March, 2012   WORKING GROUP 9

CAP Implementation

Final Report – Part 1

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1   Results in Brief

1.1 Executive Summary[1]

The Emergency Alert System is the primary warning system that provides the President with the means to address the nation during a national crisis. Over the years it has gone through several transformations but until recently can best be described as an analog delivery system.

On May 31, 2007, the FCC adopted a Second Report & Order to strengthen the development of next generation technology for the Emergency Alert System (EAS).[2] This R&O requires EAS participants to accept messages using Common Alerting Protocol (CAP) digital delivery. Subsequently, on November 18, 2010 the FCC adopted the Fourth Report & Order to establish the deadline for EAS participants to start receiving CAP messages no later than June 30, 2012.[3] On January 10, 2012 the FCC released the Fifth Report and Order which further clarified the process to receive and transmit CAP messages for the EAS and to streamline the Part 11 rules.[4]

CSRIC Working Group 9 was established to provide recommendations and best practice for the deployment of CAP and to provide an overall progress report on the first months of CAP implementation.

WG9's initial discussions, and by extension the focus of this particular report, are on two fundamental issues emerging from the Report and Order:

1. Prohibition on the use of text to speech technology on CAP EAS devices by EAS Participants.

2. Creation of a "streamlined" certification regime for CAP EAS equipment, which includes three distinct classes of CAP EAS equipment, with slightly varying certification

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[1] What is an Executive Summary?; Source:
http://www.2myprofessor.com/Common/executive_summary.htm

[2] FCC Second Report and Order, in the Matter of the Review of the Emergency Alert System, EB Docket No. 04-296, Adopted: May 31, 2007

[3] FCC Fourth Report and Order, in the Matter of the Review of the Emergency Alert System, EB Docket No. 04-296, Adopted: September 15, 2011

[4] FCC Fifth Report and Order, in the Matter of the Review of the Emergency Alert System, EB Docket No. 04-296, Adopted: January 9, 2012

requirements, based on the nature of that equipment.

2 Introduction[5]

CSRIC was established as a federal advisory committee designed to provide recommendations to the Commission regarding best practices and actions the Commission may take to ensure optimal operability, security, reliability, and resiliency of communications systems, including telecommunications, media, and public safety communications systems.

Due to the large scope of the CSRIC mandate, the committee then divided into a set of Working Groups, each of which was designed to address individual issue areas. In total, 10 different Working Groups were created, including Working Group 9 on EAS CAP Implementation.

Working Group 9 officially started its work in December 2011 and was given until March 2012 to produce this First Report. The focus for Working Group 9 is to review the Fifth R&O (released January 10, 2012) on CAP deployment, provide FCC recommendations for best practices to facilitate CAP implementation on a national level, state and local level and identify technological challenges. The second report due in December 2012 will review the progress of CAP implementation by EAS Participants for both national and state level.

2.1 CSRIC Structure

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[5] Writing@CSU; Source: http://writing.colostate.edu/guides/processes/science/pop2a3.cfm
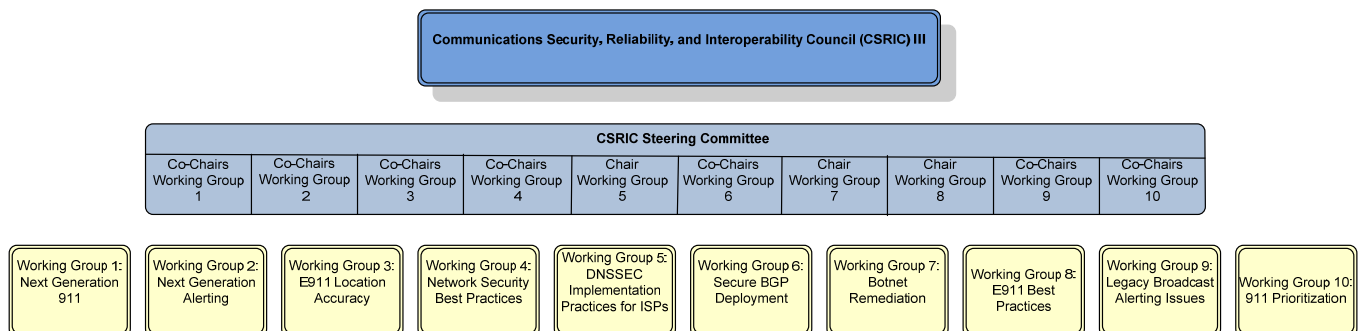
2.2 Working Group 9 Team Members

Working Group 9 consists of the members listed below.

