating CMSPs will have no knowledge or control over the embedded links.

The Commission also asks about pre-scripted templates for translations of the most common alerts being pre-installed on the mobile device itself.[13] The Commission suggests that these templates could be "activated by a data element" included in alert message metadata, which would prompt the mobile device to display the relevant template alert message in the mobile device's default language chosen by the consumer.[14] ATIS WTSC notes that there are limitations and complexities associated with the "pre-scripted template pre-installed on the device" concept described by the Commission. The described approach goes against the "all disasters are local" principle of emergency management and removes the ability of AOs to tailor messages to their jurisdiction for the event. Each event may have unique instructions/actions for citizens that may vary from what the "pre-scripted template" was designed for. Thus, a pre-scripted message may only give a high-level description of the event and may be insufficient to

[13] *FNPRM* at ¶16.
[14] *Id*.

provide specific actions. Pre-scripted templates appear more limiting than a direct translation by the device based on the user's preferred language settings. It may be more constructive to have AOs, device, OEMs, and OS vendors to collaborate on and identify standard phrases and terminology that may enhance the improvement of translation results in all supported preferred languages.

The "pre-installed" approach raises other issues that also must be considered, including: the complex interface needed to allow the AO to quickly select an appropriate template with the needed granularity for a given event when initiating the alert; the number of templates to be stored by the device; and the expected volatility of the template text (i.e., is an update mechanism needed for templates and what is the update frequency). A methodology for identifying the set of standardized templates as well as a method for updating the templates would need to be developed. Moreover, any new data element in alert message metadata that would trigger the display of a template would require standards, design, development, and deployment efforts, and potentially could also require new devices.

As a further example of the limitations of the pre-installed template approach, FEMA IPAWS identifies 21 non-weather service event codes that would likely require a "template." In addition, the National Weather Service sends WEAs for an additional approximately 10 weather-related event codes. Some of these event codes are general in nature and used for multiple events; for example, CDW (Civil Danger Warning) can be used for anything from a contaminated water supply to imminent or in-progress military or terrorist attack. The public protective actions could include evacuating, sheltering in place, boiling contaminated water, seeking medical treatment, etc. The wide range of possible events and actions for this single event code highlights the limitations of the pre-installed template approach. These limitations

would restrict AOs in providing information that is crucial to the public for any given emergency. WEA messages also typically include a time period for when the alert is valid (e.g., an NWS Dust Storm WEA would have a message along the lines of "Dust Storm Warning in this area till hh:mm tZT ddd. Avoid Travel. Check local media.") A template would not include the time information in the message, which could be critical information during an event.

ATIS WTSC notes that CSRIC VIII also recommended a spoken term or short phrase representing the alerting event in the user's preferred language to speed WEA comprehension.[15] ATIS WTSC agrees that a device-based spoken term or short phrase representing the event, along with the WEA text, can improve accessibility and speed of comprehension of the WEA message. For certain events, such as an earthquake, the spoken term "earthquake" in the user's preferred language would prompt immediate action by the user prior to even reading the WEA text. ATIS WTSC has determined that additional standards, design, and development are needed to support a spoken term or short phrase representing an event. Collaboration among industry, AOs, and FEMA also would be needed to identify how events are specified which should have a spoken phrase, as well as the most appropriate term or phrase to be spoken.

The Commission also seeks input on ASL Support.[16] ATIS WTSC does not believe a pre-installed template-based approach for ASL would be feasible because it would not provide AOs with the ability to manage disasters locally but notes that the existing text-based WEA presentation on the mobile device already supports the needs of the deaf and hard-of-hearing community. Using a single medium is the best way to ensure that WEA messages are quick and accurate. ATIS WTSC notes that any jurisdiction that chooses to provide additional information,

[15] CSRIC VIII Report on WEA Application Programming Interface (March 2023), Section 5.1.3.2.2.
[16] *FNPRM* at ¶19.

including via ASL, can follow the example of New York City and use an embedded link to a website with additional information.

The Commission also asks about the ability of text-to-speech to assist people with vision disabilities.[17] ATIS WTSC supports the use of text-to-speech functionality for those with vision disabilities. ATIS WTSC notes however that that text-to-speech is not available on all devices. While some mobile device OS vendors have included text-to-speech capability for English language WEA messages, it is not a universal function across all mobile devices, or for the full set of language options.

The Commission also asks for comment on the extent to which blind and low-vision subscribers are using text-to-speech applications and whether these applications can generate audible versions of WEA messages.[18] ATIS WTSC notes that WEA messages would not be automatically spoken aloud by screen readers. While WEA is rendered in a format that screen readers can access and read aloud, there would be a delay in generation of the audio version of the WEA message.

The *FNPRM* asks whether text-to-speech technologies can be tailored to different regional dialects or accents.[19] ATIS WTSC does not believe it is technically feasible for text-to-speech technologies to be tailored to different regional dialects or accents. For instance, English alone in the U.S. has roughly 30 different dialects. Some researchers even suggest that it is impossible to count the number of dialects in the U.S. because under a loose definition of the term, thousands of cities, towns, and groups have their own varieties or dialects. However, the text-to-speech generated information should be understood by people who speak the language

[17] *FNPRM* at ¶20.
[18] *Id.*
[19] *Id*.

that is translated even without regional dialects or accents. While relying on text-to-speech functionality for WEA alert messages might yield confusing mispronunciations, when weighed against the public benefits of vulnerable populations receiving alert messages, ATIS WTSC believes the benefits of text-to-speech outweigh the risks.

The Commission asks whether participating CMSPs could support text-to-speech for other alert message elements, such as the geographic area to which the alert message applies.[20] ATIS WTSC notes that a spoken description of the Alert Area would be challenging, especially if the user is not already familiar with their surroundings or general location. ATIS WTSC notes that text-to-speech should apply to the WEA text only – it should not apply to other alert message elements, such as the geographic area. The Alert Area in the WEA is a set of coordinates defining a polygon, a point and radius for a circle, or a geocode and is used to facilitate geotargeting, not to convey the Alert Area to the user. Converting these coordinates to speech would not be effective in communicating the Alert Area to the user and likely would provide confusing, unusable information. ATIS WTSC believes that the best way to convey the geographic area impacted by the alerting event to the user is to provide an appropriate description in the WEA text provided by the AO that can be read via text-to-speech functionality.

2. Multimedia Content

In the *FNPRM*, the Commission proposes to require support for certain multimedia content in WEA messages.[21] ATIS WTSC does not support the addition of multimedia content in the WEA broadcast because these could create capacity issues that could negatively impact performance nationwide, both in terms of reliability and latency.

[20] *Id.*
[21] *FNPRM* at ¶21.

