



ATSC

ADVANCED TELEVISION
SYSTEMS COMMITTEE

ATSC Standard: A/331:2021 Amendment No 2, Advanced Emergency Information

Doc. A/331:2021 Amend. No. 2
27 May 2021

Advanced Television Systems Committee
1776 K Street, N.W.
Washington, D.C. 20006
202-872-9160

The Advanced Television Systems Committee, Inc., is an international, non-profit organization developing voluntary standards and recommended practices for digital television. ATSC member organizations represent the broadcast, broadcast equipment, motion picture, consumer electronics, computer, cable, satellite, and semiconductor industries. ATSC also develops digital television implementation strategies and supports educational activities on ATSC standards. ATSC was formed in 1983 by the member organizations of the Joint Committee on Inter-society Coordination (JCIC): the Electronic Industries Association (EIA), the Institute of Electrical and Electronic Engineers (IEEE), the National Association of Broadcasters (NAB), the National Cable Telecommunications Association (NCTA), and the Society of Motion Picture and Television Engineers (SMPTE). For more information visit www.atsc.org.

Note: The user's attention is called to the possibility that compliance with this standard may require use of an invention covered by patent rights. By publication of this standard, no position is taken with respect to the validity of this claim or of any patent rights in connection therewith. One or more patent holders have, however, filed a statement regarding the terms on which such patent holder(s) may be willing to grant a license under these rights to individuals or entities desiring to obtain such a license. Details may be obtained from the ATSC Secretary and the patent holder.

Implementers with feedback, comments, or potential bug reports relating to this document may contact ATSC at <https://www.atsc.org/feedback/>.

Revision History

Version	Date
Amendment approved	27 May 2021

ATSC Standard: A/331:2021 Amendment No. 2, Advanced Emergency Information

1. OVERVIEW

1.1 Definition

An Amendment is generated to document an enhancement, an addition or a deletion of functionality to previously agreed technical provisions in an existing ATSC document. Amendments shall be published as attachments to the original ATSC document. Distribution by ATSC of existing documents shall include any approved Amendments.

1.2 Scope

The proposed changes consist of the following:

- 1) Amend the title of the service to Advanced Emergency Information, while retaining the AEA acronym.
- 2) Add a unique table identifier to the AEAT.
- 3) Add a new optional attribute of **AEAT.AEA@category**.
- 4) Revise Table 6.11 “Code Values for AEAT.AEA@aeaType” to permit the appearance of **AEAtext** in an AEA “Cancel” message.

1.3 Rationale for Changes

The rationales for the changes are as follows:

1.3.1 Proposed Change #1: Update the meaning of AEA to the current usage: Advanced Emergency Information.

The terminology underlying the AEA service has evolved since the capability was first offered as a contribution to ATSC. The terminology is currently Advanced Emergency InformAtion (AEA) and Advanced Emergency InformAtion Table (AEAT), as used by the ATSC AEA Implementation Team, NVISA and other groups.

1.3.2 Proposed Change #2: Addition of an “AEAT@aeaTableId” attribute.

While individual AEA message contain unique identifiers, the AEAT table itself does not currently have its own identifier. The proposed **AEAT@aeaTableId** attribute adds an identifier string for AEAT (xml table) being transmitted. The **AEAT@aeaTableId** attribute uniquely identifies each new AEAT.

1.3.3 Proposed Change #3: Creation of a Message “Category” Attribute (**AEAT.AEA@Category**)

The AEAT currently does not contain a capability for general reference to broad event categories, which may serve as a critical data reference with or without the presence of an event code (**AEAT.AEA.Header.EventCode**).

The anticipated usage of Advanced Emergency Information has expanded to encompass a range of urgent information originating from or relayed by a broadcaster, to which there may be no corresponding **EventCode**. Specifically, the **EventCode** is associated with regulated Emergency Alert System (EAS) or Specific Area Message Encoding (SAME) messages. AEA messages, however, may contain a wide array of emergency information that are not associated with any EAS or SAME event code.

The addition of the proposed **AEAT.AEA@category** attribute will facilitate the inclusion of urgent content from a broadcaster (newsroom) which does not correspond to any **EventCode** value. For example, there is no specific **EventCode** for information about an in-school emergency or lockdown, which the broadcaster may wish to communicate via AEA.

