June, 2014 WORKING GROUP 3

National Testing and Operational Issues Task Group

Final Report

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1 Results in Brief

1.1 Executive Summary

On November 11, 2011, the FCC ("Federal Communications Commission") and FEMA ("Federal Emergency Management Agency") performed a national test of the Emergency Alert System ("'EAS"). Although the EAS system has been in widespread use on the state and local level, this was the first time that a nation-wide test of the system had been conducted.

Subsequent to this test, the FCC issued a Public Notice ("Notice") to report issues raised during and after the national test and to seek comments on rule changes to improve the dissemination of national alerts. [1]

On May 16 2013 the FCC instituted CSRIC ("Communications Security, Reliability and Interoperability Council") IV to provide recommendations to the Commission regarding best practices and actions the Commission may take to ensure the security, reliability, and interoperability of communications systems. . As part of this effort, CSRIC WG3 was created to study and recommend improvements to the EAS system. Three Task Groups were created:

- EAS Security
- EAS State Plans
- EAS National Testing and Operation Issues

This report is the output of the EAS National Testing and Operational Issues Task Group.

Subject Matter Experts, representing EAS equipment manufacturers, broadcasters, cable operators, satellite provides were recruited to serve on this Task Group. Representatives from the FCC, FEMA, and NWS ("National Weather Service") also participated.

[1] *See* DA-13-1969 (September 23, 2013)

Introduction

The National Testing and Operational Issues Task Group was charged with reviewing the questions raised by the FCC in its Notice. This document identifies the issues raised.

This final report documents the efforts undertaken by the CSRIC VII Working Group 3 Operational Issues/National Test Task Group with respect to National Testing and Operational Issues.

1.2 CSRIC Structure

Communications Security, Reliability, and Interoperability Council (CSRIC) IV									
CSRIC Steering Committee									
Chair or Co-Chairs: Working Group 1	Chair or Co-Chairs: Working Group 2	Chair or Co-Chairs: Working Group 3	Chair or Co-Chairs: Working Group 4	Chair or Co-Chairs: Working Group 5	Chair or Co-Chairs: Working Group 6	Chair or Co-Chairs: Working Group 7	Chair or Co-Chairs: Working Group 8	Chair or Co-Chairs: Working Group 9	Chair or Co-Chairs: Working Group 10
Working Group 1: Next Generation 911	Working Group 2: Wireless Emergency Alerts	Working Group 3: EAS	Working Group 4: Cybersecurity Best Practices Working	Working Group 5: Server-Based DDoS Attacks	Working Group 6: Long-Term Core Internet Protocol Improvements	Working Group 7: Legacy Best Practice Updates	Working Group 8: Submarine Cable Landing Sites	Working Group 9: Infrastructure Sharing During Emergencies	Working Group 10: CPE Powering

Table 1 - Working Group Structure

1.3 Working Group 3 National Testing and Operational Issues Subgroup Team Members

Working Group 3 National Testing and Operational Issues Task Group consists of the members listed below.

Name	Company
Steve Johnson -- Co-Chair	Johnson Telecom, LLC representing NCTA
Dan Mettler -- Co-Chair	Clear Channel Media & Entertainment
Adrienne Abbott	Nevada EAS Chair
John Archer	SiriusXM
Jeb Benedict	Century Link
Ron Boyer	Boyer Broadband
Roz Clark	Cox Media Group
Ed Czarnecki	Monroe Electronics/Digital Alert Systems
Chris Fine	Goldman Sachs
Les Garrenton	Lin Media
Craig Hodan	NOAA
Chris Homer	Public Broadcasting Service
Al Kenyon	FEMA
Wayne Luplow	LGE/Zenith Electronics
Brian Oliger	WTOP / WFED
Dave Munson	Federal Communications Commission
Darryl Parker	TFT, Inc
Jerry Parkins	Comcast Cable
Harold Price	Sage Alerting Systems, Inc
Richard Rudman	Broadcast Warning Working Group
Francisco Sanchez, Jr	Harris County, Texas Office of Homeland Security and Emergency Management
Tim Schott	NOAA
Andy Scott	NCTA
Bill Schully	DIRECTV
Gary Smith	Cherry Creek Radio
Matthew Straeb	Global Security Systems/Alert FM
Allen Studer	Trilithic
Leonardo Velazquez	AT&T U-verse
Larry Walke	NAB
Michael Watson	Gray Television Group, Inc
Kelly Williams	NAB
Reed Wilson	Belo Corp

Table 2 - List of Working Group Members

2 Objective, Scope, and Methodology

2.1 Objective

The Operational Issues/National Test Task Group was tasked with reviewing the questions raised by the Federal Communications Commission (FCC) in its Notice.