The Commission proposes to require Participating CMSPs to support the sending of thumbnail-sized images in WEA messages over the air.[22] Specifically, the Commission is contemplating a thumbnail-sized photo of about 1.5"x1.5" with a resolution of 72 dots per inch [DPI] which will produce an image of 120x120 pixels and if 8-bit color scale is used, then a digital image file will be about 14,400 bytes [0.013 megabytes] in size.[23] ATIS WTSC maintains that an AO-provided embedded link in the WEA message is the best way to provide multimedia content, including images. ATIS WTSC has performed a study on incorporating a thumbnail image in the WEA broadcast. This study identifies the impacts to the number of coordinates and/or WEA message size, including the impact on number of broadcast segments that would be required to transmit an image.[24] While it is clear that any additional payload in the broadcast that includes a thumbnail image will negatively impact capacity and performance, further study would be needed to determine the magnitude of possible latency and reliability impacts. WEA 1.0 used one segment over the air to carry the alert. WEA 2.0/3.0 moved to up to five segments sent twice because English and Spanish alerts are sent independently over the broadcast. Additional segments will present a strong risk to reliability and latency because the device must receive every segment of the message before it can begin reconstruction. Adding a thumbnail image will significantly increase the number of segments (i.e., more than doubling the current number of segments), while supplying an image that it too small and possibly too low-quality to see easily. ATIS WTSC also questions the utility of a thumbnail image, specifically: (i) whether drivers who suddenly have a tiny, low-quality photo on their device would become distracted; (ii) the likelihood that people will draw much information from this photo versus

[22] *FNPRM* at ¶22.
[23] *FNPRM*, Appendix A, proposed rule 47 CFR §10.490.
[24] *ATIS Feasibility Study for WEA Supplemental Text (ATIS 0700026* (2015)). This document is available from: https://www.techstreet.com/atis/subgroups/53580.

using the preferred embedded link to obtain higher resolution images and more detailed information; and (iii) whether most people would be able to see any details, or would be more likely to still need an embedded link to a larger photo that could be viewed after receiving the alert.

The Commission seeks input on steps that can be taken to free up bandwidth to support new multimedia capabilities and asks whether it should sunset the requirement to transmit a 90-character-maximum version of alerts in addition to the 360-character-maximum version.[25] ATIS WTSC notes that the removal of the 90-character broadcast would not free up bandwidth in 4G/5G because the 90-character WEA is broadcast only on the 2G/3G systems, most of which are being sunset. Any new multimedia WEA capabilities proposed by the Commission would be considered only on 4G/5G systems, which do not broadcast the 90-character version. Therefore, the total number of bits would not be impacted on 4G and 5G systems by a 90-character sunset, and no "reallocation" would be possible to support other capabilities. ATIS WTSC is not aware of any other bandwidth-saving measures that could be implemented to allow for the inclusion of multimedia.

The Commission also proposes to require Participating CMSPs to support the presentation of "location-aware maps" in WEA messages.[26] ATIS WTSC supports the recommendations of CSRIC VIII with respect to the presentation of location aware maps[27] and notes that this impacts mobile devices and should not impact Participating CMSPs. This proposed WEA enhancement will allow users to better understand whether the alert applies to their locations. Location-aware maps will require updates to the ATIS Mobile Device Behavior

[25] *FNPRM* at ¶24.
[26] *FNPRM* at ¶25.
[27] CSRIC VIII Report on WEA Application Programming Interface (March 2023), Section 5.1.3.1.1.

specification[28] and design and development of mobile devices. Without further study, it is uncertain whether legacy devices will be able to support this capability or if new devices will be required. It should be noted that this is not multimedia content in the broadcast, but is a map constructed by software on the device using the broadcast Alert Area coordinates.[29]

The *FNPRM* also asks whether it is feasible for CMSPs to support the transmission of a data element that would trigger infographics that have been preinstalled on the device.[30] ATIS WTSC supports the idea of making preinstalled standard infographics available. ATIS WTSC agrees that if a data element such as the Event Code, for example, is passed to the mobile device in the WEA broadcast, then it may be possible for the device to use the data element to present other content related to the event through preinstalled content.

Infographics stored at the device will require a new data element incorporated into the signaling, triggering the display of the appropriate infographic. ATIS WTSC believes that the Event Code could be used for this purpose, as proposed by CSRIC VIII.[31] However, this requires a single Event Code equating to a single infographic. If an Event Code cannot be mapped to a single infographic, a second indicator coupled with the Event Code may be necessary. The Event Code is not currently conveyed to the CMSP and the device, and therefore standardization, design and development are required for signaling updates to transmit the Event Code in the WEA broadcast. Such an effort will require development in FEMA IPAWS, CMSP infrastructure, and mobile devices. ATIS WTSC notes that, without further study, it is uncertain

[28] Wireless Emergency Alert (WEA) 3.0 Mobile Device Behavior (MDB) Specification (ATIS-0700036.v003).
[29] The Commission references in the *FNPRM* that clicking of a link for the map display as mentioned in the CSRIC report, but that tap on "display map" does not involve pulling a picture from a server, but rather prompts the device to build and display the map. This makes use of the device capabilities with no additional strain on broadcast capacity.
[30] *FNPRM* at ¶26.
[31] CSRIC VIII Report on WEA Application Programming Interface (March 2023), Section 5.1.3.2.2.

if legacy devices would be able to support this new capability, or if new devices would be required.

The Commission also seeks comment on the inclusion of symbols in WEA messages.[32] ATIS WTSC does not support the inclusion of symbols in the WEA broadcast due to the capacity concerns explained above in the discussion on thumbnail images. ATIS WTSC supports the CSRIC VIII recommendation that easily recognized symbols be pre-installed in the device,[33] with the device mapping and presenting the appropriate symbol based on new signaling as explained above to prompt quicker comprehension by the user. Symbols (e.g., tornado "twister" symbol) stored in the device could be triggered by an Event Code described above. CSRIC VIII recommended a collaborative effort to narrow the list to an appropriate set of symbols[34] that could be quickly comprehended without causing delay in the user's reaction while they are attempting to understand the symbol. Public warning risk communications experts and social scientists, in collaboration with ATIS WTSC, should identify a limited set of symbols that the public would be able to instantly recognize and interpret, including knowing what action to take. ATIS WTSC agrees that alerting authorities and federal, state, local, tribal, and territorial government agencies must educate the public about emergency communications symbols so that their receipt results in rapid comprehension and action. Symbols not easily recognized have the potential to increase milling (i.e., person's initial confusion upon receiving an alert which leads them to gather information from other sources to confirm the alert) rather than to decrease it.[35] ATIS WTSC is uncertain if it is possible to ensure that graphics and links to images are readable

[32] *FNPRM* at ¶27.
[33] CSRIC VIII Report on WEA Application Programming Interface (March 2023), Section 5.1.3.2.2.
[34] *Id*.
[35] For more information on "milling", see Public Response to Disaster Warnings – Disaster Psychology – Dr Martin Lea, available from https://martinlea.com/public-response-to-disaster-warnings/#:~:text=In%20fact%2C%20disbelief%20of%20the,preparedness%20is%20low%20%5B75%5D (last visited on July 21, 2023).

by screen readers for persons who are blind or have low vision. Further study with input from screen reader application providers is needed.