The proposed **AEAT.AEA@category** attribute is particularly relevant for international usage of AEA, where event codes are not utilized as in the United States and Canada. The usage of the broader **AEAT.AEA@category** attribute will provide much greater flexibility across international implementations.

Note that the “umbrella” @category attribute can encompass a range of – e.g., a proposed category of “Weather” can encompass many existing **EventCode** values as defined in the United States and Canada, plus add the flexibility to handle messages that do not fit in those narrow and fixed **EventCode** values.

Importantly, the proposed @category attribute will provide a higher level and simple menu of choices from which messages can be filtered and selected. By comparison, the use of the **EventCode** element creates the potential for dozens of choices by an end-user to sift through when configuring their AEA application. See Table 1.1.

Table 1.1 Category Definitions

Proposed Category	Meaning
ADVISORY	Urgent Advisory (e.g., from a newsroom) that does not fit into the categories below.
HEALTH	Health Related (including environmental), including infectious disease information (e.g., COVID instructions), pollen and other environmental health hazards.
WEATHER	Urgent meteorological information and updates.
EMERGENCY	General emergency and public safety information, including fire, geological and other situations.
SCHOOL	Urgent information related to schools/educational institutions, including school closures, reopenings, in-school emergencies, and other important information.
COMMUNITY	Urgent information of local relevance, including utility/infrastructure issues, sanitation, government closures, etc.
TRANSIT	Urgent Transit/Transport/Traffic information, such as road closures, major traffic incidents, public transit delays, etc.
OTHER	Messages not categorizable above, such as test or “heartbeat” messages.

The inclusion of a new **AEAT.AEA@category** attribute would allow receiver applications to further filter AEA messages by category, and will enable broadcasters to transmit information in areas not constrained by the specific event codes that are bounded by governmental authority.

1.3.4 Proposed Change #4: Permitting Optional **AEAtext** in a “Cancel” Message

Messages with the **aeaType** value of “cancel” are currently prohibited from including the **AEAT.AEA.AEAtext** element. After consideration of a number of potential use cases, this is overly restrictive and prescriptive. A “cancel” message will direct a receiver application to immediately cease displaying another specifically referenced AEA message, and the absence of the **AEAtext** parameter precludes the possibility of including critical contextual information for other systems that may be consuming this message. For this reason, **AEAtext** should be permitted in “cancel” messages as an optional element, with a conditionality of 0..1.

1.4 Compatibility Considerations

Change #1: The change of terminology to Advanced Emergency Information would have no impact, as the XML syntax would remain the same (“AEA” and “AEAT”).

Change #2: Adding the **AEAT@aeatableId** attribute as a table identifier would not impact existing applications that are not utilizing this additional information.

Change #3: The addition of an optional **AEAT.AEA@category** attribute would not impact existing applications that are not utilizing this additional information.

Change #4: The change in allowing use of the **AEAT.AEA.AEAType** element in “cancel” messages would similarly not have an impact on existing applications, as its presence would not impact operation if the application is simply deleting the cancelled message.

2. CHANGE INSTRUCTIONS

Change instructions are given below in *italics*. Unless otherwise noted, inserted text, tables, and drawings are shown in **blue**; deletions of existing text are shown in **red-strikeout**. The text “[ref]” indicates that a cross reference to a cited referenced document should be inserted.

Revise Section 6.5 as follows:

6.5 Advanced Emergency **Information Alerting** Table

The AEAT (Advanced Emergency **Information Alerting** Table) is one of the instances of LLS information. The AEAT is composed of one or more AEA (Advanced Emergency **Information Alerting**) messages. An AEA message is formatted in the Advanced Emergency **Information Alerting**-Message Format (AEA-MF) structure.

The AEA Message Format is intended to provide a digital message format for ATSC 3.0 related emergency message transmission.

- It is a specific format for forwarding a broad range of emergency-related information, including urgent bulletins, advisories, all-hazard warnings and other urgent information over an ATSC 3.0 system.
- It is intended to be extensible, and sufficient to accommodate the content alert message formats currently in use in the United States, Canada, Mexico, Caribbean and other regions.
- It allows a warning message to be disseminated to receivers in a consistent manner.
- It includes facilities for multimedia content that could be forwarded from the alert originator (the public authority) or the broadcaster itself (such as ancillary content the broadcaster may want to forward to accompany the emergency alert).

