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Event Terms List Version 1.0

Committee Note 02

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Related work:
This document is related to:

* *Common Alerting Protocol Version 1.2*. Edited by Jacob Westfall. 01 July 2010. OASIS Standard. Latest version: http://docs.oasis-open.org/emergency/cap/v1.2/CAP-v1.2.html.

Abstract:
This Event Terms List has been developed for use with any version of the Common Alerting Protocol (CAP) or related systems.

The variety of practices employed regarding "event" types in CAP messages makes it difficult to compare messages from different sources. The problem has been presented as an interoperability issue where some consumers of CAP struggle to compare differences in language and meaning of the terms used in the <event> element in CAP.

The <event> element is the focus for this effort as it is the only required element in CAP directly associated with the subject event for a CAP message. Aligning practices surrounding this element, as opposed to other possible candidate elements, is the choice adopted in this work product for addressing this interoperability concern.

However, the <event> element is a free form text element meant to communicate with the final audience and not necessarily for the automated systems that process CAP. The only constraint on is that it be in

the same language as indicated by the element in the block the <event> element is found in. Therefore, for consumers, the ability to rely on this element for uses other than just display is not possible.

With this in mind, the concept of a mapping table where CAP originators and CAP consumers can contribute "event" terms has been conceived. With this table, language terms can be mapped to each other as a reference for client consumers thus allowing some measure of interoperability to be possible.

Status:

This is a Non-Standards Track Work Product. The patent provisions of the OASIS IPR Policy do not apply.

This document was last revised or approved by the OASIS Emergency Management TC on the above date. The level of approval is also listed above. Check the "Latest stage" location noted above for possible later revisions of this document. Any other numbered Versions and other technical work produced by the Technical Committee (TC) are listed at https://www.oasis-open.org/committees/tc_home.php?wg_abbrev=emergency#technical.

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Notices

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1 Introduction

The OASIS EMTC (Emergency Management Technical Committee of the Organization for the Advancement of Structured Information Systems), has developed a list of "event" terms for use in alert messaging systems. The list of terms attempts to help alert message consumers put some consistency into an important piece of information found in alert messages – the type of subject event.

A hazardous or concerning subject event justifies why an alerting authority created an alert message in the first place. It helps the authority anchor the information contained in the message to a specific time and place for the message audience. The subject event is essential to alert messages that use the OASIS CAP messaging standard.

The EMTC generated the "event" terms list in response to concerns expressed by the Global Disaster Preparedness Center (GDPC), a resource center hosted by the American Red Cross. The GDPC raised concerns that the varied and free form usage of event terms is inconsistent in CAP Services making it difficult to compare messages from different originating sources. As consumers of alert messages, they found there is no quick and definitive way to compare the language and meaning of the event terms found in various CAP messages.

Understanding this, the EMTC approach to the "event terms list" (referred to as the "list" in this document) has been to focus on "how" the list can help when comparing event terms. The design and management of the list is such that consumers of CAP messages, looking to compare event terms from different originating sources, will have a means to do so.

The EMTC also recognizes that many alerting authorities have their own terms; and that these terms, some long established, already work well in the communities they serve. Therefore, with the advent of the list, it is **not** suggested that alerting authorities change to using the OASIS event terms as listed, it is only suggested that the originating CAP systems for those authorities make a reference to the terms found in the list.

Understandably, the EMTC defers to each and every alerting authority their choice of terms. Those authorities have had many years to cultivate a relationship with their audiences and the EMTC has no wish to change that. The goal of the EMTC list is only to facilitate a more interoperable exchange of information to consuming parties that process alert messages from many authorities. Interoperability means that consumers, even those not associated with an alerting authority, should also be able process the message information in a standard way. With the methodology outlined in this document, the EMTC hopes this objective can be accomplished. The OASIS EMTC is asking CAP originators and CAP consumers to play a part in making this happen. Ultimately, OASIS hopes users like the GDPC will see the benefits.

2   Background - CAP Design

CAP is designed as a means to convey alerting information associated to a hazardous or concerning event of interest. It does this for the purposes of alerting audiences to the impacts of that same event.

Identifying an event of interest starts the process of creating an alert, with the event becoming the subject of discussion for each message of the alert. In CAP-based alerting systems, message originators employ CAP to house all the pieces of information associated to that subject event. Consumers of CAP messages, those considered partners to the alerting authorities, help disseminate and present that information to the intended final audiences.

Before a discussion on conveying event type information can be made, additional background is required on a variety of concepts pertaining to the alerting information - including the meaning of the terms "event" and "event type" as used in CAP.

2.1 What is an Event?

An event is something that happens in a given place during an interval of time. It is the recognition of some activity that is a deviation from the normal state of things. An event only becomes significant when affected parties observe, or are anticipated to observe, some known measure of impact. On a very basic level, simply existing is enough for an event to generate interest. On a more practical level, authorities, with expertise on the nature of certain hazardous or concerning events, may classify an event as significant based on the real or anticipated impacts of the event.

In the case of "Public Alerting", alerting authorities determine whether the impacts of an "event of interest" is concerning enough to issue a formal alert. This is their responsibility; and they can do this consistently because they have built up a pre-defined and deterministic cause for alarm based on a known set of conditions of similar events. In this situation, the alerting authority has assumed the role of defining the impacts of significance on behalf of the public audience they serve. An event, based on those measures, becomes the subject of an alert.

2.2 Interoperability

CAP consumers are aware that some of the pieces of information within a CAP message are optional while some of the information is required. The <event> element within a CAP message is a required element. It is the only required element in a CAP message that by definition is directly associated with the subject event. Unfortunately, this has resulted in many CAP consumers attempting to rely on the element as a means of comparing the subject events across messages.

However, the <event> element is a free form text element meant to communicate with the final audience and not meant for the automated systems to process. The only constraint on <event> is that it be in the same language as indicated by the <language> element of the <info> block - but even that constraint is not easily validated. Therefore, for consumers such as the GDPC, the ability to rely on this element as currently defined, for uses other than display purposes, is not always possible.

79 Consequently, it is understandable that some believe that the varied use of the <event>
80 element contradicts the concept of interoperability. One possible solution might be to
81 have originators standardize the use of the <event> element to some standard list of
82 values. However, it is the opinion of the EMTC, that the <event> element in CAP should
83 not be re-purposed for this task. The <event> element has been established as an
84 audience element and should remain as such. The EMTC believes other existing CAP
85 elements should be employed to facilitate interoperability.

86   2.3 What is a Type?

87 To "type" something is to declare something as sharing similar characteristics to things
88 that went before it. If those characteristics create a classification, whether formally or
89 informally, then a "type" is declared. One can then use a type in a sentence (i.e. "an
90 object of type X", or more commonly, "an X object"). This understanding is the basis for
91 how "typing" works in any system.

92 For example, using a term like "apple pie". The object of interest is a pie classified as
93 being of type apple (as compared to other pies). The same concept exists when using a
94 term like "hot pie", the object of interest is still a pie but this time classified as being of
95 type hot.

96 Both typing schemes in this example serve a purpose, but the type classification "apple"
97 is more substantial than the type classification "hot", as "hot" is open to wider opinion
98 and interpretation. The difference extends from "apple" being a word that is able to
99 describe another thing (a noun), whereas the word "hot" does not. The word "hot", as
100 used here, is simply a qualitative modifier (an adjective) that describes some quality of
101 the object. This distinction is important.

102 When a noun functions as a type, like "apple" does in "apple pie", it is referred to as a
103 noun adjunct. Noun adjuncts are not the object in a sentence and only serve to modify
104 another noun. Adjuncts as types generally make for easier type comparisons with other
105 types as opposed to adjectives. For example, "apple" compared to "berry", is an easier
106 comparison to react to as opposed to "hot" when compared to "warm". Comparing
107 adjectives is more subjective. Typing strategies focusing more on noun adjuncts, and
108 less on qualitative modifiers, often make comparisons easier to interpret.