To support pre-installed symbols, infographics, and the selection of a spoken term or phrase, an additional indicator may be necessary if the Event Code does not provide the granularity needed. Any additional signaling requires standardization and development which may include impacts to the AO interface, AO vendors, and Common Alerting Protocol (CAP), FEMA, IPAWS, in addition to the CMSP infrastructure and mobile devices. Without further study, it is uncertain whether legacy devices will be able to support this capability or if new devices will be required.

3. Summary

ATIS WTSC supports the Commission's goal of exploring machine translations as a method of making WEA more accessible but is not in a position to comment on whether machine translation technologies are mature enough at this time to be used for WEA translations. ATIS WTSC believes that language support that is more widely accessible than embedded links should be explored and developed and acknowledges that mobile devices having the capability to perform translations is the most logical, technically feasible, and scalable solution available. ATIS WTSC supports the use of text-to-speech functionality for those with vision disabilities, but notes this functionality is not available on all devices.

If machine language translation technologies by devices are pursued for WEA translations, ATIS WTSC urges the Commission to extend statutory liability protections to participating CMSPs, mobile device equipment manufacturers, operating system providers, and translation software developers consistent with the WARN Act liability protections.

ATIS WTSC does not support the addition of any form of multimedia content in the WEA broadcast because these could create capacity issues that could negatively impact WEA performance reliability and latency but maintains that an AO-provided embedded link in the WEA message is the best way to provide such content.

ATIS WTSC supports the idea of making pre-installed standard infographics available for display. Similarly, ATIS WTSC believes that measures to support triggering of the display of pre-installed symbols or infographics are technically feasible, but will require modifications throughout the stakeholder communications chain, possibly including changes to CAP. Without further study, it is uncertain whether legacy devices will be able to support this capability or if new devices will be required.

B. Integrating WEA More Seamlessly into People's Lives

1. Allow Alerting Authorities More Flexibility in how WEA Messages Are Presented

In the *FNPRM*, the Commission proposes to require that participating CMSPs be able to send WEA messages, at the alerting authority's option, without triggering the audio attention signal and the vibration cadence,[36] providing an active shooter scenario as an example. While ATIS WTSC leaves the policy of a "silent" WEA to policymakers and the AO community, from a technology and standards perspective such a capability would require extensive development. This development includes new signaling, to be added by the AO, passing through FEMA IPAWS and the CMSP infrastructure, and broadcast to the mobile device. The mobile device would have to interpret the indication and either provide an audio attention signal or vibration cadence with the presentation of the WEA, or silently present the WEA, regardless of user settings related to the audio attention signal and vibration cadence. This would require

[36] *FNPRM* at ¶29.

standardization, design, and development of the new capability, including the mobile device behavior. Without further study, it is uncertain if legacy devices could support this new capability, or if new devices would be required. Moreover, legacy devices may still have the audio attention signal and vibration cadence active regardless of the AOs intention for a "silent alert." In addition, FEMA would need to verify the authorization to use such an indicator. Permissions should be verified by FEMA IPAWS before being passed to the CMSP if their use is restricted to specific AOs or Event Codes.

ATIS WTSC recommends careful Commission consideration before permitting broader flexibility for the audio attention signal and the vibration cadence at the choice of AO or the consumer. ATIS WTSC notes that the absence of any attention signal or vibration cadence will require the user to look at the mobile device display when the WEA is presented in order to be alerted. There is a risk that the user may be distracted away from their device because of the event and may miss any incoming WEA. This has the strong potential to make WEA less effective, especially in the case of "life-saving" alerts which often require immediate action. Also, the risk of an AO erroneously setting the "silent" notification for alerts where a notification is needed (e.g., tornado) may result in citizens missing a WEA, putting them at risk. ATIS WTSC also notes that in the recent UK test of its version of WEA, the "silent alert" came up in another scenario, namely the "hidden phone" in domestic violence situations.[37] ATIS WTSC recommends that a study of all potential use cases for the "silent alert," along with the pros/cons of a silent alert, be undertaken prior to any decision to move forward with design and implementation.

[37] National emergency alert, and hidden second mobile phones, Exeter City Council News, April 14, 2023, https://news.exeter.gov.uk/national-emergency-alert-and-hidden-second-mobile-phones (last visited on July 21, 2023).

2. Prevent Unnecessary Consumer Opt-Out

The Commission seeks comment on how it can prevent unnecessary consumer opt-outs to WEA and asks whether participating CMSPs could "reset" WEA-capable mobile devices to their default opt-in status.[38] To remedy this, the Commission proposes "to require Participating CMS Providers to provide their subscribers with the option to durably turn off WEA's audio attention signal and vibration cadence for all alerts."[39] ATIS WTSC does not believe that any additional flexibility should be provided to the end user until more information is gathered about the number of users that might opt out of attention-getting parts of the presentation, even for Imminent Threat alerts.

The Commission also asks how to ensure that users having already chosen to opt out could be reached with information about new presentation options and asks whether the user settings on those devices could be modified.[40] ATIS WTSC notes that overwriting consumer choice by resetting the user device to its default opt-in settings is not technically feasible and would likely negatively impact consumers and their trust in the WEA program.

3. Facilitate More Effective WEA Public Awareness Exercises

The Commission asks for input regarding use of the State/Local WEA Test and proposes to authorize participating CMSPs to support up to two end-to-end WEA tests per alerting authority each year in which consumers receive test messages by default.[41] ATIS WTSC notes that AOs have a number of tools available for testing WEA end-to-end, and a waiver is only needed if the AO wants to use one of the "live" message classes for WEA testing. For example, the State/Local WEA Test class does not require a waiver although it does require users to opt-in

[38] *FNPRM* at ¶31,32.
[39] *FNPRM* at ¶31.
[40] *FNPRM* at ¶32.
[41] *FNPRM* at ¶¶34-35.

to receiving the test message. Another consideration for two end-to-end WEA tests per alerting authority each year is how to address overlapping jurisdictions in a geographic location, which could result in each AO in that jurisdiction being authorized up to two tests per year (e.g., City, County, State, Tribal, and Federal). ATIS WTSC strongly believes that multiple or overlapping jurisdictions should be expected to coordinate and stagger/consolidate their tests to avoid alert fatigue.