Name	Company
Al Kenyon	Federal Emergency Management Agency (FEMA)
Andy Scott	NCTA
Bill Marriott	Comlabs
Bill Robertson	Digital Alert Systems (Monroe Electronics, Inc.)
Bob Sherry	Intrado
Chris Homer (Chair)	DIRECTV
Clay Freinwald	Washington SECC
Daryl Parker	TFT
Donald Walker	GRM
Edward Czarnecki (Co-Chair)	Monroe Electronics, Inc.
Gary Timm	Wisconsin SECC
Harold Price	SAGE Alerting Systems
Jeb Benedict	CenturyLink
Jeff Staigh	Univision
Jim Gorman	Gorman-Redlich
Kelly Williams	National Association of Broadcasters
Larry Estlack	Michigan Association of Broadcasters
Matthew Straeb	GSS
Michael Hooker	T Mobile
Mike Nawrocki	Verizon
Ron Boyer	Boyer Broadband
Tim Dunn	T-Mobile
Eric Ehrenreich	FCC Liaison
Doug Semon	Time Warner Cable

Table 1 - List of Working Group Members

3   Objective, Scope, and Methodology

3.1 Objective

In its January 2012 EAS Fifth Report and Order (EB Docket No. 04-296), the Commission sought to continue the process to transform the Emergency Alert System (EAS) into a more technologically advanced alerting system by revising Part 11 Emergency Alert System (rules) to specify the manner in which EAS Participants must be able to receive alert messages formatted in the Common Alerting Protocol (CAP) and streamlining Part 11 rules to enhance their effectiveness and provide clarity.

The Fifth Report & Order is the second of two orders that implement Part 11 rule changes stemming from the Third Further Notice of Proposed Rule Making (FNPRM). The previous order, Fourth Report & Order, addresses the single issue of establishing a new deadline of June 30, 2012 for meeting the various CAP-related requirements that the Fifth R&O codifies. The Working Group was asked to review the new order to provide insight, implementation recommendations and status. In this Fifth R&O Report, the Working Group shall also recommend actions the FCC could take to improve EAS as it incorporates the new CAP protocol.

3.2 Scope[6]

Per the Working Group 9 charter, the group found it essential to begin with an initial focus on the FCC Part 11 Rules governing the EAS as it involves best practices to facilitate CAP implementation leading up to and beyond the June 30, 2012 deadline. The committee will be working with real-time data and events as they unfold during the roll out. Based on results of these events the group will gain valuable insight and metrics that will be used for future planning and rulemaking.

3.3 Methodology[7]

The Working Group 9 uses a collaborative, inclusive approach to its work. Given the vast array of expertise the WG-9 members brought to bear on this effort, it is critical to provide a multitude of forums and mediums through which participants could express their opinions and help shape this Final Report. The following section details the methodology through which WG-9 achieved

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[6] Elements of a Research Proposal and Report; Source: http://www.statpac.com/research-papers/research-proposal.htm

[7] Elements of a Research Proposal and Report; Source: http://www.statpac.com/research-papers/research-proposal.htm

this objective.

3.3.1 Sub-Group Structure

After its initial set of meetings, the Chair and Co-Chair of Working Group 9 decided to the review the structure of the Working Group and develop a plan that would allow for WG-9 to proceed with its study in an organized fashion which leveraged the diverse backgrounds of the Group's membership.

As such, WG-9 broke into three Sub-Groups; WG-9-1 is focusing on National implementation and best practices of CAP, WG 9-2 focusing on the progress of CAP implementation and best practices at the state & local level and WG 9-3 focusing on implementation of CAP (post June 30, 2012). The first two Sub-Groups have moved forward with independent conference calls that focused almost exclusively on the portions of the CAP implementation most applicable to their expertise.

Each Sub-Group had a Lead who developed an agenda and framed conversation and discussion amongst the participants. On some of the more divisive issues the Lead worked to bring members closer to consensus and encouraged open dialogue designed to find common ground.

3.3.2 Collaboration via Portal

In addition to the regular conference calls, an online collaboration portal was designed and implemented for use by the WG-9 participants. The portal is accessible to all Working Group members throughout the duration of their work on behalf the CSRIC. The table below details some of the most prominent capabilities featured on the Portal and how they were used by the members of the Working Group 9.

Document Repository	Collaboration space where members posted, reviewed, and edited documents
Forum	Open space where issues were discussed amongst members
Calendar	Central location where all relevant meetings and events were documented

From its inception, the portal became a useful tool for the Working Group as they shared ideas, resources, and collaborated on common documents, including this Final Report. Given the disparate locations from which the WG-9 members originated, having an online collaboration tool was instrumental to the successful completion of the Working Group's final product.