The AEAT shall be represented as an XML document containing an AEAT root element that conforms to the definitions in the XML schema that has namespace:

`tag:atsc.org,2016:XMLSchemas/ATSC3/Delivery/AEAT/1.0/`

The definition of this schema is in an XML schema file, ~~AEAT-1.0-20201106.xsd~~ **AEAT-1.0-20210308.xsd**, accompanying this Standard, as described in Section 3.6 above. The XML schema xmlns short name should be "aeat".

6.5.1 AEAT and AEA Syntax Description

The AEAT contains one or more AEA messages. The AEA message is composed of four basic elements: zero or one **Header**, zero or more **AEAtext**, zero or one **LiveMedia**, and zero or more **Media** for alert multimedia resources.

While the indicated XML schema specifies the normative syntax of the AEAT element, including the AEA, informative Table 6.9 describes the structure of the AEAT element in a more illustrative way. The specifications following the table provide the semantics of the elements and attributes.

Table 6.9 AEAT Element Structure

Element or Attribute Name	Use	Data Type	Short Description
AEAT			Root element of the AEAT
@aeaTableId	0..1	string	The identifier of the AEAT table.
AEA	1..N		Advanced Emergency Information Alert message formatted as AEA-MF.
@aeaId	1	string	The identifier of an AEA message.
@issuer	1	string	The identifier of the broadcast station originating or forwarding the message.
@audience	1	string	The intended distribution of the AEA message.
@aeaType	1	string	The category type of the message.
@refAEAId	0..1	string	The referenced identifier of AEA message. It shall appear when the @aeaType is "update" or "cancel" and shall not appear when the @aeaType is "alert".
@priority	0..1	unsignedByte	The priority of the message. It shall appear when the @aeaType is "alert" or "update" and shall not appear when the @aeaType is "cancel".
@category	0..1	string	A code identifying the event category of the AEA message.
@wakeup	0..1	boolean	Indication that this AEA is associated with a wake-up event.
Header	0..1		The container for the basic alert envelope.
@effective	0..1	dateTime	The effective time of the AEA message. It appears when the @aeaType is "alert" or "update". If omitted, the default is immediate.
@expires	0..1	dateTime	The expiration time of the AEA message. It appears when the @aeaType is "alert" or "update".
EventCode	0..1	string	A code identifying the event type of the AEA message.
@type	1	string	A national-assigned string designating the domain of the code (e.g., "SAME" in US, ...).
EventDesc	0..N	string	The short plain-text description of the emergency event (e.g. "Tornado Warning" or "Tsunami Warning").
@lang	1	lang	The code denoting the language of the respective element of the EventDesc.
Location	0..N	string	The geographic code delineating the affected area of the AEA message. It appears when the @aeaType is "alert" or "update".
@type	1	string	A national-assigned string designating the domain of the code (e.g. "FIPS" in US or "SGC" in Canada).
AEAtext	0..N	string	Contains the specific text of the emergency notification. It appears when the @aeaType is "alert" or "update". It is optional when the @aeaType is "cancel".

@lang	1	Lang	The code denoting the language of the respective element of the AEA message text.
LiveMedia	0..1		Contains the information of emergency-related live A/V Service which is delivered via broadcast stream.
@bsid	1	aeat:listOfUnsignedShort	Identifier of the Broadcast Stream that contains the emergency-related live A/V Service.
@serviceId	1	unsignedShort	Integer number that identifies the emergency-related A/V Service.
ServiceName	0..N	String	A user-friendly name for the Service where LiveMedia is available.
@lang	1	Lang	The language of the text described in the ServiceName element.
Media	0..N		Contains the component parts of the multimedia resource.
@lang	0..1	Lang	The code denoting the language of the respective element Media .
@mediaDesc	0..1	String	Text describing the type and content of the media file.
@mediaType	0..1	String	Text identifying the intended use of the associated media.
@url	1	anyURI	URL of the media file.
@alternateUrl	0..1	anyURI	Alternate URL of the media file when it is also available via non-broadcast delivery (i.e. via the Internet).
@contentType	0..1	String	IANA media type of media content referenced by Media@url .
@contentLength	0..1	unsignedLong	Size in bytes of media content referenced by Media@url .
@mediaAssoc	0..1	anyURI	URI of another Media element with which this attribute is associated.