ATIS WTSC recommends that effective use of the State/Local WEA Test, with volunteers instructed how to activate the State/Local WEA Test (e.g., CERT teams, amateur radio teams, citizens via social media, etc.), can be effective for end-to-end WEA testing. ATIS WTSC cautions against expanding means of testing beyond the existing State/Local WEA Test because it might lead to over or inappropriate testing that may work against gaining consumer confidence, as recently happened when a Florida WEA Test was performed in the middle of the night.[42]

ATIS WTSC acknowledges the Commission's desire to allow for WEA tests that are received by potentially all users. ATIS WTSC notes that given the opt-out choices available to users, only the National Alert message class would reach all consumers by default; however, ATIS WTSC does not recommend authorizing this class of alert to be used beyond the President or FEMA Administrator. If the Commission authorizes the use of one of the other classes, such as the Imminent Threat message class, for use in such testing (understanding that some users may have opted out), the Commission should be acknowledge that Participating CMSPs do not need authorization to support these tests and Participating CMSPs do not validate or otherwise

[42] Florida emergency alert test sent at 4:45 am draws angry response, has DeSantis threatening to fire someone, Fox News, https://www.foxnews.com/politics/florida-emergency-alert-sent-445-am-draws-angry-response-desantis-threatening-fire-someone, April 20, 2023 (last visited on July 21, 2023).

authorize any WEA alerting authority or any WEA passing through the CMSP infrastructure. ATIS WTSC notes that FEMA has responsibility for alerting authority validation including authorizing up to two end-to-end WEA tests per alerting authority each year. ATIS WTSC also believes that FEMA should verify that the AO conducts outreach and notifies the public in advance of the planned WEA test that no emergency is, in fact, occurring, and provides notification to the public in widely accessible formats, including in the alert text, that this is only a test. FEMA should also ensure that the WEA test message includes an indication that the alert is only a test, and should coordinate the test among Participating CMSPs, state and local emergency authorities, relevant State Emergency Communications Committees (SECCs), and first responder organizations. ATIS WTSC believes that Alerting Authorities should keep records on how they comply with WEA testing rules.

Finally on this issue, the Commission asks whether this proposal would facilitate more seamless joint exercises of EAS and the WEA system.[43] ATIS WTSC notes that, from the CMSP's perspective, joint EAS-WEA exercises would not necessarily be more easily facilitated as CMSPs do not participates in EAS. Joint EAS and WEA testing may be useful for AOs. However, ATIS WTSC notes that the Commission's EAS rules are different than the WEA rules and specify different hours for testing that might not be appropriate for WEA.

4. Summary

ATIS WTSC recommends that a study of all potential use cases for the "silent alert," along with the pros/cons of a silent alert, be undertaken prior to any decision to move forward with design and implementation. ATIS WTSC believes that the transmission of WEA messages, at the alerting authority's option, without triggering the audio attention signal and the vibration

[43] *FNPRM* at ¶36.

cadence could be technically supported but would require extensive design and development work. Consideration should also be given to the fact that this option could make WEA less effective, especially in the case of "life-saving" alerts which often require immediate action.

ATIS WTSC does not believe that subscribers should have the option to turn off WEA's audio attention signal and vibration cadence for all alerts until a study of all potential use cases is performed and more information is gathered about the number of users that might opt out of attention-getting parts of the presentation, even for Imminent Threat alerts.

ATIS WTSC supports public awareness, but urges caution concerning extensive amounts of testing that may reach the public, possibly resulting in more consumer opt-outs. ATIS WTSC also notes that there is no way to "reset" the current user settings to increase reception for these public awareness exercises, nor does ATIS WTSC support any override of consumer choice in their device settings. ATIS WTSC believes that effective use of the State/Local WEA Test, with volunteers instructed how to activate the State/Local WEA Test, can be effective for end-to-end WEA testing.

C. Promoting Transparency about WEA Availability and Performance

In the *FNPRM*, the Commission proposes to establish WEA performance minimums that participating CMSPs must satisfy for each WEA message.[44] ATIS WTSC has strong reservations regarding the utility of WEA performance minimums to improve WEA reliability and effectiveness, as well as the technical feasibility of applying such performance minimums to each WEA message. ATIS WTSC has developed best practices that Participating CMSPs use to optimize the broadcast of WEA in their networks to deliver WEAs in a timely manner and addressed the overshoot issue with Device-Based Geo-Fencing (DBGF).

[44] *FNPRM* at ¶47.

ATIS WTSC notes that the Cell Broadcast System (CBS) has been optimized for reliability and low latency, reflecting the critical role the System Information Broadcast (SIB) plays in all operations for the 3GPP network. Reliability, network capacity, and low latency are key reasons that CBS was chosen as the vehicle for WEA dissemination. As the Commission noted in its report on the 2021 WEA Test: (1) at least half of the respondents on 4G and 5G networks that received the nationwide WEA test received it within two minutes of transmission; (2) at least 90% of mobile devices on 4G networks that received the nationwide WEA test received it within four minutes; and (3) at least 90% of mobile devices on 5G networks that received the nationwide WEA test received it within three minutes.[45] The Commission found in its *September 2022 WEA Performance Exercise* report (2022 WEA Test Report) that 50% of respondents to the WEA Performance Exercise in 2022 reported receiving the alert less than two minutes after it was received by FEMA IPAWS, and 25% of respondents reported receiving the alert less than one minute after it was received by FEMA IPAWS[46] ATIS WTSC notes that the accuracy of WEA may be higher than reported as the statistics cited by the Commission may be skewed by devices that don't support WEA 3.0, or by missing data on WEA 3.0 devices that may or may not have location services enabled. ATIS WTSC knows of no other alert dissemination method to mobile devices that can meet this performance. ATIS WTSC also notes that Participating CMSPs have nearly 100% reliability with regards to successfully processing WEA alerts and that the latency over Participating CMSPs' networks is consistently minimal.[47]

[45] *Report: August 11, 2021 Nationwide WEA Test*, released by the Public Safety and Homeland Security Bureau in December 2021, at ¶34.
[46] *2022 WEA Test Report*, released by the Public Safety and Homeland Security Bureau on April 24, 2023, at pp. 9-10.
[47] The 2022 WEA Test Report and the median time to traverse a Participating CMSP's network was less than one second. *2022 WEA Test Report* at p. 2.

Participating CMSPs have optimized their networks to minimize latency from the point FEMA IPAWS delivers the WEA to the CMSP, to the time the WEA is broadcast.

Press reports highlight "deficiencies" in the WEA system but typically do not report on its success. ATIS and Participating CMSPs have been addressing reported issues with WEA and have made enhancements when appropriate. WEA DBGF, for example, was developed and standardized to minimize "receiving information that is irrelevant." DBGF requires WEA 3.0 devices, which currently are >60% of deployed devices. Until the number of WEA 3.0 devices approaches 100%, non-DBGF capable devices will skew the data and be subject to the reported "deficiencies" in WEA. Users may also elect to turn off location services, further skewing this data.