2.2 Scope

The task group focused its work on matters involving the FCC's Notice, as well as other issues that arose during the November 2011 live EAN test.

2.3 Methodology

The Operational Issues/National Test Task Group was tasked with reviewing the questions raised by the Federal Communications Commission (FCC) in its Public Notice on EAS National Testing (DA-13-1969 September 23, 2013).

After discussing these questions, the Task Group determined that it would be more helpful to identify and address the issues raised by these questions, rather than attempting to respond to each individual question. The Task Group identified the following issues:[2]

1. Application of Emergency Alert System (EAS) header Elements to a Presidential Alert
2. Visual Crawl and Audio Accessibility Issues
3. National Test Event Code
4. Impact of National Test Length on EAS Equipment
5. Additional Headers Received During Processing an Alert

The issues are explored further in the Section 4.

3 Analysis, Findings and Recommendations

3.1 Analysis

3.1.1 Application of EAS Header Elements to a Presidential Alert

- The Time Stamp is critical to include for reasons stated below in the Annex A -- Time Stamp.

[2] The Task Group notes that the Federal Emergency Management Agency (FEMA) does not intend to use Common Alerting Protocol (CAP) to propagate EAN activations in the near term but may do so in the future. . Consequently, many of the questions that the FCC raised regarding CAP and Presidential alerts would be moot if FEMA does not use CAP for EAN alerts.

- All header elements are necessary for presidential alerts.
- A national location code should be adopted for Legacy[3] and CAP ("000000", as specified in FCC EB Docket 04-296).
  - Using a Washington, DC location code may be confusing or problematic.
  - Adopting a new location code may have a cost impact because it requires firmware updates.
- Ignoring location code in Emergency Action Notifications (EANs or Presidential alerts) would preclude targeting alerts to regional areas, if desired.

3.1.2 47 CFR 11 requires clarification on how EANs are to be processed.

In particular, the Task Group identified the following areas:

a) Time stamp handling when the alert time is in the future. We make specific recommendations in the "Annex A -- Time Stamp" included in this document, the important portions are:
   - Originators must use an accurate time;
   - If an alert is received with a time stamp that is in the future, and the EAS device and downstream system(s) can forward the alert immediately, they should. If the time stamp is in the future, and the device and downstream system(s) cannot forward the message, the message should be forwarded as soon as technically feasible.

b) Buffering of real-time alert audio. The "Annex C -- EAN Audio" provides additional information. In summary, EAS devices have been implemented using two approaches. One is to buffer the incoming alert audio during the sending of the EAS header and attention tone, so that the incoming message is relayed in its entirety. This allows the originator to start sending information immediately. The other approach is not to buffer, but to switch over to the real-time input as soon as the local EAS header and attention tone is sent. This loses some of the incoming audio and requires the Presidential originator to wait until the entire Legacy relay chain has switched over. It also sets the minimum possible test duration. While there are advantages and disadvantages to each approach, using both at the same time in the overall system emphasizes the disadvantages in both systems. The method in which the system is used by the Federal Emergency Management Agency (FEMA) and its upstream federal partners will determine which approach should be used. In order to support delivery of EANs, FEMA should document requirements and specifications so that engineering work can be completed to support those plans.

[3] For purposes of this report, "Legacy" is defined as "pre" CAP, over-the-air EAS.

- EAS-CAP Industry Group (ECIG) recommendations and industry standards such as J-STD-042A-2007: Emergency Alert Messaging for Cable) may require modifications to reflect changes to 47 CFR 11.

    - The Task Group notes that additional research needs to be done to (1) identify the nature of any changes to existing industry standards and (2) assess the impact of any such changes on embedded infrastructure operated by EAS participants, including any potential costs for updating and/or replacing systems.

3.1.3 Visual Crawl and Audio Accessibility Issues

- The Task Group did not include representatives from impacted end-user and display manufacturer communities. Consequently, it cannot comment on the accessibility issues raised. However, the Task Group recommends that these issues be addressed through industry recommended practices rather than rulemaking.