109 Furthermore, as an additional advantage, noun adjuncts can have their own modifiers.
110 For example, "red", which is a modifier for "apple", leading to the combination "red
111 apple", which is a more narrowly defined multi-word modifier for "pie". Multi-word
112 modifiers improve the precision of types, but conversely can also grow in number if left
113 unchecked. Overuse can lead to lists too large to be manageable or effective.

114 This interpretation of type will figure prominently in this document.

115   2.4 What is an Event Type?

116 When an alerting authority identifies a hazardous or concerning event as a "subject"
117 event, it is helpful if the alerting authority and audience both have some prior
118 understanding of the expected impacts of the event. That prior understanding comes
119 from associating the subject event to a known event type. Defined event types assist in
120 communicating to an audience the impacts of any single subject event.

121 The OASIS CAP standard defines the <event> element as… "the text denoting the type
122 of the subject event of the alert message". This means that the authority is not actually
123 citing the subject event in the <event> element, only its type. For example, a subject
124 event like "hurricane Katrina" would have an event type classification of "hurricane" as
125 hurricane is the term given to events with conditions characteristic of a hurricane.

126 The full term in the context of this example is "hurricane event type", where "type" is the
127 object of the sentence, "event" is a permanent adjunct modifier to "type", and "hurricane"
128 is the actual event type being classified. Since the CAP standard established this
129 element as "event type", there is no need to repeat the words "event" or "type" in the list
130 of types. NOTE: In the example, "hurricane" is also an adjunct describing the "event
131 type".

132 Using another example, the term "forest fire" is also an acceptable event type for
133 alerting. Here, there are two noun adjuncts used to describe a more narrowly defined
134 "event type" as opposed to using just "fire". Another example of an event type is "ice",
135 and the more narrowly defined "thin ice". The word "thin" however is a qualitative
136 modifier and not an adjunct, and demonstrates the value that qualitative modifiers can
137 occasionally bring to the task.

138 Multi-word types operate equally well or even better than single-word types. For
139 example, a single-word event type of "emergency" is not acceptable for comparison
140 purposes. Consumers wanting to compare this with other event types would welcome
141 additional modifiers. The EMTC has to evaluate each case and use or limit modifiers as
142 needed. NOTE: multi-word event types generally have an accepted best order in
143 English (i.e. "forest fire" and "thin ice", as opposed to "fire forest" and "ice thin").

144 2.5 What is an Alert?

145 An alert is a transmitted "signal" to heighten attention and/or initiate preparation for
146 action. For this attention and preparation to be meaningful, a real or anticipated subject
147 event is necessary. As stated, it is by reference to this subject event that the alert ties
148 the message found in the alert to a time and place.

149 For many alerting authorities, an event, simply by its event type definition, is an alert-
150 able event. For example, a "dangerous animal" is an alert-able event simply because of
151 what its event type definition is. For other authorities, the event is only significant and
152 alert-able when a marked set of environmental conditions define its type. For example,
153 an authority may declare a "wind" event an alert-able event based on a certain wind
154 speed level marker. Regardless of how the need for an alert was determined, the
155 authority went through a subjective analysis identifying event types of interest. All this
156 so that the subject event for any given alert message has a type classification that aids
157 in constructing alert messages for an audience.

158 2.6 What is an Alert Type?

159 When constructing alerts, identifying subject events and event types is often not
160 enough. Using meaningful terms for communicating hazardous or concerning impacts to
161 an audience, is just as important. This is the social science of alerting and this is where
162 the concept of an alert type arises.

163 An alert type is usually just the type of event transposed to also being the type of alert.
164 For example, a "blizzard event", of event type "blizzard", would often lead to a "blizzard
165 alert" of alert type "blizzard". Since an alert message requires a subject event to center
166 the message on, it is natural to make this simple transposition of event types to alert
167 types. This transposition activity holds true for other event type schemes as well (i.e. a
168 "red event" becoming a "red alert", etc.).

169 However, the practice of setting an alert type for alerting authorities is just as
170 inconsistent around the world as is setting event types. For example, a "hot dry
171 weather" event, conducive to the possibility of bush fires, may result in alerts with alert
172 types of "bushfire emergency" or "red flag warning". These two alert types are not
173 necessarily understood to mean similar things – especially across different
174 communities.

175 Regardless of what event terms are already in use, and what they might truly signify,
176 the overall social aspect of an alerting service has been established. Furthermore, for
177 this exampled case, it should be pointed out that the alert terms "emergency" and
178 "warning" are not uncommon variations for the choice of term for an "alert", or is it
179 actually meant to be a "bushfire emergency alert" of type "bushfire emergency".
180 Nevertheless, the conclusion is that the practice of using terms for naming events and
181 alerts can vary considerably making comparisons difficult.

182 Ultimately, public alerting is not meaningful if the message is not understood.
183 Regardless of the term assigned to the event or alert, the social responsibility of an
184 alerting authority is to effectively communicate the hazards and concerns associated to
185 a subject event. In each case, representatives of the alerting authorities that chose
186 these terms felt the chosen term was the correct one for the situation.

187 2.7 Event Terms

188 Since the inception of the CAP standard, event term usage in the <event> element in
189 CAP based systems around the world has evolved to be wide ranging and varied.
190 Alerting authorities, and their CAP originators, have fallen to a number of differing
191 practices that makes comparisons of the <event> element values difficult. The list below
192 is not a complete list of these practices but does demonstrate various interpretations
193 and aspects of the larger problem of assigning an event term in CAP.

194 The list below is not a complete list but does demonstrate various practices and
195 interpretations of the larger problem of assigning an event term in CAP.

196 1) The same event can affect different communities differently. For example, a
197   "smoke" event can affect one community concerned with Air Quality and Health
198   while at the same time it can affect another community concerned with
199   Transportation.
200 2) The same event can affect a national community in one way and a local
201   community in other ways. For example, a "forest fire" can affect logistical
202   firefighting exercises on a large scale but cause evacuation activities on a
203   smaller scale.
204 3) The same event may be easy to describe in one language but not another. For
205   example, the term "AMBER alert" is well known in the English language but its
206   direct translation may not easily survive into another language.

4) An event may be composed of many smaller events and the communication of many smaller events simultaneously may require the use of a broader term to get the message across. For example, "storm surge", "heavy rain", "strong winds", "coastal flooding", "tornadoes", etc… may all be part of a "hurricane" event but an alert message full of references to the many smaller events may not be effective as they could overwhelm the audience. However, any of these smaller events occurring on their own could easily make up the subject event of a separate alert.

5) An event often comes with descriptive modifiers that authorities have used for many years based on a how the subject event was viewed in the past. The use of these descriptors can create confusion especially when compared against the established measures in the CAP standard. For example, a "thunderstorm" event and a "severe thunderstorm" event. "Severe" is one of several allowable CAP <severity> values used by agents to filter CAP alert messages, but if the value is set to "Extreme" and the event is still termed as a "severe thunderstorm" confusion can arise.

6) An event may be described differently in cause and effect situations. For example, an "earthquake" event that spawns a possible "tsunami" event may result in different originators referencing either event type in a CAP message. The alert is conveying a "Tsunami Warning" for an anticipated "tsunami" event but the cause event was the "earthquake" event. Alerting Authorities could focus on one, or the other, or the combination of the two, as the subject event of the CAP alert message

7) An event may be considered a trigger event by an alerting authority causing the authority to issue an alert focusing on a secondary event that they themselves want to initiate. For example, an "evacuation order" that contains a message that talks about the act of evacuating, and may involve very little discussion to the trigger event that spawned the order in the first place.

8) An event may be described by using a proxy term. For example, "red flag" is a term that can be used to describe an event where a triggering weather event is underway that is conducive to a secondary "fire" event occurring. Much like a "tsunami" event prompted by an "earthquake" event, the possible "fire" event is prompted by an existing "weather" event. However, in this case, the term "red flag" is a proxy term generalizing the possibility of several "fire" events.

9) Two event terms may have the same core term but be quite different types. . For example, a "bush fire" and a "chemical fire". While related due to the core term "fire", they are actually quite different event terms only connected through the broader term "fire".

