



**ATSC**

ADVANCED TELEVISION  
SYSTEMS COMMITTEE

# **Findings Regarding Emergency Alert (EAS) and Audio Emergency Information**

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### Revision History

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## Findings Regarding Emergency Alert (EAS) and Audio Emergency Information

### 1. INTRODUCTION AND BACKGROUND

The TG3-10 Ad Hoc Group on Emergency Alerts was formed to examine issues related to Emergency Information and ATSC 3.0. The AHG focused its work on the Emergency Alert System (EAS) which has common operational requirements in both the United States and Canada, as well as Emergency Information which has unique operational requirements in the United States.

A broadcaster conveys different types of emergency public information, including Emergency Alerts (EAS) and Emergency Information, each of which is manifested in different deployment mechanisms. The mechanisms used to describe and signal each type of information is described below.

### 2. DEFINITIONS

**Accessibility Descriptor** – A descriptor included in an audio presentation used to describe accessibility features of an audio presentation. See DASH-IF IOP for ATSC 3.0 v1.1, Sec. 5.4.4.2.1, Table 7.

**Associated Service: Emergency** – The AC-4 `content_classifier` value ‘110’, see ETSI TS 103 190-1 v1.3.1 Sec. 4.3.3.8.1, Table 91.

**Audio Emergency Information** – “Emergency Information” data to be presented aurally, such as the reading of a text crawl, which is distinct from Emergency Alert System (EAS) data and audio. See 47 CFR 79.2(b)(2)(ii).

**Audio Track** – A signal representing one channel or object essence comprising multiple audio samples. See ETSI TS 103 190-1 v1.3.1 §3.1. Also see A342-1 (2017) at 5.1.3.

**content\_classifier** – The AC-4 field “`content_classifier`”, see ETSI TS 103 190-1 v1.3.1 Sec. 4.3.3.8.1.

**Emergency Information** – Information that is not conveyed as EAS about a current emergency, that is intended to further the protection of life, health, safety, and property, i.e., critical details regarding the emergency and how to respond to the emergency. Examples of the types of emergencies covered include tornadoes, hurricanes, floods, tidal waves, earthquakes, icing conditions, heavy snows, widespread fires, discharge of toxic gases, widespread power failures, industrial explosions, civil disorders, school closings and changes in school bus schedules resulting from such conditions, and warnings and watches of impending changes in weather. See 47 CFR 79.2(a)(2).

**Emergency Role** – The DASH Role@value of “emergency”, see ISO/IEC 23009-1 Sec. 5.8.5.5.

**Main Program Audio** – The audio presentation with the Main Role.

**Main Program Video** – The video presentation with the Main Role.

**Main Role** – The DASH Role@value of “Main”, see ISO/IEC 23009-1 Sec. 5.8.5.5.

**Video Description Service Audio** – Audio narration describing a television program's key visual elements for the visually impaired.

**Video Emergency Information** – Emergency Information to be presented visually, such as a text crawl or other onscreen visual display of Emergency Information. See 47 CFR 79.2(b)(2)(ii).

### 3. EMERGENCY ALERT SYSTEM

The AHG finds that station Emergency Alert System (EAS) architecture will look much the same in an ATSC 3.0 environment as in ATSC 1.0 operations. EAS messages are still “burned into” the program stream typically as a crawl and audio. The viewer’s experience will be much the same (i.e., no action is required on the part of a receiver).

EAS information is conveyed as an Emergency Alert text crawl, EAS tones and EAS audio announcement in the main program audio. The Emergency Alert text crawl is created as part of the Main Program Video and is expected to be managed much as alert text crawls are in current broadcast operations. Similarly, the placement of the EAS tones and audio announcement in the Main Program Audio would follow similar workflow.

### 4. EMERGENCY INFORMATION

Emergency Information is important information, and therefore is made available in an accessible manner. Practically speaking, this means that any Emergency Information provided visually must also be available aurally.

There are two ways this may be accomplished:

- First, the Main Program Audio and Main Program Video include both Video Emergency Information and Audio Emergency Information – in this case, there is no special signaling; or
- Second, when Video Emergency Information is displayed in the Main Program Video, but the Audio Emergency Information is not in the Main Program Audio and is available in other audio – in this case, there is signaling as described below.

When Audio Emergency Information is not part of the Main Program Audio and there is Video Emergency Information in the Main Program Video, the Audio Track which contains Audio Emergency Information is marked with the **Associated Service: Emergency** in the `content_classifier` fields.

Additionally, any Audio Presentation that includes an Audio Track with Audio Emergency Information is signaled with an Accessibility Descriptor with the value “emergency”.

If an Audio Presentation includes both an Audio Track with Video Description Service Audio and an Audio Track with Audio Emergency Information, that Audio Presentation will contain two Accessibility Descriptors, one with the value “emergency” and one with the value “visually impaired”.

### 5. Q&A

*What does ATSC intend “E” designation to mean? Is the “E” designation associated with EAS audio, or is it associated with EI audio, or is it associated with both?*

First, we understand “the ‘E’ designation” with regard to audio to mean an Audio Track which is marked with the **Associated Service: Emergency** in the `content_classifier` field.

Second, we understand “EAS audio” will be included in the Main Program Audio. We understand “EI audio” to mean Audio Emergency Information that is not included in the Main Program Audio when Video Emergency Information is included in the Main Program Video.

Therefore, “the ‘E’ designation” (indicating an Audio Track that is marked with the **Associated Service: Emergency** in the `content_classifier` field) is associated with Audio Emergency Information and is not associated with “EAS audio.”

*If EAS audio is carried in the assigned “E” track, does ATSC intend that “E” always be presented (when present)? Also, in this case, how is Audio Emergency Information signaled?*

See above, an audio track is marked with the **Associated Service: Emergency** classifier only when the Audio Emergency Information is not in the Main Program Audio. EAS audio is not carried in the assigned ‘E’ track.” If present, the receiver should follow user preferences as to when it is presented.

*If Audio Emergency Information is carried in the assigned “E” track, does ATSC intend it to be subordinate to EAS audio (i.e., if both are present, is it the intent that EAS audio be presented and Audio Emergency Information be muted)?*

The receiver is not expected to perform any muting or special functions. Additional detail is described below.

The EAS audio is, as stated previously, part of the main program audio. The receiver has no way of telling whether EAS audio is present. As such, the receiver need not do anything, as there is no way to subordinate an audio track is marked with the **Associated Service: Emergency** classifier to the EAS in the main program audio.

When there is an Audio Track which is marked with the **Associated Service: Emergency** in the `content_classifier` field, that Audio Track may be mixed into the presented audio and presented (e.g., in the case where the viewer is visually impaired).

Operationally, we expect that a broadcaster would be emitting only one Audio Emergency Information Audio Track (either in the Main Program Audio or in an Audio Track which is marked with the **Associated Service: Emergency** in the `content_classifier` field).

*If EI audio represents an aural representation of non-EAS burned-in banner or crawl, does ATSC expect that there would be also be EI audio when an EAS burned-in banner or crawl is displayed?*

Audio Emergency Information may be part of the Main Program Audio, or it may be in an Audio Track which is marked with the **Associated Service: Emergency** in the `content_classifier` field. Technically, EAS audio in the Main Program Audio, and the Emergency Audio Information in the “E” Track may be transmitted simultaneously.

It is possible for EAS, VDS and E to all be present simultaneously, depending on broadcaster’s specific operations. However, the broadcaster may adjust the audio presentation parameters in such an instance. Receiver audio manipulations are not expected.

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