6.5.2 AEAT and AEA Semantics

The following text specifies the semantics of the elements and attributes in the AEAT.

AEAT – Root element of the AEAT.

AEAT@aeaTableId – This attribute, if present, shall be a string value uniquely identifying an AEAT (table) within a given RF channel (or within the data delivered by bonded RF channels). The @aeaTableId shall be restricted to the 62 alphanumeric characters using the ASCII character set of 0x30 through 0x39, 0x41 through 0x5A, 0x61 through 0x7A, the dash (0x2D), dot (0x2E) and underscore (0x5F) characters. This element is used to identify a given version of an incremented AEA Table. Any change in the presence or value of an **AEA@aeaId** will cause a change in the value of the **AEAT@aeaTableId**.

AEA – Advanced Emergency ~~Information-Alert~~ Message. This element is the parent element that has @aeaId, @issuer, @audience, @aeaType, @refAEAId, @priority, and @wakeUp attributes plus the following child elements: **Header**, **AEAText**, **Media**, and optionally **LiveMedia** and **Media**. Note that in the case of @aeaType of “cancel”, the **Header**, **Media**, **LiveMedia** and **Media** elements shall not be present.

AEA@aeaId – This attribute shall be a string value uniquely identifying the AEA message within a given RF channel (or within the data delivered by bonded RF channels). **This attribute shall be restricted to the 62 alphanumeric characters using the ASCII character set of 0x30 through 0x39, 0x41 through 0x5A, 0x61 through 0x7A, the dash (0x2D), dot (0x2E) and underscore (0x5F) characters.** ~~The @aeaId shall be restricted to the 62 alphanumeric characters (basic Latin letters and Arabic digits) using the UTF-8/Unicode character set of 0x0030 through 0x0039, 0x0041 through 0x005A, 0x0061 through 0x007A, the dash (0x002D), dot (0x002E)~~

~~and underscore (0x005F) characters.~~ This element is used to associate updates or cancels to this alert.

AEA@issuer – A string that shall identify the broadcast station originating or forwarding the message. @issuer shall include an alphanumeric value, such as call letters, station ID, group name, or other identifying value. This string shall not exceed 32 characters.

AEA@audience – This string shall identify the intended audience for the message. The value shall be coded according to Table 6.10.

Table 6.10 Code Values for **AEAT.AEA@audience**

Audience	Meaning
"public"	For general dissemination to unrestricted audiences. All alerts intended for public consumption must have the value of "public". (Required for AEA-MF public dissemination.)
"restricted"	For dissemination only to an audience with a defined operational requirement. Alerts intended for non-public dissemination may include the value of "restricted".
"private"	For dissemination only to specified addresses (conditional access requirement).
other values	ATSC Reserved

AEA@aeaType – This string shall identify the category of the AEA message. The value shall be coded according to Table 6.11.

Table 6.11 Code Values for **AEAT.AEA@aeaType**

aeaType	Meaning
"alert"	Indicates that AEA message is new. (Note, alert messages such as the U.S. required monthly test, RMT, are considered alert messages, and must contain the value of "alert".) In this case, @refAEAid shall not appear.
"update"	Indicates that AEA message is not new, but contains updated information from a previous emergency alert message. In this case, @refAEAid shall appear.
"cancel"	Indicates that AEA message is cancelling a previous emergency alert message. In this case, @refAEAid shall appear, and all attributes of the AEAT.AEA.Header , LiveMedia , and Media elements shall not be present.
Other values	ATSC Reserved

AEA@refAEAid – A string that shall identify the @aeaId of a referenced AEA message. It shall appear when the @aeaType is "update" or "cancel". When @aeaType is "alert", @refAEAid shall not be present. When @refAEAid is not present, there is no default value.

AEA@priority – The AEA message shall include an 8-bit unsigned integer value that indicates the priority of the alert when @aeaType is "alert" or "update". The value shall be coded according to Table 6.12. When it is not present, there is no default value.

