Common Alerting Protocol Techincal Working Group

Common Alerting Protocol (v 0.5a) – Alert Message Data Dictionary

DRAFT 6/20/2002

About the Common Alerting Protocol (CAP)

The Common Alerting Protocol is a draft specification of open, non-proprietary, standards-based data formats for the exchange of emergency alerts and related information among emergency agencies and public systems. The CAP will be designed to facilitate the collection and relay of all types of hazard warnings and reports.

Development and deployment of a standard such as CAP will yield important benefits for public safety:

- Warnings to the public will be better coordinated across the wide range of available warning and notification systems

- Workload on warning issuers will be reduced, since a single warning message will be compatible with all kinds of warning delivery systems.

- Overall "situational awareness" will be enhanced, since CAP will permit the aggregation of all kinds of warning messages from all sources for comparison and pattern recognition.

The Common Alerting Protocol has been under development since 2001 through the efforts of a national ad-hoc Working Group of technical and public safety experts.

About the eXtensible Markup Language (XML)

The eXtensible Markup Language (XML) is the most widely accepted format for exchanging structured data between different computer systems in the world today. It is an open, non-proprietary standard shared by all major software providers.

Recommendations for XML are developed and refined by a consortium of users and maintained by the World Wide Web Consortium (W3C). (http://www.w3c.org/XML/)

Changes in CAP Version 0.5a

This is a minor but important update, incorporating a few insights we gained while formalizing the alert message format as an XML schema:

- The sequence of elements has changed (to make it a more logical read for humans.)

- Elements are listed in schema order. Required elements are marked in **boldface**.

- The "Recap" value for the <cap:urgency> element has been changed to "Report"

- There have been various changes in the table of types and categories for the <cap:event> element. *

- The attribute names for the <cap:affects> tag have changed.

- The message examples have been removed to separate files.

- The XML Schema and a derived Document Type Definition (DTD) are also posted with this update.

* An important note: The event types and categories, like the values for urgency, severity and probability, are usable placeholders, subject to future revision as guidelines for common vocabulary emerge.

Tag Name	Purpose	Attributes and Element Contents
cap:alert	**Envelope tag for alert msg.**	Surrounds CAP alert message body. Must reference explicit CAP namespace, thus: `<cap:alert xmlns:cap="http://www.incident.com/cap">` May include an optional "id" attribute (text, defined by originator) to uniquely identify this particular message. This attribute is required if the sender originates more than one message in a single second.
cap:status	Identifies appropriate handling of message	"Actual" (the default) – this message is actionable "Exercise" – actionable only by designated exercise participants, all other recipients disregard "Admin" – regarding system operations, actionable by operators only "Test" – Technical testing only, all recipients disregard
cap:status_desc	Descriptive label describing appropriate handling	Text This tag should only be used in conjunction with `<cap:status>` values of "Exercise" or "Test"
cap:source	**Originator ID**	Identifies the originator of this alert. Guaranteed by the originator to be unique globally (e.g., may be based on an Internet domain name)
cap:source_desc	Name or description of message originator	Text
cap:event	**Event Category**	Optional attribute "type" sub-categorizes events.

type= "Geo"	type= "Weather"	type= "Safety"	type= "Health"	type= "Transport"	type= "Utility"	type= "Other"
"Earthquake"	"Wind"	"Fire"	"Hazardous Material"	"Vehicle Accident"	"Outage"	"Other"
"Volcano"	"Tornado"	"Flooding"	"Water Quality"	"Aircraft Accident"	"Service Restriction"	
"Landslide"	"Hurricane"	"Explosion"	"Air Quality"	"Rail Accident"	"Leak"	
"Tsunami"	"Thunderstorm"	"Structural Failure"	"Communicable Disease"	"Marine Accident"	"Other"	
"Other"	"Rain"	"Crime"	"Casualty"	"Special Restriction"		
	"Flooding"	"Civil Disturbance"	"Multiple Casualty"	"Special Provision"		
	"Flash Flood"	"Water Rescue"	"Quarantine"	"Other"		
	"Snow"	"Search and Rescue"	"Distribution"			
	"Blizzard"	"Abduction"	"Other"			
	"Icing"	"Evacuation"				
	"Fog"	"Access Control"				
	"Dust"	"Curfew"				
	"Heat"	"Emergency Relief"				
	"Cold"	"Animal"				
	"Other"	"Other"				

(more)

