

EB Docket No. 04-296
Reply Comments Regarding
Public Safety and Homeland Security Bureau Seeks Comment Regarding Equipment and Operational
Issues Identified Following the First Nationwide Test of the Emergency Alert System

November 14, 2013

Dear Federal Communications Commission:

I would like to submit the following comments in reply to the submissions regarding EB Docket No. 04-296, Public Safety and Homeland Security Bureau Seeks Comment Regarding Equipment and Operational Issues Identified Following the First Nationwide Test of the Emergency Alert System.

1. Document and publish private clarifications of EAS technical details

As part of the process of standing up the Emergency Alert System, FCC staff needed to answer implementer and operator questions and make clarifications.¹ This is a necessary part of creating any new technical protocol because English language protocol descriptions always have some ambiguous details.

Unfortunately, over the last twenty years these private clarifications have not been documented or published by the FCC. The result is later implementers and even later FCC staff, after the original staff members retire, may not know about those clarifications; and make different good faith interpretations. Although these clarifications may be minor and should not require full rulemaking proceedings with the corresponding implementation delays, it is important to document and publish them. No particular implementer's interpretation was necessarily correct or incorrect. Interoperability problems occur because the interpretations were different, not because they were wrong. A minor clarification before large scale deployment can prevent major interoperability problems later. But all implementers at the time and as well as later implementers need to know about those clarifications.

The FCC should document the various technical questions and private clarifications of the EAS protocols it has made, and publish them for use by all EAS implementers.

2. Overlapping EAS data headers during a message

During the 2011 National EAS test, a conference bridge issue resulted in an audio loopback overlapping EAS data headers. While audio loopback was unexpected, the concern of overlapping EAS data headers is not new. Since 2004, the National Weather Service has included equipment tests when a NWS/SAME message is interrupted by EAS equipment installed in series by local emergency management agencies at NWS Weather Radio sites.² Incomplete and overlapping EAS protocol messages can occur for numerous reasons besides an audio loopback.

In the early 1990's, when the EAS protocol was originally published, fully automated stations were rare and error conditions in EAS could be expected to be resolved by the local operator or engineer. Now the

¹ Comments of Sage Alerting Systems Inc. (November 4, 2013), page 3: Footnote 1: "This was discussed with FCC staff in 1996/1997 as the desired solution..."

² National Weather Service, Western Region Supplement 3-2004, Applicable to Instruction 10-1710, APRIL 14, 2004. Appendix C - Test Procedures. "C. (If possible) A broadcast test message (RWT or DMO) from the DES that interrupts a SAME message being broadcast by CRS."

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situation is reversed, and manual stations with 24-hour local operator or engineer coverage are very rare. Documenting how EAS protocol error conditions should be automatically resolved by the equipment is necessary.

Although an EAS protocol error may result in an incomplete or lost EAS message, the EAS network should handle errors by terminating the message and transitioning to a known starting state. This will keep the EAS network stable for future emergency messages, and prevent run-away messages and feedback loops.

3. Joining Presidential Messages “Live” or “Tape Delay”

The Emergency Broadcast System from 1963 through 1997 assumed broadcast stations would join a “live” national Presidential feed “in-progress.” EBS included a lengthy alert tone and standby scripts as downstream stations were added to the EBS network feed. During the 1990’s the FCC mushed the old EBS operating guidance with the new EAS guidance including bits and pieces of both for backwards compatibility. While some implementers may have received private guidance from the FCC staff to disregard some items as “obsolete,” other implementers have made various decisions to resolve the conflicts in different sections of Part 11.

The lack of a published National EAS Operating Guide or Plan has left a mangle of the old EBS and news EAS practices in the last documented operation plans and guides. This has created confusion for both operators and users of the EAS system. The 2007 FCC EAS Handbook includes a Stand-By script stations should broadcast until emergency messages are available and directions for selecting from multiple available audio feeds, not necessarily the first audio feed the EAS alert was received. For the November 9, 2011 National EAS Test, the FCC published a temporary EAS handbook only for the test but reverted back to the old EAS Handbook afterwards.

The three public Emergency Action Notification tests have been inconsistent how long a delay is included and the use of standby messages.