Table 6.12 Code Values for **AEAT.AEA@priority**

priority	Meaning
4	Maximum Priority <ul style="list-style-type: none"> • Urgent or extreme message context. • A highest level of alert (e.g. the U.S. Emergency Action Notification/EAN). • A Canadian "broadcast immediate" requirement in the source alert message. • Defined by station operator for a time critical alert (e.g., earthquake/EQW or tornado/TOR).

3	High Priority <ul style="list-style-type: none"> • Defined by station operator for messages of an important or severe context. • May also be used for a “broadcast immediate” message. • Overrides any previous messages.
2	Moderate Priority <ul style="list-style-type: none"> • Defined by station operator for messages of a moderate but actionable priority.
1	Low Priority <ul style="list-style-type: none"> • Defined by station operator for messages of an informative nature, or of minor and non- actionable status (e.g. weather watches).
0	Minor Priority <ul style="list-style-type: none"> • Defined by station operator for periodic or occasional messages of extremely minor context (e.g. test or administrative signals). • Messages should not interrupt the user from other interactive functions.
Other values	ATSC Reserved

AEA@category – This attribute shall identify the event category of the AEA message formatted as a string denoting the value itself. When category is not present, there is no default value. When the value of **AEA@audience** is “public”, then the value for **AEA@category** shall be from the values in Table 6.13.

Table 6.13 Code Values for **AEAT.AEA@category**

Category	Meaning
“ADVISORY”	Urgent Advisory (e.g., from a newsroom) that does not fit into the categories below.
“HEALTH”	Health Related (including environmental), including infectious disease information (e.g. COVID instructions), pollen and other environmental health hazards.
“WEATHER”	Urgent meteorological information and updates.
“EMERGENCY”	General emergency and public safety information, including fire, geological and other situations.
“SCHOOL”	Urgent information related to schools/educational institutions, including school closures, reopenings, in-school emergencies, and other important information.
“COMMUNITY”	Urgent information of local relevance, including utility/infrastructure issues, sanitation, government closures, etc.
“TRANSIT”	Urgent Transit/Transport/Traffic information, such as road closures, major traffic incidents, public transit delays, etc.
“OTHER”	Messages not categorizable above, such as test or “heartbeat” messages.
Other	ATSC reserved.

AEA@wakeup – This optional Boolean attribute, when present and set to “true” shall indicate that the AEA is associated with non-zero ea_wake_up bits (See Annex G.2). The default value, when not present, shall be “false”.

Header – This element shall contain the relevant envelope information for the AEA message, including the type of alert (**EventCode**), the time the alert is effective (**@effective**), the time it expires (**@expires**), and the location of the targeted alert area (**Location**). Messages of type “cancel” shall not contain the **Header** element.

Header@effective – This date/time attribute shall contain the effective time of the alert message. The date and time shall be represented in the XML dateTime data type format (e.g., “2016-06-23T22:11:16-05:00” for 23 June 2016 at 11:15 am EDT). Alphabetic time zone designators

such as “z” shall not be used. The time zone for UTC shall be represented as “-00:00”. When it is not present, it shall indicate “immediately effective”.

Header@expires – This date/time attribute shall contain the expiration time of the AEA message. The date and time shall be represented in the XML `dateTime` data type format (e.g., “2016-06-23T22:11:16-05:00” for 23 June 2016 at 11:15 am EDT). Alphabetic time zone designators such as “z” shall not be used. The time zone for UTC shall be represented as “-00:00”. This attribute shall not appear for an AEA message with `@aeatype` as “cancel” (because when `@aeatype` is “cancel”, the message “immediately expires”). This attribute shall appear when the `@aeatype` is “alert” or “update”.

EventCode – This string element shall identify the event type of the AEA message formatted as a string (which may represent a number) denoting the value itself (e.g., in the U.S., a value of “EVI” would be used to denote an evacuation warning). Values may differ from nation to nation, and may be an alphanumeric code, or may be plain text. Only one **EventCode** shall be present per AEA message. When **EventCode** is not present, there is no default value.

EventCode@type – This attribute shall be a national-assigned string value that shall designate the domain of the **EventCode** (e.g., in the U.S., “SAME” denotes standard FCC Part 11 EAS coding). Values of `@type` that are acronyms should be represented in all capital letters without periods. If `@type=“SAME”`, then the **EventCode** shall be defined as a three-letter event code as defined in FCC’s Part 11 rules on EAS (at 47 CFR 11.31(e)).

