PO Box 5107
Oracle, AZ 85623-5107

520-896-0303
cell: 520-488-8667
fax: 520-896-9144

Digital Alert Systems

Subject: **Public Review of OASIS CAP v1.1 IPAWS Profile v1.0**
Title: **Digital Alert Systems official comments in response to the 60 day public comment period started March 3, 2009**

by Tom Wood – Principal Engineer – Digital Alert Systems 05/01/2009

Required CAP Elements:
There are two required elements defined in the IPAWS CAP profile that stand apart from general CAP V1.1 messages. These would be the **<code>** element, with its required value of " **IPAWSv1.0** " , and the <**parameter**><**valueName**>**EAS-ORG** element. The required presence of these two fields creates a way to readily distinguish an IPAWS profile CAP to EAS activation message from others. Software implementations will have no difficulty recognizing the IPAWS profile simply by parsing the **<code>** element. However, I do not understand why the presence of the <**parameter**> <**valueName**>**EAS-ORG** is required in the IPAWS CAP definition. The value **CIV** is a reasonable default if this parameter for EAS ORG code is not included. This was the conclusion from the EAS/CAP Industry group (ECIG).

Regardless of whether or not the special **EAS-ORG** parameter is defined as required or optional, critical questions arise. These two required fields invalidate all existing CAP alerts to date from being compliant with the IPAWS scheme. This will remain so until CAP origination software is specifically modified to support IPAWS specific element values. Yet there are plenty of CAP alert messages translatable today into valid EAS messages.

Will the adoption of this content restricted IPAWS CAP to EAS profile preclude sanctioned translation of non-comforming CAP messages into EAS?

Is the intention here to simply distinguish IPAWS CAP messages definitively from others?
Or will this profile adoption restrict which CAP messages can legally result in EAS activations?

Will vendors have the latitude and freedom to provide broader CAP to EAS translation and activation (for CAP alerts that are not IPAWS CAP v1.0 compliant) to broadcast customers?

Keep in mind that if EAS activation is restricted to IPAWS compliant CAP messages, this will create a technical dependency to be met before a National system can be placed online.

Descriptive CAP elements:
References to the descriptive CAP elements (**<description>**, **<headline>**, **<instructions>**, **<areaDesc>, etc)** are conspicuously absent from this profile document. None are included in the list of CAP v1.1 elements that are given specific required constraints in this profile. These are the very elements that will provide the best opportunity to enrich an actual EAS activation at the CAP receiving end.

Is the intent of the IPAWS profile to simply provide the minimum required CAP elements (and their specific content constraints) that can result in an EAS FCC Part 11 ZCZC string? If so this limited objective should be made very clear in the profile document. Also, just how is IPAWS going to address these important descriptive details?

I would recommend the profile at least provide a listing of the CAP V1.1 descriptive elements that the EAS/CAP Industry Group spent so much time and effort addressing. Elements such as **<description>** and **<instruction>** could be listed as important parts of the CAP to EAS translation process, even if the profile defers the issues of recommended rendering and translation practices for these elements. As is, this profile offers no insight at all to the potential uses or issues for these critically important CAP descriptive elements.

Audio resource descriptor issues:
  In February I commented to this committee on the difficulty or even impossibility of determining the file format of audio file types referenced from **<resourceDesc>** elements when translating in accordance to the CAP/EAS Industry Group profile.
  The IPAWS CAP profile devised a commendable set of **<resourceDesc><mimeType>** descriptors that uniquely identify IPAWS supported media. The creation of the prefix **x-ipaws** for the value of the format parameter insures that each acceptable media type is uniquely identified (*eg. audio/x-ipaws-audio-wav specifically identifies the resource as an audio WAV file*).
  The profile states that " *Recorded audio for delivery to the public SHALL be identified and encoded in one of the following formats:* " I recommend that this profile further state that an **x-ipaws** prefixed **<mimeType>** is a REQUIRED field of any **<resourceDesc>** of the value **EAS Broadcast Content**. A comment can note that the data format of the resource is ambiguous without the IPAWS defined **<mimeType>**. I think that specifically stating that this element is required is important due to the fact that the actual CAP v1.1 specification defines **<resourceDesc><mimeType>** as optional.

I also recommend that the special IPAWS defined **<mimeType>** values be added to appropriate reference documents describing mimeTypes. The CAP v1.1 specification describes **<mimeType>** as: *MIME content type and sub-type as described in [RFC 2046].*

One other note to consider is that the requirement of the specially defined *x-ipaws* mimeTypes also creates a new constraint preventing the compliance of existing CAP messages (see discussion above).

Audio resource formats and OGG/Vorbis:
I recommend the adoption of two new **<mimeType>** parameters, *audio/x-ipaws-audio-ogg* for OGG Vorbis audio files and *audio/x-ipaws-streaming-audio-ogg* for streaming audio via OGG Vorbis.