10) The event term wording may be a broader generalization than the actual intended meaning. For example, "air quality" as a term should have a broader definition than what is often implied as the more narrowly defined "poor air quality". The repeated usage of the term "air quality", for the purposes of issuing alerts for "poor air quality", has led to a subtle training of the audience over time to interpret "air quality" as "poor air quality".

250   11) An event term choice may be subject to the behaviors and constraints of the
251   presentation systems in play. For example, the idea of keeping messages short
252   for a particular presentation medium, or only including a short attention-grabbing
253   <headline>. For example, "congestion ahead" designed specifically for an
254   electronic road sign.

255   12) An event term may appear as a plural form, or verb form, or another form,
256   instead of a simple noun. For example, an event type of "flood" may be
257   expressed using terms such as "floods" or "flooding".

258   13) An event term may not even be associated to an event at all. For example,
259   "road", "waste management", etc… are terms that are not events on their own,
260   but when used as a noun adjunct ahead of another noun like issue, situation, or
261   service, the net result is an event term that is a very broad description of an
262   event, but still a type of event.

263   14) An event term choice may include a scale reference. For example, a "UV index"
264   event. UV is the actual concern and index is simply a mis-directed proxy for the
265   true event, which may be a period of "dangerous UV radiation".

266

267   Consequently, for an event terms list to be manageable and useable for automated
268   comparison purposes, users of the list need to recognize that the EMTC list of terms is
269   not able to accommodate all these interpretations. The EMTC list of terms will be an
270   ever-growing list, but it will be a list of subject to a number of constraints to keep the list
271   manageable.

272   2.8 CAP Event Type Codes

273   One strategy to help automated systems that auto-process the delivery of the alert
274   message to the final audience is to codify values for certain pieces of information in the
275   message. Coded values, if formatted properly, can alleviate the dimension of language
276   as an issue to resolve when processing an alert. Applying a code to each item in a list is
277   desirable for automated systems and systems that deal across languages.

278   Codifying event types is also helpful for applying advanced processing in consuming
279   alerting systems. For example, a coded value for a pre-defined event type allows
280   consumers to have a pre-defined response to any alert message identifying to that
281   event type. That response could be for simple tasks such as routing or filtering or it
282   could be for more advanced tasks such as creating a unique presentation for a certain
283   type of event. In CAP, originators populating the <eventCode> element help facilitate
284   consuming responses by codifying event types.

285   2.9 CAP-XML User Groups

286   A group is a collection of participants that share a common trait. In the case of XML, a
287   language based messaging protocol, there are two basic user groups. One group is the
288   final intended audience (the end clients of the information contained within the XML
289   message), and the other is the partner group (the agents along the path of distribution
290   that source the XML for decision making information). Both these groups are served by
291   the same CAP-XML alert message.

292 There are elements in the CAP schema that are intended for one group or the other. For
293 example, many of the free form elements in the CAP-XML schema are intended for the
294 final audience, while many of the enumerated elements are intended for agents along
295 the path of distribution. As stated, the <event> element is free form and conveys an
296 event type to the final audience. Conversely, the <eventCode> element is a pre-
297 determined element with managed values, and conveys an event type to agents along
298 the path of distribution, allowing them to set up something specific in advance such as
299 filtering or routing.

2.10 CAP <category>

301 There is one additional event-based decision-making element in CAP. Unfortunately,
302 like <event>, it does not come with much guidance on how to use it properly and
303 existing practices with this element are as varied as the <event> element itself. Besides,
304 it is a very general element and is not specific enough for consumers to use for most
305 event comparison purposes. This element is the <category> element.

306 Like the <event> element, the CAP standard defines a <category> element to broadly
307 categorize subject events referenced in CAP messages. The <category> element is a
308 required element with a set of pre-defined values. Automated processing on the
309 consumer side could potentially use <category> to filter to some sort of subset list of
310 events of interest. Unfortunately however, consumers have to rely on the originators
311 upstream to set the values appropriately and consistently if interoperability is the goal.

312 Furthermore, originators often just include one <category> for the hazardous or
313 concerning event of interest in a CAP message, and that assignment usually just aligns
314 with the jurisdiction of the alerting authority. This defeats the purpose of <category>. For
315 example, an alert issued for a "volcanic ash" event may have a <category> assignment
316 of only "Health" if a health agency issued the alert, whereas it may have a <category>
317 assignment of only "Met" if a meteorological agency issued the alert. The recommended
318 use of <category> is to have multiple instances of the <category> element present in
319 the CAP message - one instance for each category that applies. The CAP consumer
320 could then reliably use a filter to look for the categories that interest them and then just
321 present the <event> value as is to the intended audience. If an alerting authority added
322 a new event type to their list of alert-able events, a consumer could build a system
323 filtered to <category> and not miss any new type of alert that the authority added.

324 OASIS is not intending to promote <category> as a solution to the <event> issue stated
325 in the outset of this document, but understanding <category> and its traits, as compared
326 to <event>, will help us address the event issue. The two important traits are re-listed
327 here.

328 1) <category> is allowed to have multiple instances of the element in a single CAP
329   message. Therefore, CAP does not constrain subject events to being in only one
330   category. The <event> element however is constrained to one value.
331 2) <category> is a pre-set broad categorization, not enough to inform on the full
332   nature of the event. Therefore, consumers can use it to filter alerts only at the
333   broad scale. The <event> element as broad or narrow as needed for the
334   audience of interest

335 These two differences figure in the methodology to solve the event type comparison
336 issue discussed in this document.

3 Event Term Spectrums

As mentioned earlier, the social aspect of alerting is a primary concern for alerting authorities. The chosen terms used in an alert message exist for the purposes of communicating effectively with an audience. However, when inspecting the terms used across various systems, not surprisingly, a wide range of terms are used. Upon further inspection, the terms are not just similar terms for the same thing, but terms that span a wide range across one or more spectra of terms. This happens both at the event level and the alert level and even authorities themselves sometimes have a hard time interpreting one another's choice of terms.

The following is discussion on terms across spectrums. This will factor into the decisions made regarding what event terms may make it into the list.

3.1 Broad to Narrow Spectrum

Terms can be very specific or very general depending on the information that needs to be conveyed. This is especially true for public alerting. For example, usually the term used for an event is often the same term used for the alert (i.e. a "wind" event leading to a "wind warning"). However, some alerting authorities generalize the type of alert by using broader terms (i.e. a "wind" event leading to a "wind" alert). Alerting authorities may choose to broaden the chosen event and alert terms for many reasons. For example, these include, but are not limited to…

- alerting for fast changing situations, where the event type is subject to change in updated messages over time (i.e. a "rain" event, changing to a "sleet" event, changing to a "snow" event and then back again, can be collectively referred to as a "winter storm" event)
- alerting to reduce message fatigue and confusion of an audience, where the audience might otherwise be subjected to different event terms for similar events

Furthermore, if a combination of events tends to occur at the same time due to the connected nature of the events, alerting authorities often use broader terms used as a catchall for the individual events (i.e. a "wind" event, plus a "rain" event, plus a "storm surge" event all associated to a "tropical storm" event). From any one physical location, for a segment of the audience affected by all these individual events, the event term "tropical storm" makes sense as a catchall term for the alert message. However, for a segment of the audience affected by only a subset of the events, such as those on higher ground, should they be subjected to the messaging of the "storm surge" component of the catchall term?

The example below shows a simple example of "wind" that includes the CAP category "Met".

Spectrum = Wind / Met

373
374

375 An authority could elect to use the broad event term "weather" or the narrow term "small
376 craft wind" when naming an event. For example, the following combination of CAP
377 elements is possible

378   `<event>` = "weather"
379   `<category>` = "Met"

380 as well as…

381   `<event>` = "wind"
382   `<category>` = "Met"

383 or even…

384   `<event>` = "small craft wind"
385   `<category>` = "Met"

386 and so on.

387 Additionally, reference terms can appear on more than one broad to narrow spectrum.
388 This is one area where the `<category>` discussion above is relevant. For example, using
389 the "smoke" example from earlier, smoke is a broad term that one can narrow to "dense
390 smoke", affecting Transportation, or "chemical smoke", affecting Air Quality and Health.