EventDesc – A string that shall contain a short plain-text description of the emergency event. This string shall not exceed 64 characters. When the **EventCode** element is present, the **EventDesc** should correspond to the event code indicated in the **EventCode** element (e.g., an **EventDesc** of “Tornado Warning” corresponds to the EAS **EventCode** of “TOR”). When an **EventCode** element is not present, the **EventDesc** should provide a brief, user-friendly indication of the type of event (e.g., “School Closing”).

EventDesc@lang – This attribute shall identify the language of the respective **EventDesc** element of the alert message. This attribute shall be represented by formal natural language identifiers and shall not exceed 35 characters in length as defined by BCP 47 [32]. There shall be no implicit default value.

Location – This element shall describe a message target with a geographically-based code. When this element is not present, it shall indicate that the AEA message is geographically relevant throughout the transmission area.

Location@type – A string that shall identify the domain of the **Location** code. Note that some receivers may not be capable of determining whether they are located within the signaled location area of the event. It is suggested that such receivers process the alert as if they were located within the area of the event.

- If `@type=“FIPS”`, then the **Location** shall be defined as a group of one or more numeric strings separated by commas. Each 6-digit numeric string shall be a concatenation of a county subdivision, state and county codes as defined in FIPS [59] in the manner defined in 47 CFR 11.31 as PSSCCC. Additionally, the code “000000” shall mean all locations within the United States and its territories, and the code “999999” shall mean all locations within the coverage area of the station from which this AEAT originated.
- If `@type=“SGC”`, then the **Location** shall be defined as a group of one or more numeric strings separated by commas. Each numeric string shall be a concatenation of a 2-digit province (PR), a 2-digit census division (CD) and a 3 digit census subdivision (CSD) as

defined in SGC [61]. Additionally, the code “00” shall mean all locations within Canada, and the code “9999” shall mean all locations within the coverage area of the station from which this AEAT originated.

- If @type="polygon", then the **Location** shall define a geospatial space area consisting of a connected sequence of three or more GPS coordinate pairs that form a closed, non-self-intersecting loop. Each coordinate pair shall be expressed in decimal degrees.
- If @type="circle", then the **Location** shall define a circular area represented by a central point given as a coordinate pair followed by a space character and a radius value in kilometers.

Textual values of @type are case sensitive, and shall be represented in all capital letters, with the exceptions of "polygon" and "circle".

AEAText – A string of the emergency message. Each **AEAText** element shall include exactly one @lang attribute. For **AEAText** of the same alert in multiple languages, this element shall require the presence of multiple **AEAText** elements. When **AEAText** is not present, there is no default value. **When the message is of type “cancel”, there is no expectation that AEAText will be presented to the audience. Message of type “cancel” shall not contain the AEAText element.**

AEAText@lang– This attribute shall identify the language of the respective **AEAText** element of the AEA message. This attribute shall be represented by formal natural language identifiers as defined by BCP 47 [32], and shall not exceed 35 characters. There shall be no implicit default value.

LiveMedia – Identification of a broadcast delivered A/V Service that may be presented to the user as a choice to tune to for emergency-related information, e.g., ongoing news coverage. A **LiveMedia** element shall be present if **AEA@wakeup** is "true". When **LiveMedia** is not present, there is no default value. Messages of type “cancel” shall not contain the **LiveMedia** element.

LiveMedia@bsid – This list of one or more unsigned **short16-bit** integer values shall indicate identifier(s) of the Broadcast Stream(s) which contain the essential portions of the emergency-related live A/V Service. When the value of **LiveMedia@bsid** is a list of more than one unsigned **short16-bit** value it shall indicate multiple Broadcast Streams with channel bonding applied.

LiveMedia@serviceId – A 16-bit integer that shall uniquely identify the emergency-related live A/V Service.

ServiceName – A user-friendly name for the Service where the live media is available that the receiver can present to the viewer when presenting the option to tune to the **LiveMedia**, e.g., “WZYX Channel 5.” When **ServiceName** is not present, there is no default value.