3.1.4 National Test Event Codes

- Recommend testing to use the event code NPT (National Periodic Test) for continuity verification semi-annually.
- The principal value of an NPT is to test the relay (CAP or EAS), but not the priority override or greater-than-two-minute length of an EAN.
- Testing of NPT could reduce the frequency for national tests.
  Provide an example of how a NPT test would be executed
    - Ability to specify “Test” in text message automatically
    - No change in firmware required
    - Multiple NPT alerts to comply with 31 location code limit
    - Lower priority than EAN but less disruptive
    - Recommend FCC provide additional clarification/specification in terms of the message length (specifically to re-confirm the NPT has a 2 minute maximum duration).
- Recommend RMT (Required Monthly Test) 10 out of 12 months (from state/local sources) and NPT (from national sources) the other 2 months
    - 11.61(a) "...EAS activations and special tests may be performed in lieu of required tests as specified in paragraph (a)(4) of this section."
- Use of EAN has disadvantages
    - Inability to specify "Test" in text message automatically
- Message to be less than 2 minutes
- Testing every three years using EAN to validate ability to exceed 2 minute alert.
- Lab testing with EAN to confirm operation in lieu of EAN “Live Code”.
- As CAP gets more use, implement close circuit testing to validate connectivity without viewer/listener disruption. Note: The link from the EAS participant to the viewer/listener gets the most usage and testing. Testing the link from the originator to the EAS participants’ facilities could be completed without impacting viewers/listeners.
- Recommend an option to reduce length of Attention Signal from 8 seconds to 4 seconds.

- Participants' choice based on air-time issues and upgrade costs.

3.1.5 Impact of National Test Length on EAS Equipment

- Need Clarification of the start-up procedures for EAN.
  - Inconsistent among vendors.
- May not require a rule change but be captured in the EAS Handbooks, which need to be updated anyway.

3.1.6 Additional Received Headers During Processing an Alert

Although not addressed by the FCC in its Public Notice, the Task Group identified an additional issue of concern with reception of a second set of headers during an ongoing alert, as occurred during the National test.

- Should the extra set of headers be ignored or processed?
- Should extra headers terminate the original incoming alert or be queued sequentially?
- A decoding device detecting a new EAN alert with a more recent time stamp, on either the same or different channel, shall terminate the first active EAN (sending an EOM) and forward the new EAN alert. Time synchronization between originators and participants is required for proper activation.
- See Annex B -- Additional Headers

Some coordination may be required with the State Plan task group and this task group in the area of testing.

3.2 Findings and Recommendations

In addition to EAS encoder/decoder equipment, many EAS systems, particularly those that are cable television delivered, rely on downstream components to successfully deliver EAS messages. It is not enough to change EAS encoder/decoders. All downstream devices must also be changed to complement the changes made in the encoder/decoders. Absent changing downstream equipment, many viewers/listeners may not receive alerts.

3.2.1 Application of Emergency Alert System (EAS) Header Elements to a Presidential Alert

- All header elements are indeed necessary for accurate distribution of Presidential alerts.
- Time stamp accuracy is also extremely important for proper interpretation and distribution of alerts.
- The Task Group recommends adopting a national location code to allow efficient and effective distribution to the entire nation while preserving the future capability to provide regional Presidential alerts, if desired. We recommend the use of “000000” over other possibilities to reduce the number of devices that will need

firmware updates.

3.2.2 Visual Crawl and Audio Accessibility Issues

- Convene a group of subject matter experts to create industry recommended practices.

3.2.3 National Test Event Code

- Recommend using NPT (National Periodic Test) to provide the ability for automated text generation to specify that the Presidential alert is a test in order to avoid misinterpretation by the public.
- Determine parameters such as alert duration, visibility of tests, timing of tests, etc..
- Keep the maximum length for NPT at two minutes.
- Determine necessary rule changes.
- Additional study is required to determine costs for software and equipment changes.

3.2.4 Impact of National Test Length on EAS Equipment

- Need FCC clarification on EAN startup procedure
  - Inconsistent among EAS equipment vendors
- Update EAS Handbooks to reflect changes

3.2.5 Additional Headers Received During Processing an Alert

- Adopt recommendations in Annex B Additional Headers

4 Conclusions

The EAS system was created to serve as the method for the President to communicate with the general public during a national emergency including times when normal channels may become unavailable, impaired, disabled, or compromised. In practice, the system is used more frequently for state and local alerting. National alerting has been used only once when tested in November, 2011. At that time, issues came to light involving differing interpretations of how the alert was to be issued and relayed.