While I am in favor of the two recommended audio formats (WAV and MP3) described in the profile, I strongly recommend the immediate adoption of the OGG/Vorbis compressed audio file/stream type as an accepted audio format within this profile. This freely available format is widely supported. It is available on Windows, Linux, MacOS, PocketPC and OS/2 systems. The OGG/Vorbis specification is in the public domain and is unencumbered by any licensing fees. It is free for all commercial and non-commercial use. The format is as high or higher quality compared to MP3. Developers of CAP to EAS translation systems can easily obtain the source code or precompiled executable applications that support the playback of OGG Vorbis format. See http://www.vorbis.com/faq/.

Note that the streaming audio description in the profile specifically mentions the open source Icecast streamer application. Icecast supports streaming OGG/Vorbis.

I do not recommend adopting only one audio format. I support the IPAWS definition allowing multiple formats. I think it is very important for CAP alert originators to be able to choose from a common set of audio formats and not just one.

Also, consider that the adopted CAP profile will ultimately be implemented on a wide variety of computer graphics and character generator target platforms. It is important to support enough common audio formats to support the variable internal software/hardware options of these platforms. Another example is that IPAWS CAP used as a machine to machine alert transfer standard should include the PCM WAV format simply because it can be more efficient to copy the native WAV file than encoding to and from MP3. It is also of course a freely available format.

Suggested Text resource element:
There has been a suggestion to add another **<resourceDesc>** data type for textual EAS information (for example a ***<mimeType >*** of *text/x-ipaws-EAS-text* would be consistent). The intention would be to provide the exact text message to be rendered at the receiving end *(as a crawl or full screen slate or even as text to speech)*. I see this as a natural and analogous extension of the currently proposed use of **<resourceDesc>** for reference audio. I favor this idea based on its elegant simplicity. If this element where present, it would override the multiple step assembly process of a textual EAS message from the descriptive CAP elements. I have already found from actual experience that textual message assembly can be a cumbersome and unpredictable or an error prone process.

However, one issue with this resource option is that it could be cumbersome for multiple languages. Perhaps multiple instances could be included? Or perhaps, if multiple language support were fully contained in a separate info block, the containment would sort out correctly?

Geocode element:
There has been a suggestion that geospatial interpretation be made a part of this profile. I think it would be a costly mistake to require the use and translation of elaborate geospatial codes into EAS FIPS codes. It has also been pointed out that there would have to be a standard database to get consistent translations of geospatial descriptions into FIPS codes. The consistency of CAP generated EAS alert activations is very important. Otherwise, duplicate EAS detection can be defeated, resulting in an increase in the number of activations resulting from one CAP alert. There could of course also be genuine area assignment errors.

I think that this capability is an advanced project. It obviously could enhance the end result of better targeted alerts, even in EAS. But this capability is simply not necessary in the first release of the profile. Requiring geospatial translation to FIPS up front will add an unnecessary and likely a very long delay to profile adoption. EAS activation renderings can be similarly enhanced by the enriched textual information available in CAP through the **<areaDesc>** and <**description>** fields. This capability, if used wisely, will result in improved EAS alerts that can inform targeted areas within standard SAME FIPS areas.

Here is an idea to broaden the possible universe of translatable messages. Can " **FIPS6**" be included as an acceptable **<geocode> <valueName>** in addition to " **SAME**" ? I do not know the full defined range of values for " **FIPS6**" so I am actually asking this as a question for the group to consider. The " **FIPS6**" valued **<valueName>** type appears in National Weather Service CAP alerts that could otherwise be translated into EAS. The associated values I have examined are valid FIPS codes and thus appear synonomous with SAME FIPS codes.

Text to Speech and Alert Text Details
I think that in the interest of actually improving the EAS system through the adoption of CAP sourced alerts, it is imperative that Text to Speech be mandated in the absence of specific associated audio resources. There are likely to be difficult issues regarding alert audio sources. We still do not have a CAP message delivery infrastructure determined for this National warning system. This leaves open important issues surrounding the practical use of audio files. Text to Speech provides a direct and efficient means to insure EAS audio on the CAP message receiving end without the need to resolve these details.

Mandating Text to Speech does require addressing the derivation of an alert description from the CAP descriptive elements or from a text resource.

As noted above, the proposed IPAWS profile conspicuously avoids mentioning derivation of any alert text from CAP messages. In my opinion the omission of text detail derivation and the resultant lack of addressing Text to Speech results in an incomplete and flawed profile.

Again, if the objective of this profile is to describe the very minimum data set needed to translate CAP to FCC EAS, then I suppose it has succeeded. But this alone will not create the end user enhancements to EAS promised by CAP. If the profile is not expanded to add these important items, then I think the IPAWS program must adopt a supplement handbook that codifies the rendering practices for handling text details and generating informative audio messages.

Tom Wood   May 1,2009