391

Spectrum = Smoke / Health
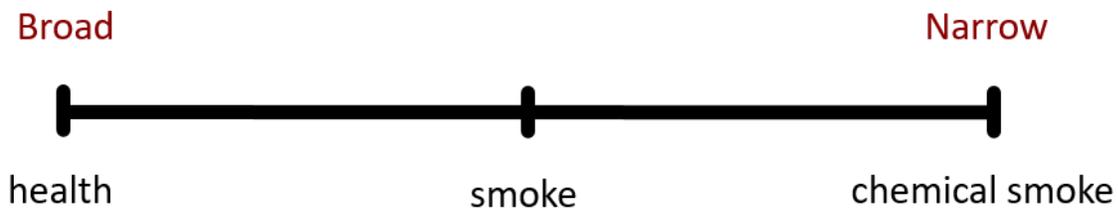
392

Spectrum = Smoke / Transportation

Broad   Narrow

transportation   smoke   dense smoke

393

394 The impacts of a "smoke event" could be associated to two different CAP <category>
395 values, "Health" and "Transport". In this case, the broad term would need more context
396 if there were a consumer that wants to filter for alert messages in just one of either
397 category.

398 Furthermore, if the "dense smoke" is from a chemical fire, and the alerting authority is
399 issuing an alert for this smoke with both the Health and Transport communities in mind,
400 do they issue two alerts or one? Do they issue a general alert message discussing
401 impacts of both, or two alert messages discussing the impacts in each category
402 knowing there may be a separate audience for each category?

403 Practices are many and varied and often go to how the authority conveys the impacts in
404 the message. OASIS has no jurisdiction over such alerting practices leaving that up to
405 the authorities themselves, but the practices affect the terms used.

3.2 Time Spectrum

407 Alerts can be used to alert audiences to events of interest that have happened, are
408 presently happening, or are expected to happen in the future. If an event is moving,
409 such as a "storm", it can be considered happening now to some and happening in the
410 future to others. Furthermore, if an event is only anticipated to happen, it may end up
411 not happening if the conditions leading up to the event change before the anticipated
412 event happens. All this can affect the chosen terms used to describe an event across
413 the time spectrum.

414 Consider for a moment a term like "forest fire". Since a forest fire is an event by its
415 nature, something that deviates from the normal condition of no fire, the term "forest
416 fire" is an acceptable event type term. However, if an authority wants to define forest fire
417 types for both "existing" forest fires, and "future" forest fires, how is that accomplished?
418 Terms such as "forest fire situation" or "forest fire threat" come to mind, along with many
419 others similar terms. When inspecting these choice of terms, a sense of timing can be
420 inferred by the additional word in the term. The word "situation" suggests a current
421 event and the word "threat" suggests a future event. For completeness, a word like
422 "incident" could be used for a past event.

Spectrum = Fire / Time

Past   Future

fire incident   fire situation   fire threat
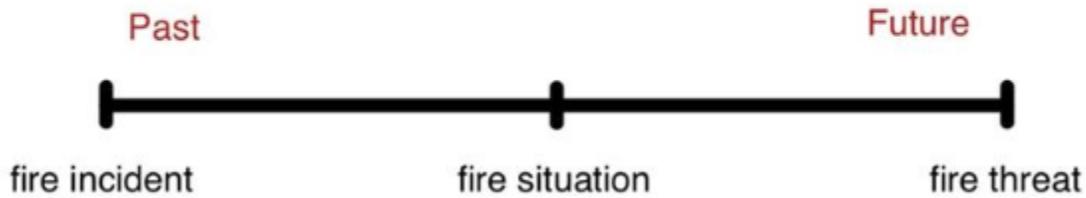
423

424   An important observation for terms like… incident, situation, threat, etc…is that these
425   terms on their own without a modifier can convey the idea of an event (i.e. a simple
426   message stating, "there is a threat" refers to a "threat" as the subject event). Such
427   events are abstract, as opposed to real, but abstract events do not contravene the idea
428   of a subject event.

429   When it comes to typing abstract events in CAP, the word "threat" is still a noun. As a
430   noun adjunct to the base word event, it too may also be typed. Using the example
431   above, the net result could be a multi-word event of type "fire threat", or the even more
432   narrowly defined "forest fire threat".

433   The term "threat event", does not provide anything helpful on its own for comparison
434   purposes other than timing. Furthermore, if a qualitative modifier is used, such as
435   "strong threat", it still does not provide anything helpful for comparison purposes.
436   Abstract events, like timing spectrum events, are best served with another adjunct as a
437   modifier instead of qualifying modifiers. With "fire threat", there is both tangible
438   information on the hazardous or concerning event plus information on the timing.

439   One advantage of adding timing spectrum words to the term is that they aid in pre-
440   planning shorter audience messages when length of message is a concern. Another
441   advantage is that the noun adjunct for words like threat, situation, incident, etc… does
442   not necessarily have to convey a sense of an event because threat, situation, incident,
443   etc… already do.

3.3 Impact Spectrum

445   Alerts can be used to alert audiences to events of interest that have impacts that are
446   minor, major, or anywhere in between. Often, the desire of many alerting authorities is
447   to express that degree of impact quickly and succinctly as possible. In CAP, this is what
448   the <headline> element is designed for; however, another way to do this is to
449   encapsulate the degree of impact into the event type term. If an event type has an
450   additional adjunct in the term that infers some sense of impact, such as "concern",
451   "problem", "issue", "hazard", "emergency", etc… then simply presenting the event type
452   may be enough to get enough of the message across in presentation mediums where
453   succinctness is key.

Spectrum = Fire / Impact

Low   High

fire concern   fire issue   fire emergency

454
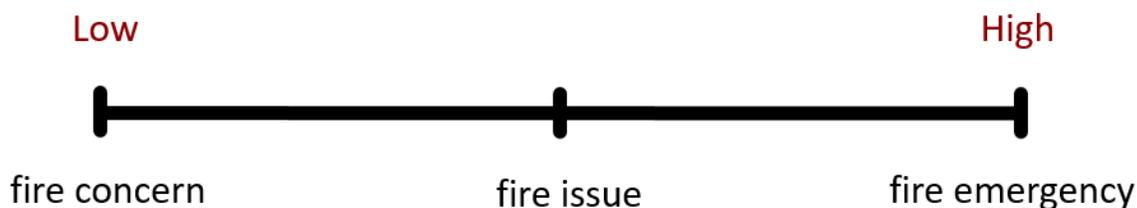
455 Much like time-based terms, impact-based terms on their own are abstract. They
456 convey the idea of an event and do not contravene the idea of a subject event in a CAP
457 message. Impact-based terms come with the same advantages of time-based terms.
458 For example, a "beach hazard" is an acceptable event type when "beach" on its own is
459 vague for comparison purposes. Even the implied full event term "beach event" is vague
460 - it really only answers the question of where, as opposed to what. Adding in the impact
461 term "hazard", as in "beach hazard" (or "beach hazard event" - as implied) makes the
462 term much more helpful.

463 ## 3.4 Action Spectrum

464 On occasion, alerting authorities use alerts to engage an audience to take action as a
465 secondary event in response to some primary triggering event. The action requested by
466 the alerting authority can range from monitoring for more information; evacuating the
467 area; sheltering in place; or engaging in specific actions intended for the well-being of
468 the individual or community. These secondary events may be simple recommendations
469 or mandated orders to do something specific.