In order to correct these issues, specific guidelines from the FCC are required regarding timing and propagation of national alerts. The primary issue pointed out in this report is dealing with the delay as the message is handed off from the origination point, to the PEP network, to the Local Primary, and to the EAS participant.

This report discusses two issues regarding EAN; buffering and joining audio in progress. Each has advantages and disadvantages. The Task Group was not able to arrive at a consensus on this matter and recommends further study. See discussion in Annex C.

5 Annex A -- Time Stamp

1. The JJJMMHH field must remain part of the EAN message
    - For frame validation
    - For duplicate detection
    - For expiration checking
2. Originators have a responsibility to ensure the proper operating condition of their EAS and CAP origination systems. The FCC and its partner agencies should encourage all users of such systems to maintain their systems in a proper state of readiness.
3. EAS Participants have a responsibility to maintain their EAS equipment in good working order. The FCC should definitively determine the extent to which, if at all, the maintenance of reasonably accurate time on EAS equipment falls under §11.35 Equipment operational readiness.
4. For various reasons, the JJJMMHH field, as entered by the originator, may not match the actual time the message was first transmitted. This difference may place the Time of Release either before or after actual time received.
    - With limited exceptions, a discrepancy in which the alert was received *after* the encoded Time of Release (JJJHHMM) does not pose an issue, so long as that alert is received during the valid timeframe of the alert. If the alert is received before the expiration time of the alert, that alert should be forwarded.
    - Where an alert is received *before* the encoded Time of Release, there may be implications due to the networked nature of EAS equipment within advanced communications architectures. Speaking generally, this is not atypical or uncommon in a networked and synchronized environment.
    - When EAS Participants can feasibly allow the forwarding of an EAS message upon receipt, even if before the encoded Time of Release, they should do so.
    - When it is not reasonably feasible for EAS Participants to forward an EAS message upon receipt, if received before the encoded Time of Release, then EAS Participants should be afforded the capability to forward such a message as soon as technically feasible.
5. The JJJMMHH field must always be relayed for EAS as it was received (for duplicate detection), origination time errors are therefore propagated. This is not a severe issue so long as the time the message is received before the stated expiration time JJJHHMMM+TTT.
6. Originators are strongly encouraged to check the time on devices used to generate EAS messages so the EAS alert is not sent with a JJJHHMM that contains a “future” time. This also affects EAS devices which have not been updated to handle the 2007 daylight savings time changes.

6 Annex B -- Additional Headers

During the National Test problems occurred because the audio portion of the alert contained another copy of the message header. Depending on the audio quality and the number of relays the message went through, these additional headers could be decoded by the receiving stations. This message looked like this:

<header> <header> <header> <attention> <audio <header> <header><header>>

This is an undefined state.

- Should the extra set of headers be ignored or processed?
- Should they terminate the original incoming alert or queued sequentially?

During the National test these headers were duplicates of the first alert, but what if they were not? If headers inside an alert are ignored, what if the second set was an EAN interrupting a low priority alert?

During the National test, the headers came as part of an alert generation problem. However, they can also originate in cases where a network feed sends an alert on its audio output, which is then passed through as program material by downstream encoder/decoders, but is then interrupted when the encoder/decoder hears the EAN on one of its monitored inputs. Some systems have encoder/decoders hooked up in series so that alerts arrive as program material on an unmonitored input - in some cases as an unintentional side effect of a state relay system. The EAN interrupted by another EAN may have happened during the National test, but may not have stood out in the data due to the general audio confusion with duplicated headers.

What to do in the case of unintentional headers received during an alert should be addressed, along with any other changes the FCC contemplates.

- Proper alert dissemination requires accurate time setting of EAN originators' encoding devices.
- A decoding device detecting a new EAN alert with a more recent time stamp, on either the same or different input channel, shall terminate the first active EAN send an EOM and forward the new EAN message.
- A decoding device detecting a new EAN alert with an older time stamp, on either the same or different input channel, shall log and ignore the older time stamped alert.
- A decoding device detecting duplicate EAN headers on the same input as a currently active EAN will ignore the headers and will not terminate the current alert.

7 Annex C -- EAN Audio

This Annex describes and analyzes methods that may be used to address this issue. The Task Group was not able to reach a consensus on which method to recommend, largely due to the impact each method would have on the installed base of EAS equipment.