Tag Name	Purpose	Attributes and Element Contents
cap:event_id	Originator's reference name for event	Text (used to collate multiple messages updating or correcting information about the same event)
cap:incident_id	Originators reference name for larger incident	Text (used to collate multiple messages referring to different aspects of the same incident)
cap:urgency	**Urgency of this event**	"Immediate" – refers to an actual event that has occurred recently or is occurring "Impending" – refers to an event that is imminent (within next hour) "Forecast" – refers to an event that is moderately probable in the near future "Report" – refers to an actual event that occurred in the past (not requiring further action) "Unknown" – urgency not known
cap:severity	**Severity of event**	"Severe" – significant threat to life or property "Moderate" – possible threat to life or property "Minor" – minimal threat to life or property "Unknown" – severity unknown
cap:probability	**Likeliness of event**	"High" – highly likely (approx. > 85% probability) or certain "Moderate" – likely (approx. > 50%) "Low" – possible but not unlikely (approx. < 50%) "Unknown" – probability unknown
cap:sent	**Date/Time when message was originated**	Date and time of message origination in ISO 8601 format (e.g., "2002-05-24T16:49:00-07:00" for 24 May 2002 at 16:49 PDT)
cap:effective	Date/Time the message information takes effect	Date/Time in ISO 8601 format. (If this item is not included, it is assumed the same as the mandatory "sent" date/time.)
cap:onset	Date/Time of expected onset of event	Date/Time in ISO 8601 format. (If this item is not included, it is assumed the same as the optional "effective" date/time, if provided, or of the mandatory "sent" date/time.)
cap:expires	Date/Time when message no longer valid	Date/Time in ISO 8601 format. (If this item is not provided, each recipient is free to make its own assumption as to when the message is not longer in effect.)

(more)

Tag Name	Purpose	Attributes and Element Contents

cap:affects	**Affected area description** (May be multiple. At least one is required, multiple of same or different types are permitted. Use of the "desc" type alone is not recommended.)	**Attribute 'type' is required**
		
		<u>type="Area"</u>
		Element is a GIS polygon described as a comma-delimited string of latitude / longitude pairs. Each value is signed ("+" for North/East, "–" for South/West) and expressed in decimal degrees (datum is WGS-84). E.g.:
		
		`<affects type="Area">+38.33, -121.55,+38.26,-121.34,+38.53,-121.04,+38.70,-121.31</affects>`
		
		<u>type="Location"</u>
		Element is a geographic location described as a comma-delimited latitude / longitude paired (signed and decimal as in "poly"), followed by a comma and a radius in kilometers.). E.g.:
		
		`<affects type="Location">+38.33, -121.55,25</affects>`
		
		<u>type="Description"</u>
		Element is a text description of the affected area. E.g.:
		
		`<affects type="Description">San Bernardino County, California</affects>`

cap:audience	Description of target audience(s) for this message	Text
cap:headline	Brief text "slug" to identify item.	Text
cap:event_desc	Description of event	Text description of nature of event (within selected category.) **Required if category is "Other"**
cap:action	Recommended action to be taken by recipients	Text
cap:info_url	WWW link to additional information	URL for additional or reference information

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Tag Name	Purpose	Attributes and Element Contents
cap:image_url	Link to digital image (map, photo, etc.)	Element is the URL of an online image file. • **Attributes "height" and "width" are required: Integer pixels** • **Attribute 'desc' is required: Text description of image content** • Attribute 'lang' is optional: Two-letter ISO language code Example: `<cap:image_url height="480" width="640" desc="Map of strike probabilities">http://www.somebody.gov/image/map12345.gif</image_url>`
cap:audio_url	Link to digital audio (recorded announcement, etc.)	Element is the URL of an online audio file. • **Attribute 'desc' is required: Text description of audio content** • Attribute 'lang' is optional: Two-letter ISO language code Example: `<cap:audio_url desc="Warning message in Korean" lang="KO">http://www.somebody.gov/audio/audio12345.mp3</audio_url>`
cap:parameter	Technical parameters associated with event	Element is the value of the parameter. • **Attribute "name" is required: Text name of parameter**
cap:contact	Envelope tag for point-of-contact structures	
cap:contact_role	Specialty or jurisdiction for which this contact is authoritative	Text
cap:contact_name	Name of individual who can provide additional information	Text, name
cap:contact_title	Title of individual who can provide additional information	Text, title of individual
cap:contact_org	Name of organization which can provide more information	Text, name of organization

(more)

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