4 Background

From the onset of WG-9's work, close attention was paid to the researching relevant topics, including the EAS, the Integrated Public Alerts and Warning System (IPAWS), the CAP, and the Commercial Mobile Alert System (CMAS) and other alerting methodologies. Several members of the 9 Working Group brought specialized expertise in one or more of these areas and are also members of WG-2 that is focused on future developments in EAS systems.

4.1 Emergency Alert System (EAS)

EAS is the primary national warning system that provides the President with the means to address the nation during a national crisis. State and local officials also use EAS to originate warning messages about imminent or ongoing hazards in specific regions. Three Federal agencies share responsibility for for EAS at the national level: the FCC, FEMA, National Oceanic and Atmospheric Administration's (NOAA) National Weather Service (NWS).

Functionally, EAS is a hierarchical alert message distribution system. Initiating an EAS message, whether at the national, state, or local level, requires the message originator (e.g. FEMA, which initiates EAS alerts at the national level on behalf of the President) to deliver specially-encoded messages to a broadcast station-based transmission network that, in turn, delivers the messages to individual broadcasters, cable operators, and other EAS Participants. EAS Participants maintain special encoding and decoding equipment that can receive the message for retransmission to other EAS Participants and to end users (broadcast listeners and cable and other service subscribers).

On May 31, 2007 the FCC adopted a Second Report and Order and Further Notice of Proposed Rulemaking (EB Docket 04-296, FCC-07-109A1) (Erratum, DA-07-4002A1) to strengthen the EAS and to promote the development of fully digital next generation technologies and delivery systems for EAS. The Second Report and Order requires EAS participants to accept messages formatted using CAP, the groundwork for next generation EAS delivery systems, no later than 180 days after FEMA announces its adoption of standards in each case. CAP is intended to ensure the efficient and rapid transmission of EAS alerts to the public in a variety of formats (e.g. text, audio and video) and via different channels (e.g. broadcast, cable, satellite, and other networks).

On May 25, 2011, the FCC adopted the Third FNPRM, in which they sought comment on a wide range of tentative conclusions and proposed revisions to the Part 11 rules that would more fully delineate and integrate into the Part 11 rules the CAP-related mandates adopted in the Second Report and Order. The Commission received 30 comments and 12 reply comments in response to the Third FNPRM.

Subsequently, on November 18, 2010, the FCC adopted the Fourth Report and Order in this docket, in which they amended section §11.56 of the EAS rules to require EAS Participants to be able to receive CAP formatted EAS alerts no later than June 30, 2012.

Finally, in the January 2012 FCC Fifth Report and Order on EAS (EB Docket No. 04-296), the Commission sought to continue the process to transform the Emergency Alert System (EAS) into a more technologically advanced alerting system by revising Part 11 Emergency Alert System (rules) to specify the manner in which EAS Participants must be able to receive alert messages formatted in the Common Alerting Protocol (CAP) and to streamline Part 11 rules to enhance their effectiveness and to provide clarity.

5 Analysis, Findings and Recommendations

5.1 Analysis[8]

CSRIC WG9 is examining a broad range of questions relating to the usage of CAP for next-generation EAS;

CAP Distribution

1. What CAP-EAS Distribution Network architectures exist at the federal, state and local level?
2. What are the physical and data components of these systems?
3. What are the interface requirements?

EAS Network Requirements

1. What is sufficient capacity to relay messages?
2. What availability is required to maintain service?
3. How does authentication work?
4. How is data security maintained? Data accuracy?

A specific initial area of investigation by WG9 pertains to the impact of the FCC's Fifth Report and Order on EAS (released 10 January 2012) on CAP EAS migration. WG9's initial discussions, and by extension of focus of this particular report, are on two fundamental issues emerging from the Report and Order:

1. Prohibition on the use of text to speech technology on CAP EAS devices by EAS Participants
2. Creation of a "streamlined" certification regime for CAP EAS equipment, which includes three distinct classes of CAP EAS equipment, with slightly varying certification requirements, based on the nature of that equipment.

