



The

# Broadcasters' Desktop Resource

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... edited by Barry Mishkind – the Eclectic Engineer

## EAS Update

### The CAP/EAS Clock Has Run Out Where Do We Go From Here?



**By Richard Rudman**

*[June 2012] What a long strange ride! The 180-Day CAP/EAS Clock was extended twice and has now run out. Yet, many questions remain. Richard Rudman discusses just where we go from here.*

Looking back on the past few weeks of the EAS story leading up to the June 30<sup>th</sup> CAP compliance deadline and beyond, we can safely say we know more than we did about the roadmap to the CAP-EAS implementation deadline destination, but we definitely need to know more as we ride along that road.

#### **THE DEADLINE THAT WAS**

To make it clear, the June 30<sup>th</sup> date requires all entities subject to Part 11 must have a CAP-capable EAS decoder installed, operating, and set to poll the federal IPAWS OPEN aggregator at: [apps.fema.gov](http://apps.fema.gov).

Please note this link will *not* work if you just put it in a browser. It will only work using a certified EAS box that has IPAWS OPEN firmware. And the FEMA does not guarantee the IP ad-

dress it is attached to will not change. You *must* use the FQDN (fully qualified domain name).

#### **THE HOOPS TO JUMP THROUGH**

The FEMA and the FCC held an Internet web broadcast on June 6<sup>th</sup>, with the goal of answering as many questions as possible about the status of the upgrades and the federal activities as we move ahead.

The FCC compliance requirements include:

- EAS Participants' EAS equipment must be capable of converting CAP-formatted EAS messages into messages that comply with EAS Protocol requirements as outlined in the EAS-CAP Industry Group's (ECIG) Implementation Guide.
- EAS Participants must monitor FEMA's IPAWS OPEN system for federal CAP-formatted alert messages using whatever interface technology FEMA deems to be appropriate.

- Monitoring specifications for CAP messages disseminated by state and local CAP alerting systems will be set forth in state and local EAS plans which must first be submitted to the FCC for approval.
  - EAS Participants that are required to create visual displays of incoming EAS messages (television stations and cable channels) must use the enhanced text in the CAP message, as set forth in the ECIG Guide.
  - EAS Participants whose EAS equipment is equipped with Test-to-Speech (TTS) software may, but are not required to use TTS to generate audio messages as specified in the ECIG Implementation Guide.
  - EAS Participants may use intermediary devices to meet their CAP-related obligations on June 30<sup>th</sup>. However, because some of these devices are incapable of extracting text contained in a CAP message for the purpose of generating a visual crawl, those stations using such devices do not have to comply with the requirement to create visual displays from enhanced text in CAP messages until June 30, 2015.
- Comlabs – EMnet CAP to EAS Converter, Software Version 4.0.1.36
  - Gorman-Redlich – CAP-DEC 1 (Software v2.20 build 5.19.2011)
  - Monroe Electronics – DASDEC-II, Software Version 2.0-0, EAS Encoder/Decoder
  - Monroe Electronics – R189 One-Net, Software Version 2.0-0, EAS Encoder/Decoder
  - Sage – Digital ENDEC Model 3644 (Software Version 1.0h75)
  - Trilithic – EASyCAP™ Software Version 1.13, EASyIPTV™ Firmware 8.02

The above list is found at: <https://www.rkb.us/> and can be checked for any additions and/or updated information. However, it is worth noting that the FEMA does not endorse any specific products on their Responder Knowledge Base (RKB).

### **EAS STATE PLAN REVISIONS**

The next step for users is to program their receivers to be in harmony with State and Local EAS Plans.

The latest word from the FCC as of the June 6<sup>th</sup> broadcast is that there is currently no deadline on submitting state plans for FCC approval.

The Commission said in the Fifth Report and Order that it would be “premature to take any action with respect to State EAS Plans until after it has reviewed and processed the test date from the November 9, 2011 Nationwide EAS Test.

In the meantime, amendments to any State Plan will be accepted by the FCC Public Safety and Homeland Security Bureau until new Plans are ready.

### **COMPLIANT CAP/EAS RECEIVERS**

Based on the FEMA/FCC presentation on June 6<sup>th</sup>, here is the current (checked as of 6/23/12) list of approved devices that meet the FCC’s requirements:

- Alerting Solutions, Inc. – CAP-to-EAS Converter, Model 3320 (Software Version 1.2.2)\*

*\* Note: as of this writing TFT states that their “3320 CAP-to-EAS converter does not require FCC Certification. They report: “We are filing a Class II permissive change to the EAS911 Type Acceptance as an intermediary device for CAP. Both FEMA certification and FCC Type Notification for the new EAS911+ are pending.”*

## STATE COMMITTEE SAMPLE PLAN

At the Spring NAB Show in April, the Broadcast Warning Working Group (BWWG) arranged for a unique workshop targeted on a missing link in what the industry needed to know about changes to the EAS.