470

Spectrum = Infectious Disease / Action

Recommended   Mandated

travel advisory   shelter-in-place directive   stay at home order

471
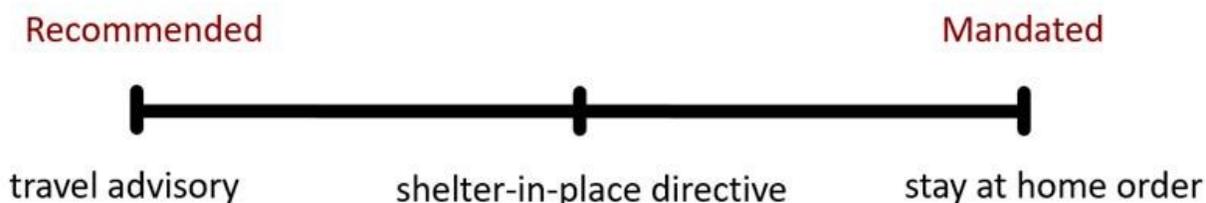
472 The COVID-19 pandemic re-acquainted world to "stay-at-home order" alerts. These
473 alerts were becoming common during the pandemic and alerting authorities were
474 becoming very prescriptive in their alert naming to get the message across. Rather than
475 issuing hundreds of alerts, all referred to as "COVID-19" alerts or "infectious disease"
476 alerts, authorities altered the wording and named the alerts to such things as "stay-at-
477 home order" and "fake vaccine warning". As an alert type, their names directed the
478 audience to the secondary event cited.
479 The corresponding event type could still easily be "infectious disease", but a modified

480 situation occurs where authorities are instead inspired to cite the secondary event as
481 the event type, but that argument is a based on the mis-conception that the event type
482 and alert type should be the same thing.

483 Other action spectrum examples are "advisory", as with "travel advisory", "alert" as with
484 "AMBER alert", "orders" as with "boil water order" and "evacuation order", etc… Even
485 "warning" as with "weather warning" is an example of this. In this latter example, the
486 word "weather" is an adjunct to warning, meaning the event of interest is the warning
487 itself and the audience engagement of the information they have just received, not the
488 real or anticipated weather that triggered the alert.

489 The term "AMBER Alert" is an alert type created to heighten the awareness of the
490 secondary response event that involves the participation of the audience. There is no
491 actual secondary event unless some or all of the audience takes part. NOTE: AMBER is
492 an acronym for "America's Missing: Broadcast Emergency Response" where the idea is
493 to illicit a response by the audience. The word "alert" is added to distinguish the
494 acronym from the color amber if heard or seen in a message.

495 The recommended approach in CAP for secondary action events is to keep the
496 <eventCode> element tied to the triggering event for comparison purposes; use the
497 <headline> element for the alert type referencing the secondary event; and use either
498 option for the <event> element as preferred by the alerting authority. Using the
499 examples above, the text snippet "stay-at-home order" or "AMBER Alert" would appear
500 as part of the <headline>, with the "infectious disease" code or "missing persons" code
501 indicated in the <eventCode> element. As for the <event> element, either "stay-at-home
502 order" and "AMBER Alert" as references to the secondary event, or "infectious disease"
503 and "missing person" as references to the triggering event.

504

505 3.5 Intersecting Spectrums

506 Spectrums can intersect. This becomes important when trying to compare terms from
507 across spectrums. For example, if one alert message uses an event term, that includes
508 a narrow time modifying term; and another alert message uses a broad impact
509 modifying term, how difficult is it for automated systems to compare the two terms? For
510 example, an event type term like "weather threat" as compared to an event type term
511 like "hurricane emergency".

512 Furthermore, there are subject events where the individual event type terms incorporate
513 concepts from two different spectrums (i.e. "fire threat emergency"). When intersecting
514 spectrums are used, it increases the difficulty of comparing terms across messages.

4   Spectrum Concept

Bearing in mind the previous discussions, a sub-committee of the EMTC has attempted to compile a reference list of event type terms that alerting authorities and originators can use or reference in CAP alert messages. The concept of a term being part of a spectra of terms was established. The EMTC will use the concept as a way to help facilitate the ongoing task of incorporating and managing new terms over time. Users of the list will not necessarily have to be familiar with the spectrum concept, but it will help. Contributors to the list will hopefully have a better understanding of how their submission is being treated if they understand the spectrum concept.

A spectrum, in the context used here, where a grouping of terms is brought together under one defined range, provides a means of comparing terms. With that, a number of concepts arise with respect to spectrums. They are introduced and discussed below.

4.1 Chosen Spectrums

Identifying a Spectrum begins with identifying a primary term (i.e. wind) and a broad term (i.e. Meteorological) and pairing them together to establish a range. The primary term needs to be an adjunct (another thing) otherwise the spectrum does not have a basis for comparison. The broad term will come from the list of CAP categories where the CAP category term applies. For example, "wind" is paired with "meteorological" creating one spectrum, whereas, "wind" is not paired with "security" as no identified pairing term is known at this time. NOTE: The CAP category CBRNE is broken up into its five constituent components for this exercise. The secondary event category "rescue" is fine for a broad-spectrum end point as a "rescue issue" is interpreted to mean an issue came up during a rescue event unrelated to the trigger event (i.e. "suspended search")

4.2 Related Terms

For every event term, there are other related event terms that others may feel are better terms to use. This is of course a matter of opinion, but in a spectrum approach the EMTC can show a given term as relatable to other terms simply by being in the same spectrum. For example, if a reference term falls onto one or more broad to narrow spectrums, all terms on those spectra are considered related terms.

4.3 Narrow Terms

How narrow (or specific) do event terms need to be? For example, a term for every intensity rating on the Enhanced Fujita Scale (EF0 to EF5), each based on the likely damage expected with a tornado event, could arguably help consumers better understand the threat. However, would the majority of agents along the public alerting path of distribution use the distinction? Unlikely.

If an <eventCode> existed for each narrow term, the audience experience could be enhanced as the narrower term increases the precision of the message. However, it is usually only a smaller subset of the audience that has a need for such specificity.

In the tornado example given, the term is actually the code itself (i.e. "EF0"). However, for other scales, such as a marine scale for wind speeds where a modifying term is

556 used (i.e. small craft wind = 15-19 knots, strong wind = 20-33 knots, gales = 34-47
557 knots, etc…), the discussion remains relevant.

558 In such cases the EMTC purposely does not venture into the very narrow edge of the
559 spectrum. The feeling is that the general public would be better served, as with the first
560 example, by the event term "tornado", or in the second example, by the event term
561 "wind". For those looking for more specificity of scale, the "Other Lists" section below
562 does offer up a complimentary solution that CAP can easily accommodate.

4.4 Terms vs. Preferred Terms

564 Preferred terms, within a spectrum of terms, is a matter of opinion. The EMTC will not
565 concern itself with choosing a preferred term. Alerting authorities are free to choose
566 their preferred term when considering their audiences. The list however makes it
567 possible to compare the terms used with other terms preferred by other authorities.

4.5 Other Language Terms

569 Other language terms are considered to be in the same spectrum. Spectrums are
570 language independent. If a term is used in one identified language, and it has an
571 equivalent term in another identified language, it is a related term. Filters by language
572 can be used to when working in one language (viewing the list), or when using the list to
573 translate from one language to another (processing CAP with the help of the list).

4.6 Other Word Forms

575 Other word forms of a term introduce other possible spectrums to consider. Plural
576 forms, verb forms, ideological forms, etc..., all add extra meaning to a term. For
577 example, "floods", "flooding", and "flooded" all add context to the term flood. As a type
578 however, they do not add to the base term flood. Additionally, the base term flood does
579 not preclude the notion of multiple floods; nor does it imply the state of the flood during
580 the event. These variations do not serve any benefit when comparing events except in
581 exceptional cases. The EMTC is creating a list of event types for general comparisons,
582 not exceptional cases.

4.7 Other Lists

584 CAP has the facility to house term references from more than one list in any single CAP
585 message. The <eventCode> element is a multi-instanced element in CAP, specifically
586 defined to allow for codes from many different lists to be simultaneously incorporated
587 into a message. For that reason, the EMTC has decided not to include terms and codes
588 based on preferences or specificity of scale, leaving that exercise up to sub-
589 communities of users to define their own lists.

590 Any such community is welcome to define and publish additional event term codes.
591 Those additional codes, if necessary, can easily cover the narrow edge of the broad to
592 narrow spectrum. For an alert message that goes out to a multitude of consumers,
593 serving both specific and general audiences, an additional event code could convey the
594 preferred or specific details to subset audiences and the EMTC code could convey
595 general details to general audiences.