ATIS WTSC, FEMA, and the AO community should work together to identify and address any "inconsistent WEA performance that may have led some emergency management agencies to delay becoming authorized as alerting authorities and may have caused others to limit their use of WEA." Many perceived "inconsistencies" in WEA performance can be addressed without the need to collect information through AO education on issues such as the DBGF roll-out (i.e., WEA 3.0-capable device penetration in the market) and understanding the impacts of the complex RF environment on the WEA broadcast.

ATIS WTSC also believes that the State/Local WEA Test remains the best way to instill confidence in WEA and for AOs to gain a better understanding of how WEA works. The use of this alert class with reporting volunteers is the most accurate method for gauging WEA performance within any particular AO's jurisdiction, in addition to allowing the AO to verify its own compliance and understanding of WEA's capabilities. This test support, designed by all stakeholders in CSRIC IV and implemented by ATIS WEA, is currently available but

underutilized. New specifications have been created by ATIS WTSC WEA to improve AOs' understanding of what is offered by the State/Local WEA Test.[48]

1. Improving WEA Performance

In the *FNPRM*, the Commission seeks comment on whether improvements to the existing minimum reliability requirements are technically feasible and generally achievable across circumstances.[49] ATIS WTSC recognizes and supports the Commission's goal to ensure that all WEA-capable mobile devices within a target area receive alerts intended for them. However, WEA is a radio frequency (RF) based system and in any RF system anomalies exist that are outside the Participating CMSP's control that may result in some devices not receiving the WEA broadcast (e.g., being out of coverage from a Participating CMSP's cell tower). By design, these devices may eventually receive the WEA after some delay when they are back in coverage, or perhaps may not receive the WEA broadcast at all if they never return to coverage or return after the alert expires and the broadcast has stopped. ATIS WTSC notes that the data from the State/Local WEA Test demonstrates that WEA performs exceptionally well. As noted above, the Commission's reports following the 2021 and 2022 testing demonstrate that over 90% of devices are receiving alerts quickly.[50] In addition, latency over the CMSP's network is consistently minimal, as the processing per alert is very consistent within the network functions, only varying by milliseconds based on the size of the Alert Area that may affect the number of cell sites with coverage needing to be compared against the Alert Area.

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[48] *See, e.g.*, WEA 3.0 Practical Hints for Alert Originators (ATIS-0700049).
[49] *FNPRM* at ¶48.
[50] *See* 2021 WEA Test Report at ¶34 (indicating that: (1) at least half of the respondents on 4G and 5G networks that received the nationwide WEA test received it within two minutes of transmission; (2) at least 90% of mobile devices on 4G networks that received the nationwide WEA test received it within four minutes; and (3) at least 90% of mobile devices on 5G networks that received the nationwide WEA test received it within three minutes.) and *2022* WEA Test Report at pp. 9-10 (finding that 50% of respondents to the WEA Performance Exercise reported receiving the alert less than two minutes after it was received by FEMA IPAWS, and 25% of respondents reported receiving the alert less than one minute after it was received by FEMA IPAWS).

The Commission also asks about WEA accuracy and overshoot.[51] ATIS WTSC notes that the Participating CMSPs broadcast WEAs such that they reach 100% of the target area if the provider has coverage in 100% of the Alert Area. There are provisions in the Commission's rules should the CMSP not have coverage in 100% of the Alert Area.[52] Mobile devices may, for several reasons, still not have coverage and thus not receive the alert (e.g., in an elevator or other bad reception area, or other radio anomalies). The WEA specifications and best practices already address reliability through the periodic re-broadcast of the WEA during the period in which the WEA is active. The repeated broadcast is not only intended for those entering the broadcast area at some point following the initial broadcast but also is intended to account for the various circumstances when the device is out of coverage or did not receive the WEA due to some other RF anomaly. Mobile devices have duplication detection so that WEAs already received and presented are not presented again.

ATIS WTSC has developed the specification for WEA 3.0 DBGF, which is implemented in WEA 3.0 devices, to assist Participating CMSPs in complying with the 0.1 mile overshoot rule. ATIS WTSC notes that overshoot still occurs due to the propagation characteristics of radio signals and the need for the broadcast to cover 100% of the Alert Area. Device presentation of WEAs outside the Alert Area will continue to occur while pre-WEA 3.0 devices are in the field because these devices are not capable of using geocoordinates broadcast in the WEA message. Overshoot will also happen when a location cannot be obtained by the mobile device within a reasonable period following reception of the alert for any reason, including when the user has location turned off or is in an environment where sufficient location acquisition signaling cannot be obtained (e.g., in an elevator or basement). Under these circumstances, the

[51] *FNPRM* at ¶49.
[52] *See* 47 CFR §10.450.

device will not know its location with respect to the Alert Area, and thus will present the WEA in an abundance of caution to get the potentially life-saving message to the user. Due to the challenges mentioned here, ATIS WTSC notes that the quality of the Alert Area description within the WEA text provided by the AO is critical to mitigating confusion about where the alert applies. ATIS WTSC further recommends that AOs avoid the use of the phrase "in your area" because the broadcast will cover areas outside the Alert Area to comply with the 100% coverage requirement. Instead, ATIS WTSC recommends that the AO be as specific as possible in describing the affected area within the WEA text to assist the user.

ATIS WTSC recommends that the Commission consider all implications if it requires location services to always be enabled for WEA on WEA-capable mobile devices, even if they are disabled for other applications and uses. Unlike 9-1-1, WEA is not a user-initiated request for assistance at the time of the event. Alternatives to "always enabled" should be explored by ATIS WTSC. Technical factors such as battery impact, as well as consumer trust and privacy, are considerations on always requiring location services to be enabled that may result in consumers' choosing to opt-out of WEA.

ATIS WTSC notes that 2G/3G networks have been or are being phased out and will not be updated to support WEA 3.0 (i.e., to broadcast DBGF coordinates). 4G and 5G networks, as well as all new mobile devices, meet the Commission's proposed "WEA-capable" definition because they support DBGF and thus comply with the Commission's geotargeting requirements.

ATIS WTSC also notes that for WEA 3.0 DBGF devices the standards give the device vendors/OS providers the flexibility to set their own wait time to acquire the device location before defaulting to presentation of the WEA. ATIS WEA standards allow mobile device experts to use their knowledge of the likely amount of time needed to acquire location, as well as

a reasonable amount of time to wait before determining that location cannot be obtained. A mobile device may be unable to calculate its location for WEA purposes within the permissible period, even when the device's location services are turned on and available to the WEA firmware, for several reasons, such as being unable to obtain a GPS/GNSS satellite fix (e.g., out of coverage of GPS/GNSS satellites), having recent location not available or exceeding the device timer to first fix to obtain location, low battery, incorrect date and time settings, having network override set, etc. ATIS WTSC is not aware of any issue or problem with the geofencing solution being used in WEA-capable mobile devices.