5.2 Findings

1) Text to Speech Prohibition – The FCC Fifth Report and Order disallows the use of text-to-

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[8] Elements of a Research Proposal and Report; Source: http://www.statpac.com/research-papers/research-proposal.htm

speech conversion technology on and CAP EAS device, though it concedes the potential use of such technology by CAP originators themselves.

a) We observe that several key CAP-based EAS origination and relay system, including FEMA IPAWS, appear to rely on the use of Text to Speech technology.

    i) At this time, WG-9 will not incorporate a specific FEMA response/feedback on the text-to-speech issue.

    ii) However, the working group's understanding is that the FEMA IPAWS system is - in large part - predicated and reliant upon usage of text-to-speech conversion technology at the remote EAS CAP device level.

b) It is also noted that the National Weather Service is preparing to feed CAP to IPAWS by April 2012. However, the NWS will not support audio in this CAP feed. As such, it is the Working Group's understanding that the NWS CAP feed would similarly be predicated on use of text to speech conversion technology at the EAS-device level.

c) We observe, based on feedback from several state authorities, that prohibiting usage of text to speech in CAP EAS devices would create very significant complications for both existing deployed and planned CAP state agency systems

    i) It is was noted that at least one deployed and operational CAP relay system (in the State of Washington) is similarly predicated on the use of text to speech by EAS devices. There are at least two other state systems that appear to be in advanced states of deployment which would be likewise impacted by a prohibition of text to speech by EAS devices.

    ii) We also noted the strong opposition to the prohibition by text to speech by emergency management authorities and the state broadcast association in the State of Michigan, which views that prohibition as dangerously removing an essential backup capability for the audio portion of EAS messages in their state system.

    iii) These two state-level examples – with very different IP-based alert architectures – demonstrate the impact of a prohibition of text to speech conversion by EAS devices. In the case of Washington, which is disseminating XML CAP messaging via Internet with no audio file, the prohibition would prevent the formation of the aural portion of the message at EAS Participant sites. In the case of Michigan, which is disseminating messaging with audio via a satellite network, the prohibition is viewed as disabling a key reserve capability of remotely compiling the aural portion of the message in case the intended audio file is missing, corrupted or otherwise unusable.

d) We observe, from input from the various manufacturers, that it appears that there would be a minimal impact on EAS Devices themselves. All EAS Participants will need to take some form of action, either changing their existing settings, or downloading a a software update to provide users with the option to disable the text to speech feature.

e) Conversely, we note that the text to speech prohibition will have a number of significant impact on CAP delivery;

    i) A major potential unintended consequence relates to the usability of a CAP EAS

message in the event there is a problem with the audio file created by the CAP Originator. If an audio file is not present, is corrupted, or otherwise unusable, the text to speech prohibition effectively leaves no fallback for the creation of the voice component of the message.

ii) The working group examined the utility of using text-to-speech, in lieu of no audio at all.

(1) For video programmers (broadcast television, CATV, DBS), if no audio file is present, the textual component of the message could still be displayed, per Part 11 requirements. There would be no aural component, aside from the EAS header and attention tones. Further examination may be required in terms of the potential impact on those with visual disabilities, if the aural portion of the message is unavailable.

(2) A further challenge in the case of low power television (LPTV) stations, is that they are not required to issue the EAS Frequency Shift Key (FSK) tones or the Attention Signal, therefore, with no aural component, LPTV stations would apparently not emit any audio alert.

(3) For audio programmers (broadcast radio, Satellite Digital Audio Radio Service [SDARS]), if no audio file is present, there would be no aural component, aside from the EAS header and attention tones. This would, of course, have a severe impact on the usefulness of the alert message for the listening population.

(4) We also noted that §11.51(b) of the current EAS rules indicate that the attention tones are not to be used if there is no audio.

(5) We further note that the EAS-CAP Industry Group (ECIG) Implementation Guidelines itself cautioned that should there be no audio file, and text to speech conversion is also not present, then the audio output of the device would only consist of the EAS header tones followed by the End of Message tones.

iii) Providers of CAP dissemination systems (including those currently in use by a number of states) which currently rely on Text to speech may need to provide significant changes to systems to support the text to speech prohibition.

(1) We note, however, that there is no requirement or mandate for any such software or system developer to do so.

(2) We further note that there is no requirement, mandate, or specified source of funding for any state, county, local, territorial or tribal jurisdiction to acquire new, or acquire modified capabilities to generate an audio MPEG 1Layer 3 (MP3) file for consumption by remote EAS CAP devices.[9]

iv) Both Originators and Consumers of CAP – and the relay systems connecting the two - will see significantly greater bandwidth requirements, by virtue of polling both the

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[9] MP3 is an audio-specific digital encoding format designed by the Moving Picture Experts Group (MPEG) as part of the MPEG-1 standard, and later extended in MPEG-2 standard.

Extensible Markup Language[10] (XML) CAP message and downloading an MP3 file.

    (1) At the IPAWS format of 64kbps MP3 compression rate, a two minute audio message requires 960k bytes of data. For a state with a 400 EAS Participant sites (for example) total bytes that would be transferred by a state server to all EAS Participants is about 375 M/Byte. To send the audio file to all EAS Participants in 60 seconds, an average speed of 50 Mbit/sec would be required.

