OASIS Emergency Management Technical Committee
Notification Methods and Messages Subcommittee

Common Alerting Protocol (CAP) Alert Message

Document Object Model and Data Dictionary

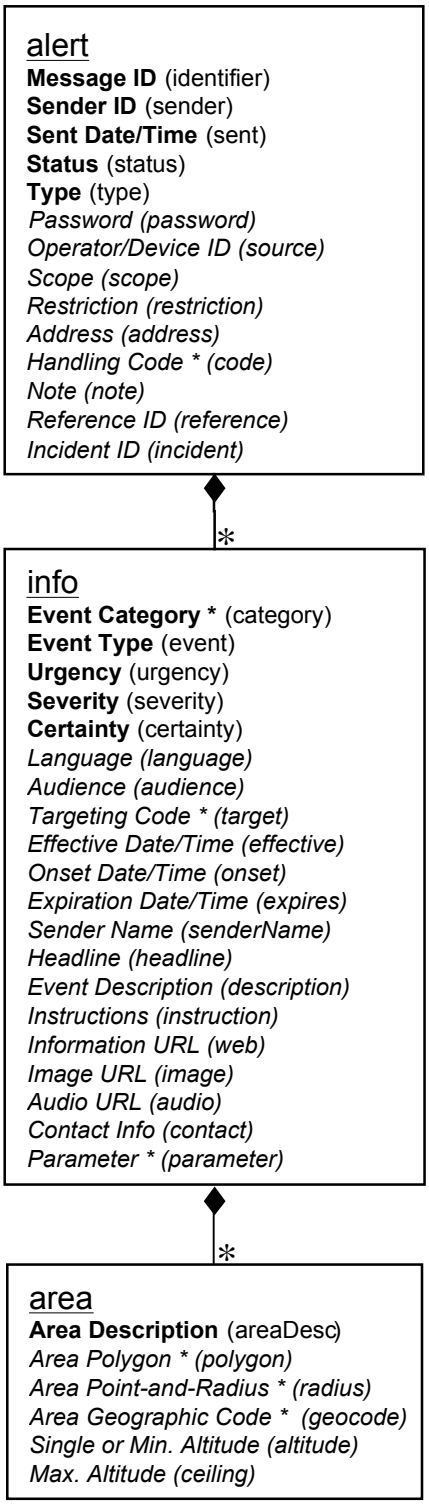
Subcommittee Draft for Discussion

revised draft 6/11/2003

Common Alerting Protocol (v 0.8a)
Alert Message Document Object Model

revised draft 6/11/2003

Elements in **bold** are mandatory; those in *italics* are optional; asterisk (*) indicates multiple instances permitted



Common Alerting Protocol (v 0.8a)
Alert Message Data Dictionary

revised draft 6/11/2003

Context: Name	Object Class. Property. Representation	Definition and (Optionality)	Notes or Value Domain
Part 1 - "alert" Element and Sub-elements			

cap: alert	**message. alert. group**	**The container for all component parts of the alert message (mandatory)**	(1) Surrounds CAP alert message sub-elements.
			(1) Must include the xmlns attribute referencing the CAP URI as the namespace, e.g.:
			`<cap:alert xmlns:cap="http://www.incident.com/cap">`
			`[sub-elements]`
			`</cap:alert>`
			(1) In addition to the specified sub-elements, may contain one or more <info> blocks.

cap: identifier	**message. identifier**	**The identifier of the alert message (mandatory)**	(1) A number or string uniquely identifying this message, assigned by the sender (1) No spaces or restricted characters (< and &)
cap: sender	**message. sender. identifier**	**The identifier of the sender of the alert message (mandatory)**	(1) Identifies the originator of this alert. Guaranteed by assigner to be unique globally; e.g., may be based on an Internet domain name (1) No spaces or restricted characters (< and &)
cap: password	message. password. string	The string representing the password of the alert message (optional)	The string password is used for authenticating the sender. (Note that this element should only be used on secure channels, and that simple password authentication schemes have numerous well-known weaknesses.)
cap: source	message. source. identifier	The text identifying the source of the alert message (optional)	The source may be an operator or a device.
cap: sent	**message. sent. time**	**The time and date of the origination of the alert message (mandatory)**	The date and time is represented in ISO 8601 format (e. g., "`2002-05-24T16:49:00-07:00`" for 24 May 2002 at 16:49 PDT).
cap: status	**message. status. code**	**The code denoting the appropriate handling of the alert message (mandatory)**	Code Values: • "Actual" - Actionable by all targeted recipients • "Exercise"- Actionable only by designated exercise participants; exercise identifier should appear in <note> • "System" - For messages that support alert network internal functions. • "Test" - Technical testing only