ATIS WEA standards also provide a network override so that Participating CMSPs may adjust this wait time to acquire the device location before defaulting to presentation of the WEA based on their own testing and/or network experience. ATIS WTSC will continue to work with CMSPs, device manufacturers and OS providers to determine if test results or studies demonstrate that their devices strike the correct balance for presenting WEA messages in a timely and accurate manner.

ATIS WTSC notes that the proposed the enhancement for "location-aware" maps,[53] if pursued, will further assist any consumers by helping them to understand their location with regard to the Alert Area. If presentation has occurred outside the Alert Area boundaries because location could not be acquired, the user will be better able to understand whether there is a need to act.

In the *FNPRM*, the Commission proposes to require Participating CMSPs to satisfy minimum speed requirements.[54] The Commission seeks comment on whether Participating CMSPs should present alerts within five minutes on 99% of WEA-capable mobile devices that

[53] *FNPRM* at ¶25.
[54] *FNPRM* at ¶52.

have not opted out from receiving the alert and are within the target area.[55] ATIS WTSC notes that it is not possible for Participating CMSPs to ensure that mobile devices present alerts within five minutes on 99% of WEA-capable mobile devices that have not opted out from receiving the alert and are within the target area. A Participating CMSP has limited control over the RF environment in the Alert Area and has no knowledge of the state or location of devices within the target area while the WEA is being broadcast/rebroadcast. RF anomalies and the lack of information regarding device state/location result in circumstances that may result in significant delay in the time between the transmission of an alert by a Participating CMSP and presentation by a WEA-capable mobile device. As ATIS WTSC previously noted, the RF environment is complex with anomalies that impact reception of the WEA broadcast on the mobile device. Devices may be out of coverage/in a coverage shadow while the WEA is broadcast, and thus a Participating CMSP cannot ensure and has no control over when and if those devices will receive the WEA within five minutes. In addition, this interval of "five minutes" appears to be based on the technical upper limit of a currently unused operator override parameter that has no relation to this performance metric.

Likewise, a performance metric of one second from receipt of the WEA at the Participating CMSP alert gateway to the presentation is not an appropriate benchmark for the percentage of mobile devices that already have a location at the time they receive a WEA and therefore need limited additional processing before presenting the alert message. ATIS WTSC believes that a fair metric for measuring the speed of a WEA for a given Participating CMSP is the time when the WEA broadcast to the Alert Area begins compared to the time it was originated by the AO, the time it was delivered to the Participating CMSP's gateway from

[55] *Id.*

FEMA IPAWS, as well as the rebroadcast interval that is used by the Participating CMSP to maximize the likelihood of devices in an RF shadow or moving into the Alert Area receiving the WEA while the alert is still active.

The Commission asks whether the WEA standards are deficient for providing that receipt of a WEA message does not necessarily prompt geofencing-capable mobile devices to obtain a fresh location fix.[56] ATIS WTSC does not believe the standards are deficient and notes that the ATIS Operational Considerations document[57] encourages the use of "current" location, meaning that the location to be used by WEA for determining whether to present the alert will not necessarily be the last location obtained prior to receipt of an alert if enough time has passed that the stored location may no longer be valid given the mobile nature of the devices involved.

The Commission in the *FNPRM* asks about delivering the alert to mobile devices.[58] However, CMSPs do not "deliver WEA messages to all WEA-capable mobile devices" in the Alert Area; they broadcast the alert to 100% of the Alert Area if the provider has coverage in 100% of the Alert Area. If a device is in the broadcast area, it will receive the alert, barring radio anomalies, followed by processing and presenting the alert if appropriate. The periodic re-broadcast throughout the life of the alert already makes the alert broadcast available to devices entering the Alert Area following the initial broadcast.

2. Reporting Information about WEA Performance

Participating CMSPs have chosen CBS for the processing and broadcast of WEAs because CBS has been optimized for reliability and latency due to the critical role it plays in

[56] *FNPRM* at ¶54.
[57] Wireless Emergency Alert (WEA) 3.0 Operational Considerations for Commercial Mobile Service Providers (CMSPs), ATIS – 0700050 (December 1, 2021), Section 4.4.3 This document is available from https://www.techstreet.com/atis/searches/37865136.
[58] *FNPRM* at ¶48

3GPP networks. The collection of any performance metrics is not likely to provide any data useful to Participating CMSPs for further optimization of network parameters related to WEA broadcast, nor is it apparent that such metrics would result in any changes to WEA performance. ATIS has developed best practices that aid Participating CMSPs in configuring the various parameters for WEA broadcast to optimize performance and user experience, and Participating CMSPs perform testing to ensure their networks are optimized. ATIS WTSC notes that many of the reported performance issues were related to overshoot, which has been addressed in WEA 3.0 DBGF, while others are related to perceived delays in the receipt of WEAs and may be attributed to RF anomalies that have been addressed, to the extent possible, by the rebroadcast nature of WEA. Education on the technical nature and RF characteristics of WEA should aid in providing AOs a better understanding of their perceived "shortcomings" in WEA.

ATIS WTSC believes that AOs should be encouraged by an alerting tool that reaches more than nine out of ten of their constituents with life-saving information, with dissemination in less than two minutes, especially when considering the number of their constituents reached by WEA in comparison to other dissemination methods available. It is the view of ATIS WTSC that more emergency management agencies will be motivated to become alerting authorities if they are educated on the capabilities of WEA and on how WEA has been used to save lives and use the State/Local WEA Test capabilities to gain confidence that the system works.

ATIS WTSC notes that the WEA broadcast parameters allow flexibility for Participating CMSPs to adjust as necessary. As noted in the ATIS Operational Considerations document,[59] each operator should consider the related tradeoffs, especially on the rebroadcast interval, balancing the intent to maximize the number of users that receive the WEA as expeditiously as

[59] Wireless Emergency Alert (WEA) 3.0 Operational Considerations for Commercial Mobile Service Providers (CMSPs), ATIS – 0700050 (December 1, 2021), Section 4.2.

possible with the need to protect the network capacity to avoid the possibility of delayed communications by users reaching out for help, especially in a crisis situation when multiple simultaneous alerts might be active. A one-minute rebroadcast interval requirement across all Participating CMSPs may improve WEA's reliability and latency and provide a consistent experience, particularly among people who enter the Alert Area following a Participating CMSP's initial transmission of the alert, but other user and network needs must be considered.

Performance testing has been done both using the National Alert class in 2021 and Public Safety alerts in 2022. Commission reports on these tests show a lack of significant variation in performance regardless of service provider, system generation, activity status of the device (i.e., voice or data in use), location (indoor vs. outdoor), and device manufacturer and OS.[60] It is unclear why these performance numbers are not sufficient to give a clear picture of overall performance. Performance within a jurisdiction, as stated earlier, is best obtained through engaging in the State/Local WEA Test. To remove human error from the data gathering, a reporting app could be developed and installed on the devices belonging to volunteers with their understanding and agreement to the reporting of user settings through that app.

