

May 29, 2018

Via FCC Electronic Comment Filing System

Marlene H. Dortch
Office of the Secretary
Federal Communications Commission
445 12th Street SW, Room TW-A325
Washington, DC 20554

Re: Multimedia Content in Wireless Emergency Alerts (PS Docket Nos. 15-91 and 15-94).

Dear Marlene H. Dortch:

I would like to comment on the refreshing the record on facilitating multimedia content in wireless emergency alerts, DA 18-302, March 28, 2018.

If you have any questions concerning these comments, please do not hesitate to call (703-892-1810) or email (sean@donelan.com) me.

Respectfully submitted,

Sean Donelan

Enclosure

1. One input – Multiple outputs

Local alerting authorities rarely take full advantage existing capabilities of national alert and warning systems, whether lack of training, resources or awareness. The FEMA Integrated Public Alerting and Warning System architecture enables alert originators to input an alert or warning message once and deliver it over multiple alerting pathways with differing capabilities, such as text, audio, video, coded geo-spatial data and other assistive formats. Because not every dissemination channel can render content in every format, alert originators should include information in multiple formats. That does not mean every dissemination channel must, will or can render every media format created by alerting authorities.

Wireless Emergency Alerts may not be the best IPAWS channel for rich multimedia messages. IPAWS messages are also distributed through over-the-top messaging applications and social media channels. When alert originators only include alert content for a single alert channel, such as WEA, they reduce effectiveness and reach of public alerts and warnings through other IPAWS alerting dissemination channels. FEMA and the FCC should improve their training and guidance for alert originators how to take full advantage of existing capabilities of national alert and warning systems.

Rich multimedia is only useful for alert and warning if it does not cause deliverability issues. If the public doesn't receive the message, it doesn't matter how rich the content in the multimedia message was. A video may be worth a thousand words, but it's also a hundreds of thousands bytes. A small thumbnail of a few thousand bytes may be enough for a simple icon but is often too small to see much visual detail. As a comparison, the typical image attached to a Twitter message is about 100,000 bytes.

Multimedia content is more difficult to augment with information from a user's smart device. For example, a static picture of a map can't be augmented with the person's current location. But including machine coded geo-spatial information instead of a picture of a map requires transmitting fewer bytes and can be used to augment smart maps on the user device allowing the user to zoom in/out, display the user's location in relation to the hazard area, and even provide individualized turn-by-turn directions how to evacuate the area.

FEMA and the FCC should sponsor social science and user interface design research how the alert information from IPAWS messages can be rendered on different devices and understood by different demographic groups. This should not be limited to only Wireless Emergency Alerts and mobile devices. IPAWS messages should be rendered by internet applications, Emergency Alert System devices, and future technologies such as smart speakers, smart speakers, etc.

2. Alert and Warning versus Emergency Public Information

FEMA and the FCC should distinguish between the use requirements for disseminating Alerts and Warnings versus the need for supplemental Emergency Public Information.

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Online commerce and marketing applications separate “transactional” messages from “informational” messages for a variety of reasons, including complying with advertising laws. Although advertising laws and regulations are not applicable to government alert originators, the other reasons for separating message types are applicable. Transactional messages don’t use rich multimedia. Transactional messages need low latency and high deliverability, by keeping transactional messages brief and simple. Informational messages often use rich multimedia for promotional messaging. Informational messages don’t require immediate delivery but require rich multimedia including pictures, audio, intelligent applications such as find the nearest store.

Alert and Warning messages, such as imminent life-threatening warnings, best map to transactional messages, which require low latency “push” delivery even when communication networks are congested or damaged by the disaster.

Emergency Public Information, such as news broadcasts and press conferences, best map to information messages needing large amounts of bandwidth but not necessarily immediate delivery. Informational messages are on-demand “pull” delivery when the user requests it. Because informational messages may be pulled on-demand by the user, marketers sometimes return different messages at different times.

Disasters can’t always be predicted, but network congestion also occurs at major social events such as New Year’s Eve every year. While cellular networks regularly carry rich multimedia messages on normal days throughout the world, there are times when multimedia messages experience significant latency and deliverability problems. For example, during the hours before midnight in Times Square even with augmented cell towers, many cellular messages are delayed and lost. The use of cell broadcast for Wireless Emergency Alerts avoids the congestion on the normal cellular data channels under those conditions. But cell broadcast does not have the same capacity for large multimedia messages as the normal cellular data channels.