    (2) Conversely, a CAP message without audio requires a significantly smaller amount of data, approximately 4k to 6k bytes. For a the same state example of 400 EAS Participants, total bytes that would be transferred by a state server to all Participants is about 2MByte.

2) Observations on file based audio (if used in lieu of text to speech technology)

    a) While the IPAWS digital signature validates the textual content of the XML file (i.e. verifies that a provided Uniform Resource Identifier (URI) string is the original authored string), this does not in and of itself does not provide any guarantee that the remote referenced file has the intended content.

    b) We note that the current IPAWS CAP Profile v1.0 does not provide *mandatory* guidance usage of digital signatures.

    c) Finally, there is the likelihood that the need to secure the remote audio file content could significantly slows down the entire system. The burden of digital signature validation could impact the overall system performance.

3) EAS Device Certification

    a) The working group examined the revised CAP EAS device certification process in depth. Three classes of CAP equipment were created by the Commission:

        i)   Integrated CAP EAS encoder/decoders;

        ii) Universal intermediary devices; and

        iii) Component intermediary devices

    b) FCC findings on intermediary devices are not explicitly incorporated into its intended Part 11 revisions, contained in the Fifth Report and Order.

        i) In Section 4 "Discussion", the FCC signals its intention that all intermediary devices should be certified and submit a Suppliers' Declaration of Conformity (SDOC), provided via the IPAWS Conformity Assessment Program. Further, in paragraph the FCC signals it intention for integrated devices to have both a Part 11 certification and to file an SDOC.

        ii) We note however that the Part 11 changes detailed in Appendix A of the Fifth Report and Order do not explicitly incorporate these intended changes.

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[10] The Extensible Markup Language (XML) defines a set of rules for encoding documents in a format that is both human-readable and machine-readable.

c) Implications of "Streamlined" Process for Integrated CAP EAS devices

    i) Subcommittee consensus that the report and order indicates that integrated CAP EAS devices are required to submit a class II permissive change filing, plus a copy of an SDOC.

    ii) For devices currently holding a Part 11 certification and valid SDOC, the consensus was that such devices could readily complete the streamline certification process well before the 30 June 2012 CAP deadline.

d) Implications for Universal Intermediary Devices

    i) Consensus that the process consists of submission of the universal intermediary device for Part 11 testing and CAP conformance testing (or submit SDoC, if available).

    ii) An unresolved question emerged as to whether Intermediary Devices are to be subject to complete Part 11 sections, or only selected portions? Consensus among subcommittee members was that the Report and Order infers Intermediary Devices be subject to complete Part 11 certifications for EAS encoders.

    iii) The consensus among subcommittee members was that universal intermediary devices holding a valid SDOC had a reasonable possibility of meeting the Part 11 certification requirements by 30 June 2012, provided that the Part 11 testing regime was "on line" at the earliest possible time.

    iv) The consensus among subcommittee members was that universal intermediary devices that hold neither a valid SDOC nor Part 11 certification, may face challenges in meeting the certification requirements by 30 June 2012, given the remaining timeline. However, it was noted that – currently there are no known universal intermediary devices that do not hold an SDOC.

e) Implications for Component Intermediary CAP EAS devices

    i) Subcommittee consensus that the report and order indicates that the combination of devices (both intermediary device plus legacy EAS device) must be resubmitted for Part 11 certification and CAP conformance testing (if SDoC not available for device combination, as tested).

    ii) The subcommittee noted the need to test the specific combination of software and hardware as submitted in the original IPAWS conformity assessment under which the SDOC was filed.

    iii) The consensus among subcommittee members was that component intermediary devices holding a valid SDOC had a reasonable possibility of meeting the revised Part 11 certification requirements by 30 June 2012, provided that the Part 11 testing regime was "on line" at the earliest possible time.

    iv) The consensus among subcommittee members was that a component intermediary devices that does not hold an SDOC relating to the specific hardware and software configuration (as tested), may face challenges in meeting the certification requirements by 30 June 2012, given the remaining timeline.

    f) Potential issues of combining IPAWS Conformity Assessment with FCC Part 11 Equipment Certification

        i) The subcommittee discussed potential challenge of combining FCC Part 11 type certification with IPAWS Conformity Assessment for specific products and product configurations. An observation was made that the Part 11 process relates to type approval, while the IPAWS Conformity Assessment in effect relates to a product and configuration specific approval.

        ii) It was noted that the FEMA CAP conformity test guidance will be a public document, which will be posted on the National Incident Management System Supporting Technology Evaluation Program (NIMS STEP) website. FEMA will also investigate whether it can provide a copy to CSRIC WG 9-1 for review. There was agreement that FEMA should be urged issue the CAP conformity test guidance as quickly as possible, so that prospective laboratories may begin review and design of their test support programs.

        iii) There was consensus that completion of Part 11 testing of products with an existing valid SDOC/Test Report is feasible by June 30, 2012 (based on existence of a known Part 11 test processes).

        iv) Again, there was consensus that completion of both Part 11 testing and CAP conformance testing may be problematic by June 30, 2012 for products without a SDOC/Test Report.