ATIS WTSC notes that it is still unclear how this data would be used to modify any aspect in any part of the end-to-end system, either from data available from the State/Local WEA Test, or data from staged reporting devices. More specific information is needed from AOs with example scenarios and detailed descriptions of exactly how any reported information would be used, what calculations would be run, what results from those calculations would be expected to trigger a reaction, and what response on the part of either the AOs or CMSP would be expected.

[60] *See 2021 WEA Test Report at* ¶2, *2022 WEA Test Report* at p. 5.

The Commission also seeks comment on gathering performance data from consumer devices.[61] There is no reverse reporting path in WEA due to the nature of the CBS. CMSPs, therefore, would not be able to report the timing or results of any events beyond the broadcast of the alert.[62] The Commission asks about reporting by CMSPs, but ATIS WTSC notes that the CSRIC VIII report on performance did not suggest the collection or reporting of any device performance information by the CMSP. More importantly, the collection of this data would achieve nothing because data gathered from consumer-owned devices would be incomplete, unverifiable, and unusable for calculations or to assess improvements.

The Commission seeks input on its proposal that Participating CMSPs would not have to collect precise location information, but rather, each WEA-capable mobile device could provide to the Participating CMSP only whether the device was located inside the target area or farther than 0.1 miles from the target area.[63] ATIS WTSC notes that it would impossible to corroborate the data collected under this proposal and, therefore, there would be no way to verify its accuracy. As a result, no actionable data would be produced.

In the *FNPRM*, the Commission notes that CSRIC VIII found that WEA-capable mobile devices currently do not know whether they are receiving the first WEA broadcast or a later WEA broadcast and ask if Participating CMSPs could take measures to enable devices to identify the initial transmission.[64] ATIS WTSC concludes that it is not possible to do this. Even if a cell site could produce mobile device attachment records for a particular instant in time, there is no way to match the times of any mobile connection with WEA broadcast/rebroadcast times.

[61] *FNPRM* at ¶61.
[62] See ATIS Comments to Further Notice of Proposed of Proposed Rulemaking (filed June 21, 2021) at p. 8.
[63] *FNPRM* at ¶61.
[64] *FNPRM* at ¶59.

ATIS WTSC confirms that there is no way for a device in the field to know whether it is receiving the first broadcast or a rebroadcast.

The Commission also seeks comment on CSRIC VIII's view that it is not possible for Participating CMSPs to know the number of devices in a targeted area that have opted into sharing WEA performance data.[65] ATIS WTSC notes that forming complete calculations for performance metrics would require all of the following: (1) the full set of devices attached to the network at the exact moment that the broadcast reaches the devices in the field; (2) the exact location of every device in the broadcast area; and (3) the full set of devices nationwide that have agreed to report. There is no technically feasible manner to obtain this full data set. ATIS WTSC also believes that there are privacy concerns associated with the provision of such information, and notes that CSRIC VIII also acknowledged that there are privacy implications that must be addressed.[66] CMSPs, device OEMs, and OS providers have stated that their privacy policies will prevent providing location information, or any information from which location could be derived, of their subscribers/consumers as part of any automated WEA performance reporting of consumer devices, even considering consumer opt-in, as no method for anonymizing data at the source (mobile device) has been identified. Privacy concerns by mobile device customers may also increase the number of users that choose to opt-out of WEA due to the lack of confidence in the protection and use of their personal information.

The Commission requests input on the CSRIC VIII recommendation that Participating CMSPs email alert performance information to an alerting authority or centralized collection point for each WEA sent.[67] ATIS and its members participated in this effort and noted that

[65] *Id*.
[66] CSRIC VIII Report on WEA Application Programming Interface (March 2023), Section 5.1.2.1.
[67] *FNPRM* at ¶63.

CSRIC VIII did not fully vet this type of reporting. ATIS WTSC believes that this option needs to be explored to understand if there are any benefits to providing such an email and what performance information could be included.

The Commission asks about the timeframe for requiring performance reporting.[68] ATIS WTSC believes that the implementation of performance reporting will depend on the target scenarios, what performance metrics are to be reported, the required calculations based on the performance metrics, and action triggers as a result of any performance reporting. Until these are defined, ATIS WTSC believes that the timeframe for design, standardization, and development of this proposed performance reporting cannot and should not be determined.

3. Establishing a WEA Database

The Commission also seeks comment on the most cost-effective mechanism for Participating CMSPs to submit WEA elections and performance information into the WEA Database.[69] ATIS WTSC does not believe that such a database should be established. With no specific benefits for performance information identified, it is unclear how such a database would be useful . If AOs are unable to provide a clear description of the benefits for the CMSPs, it is unlikely that the general public, with little or no knowledge of the WEA system, will glean any useful information from the database regardless of what is included.

4. Summary

ATIS WTSC has strong reservations regarding the utility of WEA performance minimums to improve WEA reliability and effectiveness, as well as the technical feasibility of applying such performance minimums to each WEA message. ATIS WTSC notes that the CBS

[68] *FNPRM* at ¶64.
[69] *FNPRM* at ¶65.

has been optimized for reliability and low latency and the results of the 2021 and 2022 WEA tests prove that WEA is effective and that WEA messages reach consumers quickly. ATIS WTSC does not believe that additional performance data would significantly increase confidence in the WEA system. ATIS WTSC recommends that the industry, including FEMA and the AO community, should work together to identify and address any questions related to WEA performance.

ATIS WTSC notes that performance in any given jurisdiction will depend on the AO's ability to properly use the system. Collecting information from other jurisdictions does not tell an AO how the system will perform in its jurisdiction. Instead of collecting data from CMSPs, it may be more productive for the Commission to collect and analyze the input of the AOs and study how that input may be affecting WEA performance.

ATIS WTSC notes that certain proposals in the *FNPRM*, such as those related to minimum speed requirements and gathering performance WEA data from consumers' devices, are not technically feasible. ATIS WTSC does not believe the WEA standards are deficient and notes that the ATIS WTSC Operational Considerations document provides valuable information regarding the operation of WEA that may assist AOs and other stakeholders.

ATIS WTSC also notes that there are privacy implications associated with the automatic reporting of WEA performance information from WEA-capable mobile devices. ATIS WTSC believes that WEA performance reporting cannot and should not be considered until target scenarios, calculations and action triggers are defined.