Emergency managers should be cautious extrapolating network performance during normal conditions to expected performance during disaster conditions. In previous rulemakings, emergency management agencies have said their web sites, call centers, etc. could handle the mass notification load of an emergency alert. This is essentially never true. After Hawaii’s false alert, the state and county’s web sites quickly became unusable due to the load, phone lines were jammed, and 9-1-1 PSAPs were overloaded. The same thing happened when alerts for wildfires were sent in California. During FEMA’s latest national periodic test, some EAS participants couldn’t retrieve the audio multimedia file from FEMA’s cloud provider and used Text-to-Speech instead.

The Multimedia Messaging Service pushes only a short WAP or WEB link through the SMS channel. The MMS application on the user’s phone then opens a new data channel downloading the link content separately. Unlike cell broadcast, MMS requires the user have an active data subscription and enough capacity on the data channels.

3. Federal, State/Territorial, Local/Tribal Use Cases

Any cost-benefit analysis must consider if enough state/local/territorial/tribal alert originators have the resources and training to originate rich multimedia IPAWS alert messages in addition to using normal public channels. WEA and EAS were intended to supplement, not replace normal public information channels used by public information officers. PIOs also have access to news media through press conferences, social media and local alerting systems. The cost of changing WEA and EAS to support rich multimedia alert messages would have zero payback if a sufficient number of state and local alert originators don't have and use their resources to create better alert messages. The quality of the national alert and warning systems depend on the quality of the messages created by alert originators.

Garbage In – Garbage Out.

In previous rulemakings on multilingual alerts, state and local alert originators have said they don't have the resources to quickly create and obtain management approval to send alert messages in multiple languages. It's not clear they would have more resources to create multimedia messages. Of the potential 30,000 to 80,000 potential local, city, county and state emergency response agencies in over 3,000 counties, only about 1,200 of the largest have completed the FEMA process to use IPAWS. Only a few emergency management agencies regularly send test IPAWS messages. Federal use is primarily weather warnings, which the National Weather Service is able to send within a few minutes. State and local use of IPAWS is primarily AMBER alert messages, which often take several hours to prepare and approve.

Even the largest cities and counties with warning coordinators on duty 24/7/365, local emergency managers said it would take over 45 minutes to an hour to prepare alert messages and obtain approval from their management to send and alerts through IPAWS at a recent FCC workshop. The longer it takes for state and local officials to prepare and approve messages, the less value using expedited alert channels instead of normal public information channels for long-form multimedia information.

FEMA has not revised the White House Statement of Requirements or documented a Federal need for rich multimedia beyond a presidential audio message through the Emergency Alert System. After the January 2018, Hawaii false alert, FEMA said it had not plan for issuing a public missile alert itself even though the flight time is less than 30 minutes. Instead FEMA considered warning the public a state and local responsibility. The public may not receive long form multimedia information until after a missile strike. The fast alert and warning system with a short message could be delivered quickly. So it may be better to use multimedia messages for post-disaster recovery information through different distribution channels.

The National Center for Missing and Exploited Children often includes links to photographs of missing children and suspects in IPAWS messages. But, NCMEC's AMBER alert portal often does not have any useful information in IPAWS messages for dissemination output channels which can't display a photograph, such as radio, NCMEC's AMBER alerts may be less effective. On the other hand, New York City did not include a link to a picture of a bombing suspect in its IPAWS

message, choosing to limit its message to only a brief message through a single IPAWS channel – Wireless Emergency Alert.

A tornado warning can be prepared with machine coded geo-spatial coordinates and ready to be delivered in less than a minute through the alert and warning channel. But if an AMBER Alert took hours to prepare, a different emergency public information delivery channel with multimedia support including the pictures may be more valuable even if its slower.

The FCC should not make WEA as the universal hammer in its emergency public information toolbox.

4. Avoid Locking in Technological Obsolescence

Instead of focusing only on Wireless Emergency Alerts and cellular technology, the FCC should avoid of locking in technological obsolescence.

As joint managers of the national alert and warning system, FEMA, FCC and NOAA should publish a technology independent statement of objectives. While the FCC does not regulate over-the-top applications, the statement of objectives should be open to non-regulated alert and warning participants. FEMA training should inform alert originators limiting alert messages to only a single alerting channel reduces its reach and effectiveness. WEA may have only a short text, but alert originators could also reach over-the-top smartphone apps with longer messages and multimedia with the same IPAWS message.