5 Event Terms List

As mentioned in the outset, the EMTC has developed a list of "event" terms for use in alert messaging systems. There was no shortage of challenges with this initiative. Determining how to build and structure the list first meant understanding the bulk of the problems the list was intended to solve. Also, stewards of the list, as well as users of the list, would each have their own objectives when working with the list. Furthermore, how to apply and present the list afterwards to all users was also difficult since many existing alerting practices are already underway and had to be accommodated for in the methods chosen.

For users, the EMTC list was developed to be open-ended. An open-ended approach is considered evergreen – the resulting material retains its relevance by growing continuously to meet the needs of a community. For the sub-committee, managing an open-ended reference list, where new terms can be submitted over time, is possible, but only when a solid evaluation process for upkeep is established. This is possible with the concept of spectrums.

Secondly, strategies such as a thesaurus approach emerge. With a thesaurus approach, each term is related to other similar terms and by selecting one term, other similar or related terms can be found using the various spectra the term can be found in. The thesaurus then leads the user down a path where the user can choose for themselves the best term as they deem appropriate for the situation. Through the spectrum approach, the EMTC will be able to list related terms for any given reference term when using a thesaurus.

For consumers of CAP, the <event> element is free form, and consumer systems should already be accepting free form values for this element. The consuming systems should not require any refactoring if the terms from the EMTC list start to appear in CAP messages. This of course assumes consumers use the <event> element for what it was intended – as a display element only.

Secondly, for consumers that want more – that want the ability to auto-process and compare event types across systems and platforms – the EMTC is suggesting an alternative procedure requiring the cooperation of CAP originators and consumers alike. The EMTC is asking originators to populate at least one instance of the <eventCode> element with a code value from the EMTC list – the value that most closely represents the event type used by the alerting authority. For example, if the alerting authority has an established event term, and it closely mirrors an EMTC term, the following should be placed into any associated CAP alert message.

```
        <eventCode>
                <valueName>OET:v1.0</valueName>"
                <value>OET-537</value> --a coded value of the closest EMTC event term
        </eventCode>
```

If a term does not closely resemble any EMTC term, then following should be used.

```
        <eventCode>
                <valueName>OET:v1.0</valueName>"
                <value>OET-000</value> --a coded value for the EMTC event term "other event"
        </eventCode>
```

For alerting authorities, if one does not already have their own list, one may freely use the terms from the EMTC list. If one already has their own event terms list, the EMTC requests a mapping of those terms to equivalent terms in the EMTC list by the alerting authorities and CAP originators when generating an alert message (as exampled above). The sub-committee will periodically expand the list and release updated versions.

Secondly, the EMTC is also asking authorities to submit terms for inclusion into the list. As mentioned, the sub-committee will periodically expand the list but will only do so acting as a custodian of the list rather than the subject matter experts for the terms on the list. If there is a situation where the "other issue" coded value is used in a CAP alert message, then the native event type used in that message is a candidate for inclusion on the EMTC list going forward.

5.1 Submitted Event Terms

The following is the general procedure used when considering a new term for inclusion into the list.

- A submitting agency identifies an event term for submission
- The submitting agency identifies one or more CAP categories for the event term (to set the broad edge of the spectrums of interest)
- The EMTC assesses whether it is truly an event type term or not (based on the earlier discussions)
- The EMTC assesses whether it truly fits the spectrums or not
- Once accepted the term will be added to the list
    - o It will be roughly ordered within the indicated broad to narrow spectra
    - o It will be assigned a new EMTC event term code if it has no sibling term
    - o It will be assigned an existing EMTC event term code if it has a sibling term
- All other terms in the associated spectra will be considered related terms
- Suggestions for other language terms will be accepted and added
    - o Equivalent other language terms will be considered sibling terms

The sub-committee will only review the terms as indicated above. For that, we need the help of the submitting agency - either the alerting authority itself or an agency on behalf of an alerting authority.

5.2 What Event Terms OASIS Will Accept?

The list below demonstrates what OASIS will accept…

1) event type terms that convey a sense of time and space.
2) event type terms that fall within a broad to narrow spectra of terms.
3) multiple event type terms in different languages for a single event type.
4) event type terms that are used to service multiple user communities, regardless of the number of authorities it affects.
5) event type terms that are regional event terms (i.e. "monsoon").

680   6) event type terms that are proxy terms (i.e. "AMBER Alert"), if the proxy term is
681   well associated to an event type.
682   7) event type terms that are multi-word terms (i.e. "falling object") where the multi-
683   words are needed to convey the concept of an event.
684   8) event type terms that collectively subsume a number of smaller events (i.e.
685   "tropical storm" which may subsume "wind", "rain", "high seas", "flood", etc…).
686   9) event type terms that are secondary event terms when the secondary event is
687   truly the subject event (e.g., "boil water advisory", "evacuation order" or "AMBER
688   alert"). The secondary event is what the alerting authority is truly directing the
689   attention of the audience (for AMBER Alert, that secondary event is the search
690   for the missing child, as opposed to the original abduction event that triggered
691   the AMBER Alert).
692   10) new spectrum mappings to existing terms (i.e., adding terms to other
693   spectrums).

694   5.3 What Event Terms OASIS Will Not Accept?

695 The list below is not a complete list of ideas applicable to the process of **not** accepting
696 event terms, as new ideas may emerge, but the list does example what OASIS will **not**
697 accept…

698   1) terms not associated to an event on their own (i.e., "terrorism).
699   The term "terrorism" is not associated to an event, as it is an ideology.
700   Consequently, the implied full term "terrorism event" does not even suggest a
701   CAP category as it could be any of them making it difficult for comparison
702   purposes of events. NOTE: "terrorist incident" is in the event terms list as an
703   event type as it suggests a CAP category of "Safety". NOTE: This explanation is
704   not necessarily directly applicable to all languages; however, the intent still
705   applies.
706   2) terms that are actually secondary event terms that are often mistaken as a
707   primary event term. (i.e. "thunderstorm warning").
708   The term "thunderstorm warning" is a secondary event term that refers to the act
709   of responding to a warning, not the real or anticipated presence of a
710   thunderstorm event itself. With all possible secondary event terms making a long
711   list of terms, it makes it difficult to manage a list of terms for comparison
712   purposes. Furthermore, such secondary events are not what the CAP elements,
713   <severity>, <onset>, etc. were designed to address, although many authorities
714   just use a value representative of the primary event. However, in this case, the
715   primary term "thunderstorm" will suffice as it makes comparisons and list
716   management easier.
717   3) terms that are multi-word terms that use a modifier to classify an event by scale
718   rather than distinguish the event from another event by its nature (i.e., "gale force
719   winds" and "hurricane force winds" are derived terms based on a level marker).
720   However, the terms "chemical fire" and "forest fire" would be accepted separately
721   as the nature of the two events are quite different. Therefore, the terms "gale
722   force wind" and "hurricane force wind" are not considered for the OASIS event
723   terms list, but the term "wind" is acceptable. NOTE: Communities, such as

