September 12, 2016

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

Re: Requested clarification of Emergency Alert System rules concerning "live" and "immediate"
(PS Docket No. 15-94)

Dear Marlene H. Dortch:

I would like to request the Public Safety and Homeland Security Bureau clarify or publish its interpretation concerning the rules for the Emergency Alert System (47CFR11) for "live" and "immediate" activations of the EAS. In particular, how "live" and "immediate" are used for Emergency Action Notification (EAN) and National Periodic Test (NPT) activations.

Background

Reportedly, an FCC staffer made informal comments at a meeting his interpretation of the rules meant they must be re-transmitted as soon as the EAS headers are validated. This informal comment did not take into consideration either the "manual" capability for activating the EAS at a participant's facility, which has been permitted since the original FCC order[1] establishing the EAS in 1994; and appeared to add a requirement to re-transmit NPT messages "live." This appears to contradict FCC's 2015 Sixth Report and Order[2].

As a result of these informal comments, some EAS manufacturers made extensive software changes including removing the ability to use the "manual mode" for both EAN and NPT activations from their EAS encoder/decoders. Further, some EAS participants reportedly made

---

[1] "We have, therefore, adopted rules requiring EAS encoders and decoders to provide both automatic and manual operation and will permit each EAS participant to determine whether to use automatic or manual operation to send or receive EAS alerts." Report and Order and Further Notice of Proposed Rule Making (1994)

[2] "The costs that EAS Participants must incur as a result of our requirement are limited to those incurred by the relatively small number of EAS Participants who will have to manually change the settings of their EAS equipment to automatically respond to the NPT." Sixth Report and Order (2015)

extensive and expensive changes to their systems and associated standards in order to comply with this apparent change to FCC policy for EAS.

It may have been further confounded by the 2012 Fifth Report and Order[3] removing the requirement: "during a National emergency must carry Presidential Messages "live" at the time of transmission or immediately upon receipt." The 2012 rulemaking discussed removing the obsolete EAS message priorities, but did not discuss removing the "live" requirement for EAN messages. Because there was no discussion or comment about removing the "live" requirement during the rulemaking, I do not believe the FCC intended to remove the "live" requirement which uniquely applied to EAN messages, and only EAN messages. This was probably an inadvert editing error of not re-locating the "live" requirement to a different section when section 11.44 was deleted. The unique "live" requirement for EAN messages had been part of the EAS rules since 1994, and permeates other standards supporting the EAS include the ANSI/SCTE-18 standard "Emergency Alert Messaging for Cable" and ATIS "IPTV Emergency Alert Provisioning Specifications." Adding a "live" requirement for non-EAN event codes would have a cascading effect on many other non-EAS systems (i.e. set-top boxes) and supporting standards.

In the 2015 Sixth Report and Order the FCC required National Periodic Test (NPT) code be retransmitted "immediately upon receipt."[4] The FCC's analysis did not foresee its change to the NPT would require expensive changes to how EAS equipment processed the NPT or related standards. The 2015 rulemaking stated the changes would be "simple reconfigurations of the code filters on their encoder devices." The rulemaking did not foresee extensive changes to related standards such as SCTE-18 to support "live" transmission of NPT messages. And finally, the rulemaking explicitly rejected making the NPT fully emulate the EAN. The FCC noted an NPT which shares similar characteristics of normal event codes would still accommodate FEMA's desire to perform a national test in the near future, and would dramatically lower cost than adding EAN-like capabilities to NPT. FEMA conducted several regional tests over the last year with EAS participants using software which did not include EAN-like "live" capabilities for the NPT.

The last publicly available White House Statement of Requirements states suggest a five (5) minute reaction time. Although it stated an automatic capability is desirable, it was not a requirement. FEMA did not express a need for the NPT to be transmitted "live," but did express the desire the NPT be disseminated with "same immediacy as the EAN." FEMA has not

---

[3] "Deleting Section 11.44", Fifth Report and Oder (2012)
[4] "National Periodic Test Code", Sixth Report and Order (2015)

published the current White House Statement of Requirements, so I do not know if these requirements changed.

<u>Suggestions how PSHSB should interpret "Live" and "Immediate"</u>

I would like to suggest the Public Safety and Homeland Security Bureau interpret the terms "immediate" and "live," consistent with historical use in the EAS rules and support both automatic and manual operation of EAS equipment. While the FCC and FEMA may want to encourage the use of automatic mode for EAS equipment, manual mode remains an allowable part of the EAS rules.

1. Continue to permit both automatic and manual operation and will permit each EAS participant to determine whether to use automatic or manual operation to send or receive EAS alerts.
2. Restore the "live" requirement language to the EAS rules for Emergency Action Notification (EAN) messages, and only EAN messages. Live should be interpreted as "at the time of transmission." This means EAS equipment must re-transmit the <u>complete</u> EAN message from beginning to end, as it is being received, with reasonable buffering delays. "Live" does not mean waiting for the End-of-Message (EOM), or "live - tape delayed on the West Coast."

   Further, if the complete EAN message is less than two minutes, "live" means "immediately" upon receipt of the EOM, as "immediate" is described below. An EAN message may be both "live" at the time of transmission or "immediately" upon receipt, as the previous section 11.44 stated.

