

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of)	
)	
Review of the Emergency Alert System)	EB Docket No. 04-296
)	
Frank W. Bell)	

Re: SECOND FURTHER NOTICE OF PROPOSED RULEMAKING

1: Spanish Broadcasters.

In the Introduction, paragraph 3, there is a reference to the operation of EAS as designed. However footnote 4 includes reference to the Independent Spanish Broadcasters Association. An acknowledged problem, arising from the Katrina lessons learned, of EAS as designed is that there is no provision for language identification. In consequence the observed result may be that while the header tones may be passed, the following message is not passed as it is not Spanish. So this proposed EAN nationwide test is likely to proceed in the same manner and therefore have a significant number of failures from this design deficiency. Because this is a design deficiency, these failures should be accepted and expect to be addressed in a “Next-Generation EAS”.

2: Puerto Rico and American Samoa.

There is no reference to Puerto Rico or American Samoa. Are Puerto Rico or American Samoa to be included in this test? Other outlying islands?

3: Design for Quality.

While there is a reference to maintaining the quality of EAS in the Introduction, Paragraph 1 and to “increase the amount and quality of alert and other emergency information delivered to the public” in Discussion section C “Next Generation EAS Concerns” paragraph 21, there is no reference to design for quality. For more information on design for quality, please refer to www.asq.org for authoritatively stated explanations. The lack of design for quality inevitably results in difficulty obtaining quality. The approach of only providing testing in order to determine failures inevitably results in more failures than by first incorporating quality at the design phase.

An example of design for quality would be the provision of monitoring receivers. Such receivers would be able to note the BER (bit error rate) of each message. The message may be transmitted error free, but the BER would be a measure of how marginal a link may be. In addition to responses by encoder/decoder on the CAP WAN, such monitoring receivers should be capable of automatic reporting (by email probably) and software developed for the State to receive and process the responses to determine faults and also area covered.

3: Fines, Penalties or Sanctions for failures.

There is no mention of either fines, penalties or sanctions for test failures. Given that the national EAN test is a test of a type that has not been organized nationwide previously, there is a probability of there being failures. The results of the test in Alaska suggest that this would be a low probability, but there is no guarantee that this would be zero. Given that there has been action toward levying a fine for a test failure in the past, there is no assurance here that this would not be repeated. Given the lack of design for quality and the manually intensive monitoring required by valuable staff in this public-private partnership,

would broadcasters be inclined of their own volition to participate in such a test? An assurance that an emphasis on design for quality rather than solely depending on obtaining quality by penalizing failures would be more effective in encouraging cooperation.

4: Next-Generation EAS Concerns.

In paragraph 21 it states “The *Second Report and Order* also required EAS Participants to adopt Next Generation EAS delivery systems no later than 180 days after FEMA publicly releases standards for those systems.” However FEMA is not an accredited standards development organization. While it may contribute to and subsequently endorse a standard developed by appropriate standards organizations, the phrase “publicly release standards” appears to indicate that FEMA would develop the standards itself. That would not then be something that could correctly be called a standard, rather it would be a U.S. Government specification. For Example; the Department of Defense has MIL-SPEC, which are specifications.

OASIS is a standards organization however. While CAP was developed, and some improvements can be expected in the next version(s), the definition of an improved or next-generation EAS is currently out of scope for even consideration in terms of what is to be incorporated in the CAP or EDXL-DE standards. For example; while AMBER Alert is a successful application of EAS, in order to have the vehicle plate data being the last displaying and remaining on screen data on the RDBS (Radio Data Broadcast System, or RDS in Europe) or on HD radio, there needs to be an identifier for this particular data. An example would be;

```
<vehicle> AMBER  
:vehicleState> vv  
<vehicleID> vvvvvvvv  
<vehicleEnd>
```

Furthermore, while there has been mention of incorporating EDXL-DE as a source for “Next-Generation EAS”, and some emergency system developers prefer this to CAP, there has not been any development of a standard other than the initial proposal I developed over a year ago and submitted early last year. Although the EAS equipment manufacturers group developed a well worded document for CAP only and not EDXL-DE, the substance of it only really served to highlight the limitations of the ASCII based Part 11 specification. As I have demonstrated, a binary definition of a revised Part 11 that is compatible with the current ASCII definition can be much superior as a match to CAP and EDXL-DE.

Some aspects of the complex technology would be beyond the scope of one standards organization. In such situations it is most effective to have liaison between relevant standards organizations. Sometimes manufacturers have proprietary technologies which are applicable, an example is Dolby Digital in TV. So liaison with the development staff of such organizations is also applicable. However as they understand the technology the best, it is best to cooperatively discuss solving issues to develop solutions rather than simply making a legislation requiring a particular solution which may be lacking in the understanding of the technological and other ramifications and so not be the most optimal solution at that time or as may be achievable with future developments.