An EAN originated by FEMA goes through several relays as it moves through the EAS audio system, PEP (Primary Entry Point), State Relay, LP (Local Primary), and the end point systems. The number of relays is unknown, and can change based on propagation effects, temporary reconfigurations due to equipment failure or maintenance, changes to the state plans, or effects of the emergency itself. The EAS audio relay system is an important part of the EAS system's ability to provide alerts at a time when national networks and the Internet may be unavailable...

At each relay point, the local EAS device re-issues the header and attention tones after they have been received from the upstream source. This requires either inserting the headers into the audio, or replacing a part of the audio with the headers. Both of these approaches are used by equipment now in the field.

The following figures show the two approaches graphically.

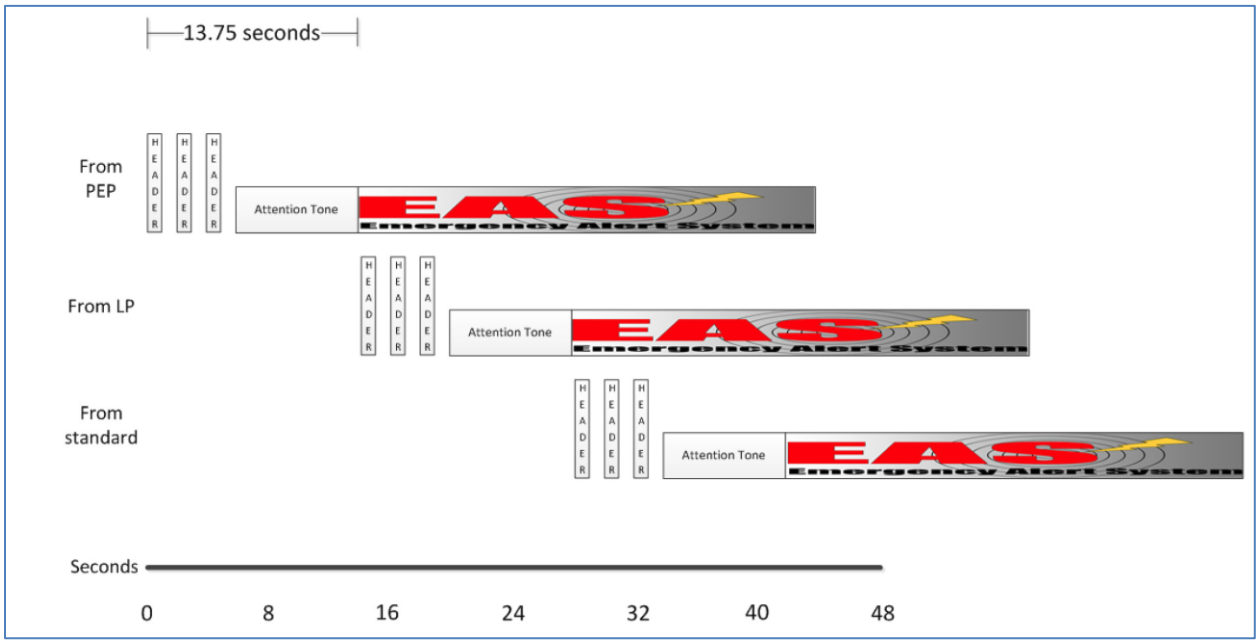

Figure 1. Storing audio so that headers are inserted and do not replace incoming audio.