   In 1994, the reasonable assumption may have been EAS equipment would need to re-transmit the EAN message before the two-minute EAS audio message buffer window was overrun by the incoming EAN message, assuming an EAN lasted more than two minutes. The maximum allowable EAN buffering delay was probably between 30-90 seconds, leaving sufficient time to re-transmit the EAN header and attention signal. Computer memory is much cheaper than 1994, and audio buffers are much larger now, but I assume the maximum EAN buffering delay should still be less than two minutes to meet the "live" EAN requirement.

   In practical terms an interpretation of "live" for EAN messages should mean:

a. Automatic mode: Live should mean the EAN message is re-transmitted as it is being received (after the valid EAN header is received, without waiting for an EOM). The re-transmission may be briefly delayed using the audio message buffer during the re-transmission of the EAN header and attention signal and necessary preparation of transmission channels (i.e. force-tuning, switching relays). But "live" means without automation hold-offs or other unnecessary delays.

b. Manual mode: An EAN should still allow an operator a small window to react, while the EAN transmission is being buffered without waiting for an EOM. A reasonable operator delay may be 30-60 seconds, which still allows time to re-transmit the EAN header and attention signal before the audio message buffer is overrun. In addition to the brief operator reaction window, the EAN re-transmission may be briefly delayed for necessary preparation of transmission channels (i.e. force-tuning, switching relays). But "live" means without automation hold-offs or other unnecessary delays.

3. For non-EAN messages, or a short EAN less than two minutes, the interpretation of time limits, including "immediate," should begin with the receipt of the End-of-Message (EOM).

a. National tests using NPT (and short EAN messages) immediately of receipt of the EOM (or sooner).

b. Other EAS activations within 15 minutes of receipt of the EOM (or sooner).

c. Monthly tests using RMT within 60 minutes of receipt of the EOM (or sooner).

EAS equipment may include other message handling options

- a semi-automatic mode which automatically re-transmit the EAS message after waiting a pre-configured time period for an operator to react.

- re-transmit messages, including an NPT, as they are being received (i.e. "live"), before an EOM is received.

- re-transmit incomplete non-EAN messages, which timed out after two minutes without receiving an EOM.

In practical terms, an interpretation of "immediate" for non-EAN messages (and short EAN messages) should mean:

a. Automatic mode: Immediate should mean the EAS message is re-transmitted immediately after it is received (receipt of EOM) or sooner. The re-transmission may be briefly delayed for necessary preparation of transmission channels (i.e.

force-tuning, switching relays). But "immediate" means without automation hold-offs or other unnecessary delays.

b. Manual mode: Immediate should allow an operator a small window (30-60 seconds, similar to an EAN above) to react. In addition to the brief operator reaction window, the re-transmission may be briefly delayed for necessary preparation of transmission channels (i.e. force-tuning, switching relays). But "immediate" means without automation hold-offs or other unnecessary delays.

Conclusion

In conclusion, I would like to thank the Public Safety and Homeland Security Bureau for the opportunity to request it clarify and publish its interpretation how the terms "live" and "immediate" are used in EAS operations. Throughout the 1990s, when the Emergency Alert System was new, and there were many questions how it should work, the FCC Compliance & Information Bureau published information and provided clarifications about the Emergency Alert System on its web site. The web site may have been ugly by today's standards, but it was useful for sharing information. After 1999, when the FCC re-organized its bureaus, the Enforcement Bureau took over responsibility for the EAS. The Enforcement Bureau ceased publishing clarifications about the EAS (and the previous EAS answers/clarifications disappeared).

I encourage the Public Safety and Homeland Security Bureau return to the previous practice of the Compliance & Information Bureau by publishing clarifications and interpretations about EAS on its web site or another public location. Public Notices in the Federal Register are more difficult to find than the PSHSB website. This would help avoid misunderstandings from informal hallway comments between meetings.

If you have any questions concerning this request for clarification or interpretation, please do not hesitate to call (703-892-1810) or email (sean@donelan.com) me.

Respectfully submitted,

Sean Donelan

Enclosure

Header   Att. Signal   At time of
Decoded   Decoded   transmission   Upon receipt

⇩   ⇩   ⇩ |←——— Audio buffer ———→| ⇩
                                                (at least two minutes)

Header   Attention Signal   Audio Message   End of
                                                                              Message

1sec |←—8 to 25 sec—→| Not less than two minutes before automatic reset   1sec
                                                  (Some include/trim silence at beginning and ending)
        1sec   1sec

        |←1 to 3? sec→| |← 1 to 5? sec →| |← |←1 to 5? sec→| |←

                                                EAS Audio Message
                                                   (Non-EAN)

                        End of
        Header   Message

                                                EAS Non-audio Message
                                                     (e.g. RWT)

1sec   1sec
        1sec   1sec
                |←1 to 3? sec→| |←

Header   Att. Signal   At time of
Decoded   Decoded   transmission   Upon receipt

⇩   ⇩   ⇩ |2 min|← Audio buffer   ⇩

Header   Attention Signal   Audio Message   End of
                                                                              Message

1sec |←—8 to 25 sec—→| Unlimited time   1sec
                                                    (EAN disables automatic reset)
        1sec   1sec

        |←1 to 3? sec→| |← 1 to 60? sec →| |← |←1 to 60? sec→| |←

                                                Emergency Action
                                              Notification Message