ServiceName@lang – Shall identify the language of the respective **ServiceName** element of live media stream. This attribute shall be represented by formal natural language identifiers and shall not exceed 35 characters, as defined by BCP 47 [32]. There shall be no implicit default value.

Media – This element contains the component parts of the multimedia resource, including the language (@lang), description (@mediaDesc) and location (@url) of the resource. It refers to an additional file with supplemental information related to the **AEAText**; e.g., an image or audio file. Multiple instances may occur within an **AEA** message block. Note that AEA media is made accessible to a BA that is subscribed to AEATs (see A/344 [46] for subscribe AEAT API) using the AppContextIdList in the Extended FDT Instance (**EFDT.FDT-**

Instance@appIdList), see Section 9.2.10 of A/344 [46]. Messages of type “cancel” shall not contain the **Media** element.

Media@lang – This attribute shall identify the respective language for each **Media** resource, to help instruct the recipient if different language instances of the same multimedia are being sent. This attribute shall be represented by formal natural language identifiers as defined by BCP 47 [32], and shall not exceed 35 characters. This element shall be present if the @mediaDesc element is present.

Media@mediaDesc – A string that shall, in plain text, describe the content of the **Media** resource that provides context for a viewer to understand what a given media file contains. For example, “Evacuation map of Jones County as of 1/1/2019” or “Doppler radar image related to Hurricane Sandy”, etc. The language of the **Media@mediaDesc** shall be inferred to be the same as the language indicated in **Media@lang**. This information may be used by a receiver to present a viewer with a list of media items that the viewer may select for rendering. When this field is not provided, the receiver may present generic text for the item in a viewer UI (e.g., if @contentType indicates the item is a video, the receiver may describe the item as “Video” in a UI list).

Media@mediaType – This string shall identify the intended use of the associated media. Note that media items identified with this attribute are typically associated with items that are automatically handled by the receiver’s alert user interface, as opposed to media that is presented in a list to the user for selection. The value shall be coded according to Table 6.13. When **Media@mediaType** is not present, there is no default value.

Table 6.13 Code Values for **AEAT.AEA.Media@mediaType**

MediaType	Meaning
"EventDescAudio"	The audio (voice) associated with the EventDesc element
"AEAtextAudio"	The audio (voice) associated with the AEAtext element
"EventSymbol"	A symbol associated with the EventDesc
other values	ATSC Reserved

Media@url – A required attribute that shall indicate the location of the rich media resource delivered via broadcast ROUTE. As a relative URL, the value of **Media@url** shall match the @Content-Location attribute of the corresponding **File** element in the Extended FDT Instance in the LCT [26] channel delivering the file, or the Entity header of the file, and its format complies with that of the Content-Location URI as described in Section 8.1.1.2.

Media@alternateurl – An optional attribute that shall indicate the location of the rich media resource when it is also available via broadband. The attribute shall be formed as an absolute URL and shall reference a file on a remote server.

Media@contentType – A string that shall represent media type assigned by IANA for the media content referenced by **Media@url**. **Media@contentType** shall obey the semantics of the Content-Type header of HTTP/1.1 protocol RFC 7231 [31]. When **Media@contentType** is not present, there is no default value.

Media@contentLength – A string that shall represent the size in bytes of media content referenced by **Media@url**. When **Media@contentLength** is not present, there is no default value.

Media@mediaAssoc – An optional attribute that shall contain a **Media@url** of another rich media resource with which this media resource is associated. Examples include a closed caption track

associated with a video. Construction of **Media@mediaAssoc** shall be as described in **Media@url** above. When **Media@mediaAssoc** is not present, there is no default value.

Revise Section Annex G as follows:

Annex G: Emergency Message Signaling

G.1 EMERGENCY ALERT SYSTEM STRUCTURE

Advanced Emergency **Information Alerting**—(AEA) provides an emergency notification mechanism in ATSC 3.0, which is capable of forwarding a broad range of emergency data, which can include urgent bulletins, advisories, all-hazard warnings, emergency-related messaging, and other urgent information over an ATSC 3.0 system. This annex describes one manner in which the AEA may function in support of external public warning alerts sources; however, the emergency information Service provided by the AEA is not limited to this specific purpose, and may be utilized to convey additional forms of urgent messaging.

– End of Document –