There was broad consensus that this situation does not warrant any extension to the 30 June 2012 CAP compliance deadline. Sufficient time exists to both allow manufacturers to take necessary steps to meet the streamlined certification guidelines, as well as to allow EAS participants to evaluate and make their best judgments such equipment.

We evaluated the use of Personal Identification Number (PIN) access codes to the IPAWS aggregator (used for EAS CAP equipment).FEMA currently provides PIN access codes generically to vendors who have products that have received an SDOC. That is, these IPAWS PIN codes are not necessarily (or explicitly) tied to the specific equipment/software that received the SDoC.

    g) There was broad agreement that the FEMA IPAWS OPEN API specification and PIN code schema do not fall under FCC jurisdiction or Part 11 regulations.

    h) We therefore will not be making any recommendations or offering best practices at this time.

5.3 Recommendations;

    1 Recommendations Regarding Usage of Text to Speech

        a. WG-9 recommends "Text to Speech" Prohibition be removed for the following reasons;

            i. Text to speech would seem to provide an essential back-up or redundancy capability to ensure that the aural portion of a CAP EAS message is

delivered, even if the Originator's audio file is unavailable or damaged.

ii.   Without such a back-up capability, CAP EAS messaging may be of limited utility for audio based media, as well as those individuals primarily relying on aural messaging (such as the visually impaired).

iii. Our perception, based on informal discussions with of active state and county Originators, is that use of test to speech within CAP EAS devices would increase the overall success of CAP rollout for participants. Usage of CAP by these Originators is based on the assumption that Text to Speech capability would have been available at the CAP/EAS device, and therefore they would not need to provide audio files.

iv.   Use of text to speech in CAP EAS devices would allow a more diverse group of providers to participate. Removing the necessity of producing quality audio at the Origination point allows for a wider number of origination points, each at lower cost, complexity, and staffing requirements. Allowing Text to Speech permits originators to grow from entry level systems to more fully configured systems based on their budget and use of the CAP system.

v.   Conversely, a prohibition of Text to Speech on CAP EAS devices may very well dissuade potential Originators from adopting either adopting CAP, or from making more effective use of EAS.

vi.   Usage of Text to Speech capability would also reduce operational costs for alert originators, in terms of total bandwidth required by CAP Originators, CAP disseminators, and EAS Participants

vii. Prohibiting Text to Speech capability on CAP EAS devices would translate into additional requirements and costs for Originators to either acquire or alter existing systems to originate high quality audio.

b. WG-9 further recommends that the FCC incorporate the ECIG guidelines on "Text to Speech," which provide for the ability to process an audio file for EAS voice, and also provide for text to speech conversion in the event, for whatever reason, that audio file is unavailable or unusable.[11]

2   Recommendations Regarding CAP EAS Device Certification

a. WG-9 recommends that contents of paragraphs 170 and 171 in the Fifth Report and Order be incorporated into the amendments of Part 11, which otherwise would have appeared in Appendix A of the Fifth Report and Order.

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[11] See EAS CAP Industry Group (ECIG) Recommendations for a CAP EAS Implementation Guide (Version 1.0) at Section 3.5.1 "Using or constructing EAS Audio during a CAP-to-EAS alert activation" and Section 3.5.4 "Constructing Text-to-Speech from the CAP V1.2 IPAWS v1.0 Profile"

b. WG-9 recommends that the FCC require submission of BOTH a vendor supplied SDOC and third party IPAWS CAP Conformance Test Report (this would apply to integrated, universal intermediary and component intermediary devices).

    i. This was felt to be important for a number of reasons, including the incorporation of the specific findings in the Test Report in the "streamlined" Part 11 process.

    ii. There was broad agreement that the Test Report represents an independent and impartial document, which enables the test lab to validate that the product filed under an SDoC is the same as was specifically tested under the Test Report.