724	marine based communities, are welcome to establish a set of terms and codes
725	for scale based terms with the recommendation that those generally narrower
726	terms be mapped to the closest more general OASIS term (and associated event
727	code). Originators of CAP messages for these events are asked to include a
728	reference to the OASIS event code in one instance of the multi-instanced CAP
729	<eventCode> element.
730	4) terms that are multi-word terms where the modifier is a general reference to a
731	scale. For example, "UV index", which has an implied level marker scheme
732	based on the word "index" but by its presence in an alert message implies an
733	event out of the ordinary. Therefore, the term "UV index" is not considered
734	acceptable for the list, but the term "UV" is.
735	5) proxy terms that are otherwise not event terms (i.e., "red").
736	Red is not an event on its own, it is a quality tied to an impact scale. "Red" may
737	be used by the authority in the <headline>, <description>, <parameter> or other
738	elements as an alerting authority based preferred term but as an event these
739	terms do not convey the idea of an event and make comparisons difficult. Multi-
740	word terms that try to make an event out of a proxy event (i.e., "red issue") are
741	also not accepted, as this assumes a scale-based term. Turning the proxy term
742	into an event in this manner provides no context to the term event as the
743	definition of red on its own is a color. NOTE: Communities, such as public
744	alerting based communities, are welcome to establish a set of color based terms
745	and codes, however, originators of CAP messages are asked to also include a
746	reference to the OASIS event code in one instance of the multi-instanced CAP
747	<eventCode> element based on the actual event.
748	6) terms tailored for a specific dissemination channel or display medium (i.e.
749	"congestion ahead").
750	Channel based terms are often tailored and leave out details. For example, an
751	electronic road sign that says "congestion ahead" assumes the audience
752	understands the context of viewing the message while driving. Such messages
753	are actually private messages, built for a specific channel; the information is still
754	public, only the tailoring is private. Without the context of the display medium, the
755	event type becomes vague and difficult for comparison activities.
756	7) terms that are plural, verb, or other word forms of an event term (i.e. "floods",
757	"flooding", "flooded", etc…).
758	Unless the natural form of the term is in one of these forms, "floods", "flooding"
759	and "flooded" do not imply anything more as an event type than does just the
760	word flood. Flood is actually more versatile as a corresponding alert type as the
761	alert can pertain to all these variations. The various forms of the word flood are
762	free to be used in other event typing schemes; however, the EMTC list will
763	constrain such entries to its base form.

Appendix A. Acknowledgments

The CAP Subcommittee is Chaired by Jacob Westfall who has led the committee in the development of this Committee Note. The tireless efforts of Norm Paulsen supported by lead editor Rex Brooks and Scott Roberson have made this document possible. The following individuals have participated in the subcommittee creating this specification and are gratefully acknowledged:

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Sabrina Weber	IEM

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818 Appendix B. OASIS Event Terms

819   The OASIS event *code* value is for use in the cap.alertInfo.eventCode.value element

820   Note: "OET" represents "OASIS Event Term"

821   The version of the OASIS Event Terms list that the OASIS event code is taken from is indicated in the
822   cap.alertInfo.eventCode.valueName element.

823   Note: It is of the form "OET:*m.n*", where "*m.n*" is the major.minor version of this document.

824   The OASIS event *term* is for use in the cap.alertInfo.event element

825   Note: The OASIS Event Term is supporting material for comparison purposes and for systems that have
826   no Event term list.

827   The "Grouping" column is used to indicate other CAP Event terms which are related.

828   Note: Most often, the grouping term is a broad grouping term on the broad to narrow spectrum, where
829   the term on the row is a more specific term on the same spectrum. The Grouping term can lead to other
830   related terms if the given Event term "doesn't quite fit" the situation.

831   The CAP Category Code(s) value is for use in the cap.alertInfo.category element

832   Note: The "CAP Category Code(s)" column, lists the known CAP Categories the OASIS Event term is
833   associated, and OASIS recommends all values listed should be included in the multi-instanced
834   cap.alertInfo.category element in a CAP message.

835

836

OASIS Event Code	OASIS Event Term	Grouping	CAP Category Code(s)
OET-000	other	other	Other
OET-001	accumulating ice	safety	Safety; Transport
OET-002	active shooter	criminal activity	Safety; Security
OET-003	administrative action	testing & system activity	Other
OET-004	air hazard	aviation hazard	Meteorological; Transport
OET-005	poor air quality	health hazard	Environmental; Health
OET-006	stagnant air	air hazard	Meteorological
OET-007	aircraft crash	aviation hazard	Transport
OET-008	aircraft incident	aviation hazard	Transport
OET-009	airport closure	aviation hazard	Transport
OET-010	airspace closure	aviation hazard	Transport
OET-011	airspace restriction	aviation hazard	Transport
OET-012	ambulance	health issue	Health
OET-013	animal disease	health issue	Health
OET-014	animal feed	health issue	Health
OET-015	animal health	health issue	Health
OET-016	arctic outflow	temperature hazard	Meteorological
OET-017	ashfall	air hazard; marine; aviation	Geological; Health; Meteorological; Safety; Transport
OET-018	avalanche		Geological
OET-019	aviation hazard	aviation hazard	Transport
OET-020	aviation security	aviation hazard	Transport; Security
OET-021	beach hazard	marine	Safety
OET-022	biological	biological hazard	CBRNE
OET-023	blizzard	winter weather	Meteorological
OET-024	blood supply	health issue	Health
OET-025	blowing dust	air hazard	Meteorological
OET-026	blowing snow	winter weather	Meteorological
OET-027	blue-green algae	water hazard	Environmental
OET-028	bomb threat	criminal activity	CBRNE

OASIS Event Code	OASIS Event Term	Grouping	CAP Category Code(s)
OET-029	bridge closure	road hazard	Transport
OET-030	bridge collapse	road hazard	Transport
OET-031	building collapse	infrastructure issue	Infrastructure
OET-032	building structure hazard	earthquake	Geological
OET-033	bush fire	fire	Fire
OET-034	cable service issue	utility issue	Infrastructure
OET-035	canal issue	utility issue	Infrastructure
OET-036	chemical fire	fire	CBRNE; Fire
OET-037	chemical hazard		CBRNE
OET-038	chemical smoke		Health; CBRNE
OET-039	child abduction	criminal activity	Safety; Security
OET-040	Civil issue	civil issue	Security
OET-041	civil protest	civil issue	Safety
OET-042	coal gas	utility issue	Infrastructure
OET-043	coastal flood	flood	Meteorological
OET-044	cold	temperature hazard	Meteorological
OET-045	cold weather	winter weather	Meteorological
OET-046	communications service disruption	utility issue	Infrastructure
OET-047	contagious disease	health hazard	Health
OET-048	contaminated water	health hazard	Health
OET-049	contamination		CBRNE; Health
OET-050	criminal activity	criminal activity	Safety
OET-051	cybercrime threat	criminal activity	Safety; Security
OET-052	cyclone	tropical storm	Meteorological
OET-053	dam break	flood	Geological; Meteorological
OET-054	dam issue	infrastructure issue	Infrastructure
OET-055	dangerous animal	civil issue	Safety
OET-056	dangerous person threat	criminal activity	Safety
OET-057	debris flow	geophysical	Geological
OET-058	demonstration	testing & system activity	Other

OASIS Event Code	OASIS Event Term	Grouping	CAP Category Code(s)
OET-059	dense fog	air hazard	Meteorological
OET-060	dense smoke	air hazard	Meteorological
OET-061	diesel fuel issue	utility issue	Infrastructure
OET-062	disease	health issue	Health
OET-063	disease outbreak	health issue	Health
OET-064	drought	weather	Meteorological
OET-065	drug safety issue	public health	Health
OET-066	drug supply issue	public health	Health
OET-067	dust storm	air hazard	Meteorological
OET-068	dyke break	flood	Meteorological
OET-069	earthquake	earthquake	Geological
OET-070	electronic infrastructure issue	infrastructure issue	Infrastructure
OET-071	emergency responder incident	criminal activity	Safety
OET-072	emergency responder threat	criminal activity	Safety
OET-073	emergency support facilities incident	infrastructure issue	Infrastructure
OET-074	emergency support services incident	infrastructure issue	Infrastructure
OET-075	emergency telephone outage	infrastructure issue	Infrastructure
OET-076	environmental issue	environment	Environmental
OET-077	explosion threat	civil issue	CBRNE
OET-078	falling object	safety hazard	Safety
OET-079	fire	fire	Fire
OET-080	flash flood	flood	Meteorological
OET-081	flash freeze	winter weather	Meteorological
OET-082	flood	flood	Meteorological
OET-083	fog	air hazard; winter weather	Meteorological
OET-084	food contamination	biological hazard	Health
OET-085	food safety issue	public health	Health
OET-086	food supply issue	public health	Health
OET-087	forest fire	fire	Fire