A group of twenty-five EAS subject experts that included state and local EAS Chairs, EAS equipment manufacturers, broadcasters, and a representative of FEMA met for two hours to start work on a sample state EAS plan that incorporated all we knew at that time about Part 11 changes.

That sample plan is now in its Version 4 stage and is posted on the [EAS Forum](#) website. Notification of its availability has been sent to state chairs, SBE, NAB, NASBA and other interested parties. Principally because the FCC has not yet given us answers on what state and local plans should say about key EAS plan elements this document is by necessity going to be a work in progress,

As of this writing, the FCC expects state plans to include not only a mapbook, but also "... should include a data table, in computer readable form, clearly showing monitoring assignments and the specific primary and backup path for emergency action notification (EAN) messages that are formatted in the EAS Protocol (specified in §11.31), from the PEP to each station in the plan."

This seems to some to represent an unfunded twin cost and resources burden on the volunteer groups that sit on state and local EAS committees. More guidance is needed, and a request for this guidance has been made to the FCC by the BWWG.

## BEST PRACTICES

In reviewing the June 6<sup>th</sup> web broadcast, as well as other sources, we can share the following checklist to be considered as "Best Practices"

for implementing the changes in EAS Operations.

1. Select a suitable location for the operation of your EAS device (see the manufacturer's recommendations).
2. Bench test the unit prior to installation.
3. Be sure to connect the appropriate monitor sources per your local EAS Plan.
4. Make sure the device is inserted in-line with the station's audio chain. Take special care if assigning contact closures for audio switches and other devices,
5. Configure your state and local area FIPS codes, set the correct time/UTC offset. Assure that you have a valid NTP source selected and that time updates are happening correctly.
6. Set your Originator Code (ORG) to "Broadcast or Cable."
7. Set your call sign or other identification code.
8. Assure the attention tone duration is set to eight seconds.
9. Set the unit for Automatic (especially if unattended) or Manual configuration.
10. Configure the appropriate Event Codes for your area – per your local EAS Plan.
11. Adjust for nominal audio input and output levels.
12. If connecting to a crawl generator, check your serial settings along with speed, size, and other setting to ensure that it is readable.
13. Check your device frequently to make sure it has connectivity. Some devices

facilitate this by sending emails if the link is broken, and through other aids.

14. Save your device configurations in case reloading or adjustments are necessary.
15. Check the manufacturer's website and EAS listservers periodically for firm-ware updates.
16. Check your IP infrastructure regularly to assess Internet connectivity.
17. Monitor over-the-air EAS sources per your local EAS Plan
18. Contact your EAS sources if you do not receive their RWTs and RMTs (traditional EAS or CAP) – make them aware of any issues with audio quality, and place such correspondence in your EAS log.
19. Conduct RWTs and RMTs as required.
20. Perform regular checks between tests.
21. Ensure your Chief Operator regularly reviews the EAS logs (That means every week).
22. Participate in your State and local EAS groups, and encourage local emergency management to become certified as originators.

### **EXPANDED IPAWS OPEN RWT TEST SCHEDULE**

In order to accommodate as many of the stations still installing their CAP/EAS receivers at the last minute, the FEMA expanded their IPAWS OPEN testing schedule during the last half of June.

At this time, the word is that the Monday tests will continue at least for two weeks in July, with the future testing plans still being worked out.

Broadcasters have asked that at least some of the tests continue long-term, but there has been no word on that as of this writing.

### **DATA CONSIDERATIONS FOR IPAWS OPEN POLLING**

The best estimate for the amount of data you can expect through IPAWS OPEN polling of the federal aggregator is between 4 and 6 Mbytes per day. FEMA's informal guidance is to poll over 30 seconds, with a 1 mbps connection.

For example, here is a data payload estimate, using mostly weather alerts, and with no audio, for a 24-hour period:

Fast poll:	0.69 MB
Feed fetch:	6.00 MB
Alert Fetch:	0.24 MB
Total:	6.93 MB

Using the 64 kbs compression rate of the IPAWS mandate for audio, a one-minute alert would be a file with a size of 0.45 MByte.