c. WG-9 recommends that all testing under the "streamlined" certification process be conducted under in accordance with §11.34, and Certified in accordance with the procedures in part 2, Subpart J (47 CFR 2), under the auspices of a FCC approved third party facility (i.e. a Telecommunications Certification Body), with the exception of equipment which may be consider as falling under §11.34(e) relating to equipment constructed by an EAS participant but not offered for sale.

d. WG-9 further recommends that it disallow any other self-certification of equipment, as begin inconsistent with the procedures set forth in part 2, Subpart J.

e. WG-9 recommends that the FCC testing ensure certifications relate to the specific product combination (hardware model + software version) as actually tested by a third party facility, and as should be detailed in the respective Test Report and SDOC.

f. WG-9 recommends that that FEMA issue its CAP conformity test guidance as quickly as possible, so that prospective laboratories may begin review and design of their test support programs.

g. WG-9 recommends the following additions to 47 CFR 11.34

(h) Intermediary devices that output EAS protocol in accordance with §11.31 must be certified as EAS Encoder (§11.32), and must additionally conform to specified requirements for EAS Decoders (§11.33) as follows:

(i) Intermediary devices must meet all of the rules of EAS Encoders, as specified in §11.34, but they may omit the requirements of the following sections:

§11.32(a)(2) (A data input is necessary; an audio input would seem to not be necessary),

§11.32(a)(3) (Only an audio output or a data output is necessary.),

§11.32(a)(4)

§11.32(a)(7)

§11.32(a)(9)(iii) (A tone level of +8dBm is not needed; the output must be sufficient to be decoded by legacy EAS decoders.

§11.32(a)(9)(vi)

(ii) Intermediary Devices must additionally meet at least the following requirements of EAS decoders:

§11.33(a)(4) (The Intermediary Device must provide logs of input and output messages sufficient to meet the requirements of §11.35(a) but not the display requirements of this section.)

§11.33(a)(11) EAN received via CAP must override all other output messages

§11.33(b)

(j) An Intermediary device, in addition to the visual message requirements of §11.51 for analog and digital television, must make visual messages available to its operator derived from CAP-formatted EAS messages, which shall contain the Originator, Event, Location and the valid time period of the message and shall be constructed in accordance with §3.6 of the EAS-CAP Industry Group's (ECIG) Recommendations for a CAP EAS Implementation Guide, Version 1.0 (May 17, 2010).

(k) An Intermediary Device must be Certified in accordance with the procedures in Part 2, Subpart J, of this chapter. The data and information submitted must show the capability of the equipment to meet the requirements of this part as well as the requirements contained in Part 15 of this chapter for digital devices

(l) All devices certified under Part 11 that receive CAP messages must also demonstrate CAP compliance:

> (i) For devices that already have Part 11 certification, the grantee must submit a Class II Permissive Change filing that includes: (i) a cover letter explaining that the purpose of the filing is to apprise the Commission that the device has been tested for compliance with the CAP 1.2, the IPAWS Profile Version 1,0, and the ECIG Implementation Guide and that the filing is being made to update the device's existing certification file; (ii) a statement signed by the grantee of the device's underlying FCC equipment authorization confirming compliance with section §11.56 of the Commission's rules; and (iii) a copy of either (a) the IPAWS CA program SDoC, if tested under FEMA's program; (b) the NIMS SDoC, if tested under the NIMS CAP testing program; or (c) for devices tested outside these programs, a copy of the test report showing that the device passed the test elements. If the has already been marketed, the Class II Permissive Change filing must be submitted by June 30, 2012, the effective deadline for overall CAP compliance.

> (ii) For devices that do not already have FCC certification, the grantee must include with the FCC certification application materials: (i) a cover letter explaining that the device has been tested for compliance with the ECIG Implementation Guide pursuant to the procedures adopted in this order; (ii) a statement signed by the grantee confirming compliance with section §11.56 of the Commission's rules; and (iii) a copy of either (a) the IPAWS CA SDoC, if tested under FEMA's IPAWS Conformity Assessment program, (b) the NIMS SDoC, if tested under the forthcoming NIMS CAP testing program, or (c) for devices tested outside these programs but in accordance with Part 2, Subpart J, a copy of the test report showing that the device passed the test elements.

h. WG-9 recommends that FEMA be encouraged to issue PIN access codes to specific products holding the appropriate combination of Part 11 and CAP conformance certifications (rather than to vendors generally).

i. WG-9 recommends that the FCC make additionally clear, for the protection of both EAS participants and manufacturers, that, as of the effective date of the 5th Report & Order (i.e. 30 days after the date of publication in the Federal Register), vendors may not market intermediary equipment until such time they complete the streamlined certification process. Similarly, vendors may market integrated equipment until June 30th, they may do so only if they have completed their streamlined certification requirements on or before that date.

j. WG-9 recommends that the 30 June 2012 CAP compliance deadline remain in

place. The Working Group did not see any issues arising from the CAP EAS Certification Process that would appear to warrant any extension to that target date.