- January 6, 2010 Alaska EAN test: (Tone) (several second silence) “This is the FEMA Operations Center. Standby for the Presidential Communications Officer. “ (several second pause with clicking sounds) “Test... test... test... This is a test....” Message continued.
- January 26, 2011 Alaska EAN test: (Tone) (20 seconds silence) “This is a test...” Message continued.
- November 9, 2011 National EAN test: (Tone) “This is a test...” Message continued until audio loopback.

47 CFR 11.54(c) states that “... EAS Participants may transmit in lieu of the EAS audio feed an audio feed of the President’s voice message from an alternative source, such as a broadcast network audio feed ...”

Since the audio quality available and the audio timing will be different between different available feeds, switching between feeds will have skips and jumps in the audio. On the other hand, requiring the audio

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feed be carried from the beginning without skips may result in extremely poor quality audio depending on which feed was the first to trigger the EAS equipment. Divergent audio levels (too high and too low) was also problem during the National EAS Test, although that problem was overshadowed by the audio feedback at the origination point.

The published plan goals for Presidential messages should include:

1. Be immediate, understandable and complete, but recognizing some trade-offs may occur between those objectives;
2. Not include extraneous audio, such as stand-by scripts, reference tones, extended silence, switching noises, etc.;
3. Automated handling by default, taking advantage of Common Alerting Protocol and embedded digital audio metadata in the future to reduce operator handling to only by exception.

While the term of art “Live” may have been well understood by broadcasters in the 1960’s, “live” is too ambiguous for use across the wide spectrum of EAS stakeholders and current network transmission technology.

4. Multi-channel programmers and cable overrides

National EAS Presidential messages and State/Local EAS messages have different apparent goals on how to notify the public about emergencies. Presidential messages are mandatory and national across every EAS participant. State/Local messages a voluntary and geographically constrained.

If the goal is to ensure Presidential messages reach every possible member of the public regardless of the mass media channel they are listening or watching, then having every EAS participant interrupt all channels for the Presidential message would be the most reliable in case some of the EAS participants didn’t re-transmit the message due to hardware or broadcast problems. This added reliability means sometimes multiple EAS alerts would interrupt the same program by different multi-channel operators.

The goals for State/Local EAS messages have always been less defined. Because EAS Participants do not need to carry any state/local emergency messages, it could be that there are no state/local EAS goals. If the goal is quickly alert a local population to local emergencies, and disturb the fewest people outside the affected area, the EAS geo-alerting decision should be made as close to the end-user as possible. A cable operator may be able to narrowcast local EAS alerts to just the affected neighborhoods or municipalities while an over the air broadcaster may decide not to carry local municipal alerts because it doesn’t want to disturb viewers in other cities.

As traditional broadcasters change to digital television and digital radio, they have also become multi-channel programmers. When each program on a multi-channel service should and should not be interrupted for state/local EAS messages is currently an individual business decision. How a multi-

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Issues Identified Following the First Nationwide Test of the Emergency Alert System

channel operator transfers legal responsibility for EAS operations between sub-channels should be re-visited by the FCC depending on the overall goals for national/state/local emergency alerting.

For example, a FM Hybrid Digital (HD) station may re-transmit a 24x7 local news from a local AM station on HD-2 and a satellite fed music program on the HD-1/main channel. If the AM news programmer has its own EAS equipment and is already covering the local emergency, should the FM transmitter EAS equipment interrupt both HD-1/main and HD-2 , only HD-1/main, or neither to notify listeners? Likewise, if a Digital TV station has a full news operation covering the local emergency on its main channel (DTV.1) decides not to re-broadcast an EAS message using its EAS equipment, but has a secondary channel showing a satellite-fed shopping channel, should the TV transmitter interrupt the secondary digital channel with local news coverage, an EAS alert, a video crawl? What should the contract between the shopping channel and DTV station or AM news and FM music station cover concerning EAS?

FCC should also re-visit whether the practice of satellite-fed re-transmitters hundreds of miles from the “local” studio negates the old reasoning for not having a local EAS receiver/encoder participating in the same local EAS area community as being served by that broadcast tower. In the future, the Common Alerting Protocol would allow satellite main control studios to receive EAS information from all the remote community emergency officials.

Maximizing the geo-targeting of emergency alerts and minimizing the disruption of unaffected people should be a goal for state/local EAS plans. Selective alerting, embedded digital metadata, and other technologies should be encouraged to improve state/local emergency alerting. However, the business relationships between multi-channel operators and program providers, cable or over-the-air, are constantly changing. A simple rule is unlikely to cover them.

Thank you for your consideration,

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