Of course, the bandwidth depends on how fast you want to get the alerts on the air. Assuming you are not streaming or using a progressive download (that is, the entire file must be downloaded before the alert can be played), this is what you might expect.

### **DOWNLOAD AND ON-THE-AIR**

For audio, "acceptable" depends on the level of latency you want to accept or afford.

With a 64 kbps Internet connection (slightly faster than a dial-up modem), it will take slightly over one minute to download a one-minute alert. A dedicated 128 k connection will get a two-minute alert on the air in one minute, amounting to 256 k in 30-seconds.

If you want to put a one-minute IPAWS OPEN audio alert on the air in 10 seconds, you will need a 6x link, 384 kbps. A one Mbit link will

allow you to put it on the air in 4 seconds. Since most stations get the alert completely before turning it around with legacy gear, a factor of 2 or 3 over the 64 kbs rate is fine. Times quoted would double for the maximum two-minute alert.

All of these calculations assume you are not sharing the connection with any other critical applications. If you are, you likely have an Internet connection with more bandwidth anyway. The point is, for radio stations, you do not need to run 1Mbit to your remote transmitter site. 128kb is fine – in fact, it is more than fine for Text-To-Speech (TTS).

Progressive download is possible, meaning you can start the alert right away. There are implications for security (currently, you must have the entire file before you can check the security hash), and you risk dead air if the link runs slowly, but it will reduce time to air.

## **TEXT TO SPEECH**

Prior to the NAB Convention we were all wondering if the FCC would rescind their ban on EAS Text-To-Speech (TTS).

The FEMA petitioned their federal partner, the FCC. A significant number of EAS stakeholders agreed and supported FEMA's petition. And the FCC did the right thing. Voluntary use of TTS will be allowed. Check with your equipment vendor for TTS capabilities.

## **THE EAN LIVE CODE TEST**

Back in April, questions were raised with some FCC officials available as to when they would announce their report on the National EAN live code test last November and what Part 11 decisions and changes would be made based on that report.

Another issue related to the many stations (one estimate says 40%) did not file their required national test reports, and why there was no way

for anyone to easily find out if their report was on file.

Tom Beers, the Chief of the Policy Division, Public Safety and Homeland Security Bureau, noted that the FCC said from the start that they would not cite or fine stations that had trouble running the National EAS Test – but added that not filing the reports was a different matter and could be considered grounds for citations and fines.

He also told attendees at the NAB's EAS session that the majority of the non-reporting stations were "low power" stations.

## **MAKING SURE YOUR REPORT WAS RECEIVED**

If you are still wondering if your station might be one of the remaining non-reporting stations, Beers announced that the FCC has come up with a way for you to confirm whether they have your report.

Timothy May has been designated as the source of information on National Test reports. You can contact him at [timothy.may@fcc.gov](mailto:timothy.may@fcc.gov) and ask him whether your report was received. You should keep a copy of his response with your EAS records. And if for some reason you have not responded yet, go to [the National EAS Test website](#) and follow the instructions for "paper filings."

## **LOOKING AHEAD**

Some EAS experts say that the success of EAS in the long run ultimately depends on forging strong links between the emergency management community – the originators of warnings – and the broadcast, cable and satellite entities subject to Part 11 whose job it is to get those warnings to the public.

FEMA started the ball rolling with a procedure so state and local emergency managers can send warnings using the federal CAP aggregator:

1. Take a FEMA online course on IPAWS OPEN, IS-00247.
2. Take the online exam and pass it.
3. Apply to their state emergency management agency for approval to originate through the IPAWS OPEN aggregator.
4. State emergency management forwards to the FEMA approved applicants.
5. Origination privileges are granted.

Local and state emergency managers do not need to purchase special EAS equipment to originate. Several software vendors that specialize in selling to government make CAP warning origination tools. At this writing some, but not all have incorporated the IPAWS OPEN profile.

After NAB, the BWVG received word from the FEMA that they would take further steps to help forge the vital public/private partnership needed. FEMA has new guidelines for state grant requests that could include funds for training, education projects.

## THE ROAD AHEAD

While we now know more than we did, there are still many unanswered questions and missing puzzle pieces.

We do know that the June 30<sup>th</sup> compliance deadline is a hard date – and all subject to Part 11 must be able to accept IPAWS OPEN messages either directly or indirectly by that date.

For equipment-specific questions, the best advice is to watch the email list servers and stay current with what your equipment manufacturer has to say.

Nevertheless, stay tuned to the various EAS resources for the latest information. The ride is not over yet!

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The EAS Forum is [located here](#).

The BDR EAS Information page is [located here](#).

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