Next-Generation EAS cannot be expected to be EAS simply with added features. It would be a platform transition. An example of a platform transition is that from propeller to jet planes, or steam to diesel trains. This type of transition cannot be expected to be achieved by setting a fixed time period such as the 180 day time period assigned. There would need to be beta tests and small scale deployments to determine the unexpected bugs and to solve them before moving to the next phase. The transition to digital TV took years, and had a several year postponement. While this is a simpler transition, it would still be using digital TV and HD radio, which may have unexpected limitations in terms of processing capability of particular hardware

Also that there is a proposal to have a CAP based delivery system in place before there is a reasonable approximation to the next-generation EAS apparent means that it would be possible to buy equipment that would be made obsolete by the next stage. This is expensive and time consuming and undesirable.

There is in paragraph 22 some discussion of IPAWS and the EAS Daisy Chain as if the two were comparable. While IPAWS would carry CAP and EDXL-DE messages which can alert other alerting technologies, the current EAS Daisy Chain method is quite incapable of being translated into a viable CAP or EDXL-DE message. Firstly a mesh would be more redundant and so less liable to a single point of failure. Secondly, only the type of improved EAS as described in papers at www.globalcom123.com/eas which uses the expanded capabilities of digital TV and HD radio is capable of being translated back into a viable CAP or EDXL-DE message for the benefit of other alerting technologies.

I asked a representative of FEMA three questions;

- 1) What did FEMA consider to be a role for digital consumer radio and TV other than a replication of analog functionality? (This is not a question in terms of rulemaking, rather a question of marketable features that would contribute to the improvement of EAS and may be marketable worldwide.)
- 2) If the CAP/EDXL-DE network failed to deliver a message to location B in a disaster, would it not be desirable for a CAP or EDXL-DE message to be delivered as derived from an improved replacement of EAS being broadcast? (The NPRM does not mention this type of improvement.)
- 3) What did he think of the EAS+ family of solutions? (Briefly, they add considerable capabilities when digital TV and HD radio are adapted.)

Now I am asking the FCC these questions with the hope that there will be some relevant response. In relation to the planned test, there does not appear to be any consideration that while the EAS system inherited the EAN responsibility from EBS, and this has very important value, it has never been used. On the other hand increasing the value of EAS by improving existing uses, see AMBER example previous, or providing architectural improvements to increase local usage, does not appear to be considered. Location, receiver category and some user selectivity are relevant to this local usage improvement. If EAS is valuable, there will be more buy-in to the system and EAN would effectively get a free passage. Otherwise this is a lot of work by staff who may not even be present. The results from the monitoring and encoder/decoder responses can have a population targeted multiplied by the message value less the additional population covered multiplied by the annoyance value to determine the overall benefit value of that message transmission. Such values are an item for a well defined market research project.

5: In paragraph 32 the FIPS codes are mentioned.

Whether or not to use a FIPS code for an EAN? While there appears to be cases for both sides of this decision, the question of implementation is also relevant. If something is difficult to implement, there can be expected a significant legal effort to oppose a change. However if this were implemented as an item in an XML file which the encoder/decoder can easily import and read, it becomes easy to implement a change if it were needed. This file can be assigned a name and be an item for a standard, allowing that additional items may be added that do not contradict the standard entries. For example the Canadians will certainly want a country code and the ability to indicate that the language is French. Such extensions beyond the basic FCC requirements should be acceptable, but the FCC would be a stakeholder that can be

expected to make comments on such matters that are provided for in the design for other jurisdictional requirements. EAS+ is designed with the intent to be able to meet the requirements of all jurisdictions, which adds capabilities not needed in the U.S. system. Canadians don't have FIPS codes for example, but postcodes or some other code should be equivalent and capable of being used in the PSSCCC format including the country code.

The FIPS codes identify every county. However a nationwide list does not appear to be available on a website. The use of the P for all or one of the county sectors for every county does not appear to exist as a definition in terms of the cities or towns that are in each county. So the implementation is something that may be addressed in the future. It can be expected to be a large amount of data. Radio broadcasting has about 70% of listeners in vehicles (including trains). Such receivers cannot be expected to have any realistic way of determining which county they are in, let alone which sector. However they are increasingly incorporating navigation systems or CMRS location determination which is latitude or longitude based. So the polygon for the selected area can be used as a means to determine if the receiver is in the alert message area selected. So therefore there needs to be a polygon approximation of the area selected with a limited number of points transmitted with each alert, unless the event code is EAN for example.

The allocation of FIPS codes does not appear to preclude the use of P being used to select sectors within a state. The purpose of such state sectors would be for message routing within the Daisy Chain/Mesh so messages are not retransmitted in directions that are away from the selected sector. This reduces the bandwidth usage and also aids in increasing the selectivity of message broadcasting to analog radios or legacy TVs.

There should be a national-level FIPS code, though the use of this for the test being planned is a question of implementation in current encoder/decoders. The use of P for national sectors e.g. time zone based may be a way of providing additional flexibility e.g. use of EAN or some other code (RYT?) to greet the new year as a suggestion.

The NPRM uses the term ENDEC. Is this term subject to copyright restrictions or may it be used with the permission of the original ENDEC manufacturer?

6: Conclusion

The conclusion of this submission is that while the nationwide test of EAN should proceed, there are many relevant issues that should be addressed. Some are immediate, but others apply to preparations for a Next-Generation EAS as part of this process.