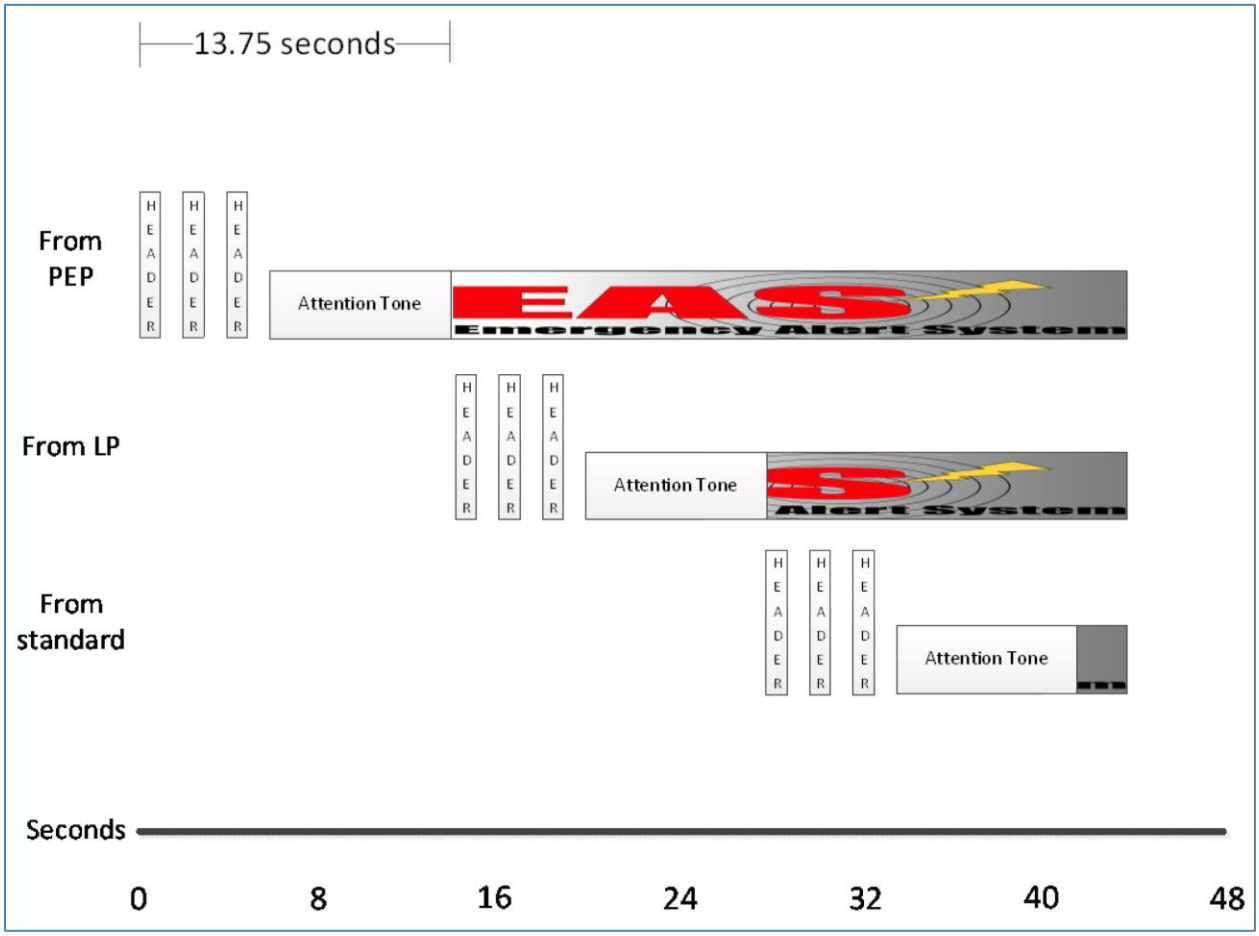

Figure 2. Switch to live audio in progress, replacing part of the incoming audio with the headers.

Which method, buffering or non-buffering, is preferred depends on how the system is intended to be used by FEMA and the President.

Method 1: Presidential audio begins as soon as the first EAS headers are sent.

In this method, the White House can begin meaningful audio as soon as the EAN headers are sent by FEMA's origination equipment. This type of tightly produced audio has several advantages:

1) It permits the President to begin speaking without additional setup delay.
2) It allows the public to receive the message as fast as the EAS system can deliver it.
3) It does not contain periods of silence or other non-informative call out audio that could lead to tune out by the public, manual reset by EAS participants, or panic due to uncertainty as to the cause of the alert.

Disadvantage:

To ensure that all audio is heard by the entire audience, each EAS device must buffer the incoming audio while it is sending its local version of the EAS headers. Some percentage of EAS equipment in the field today is unable to buffer the incoming audio and would have be modified or replaced at a cost to the EAS participant.

Method 2: Presidential audio is delayed until the entire EAS relay chain has switched over to

national control. This method has no particular operational advantages because it delays the start of meaningful audio. However, it does allow for simpler implementation of EAS devices because it removes the requirement for equipment to simultaneously report and play back audio. In this method, the President must wait for at least one minute before speaking, to allow the relay chain to completely switch over to national control. During that time, to avoid dead air, some sort of call out message "Stand by for …." must repeat for the entire length of the switch over delay.

Advantages:

1) A call out is required, but once it is complete, everyone hears the same information at close to the same time, though normal satellite and compression and digital radio delays would tend to spread this out over 2 to 6 seconds per relay hop.