5.4 Best practices;

1. Text to Speech

    a. If the "Text to Speech" prohibition remains in effect:

        i. EAS Participant: EAS participants should confirm with their respective equipment vendors to ensure system firmware/software versions are up to date and the text to speech option is disabled.

        ii. Equipment Manufacturers: EAS CAP equipment manufacturers should provide guidance to EAS Participants, as soon as practical, as to how the text to speech option can be disabled on each respective version of equipment.

        iii. Federal Government: Federal agencies (FCC and FEMA) should develop additional specific best practices and guidance for by (a) CAP EAS alert origination systems (b) users of such equipment (state, county, local, tribal and territorial) on making audio files (mp3) available locally.

        iv. Local Government and CAP system developers: If audio files on remote servers are to be relied on as the source for EAS audio, then developers should consider how that audio can reside in a trusted environment where the content would not be compromised before, during or after an alert event. This may include authentication of the multimedia.

    b. If the "Text to Speech" prohibition is rescinded:

        i. EAS Participant: EAS participants should work with their respective manufacturers to identify and wherever possible remediate any significant inconsistencies or errors in pronunciation, etc.

        ii. Equipment Manufacturers: EAS CAP equipment manufacturers should voluntarily and proactively respond to any significant inconsistencies, errors in pronunciation, or local lexicon.

        iii. Local Government and CAP system developers: Should follow best practices, for example as contained in FEMA training course IS-247, to ensure as much as possible that the CAP text message being delivered should not contain jargon, acronyms, and letter/number combinations which typically challenge text-to-speech engines. CAP origination system developers should, confer with manufacturers of CAP EAS equipment, to further define operational guidance and industry best practices for use of text-to-speech in these systems.

2. EAS Equipment Certification

    a. EAS Participants: Should coordinate with their respective equipment manufacturers on the process under which their equipment will meet the required streamlined certification process.

    b. Equipment Manufacturers: Should take early steps to prepare themselves for their various requirements under the streamlined certification process, so that they provide themselves and their customers with the least level of risk.

        i. Manufacturers of integrated devices should file their Class II permissive change forms, along with a copy of their SDoC (and preferably Test Report, in addition) as soon as possible.

        ii. Manufacturers of both component and universal intermediary devices should be prepared to discontinue marketing their devices, in compliance with 47 CFR 2.803 within 30 days after the date of publication of the 5th Report and Order in the Federal Register), until such time as they have completed the streamlined certification process.

    c. Federal Agencies:

        i. The FCC should ensure that equipment certifications relate to the specific product combination (hardware model + software version) that was actually tested. This would maintain the integrity of both the Part 11 and IPAWS conformity assessment components of the streamlined certification process.

        ii. The FCC and FEMA should coordinate closely on the preparation of facilities supporting the streamlined certification process. FEMA should issue the CAP conformity test guidance as quickly as possible, so that prospective laboratories may begin review and design of their test support programs.

        iii. The FCC should continue the use of certified third-party test facilities to conduct both the Part 11 and CAP conformance portions of the streamlined certification process, as currently stipulated under §11.34, referencing 47 CFR Part 2, Subpart J "Equipment Authorization".

        iv. The FCC should not permit self-certification, or accept statements of self-certification, as meeting any of the criteria of the streamlined certification process.

6

Appendix – References

- FCC EAS Rules (CFR 47 Part 11). Web:
  http://ecfr.gpoaccess.gov/cgi/t/text/textidx?c=ecfr&rgn=div5&view=text&node=47:1.0.1
  .1.11&idno=47

- FCC Second Report and Order, in the Matter of the Review of the Emergency Alert
  System, EB Docket No. 04-296, Adopted: May 31, 2007

- FCC Fourth Report and Order, in the Matter of the Review of the Emergency Alert
  System, EB Docket No. 04-296, Adopted: September 15, 2011

- FCC Fifth Report and Order, in the Matter of the Review of the Emergency Alert
  System, EB Docket No. 04-296, Adopted: January 9, 2012

- CAP v1.2 USA IPAWS Profile v1.0 Committee Specification OASIS Emergency
  Management Technical Committee, October 2009.

- EAS CAP Industry Group (ECIG) Recommendations for a CAP EAS Implementation
  Guide, Version 1.0. Web: http://eas-cap.org/ECIG-CAP-to-
  EAS_Implementation_Guide-V1-0.pdf