D. **Compliance Timeframes**

The Commission proposes compliance timeframes:

- For Participating CMSPs' WEA-capable mobile devices to translate English-language alert messages that they receive into the subscriber's default language preference-- 30 months after the publication of final rules in the *Federal Register;*[70]
- For Participating CMSPs to support sending thumbnail-sized images in WEA alerts and the integration of location-aware maps -- 36 months from the publication of the rules in the *Federal Register*;[71]
- For Participating CMSPs to be able to send WEA messages without triggering the audio attention signal and the vibration cadence and provide their subscribers with the option to turn off attention signal and vibration cadence -- within 30 months of the rules' publication in the *Federal Register;*[72]
- For Participating CMSPs to be authorized to support up to two annual end-to-end WEA tests per alerting authority -- 30 days after the Public Safety and Homeland Security Bureau issues a Public Notice announcing OMB approval of any new information collection requirements associated with this rule change;[73]
- For the proposed rules requiring Participating CMSPs to satisfy WEA performance minimums and submit reports measuring WEA's performance -- 30 months after the publication of final rules in the *Federal Register* (or within 30 days of the Public Safety and Homeland Security Bureau's publication of a public notice announcing that the WEA Database is ready to accept filings, whichever is later);[74] and
- For CMSPs to refresh their elections to participate in WEA using the WEA Database -- within 30 days of the Public Safety and Homeland Security Bureau's publication of a public notice announcing (1) OMB approval of any new information collection requirements and (2) that the WEA Database is ready to accept filings;[75]

ATIS WTSC notes that CSRIC VIII discussed the proposals in the *FNPRM* and produced timelines but did not have sufficient opportunity for in-depth consideration. In addition, each enhancement timeframe was considered only in isolation. CSRIC VIII recommended that ATIS WTSC work with other stakeholders to provide further input within six months for the Commission's consideration for inclusion in any future proposed rulings.[76] This input is intended not only to verify the timelines supplied for each of these proposals in isolation, such as

[70] *FNPRM* at ¶77.
[71] *FNPRM* at ¶78.
[72] *FNPRM* at ¶79.
[73] *FNPRM* at ¶80.
[74] *FNPRM* at ¶81.
[75] *FNPRM* at ¶82.
[76] CSRIC VIII Report on WEA Application Programming Interface (March 2023), Section 5.2.

CSRIC VIII has done, but to also consider the overlap of resources among the proposals and the impacts of that overlap on the timelines should it be decided that more than one proposal will move forward. ATIS approved this work item in April of this year but has been engaged in drafting comments to the *FNPRM*. Work began during the ATIS WTSC July 2023 meeting and is not expected to be completed until December 2023. This limits the ability of ATIS WTSC to provide additional information on the timelines for the proposals.

Performance reporting cannot be engineered without established goals and targets. ATIS WTSC notes that the CSRIC VIII timeline estimate was built upon there already being some idea of the target design. Given the lack of that knowledge, this work would be required to start with the task of identifying, at a minimum, clear goals, the related calculations to achieve those goals, whether the data to support those calculations can be produced, and the most efficient technical steps to produce that data.

ATIS WTSC notes that all proposals in the *FNPRM* require multi-stakeholder collaboration and/or studies. As acknowledged by CSRIC VIII, this pre-design work is expected to take a minimum of 18-24 months and must take place before design and standardization can be completed.[77] Multi-stakeholder collaboration and/or studies is a critical first step that minimizes the possibility of negative impacts to the users, in the case of social studies, as well as to avoid the possibility of beginning the technical design, then having to re-design solutions. Design and standardization take an additional 18-24 months, followed by development, testing, integration testing throughout the stakeholders (end-to-end) and deployment. An additional consideration is the fact that CAP changes may be involved if the currently available information elements carried in the signaling cannot be used to provide the granularity needed to direct

[77] CSRIC VIII Report on WEA Application Programming Interface (March 2023), Section 5.2.

specific actions, such as the display of symbols or infographics. The Commission's estimate for each proposal of 30 months does not account for all tasks identified by CSRIC VIII, even with the proposals considered in isolation, and CSRIC VIII did not specifically discuss and include, in their timelines, the impact of CAP changes. Public education should also be considered in these timelines.

Regarding performance reporting, ATIS WTSC asks the Commission to consider that multiple proposals were explored as to how data may be collected, and which methods have the potential to produce actionable data. ATIS WTSC believes that the Commission should not require the expenditure of resources for any method that does not produce actionable data. ATIS WTSC notes that the timeline will vary based on what method of collection is chosen but there is no method that could be implemented within the 30 months deadline proposed by the Commission. The Commission should also keep in mind that field penetration (12-24 months) of upgraded devices, if applicable, must be taken into account with regard to the effectiveness of the feature over time. A collection point for the data (server) must also be established.

III. Conclusion

ATIS WTSC supports the CSRIC VIII recommendations for performing the appropriate social studies and collaborative efforts for any enhancements to be pursued to ensure that the results will match the desire of improving the user experience. These pre-design efforts will also help the stakeholders to avoid a possible re-design of the enhancements once the technical work has begun. Extensive public education pre- and post-deployment will be needed.

ATIS WTSC supports the evaluation of the readiness of machine translations on mobile devices as a way forward to improve language support, given the currently limited use of embedded URLs. Machine translation on the device, if mature enough, is the most scalable and

flexible solution and the only technically feasible method proposed thus far with the potential to provide consistent results nationwide without the loss of event-specific information. If machine language translation technologies are pursued for this purpose, statutory liability protections should be extended to participating CMSPs, mobile device equipment manufacturers, operating system providers, and translation software developers consistent with the WARN Act liability protections.[78]

The reports from the 2021 and 2022 WEA testing overseen and analyzed by the Commission clearly demonstrate WEA's strong performance, confirming that the CBS provides the best reliability and latency performance available. Those same Commission reports show no identifiable data trends based on any of the variable input factors (service provider, data active, system generation, etc.), supporting the statements that the minor perceived limitations of WEA reflect the inherent challenges of a radio-based communications system that are beyond the control of the CMSPs. Further reassurance for the AOs, if needed, is best obtained through use of the State/Local WEA Test in their jurisdiction.

If WEA performance reporting is nonetheless pursued, ATIS WTSC urges the Commission to strongly consider the data-gathering method to be utilized to avoid spending the resources of all stakeholders for years to come on the pursuit of incomplete and unverifiable data that will never be actionable, as would be the case with reporting from consumer-owned devices. The privacy implications associated with reporting from consumer-owned devices, detailed earlier in these comments, must also be taken into consideration. The work would need to begin with a task that identifies, at a minimum, clear goals, the related calculations to achieve those

[78] As noted above, the WARN Act's limitation of liability for harm resulting from emergency alerts applies to only to "[a]ny commercial mobile service provider (including its officers, directors, employees, vendors, and agents)" that transmits emergency alerts. 47 U.S.C. § 1201(e)(1).

goals, whether the data to support those calculations can be produced, and the most efficient technical steps to produce that data. A performance reporting system cannot be designed and engineered without clear targets and objectives.

Respectfully submitted,

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