Disadvantages:

1) A call out is required, delaying the delivery of information to everyone for the switchover time, at least one minute.
2) The additional delay caused by the call out disrupts normal broadcasting for the extra time, and the lengthy call out can lead to tune out by the public, manual reset by EAS participants, or panic due to uncertainty about the cause of the alert.
3) If the length of the relay chain in a local area exceeds that allowed in this plan , stations at the far end of the chain will miss some audio, again creating confusion.

In summary, for method 1, buffering is required; for method 2, buffering is not required. The task group also considered if a hybrid system of EAS devices with buffering and without buffering is possible. It is, but an EAN delivery system where both approaches are used simultaneously, is the worst case. The no-buffering method requires a call out of at least 40 seconds before information can start. The buffering method will ensure that the entire call out is heard for listeners with a chain of buffering systems in their delivery path, resulting in a delay of at least 53 seconds for some users, and as much as 80 seconds for other users, before they begin to hear meaningful information. In addition, consideration must be given to the financial and operational impact to EAS Participants resulting from equipment replacement.

Implementation details

The National Test did not use a call out period, and therefore some broadcast stations did not receive the entire audio message. Due to the audio intelligibility problems of that test, the missing audio was not apparent to all stations. In some cases, enough time elapsed that the alert message had concluded before it was received by stations at the ends of the chain. These stations missed the alert entirely. To accommodate all the hardware and software currently deployed in the EAS system, FEMA would need to provide a call out at the start of future alerts to allow for systems that don't provide buffering. However, as stated above, the total length of the alert would increase, and the systems that do buffer would be impacted to a greater extent, because the entire length of the call out would be aired.

The Task Group notes that Part 11 rules do not specify if a call out is to be present, and do not discuss the use of buffering, thus allowing both types of EAS devices to be produced. The Task Group discussed the following three options to address this issue:

1. Do nothing. This allows the existing mix of buffering and non-buffering systems to be used. To avoid dropped audio at non buffering systems (and therefore at any systems that monitor them), FEMA then should provide a call out at the start of the alert. This should be at least 40 seconds; a full minute would provide a safety margin and allow for an additional level of relay. Pro: no EAS systems need to be updated. Con: the call out is required, leading to a delay in getting information to anyone, and the additional problems caused by taking the national broadcast system off the air for up to a minute (longer at stations that buffer) without providing any useful information.

2. Buffering. Pro: FEMA does not need to add a call out, EAN information is distributed more quickly, no audio is lost. Con: This requires an update, probably a hardware update, to the systems described in this annex. FEMA would not use a call up period.

3. Disable buffering, if present. Again, FEMA would have to provide a call out period. Con: Systems with buffering would need to disable it, so that the EAN is not further delayed by the buffer. Systems described in this annex would need an update, probably software, and in the case of legacy equipment on that list, a hardware update.

To permit the FCC to estimate the number of systems that might be affected by a change to Part 11 to address this issue, the Task Group provides the following lists. This information was provided by EAS equipment vendors who participated in the work of the Task Group.

List 1: EAS systems that currently buffer EAN audio:
Digital Alert Systems
Sage Alerting Systems (both Legacy and new),
TFT (new)
Trilithic (new)

List 2: EAS systems that use real-time EAN audio:
Gorman Redlich
TFT (Legacy)
Trilithic (Legacy)

EAS equipment and downstream services should be prepared to handle an EAN that is of any duration, including (substantially) less than 2 minutes.

- There are two broad approaches to handling EAN audio in EAS equipment: buffer, or switch to live audio in progress.
- By maintaining both approaches, the EAN originators and the EAS Participants need to be aware of the complications each method will have on the Presidential message.
- The Task Group sees this current scenario as the most problematic. However any decision on a single method needs to be examined carefully because it will entail additional costs and burdens on EAS Participants.

8 Annex D -- NPT Test Code

The Task Group recommends expanded use of the National Periodic Test ("NPT") Event Code, including semi-annual use of the NPT event code to verify EAS network connectivity. The NPT event code provides the benefit of automatic inclusion of textual content ensuring the viewing public that the alert message is, in fact, a test only.

The Task Group concludes that no change in software/firmware would be required on deployed EAS encoder/decoders, insofar as the NPT event code is utilized within existing parameters specified in 47 CFR Part 11 (specifically, that the NPT test alert is limited to up to two minutes in duration), The Task Group has identified several issue areas, however, regarding location codes that warrant additional investigation.