OASIS Event Code	OASIS Event Term	Grouping	CAP Category Code(s)
OET-088	freeze	winter weather	Meteorological
OET-089	freezing drizzle	winter weather	Meteorological
OET-090	freezing rain	winter weather	Meteorological
OET-091	freezing spray	winter weather; marine	Meteorological
OET-092	frost	winter weather	Meteorological
OET-093	fuel issue	utility issue	Infrastructure
OET-094	geophysical issue	geological	Geological
OET-095	grass fire	fire	Fire
OET-096	hail	severe weather	Meteorological
OET-097	hazardous seas	marine	Transport
OET-098	health issue	health issue	Health
OET-099	heat	temperature hazard	Meteorological
OET-100	heating oil issue	utility issue	Infrastructure
OET-101	high seas	marine	Meteorological
OET-102	high surf	marine	Meteorological
OET-103	high tide	marine	Transport
OET-104	high water	utility issue; marine	Infrastructure; Transport
OET-105	home crime	criminal activity	Safety
OET-106	humidity issue	temperature hazard	Meteorological
OET-107	hurricane	tropical storm; tropical cyclone	Meteorological
OET-108	ice	winter weather	Meteorological
OET-109	ice pressure issue	ice issue	Meteorological
OET-110	ice storm	winter weather	Meteorological
OET-111	iceberg	ice issue	Meteorological
OET-112	industrial crime	criminal activity	Safety
OET-113	industrial facility issue	safety hazard	Safety
OET-114	industrial fire	fire	Fire
OET-115	infrastructure issue	infrastructure	Infrastructure
OET-116	internet service issue	utility issue	Infrastructure
OET-117	lake effect snow	winter weather	Meteorological

OASIS Event Code	OASIS Event Term	Grouping	CAP Category Code(s)
OET-118	lake wind	air hazard	Meteorological
OET-119	landline service issue	utility issue	Infrastructure
OET-120	landslide	geophysical	Geological
OET-121	law enforcement issue	civil issue	Security
OET-122	levee break	flood	Meteorological
OET-123	lightning	thunderstorm; severe weather	Meteorological
OET-124	limited visibility	air hazard	Transport
OET-125	low tide	marine	Transport
OET-126	low water	utility issue; marine	Infrastructure; Transport
OET-127	low water pressure	utility issue	Infrastructure
OET-128	meteoroid	space	Transport
OET-129	meteorological issue	meteorological	Meteorological
OET-130	missile threat	national hazard	CBRNE
OET-131	missing child	safety hazard	Safety
OET-132	missing person	safety hazard	Safety
OET-133	mobile communication issue	utility issue	Infrastructure
OET-134	monsoon	weather	Meteorological
OET-135	mudslide	geophysical	Geological
OET-136	natural gas	utility issue	Infrastructure
OET-137	network message notification	testing & system activity	Other
OET-138	nuclear power plant issue	infrastructure issue	Infrastructure; CBRNE
OET-139	oil leak	beach hazard, environmental	Environmental
OET-140	oil spill	beach hazard, environmental	Environmental
OET-141	overland flood	flood	Meteorological
OET-142	pipeline rupture	utility issue	Infrastructure
OET-143	plant health issue	health issue	Health
OET-144	heavy rain	health issue	Health
OET-145	pollen	health issue	Health
OET-146	potable water issue	utility issue; water hazard	Infrastructure

OASIS Event Code	OASIS Event Term	Grouping	CAP Category Code(s)
OET-147	power outage	infrastructure issue	Infrastructure
OET-148	power utility issue	utility issue	Infrastructure
OET-149	product safety	safety hazard	Safety
OET-150	public facility issue	infrastructure issue	Infrastructure
OET-151	public health	health issue	Health
OET-152	public service issue	infrastructure issue	Infrastructure
OET-153	public transit issue	infrastructure issue	Transport
OET-154	pyroclastic flow	volcano hazard	Geological
OET-155	radiation issue	radiological hazard	CBRNE
OET-156	radio transmitter	safety hazard	Infrastructure
OET-157	radioactive material release	radiological hazard	CBRNE
OET-158	radiological fire	fire	CBRNE; Fire
OET-159	railway issue	infrastructure issue	Transport
OET-160	rain	weather	Meteorological
OET-161	rapid ice closing of water passage	ice issue	Transport
OET-162	red tide	health issue; marine issue	Health
OET-163	rescue	rescue	Rescue
OET-164	retail crime issue	criminal activity	Safety
OET-165	rip current issue	beach hazard	Safety
OET-166	road closure	road hazard	Transport
OET-167	road issue	road hazard	Transport
OET-168	road vehicle accident	road hazard	Transport
OET-169	rogue wave	marine	Geological
OET-170	safety	safety hazard	Safety
OET-171	sandstorm	air hazard; weather	Meteorological
OET-172	satellite debris	space	Other
OET-173	satellite service	utility issue	Infrastructure
OET-174	school bus issue	infrastructure issue	Transport
OET-175	school closing	infrastructure issue	Infrastructure
OET-176	school lockdown	infrastructure issue	Infrastructure

OASIS Event Code	OASIS Event Term	Grouping	CAP Category Code(s)
OET-177	search	search	Rescue
OET-178	security	security	Security
OET-179	sewer	utility issue	Infrastructure
OET-180	shoreline threat	beach hazard	Safety
OET-181	sinkhole	safety hazard	Safety
OET-182	sleet	winter weather	Meteorological
OET-183	smoke	air hazard	Meteorological; Transport; Health
OET-184	snow	winter weather	Meteorological
OET-185	snowstorm	weather	Meteorological
OET-186	space debris	space	Other
OET-187	space weather	space	Other
OET-188	squall	weather; marine	Meteorological
OET-189	storm	weather; marine	Meteorological
OET-190	storm drain	utility issue	Infrastructure
OET-191	storm surge	weather; flood	Meteorological
OET-192	structure fire	fire	Fire
OET-193	swells	marine	Safety; Transport
OET-194	telephone	utility issue	Infrastructure
OET-195	terrorist incident	criminal activity	Safety
OET-196	thin ice	safety	Safety
OET-197	thunderstorm	weather	Meteorological
OET-198	tornadic waterspout	severe weather	Meteorological
OET-199	tornado	severe weather; tornado	Meteorological
OET-200	toxic plume	contamination hazard	CBRNE
OET-201	toxic spill	contamination hazard	CBRNE
OET-202	traffic	road hazard	Transport
OET-203	transport issue	transport	Transport
OET-204	tropical depression	tropical storm; tropical cyclone	Meteorological
OET-205	tropical storm	weather; tropical cyclone	Meteorological
OET-206	tsunami	marine	Geological

OASIS Event Code	OASIS Event Term	Grouping	CAP Category Code(s)
OET-207	typhoon	tropical cyclone	Meteorological
OET-208	ultraviolet	safety	Safety
OET-209	utility	utility issue	Infrastructure
OET-210	vehicle crime	criminal activity	Safety
OET-211	volcanic activity	volcano hazard	Geological
OET-212	volcanic eruption	volcano hazard	Geological
OET-213	volcanic lahar	volcano hazard	Geological
OET-214	volcanic lava	volcano hazard	Geological
OET-215	waste management	utility issue	Infrastructure
OET-216	water	utility issue; water hazard	Geological; Transport
OET-217	water main break	utility issue; water hazard	Infrastructure
OET-218	waterspout	marine	Meteorological
OET-219	weather	weather	Meteorological
OET-220	wildfire	fire	Fire
OET-221	wind	air hazard	Meteorological
OET-222	wind change	air hazard	Meteorological
OET-223	wind chill	temperature hazard	Meteorological
OET-224	wind shear	air hazard	Meteorological
OET-225	winter storm	winter weather	Meteorological
OET-226	winter weather	weather	Meteorological

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Revision	Date	Editor	Changes Made
02	09-23-2020	Scott Robertson	Appendix A Acknowledgments added Appendix B Event Terms. added Appendix C Revision History added First Complete Draft
03	10-28-2020	Rex Brooks	First Complete Edited Draft
04	10-01-2021	Norm Paulsen, Rex Brooks	Multiple additions Appendix A Acknowledgments edited Second Complete Edited Draft

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