NPT Message Prioritization:
The Task Group recommends that the FCC issue additional clarification on the prioritization of the NPT alert message.

1. The Task Group recommends that the NPT alert message should not be afforded the level of priority of an EAN event code. This would avoid the undesirable situation of an NPT test message potentially interfering with an actual civil or weather alert (such as an AMBER or tornado warning). The NPT code should not "trump" or preempt a valid civil or weather alert.

2. As with EAN alerts, accurate time stamping by originators is critical. The Task Group recommends that the NPT alert message follow the similar recommended release guidelines as those suggested by the Task Group for the EAN. That is, an NPT alert should be released immediately. In the situation in which an NPT is received with a time stamp that is in the future, and the EAS device and downstream system can forward the alert immediately, it should. If the time stamp is in the future, and the device and downstream system cannot forward the message immediately, the message should be forwarded as soon as technically feasible. (Refer to Annex A -- Time Stamp above.)

NPT Location Codes:
The Task Group finds that the location or "geocoding" of the NPT alert may likewise require additional clarification from the FCC. The Task Group defined three scenarios for geolocation and the NPT code, and notes the following:

- NPT alerts in conjunction with the 31 location (FIPS) code limit (without a national location code).
    - It is unclear whether every EAS device manufacturer allows an NPT to autoforward regardless of location code (as with the EAN).
    - If this is the case, until and unless all EAS device manufacturers update their equipment to allow NPT codes to autoforward regardless of geocode, then the Task Group recommends that NPT alerts adhere to the 31 location code limit.
    - This limit may require the issuance of multiple NPT alerts for national coverage, and would potentially result – in limited "overlap" areas – in the receipt of

multiple NPT alerts.
    - However, this scenario has merit, at least in the short term, until it is determined both how all EAS devices process NPT geocodes, and whether there are any limitations in downstream systems in the treatment of geocodes for NPT messages.

- NPT alerts that "ignore" a geocode.
    - If CAP EAS devices are uniformly updated to forward NPT alerts regardless of geocode (essentially "ignoring" FIPS), the change would simplify national testing (single NPT message). However, the change removes the potential for regional NPT testing.
    - The Task Group notes that additional research, testing and evaluation by EAS participants would be also required to determine the extent to which the installed base of equipment (including systems downstream of the EAS device) may be impacted by an update to allow NPT codes to forward regardless of geocode.

- National Location Code
    - CAP EAS devices be updated to process an NPT in conjunction with a national location code (e.g., "000000"). This provides the benefit of simplified national testing, and retains the possibility of regional NPT testing (using conventional FIPS codes).
    - The Task Group again notes that additional research, testing and evaluation by EAS participants would be required to determine the extent to which the installed base of equipment (including systems downstream of the EAS device) may be impacted by an update to support a national geocode for NPT testing.
    - Long term, this may be the most optimal geocode solution for NPT test codes.

NPT Message Duration

The Task Group recommends that NPT test messages remain limited to two minutes in maximum duration, like other "conventional" EAS event codes.

- Federal regulations governing EAS (47 CFR Part 11) only identify the EAN event code to specifically support alert messages of unlimited duration.
- Under existing EAS regulations the NPT event code is treated in the same manner as a conventional EAS code (i.e., 2 minute duration).
    - For this reason, all deployed CAP EAS equipment are configured to process NPT alerts with a maximum duration of two minutes.
    - Similarly, the Task Group understands that systems downstream from the EAS equipment are configured to process NPT alerts with a maximum duration of 2 minutes.
- For these reasons, the Task Group recommends the NPT code retain a maximum duration of 2 minutes.

NPT Forwarding

As a matter of clarity, the Task Group recommends that the FCC specify that the NPT test code is intended for mandatory forwarding into the broadcast chain (like the Required Monthly Test), and is not a "log only" event (like the Required Weekly Test).

National EAS Participants

National EAS Participants (e.g. DBS Providers and Satellite Radio) have a national footprint and may not be able to regionalize messaging. In the event that a regional or geocoded message is transmitted, the working group recommends that such national organizations be exempt from the mandatory forwarding under the following conditions:

- The geographic area for the regional message is significantly smaller than the footprint of the national organization's transmitted area.
- The geocode associated with the NPT event code does not specify US-all (000000).