cap: scope	message. scope. code	The code denoting the intended distribution of the alert message (optional)	(1) Code Values: • "Public" - For general distribution • "Restricted" - For dissemination only to users with a known operational requirement (see <restriction>, below) • "Private" - For dissemination only to specified recipients (see <address>, below) (1) If this item is not provided, assumed value is "Public"
cap: restriction	message. restriction. text	The text describing the rule for limiting distribution of the restricted alert message (conditional)	Used when <scope> value is "Restricted"
cap: address	message. address. group	The group listing of intended recipients of the private alert message (conditional)	(1) Used when <scope> value is "Private" (1) Each recipient may be identified by an identifier or an address in a space-delimited list. Identifiers or addresses which contain whitespace or reserved characters should be enclosed in double quotes.
cap: code	message. control. code	The code denoting the special handling of the alert message (optional)	(1) Any user-defined flag or special code used to flag the alert message for special handling or to activate pre-determined responses by code-aware recipients. Should not be used to limit or direct message distribution; use <restriction> or <address> and the corresponding value in <scope> instead. (1) Multiple occurrences are permitted within a single <alert>.
cap: type	**message. type. code**	**The code denoting the nature of the alert message (mandatory)**	Code Values: • "Alert" - Initial information requiring attention by targeted recipients • "Update" - Updates and supercedes the earlier message(s) identified in <reference> • "Cancel" - Cancels the earlier message(s) identified in <reference> • "Ack" - Acknowledges receipt and acceptance of the message(s)) identified in <reference> • "Error" indicates rejection of the message(s) identified in <reference>; explanation should appear in <note>
cap: note	message. note. text	The text describing the purpose or significance of the alert message (optional)	(1) The message note is primarily intended for use with the Ack, Cancel and Error alert message types. (1) In the Ack message type, may be used to report delivery results.

cap: reference	message. reference. group	The group listing identifying earlier messages referenced by the alert message (optional)	(1) The extended message identifier (in the form "*identifier*/*sender*") of an earlier message or messages referenced by this one. (1) If multiple messages are referenced, they are separated by whitespace.
cap: incident	message. incident. name	The name of the referent incident of the alert message (optional)	Used to collate multiple messages referring to different aspects of the same incident
Part 2 - "info" Element and Sub-elements			
cap: info	message. info. group	The container for all component parts of the info sub-element of the alert message (optional)	(1) May only occur within an <alert>. (1) Multiple occurrences are permitted within a single <alert>. If targeting of multiple "info" blocks in the same language overlaps, information in later blocks may expand but may not override the corresponding values in earlier ones. Each set of "info" blocks containing the same language identifier is to be treated as a separate sequence. (1) In addition to the specified sub-elements, may contain one or more <area> blocks.
cap: language	message. language. code	The code denoting the language of the info sub-element of the alert message (optional)	(1) Code Values: Natural language identifier per RFC 1766. (1) If not present, assumed value is "en-US".
cap: category	**message. category. code**	**The code denoting the category of the subject event of the alert message (mandatory)**	(1) Code Values: • "Geo" - Geophysical (inc. landslide) • "Met" - Meteorological (inc. flood) • "Safety" - General emergency and public safety • "Security" - Law enforcement, military, homeland and local/private security • "Rescue" - Rescue and recovery • "Fire" - Fire suppression and rescue • "Health" - Medical and public health • "Env" - Pollution and other environmental • "Transport" - Public and private transportation • "Infra" - Utility, telecommunication, other non-transport infrastructure • "Other" - Other events (1) Multiple instances may occur within a single "info" block.

cap: event	**message. event. text**	**The text denoting the type of the subject event of the alert message (mandatory)**	The text may use a specified nomenclature if available.
cap: urgency	**message. urgency. code**	**The code denoting the urgency of the subject event of the alert message (mandatory)**	(1) The "urgency", "severity", and "certainty" elements collectively may distinguish less emphatic from more emphatic messages. (1) Code Values: • "Immediate" - Responsive action should be taken immediately • "Expected" - Responsive action should be taken soon (within next hour) • "Future" - Responsive action should be taken in the near future • "Past" - Responsive action is no longer required • "Unknown" - Urgency not known
cap: severity	**message. severity. code**	**The code denoting the severity of the subject event of the alert message (mandatory)**	(1) The "urgency", "severity", and "certainty" elements collectively may distinguish less emphatic from more emphatic messages. (1) Code Values: • "Extreme" - Extraordinary threat to life or property • "Severe" - Significant threat to life or property • "Moderate" - Possible threat to life or property • "Minor" - Minimal threat to life or property • "Unknown" - Severity not known
cap: certainty	**message. certainty. code**	**The code denoting the certainty of the subject event of the alert message (mandatory)**	(1) The "urgency", "severity", and "certainty" elements collectively may distinguish less emphatic from more emphatic messages. (1) Code Values: • "Very Likely" - Highly likely (p > ~ 85%) or certain • "Likely" - Likely (p > ~50%) • "Possible" - Possible but not likely (p <= ~50%) • "Unlikely" - Not expected to occur (p ~ 0) • "Unknown" - Certainty not known
cap: audience	message. audience. text	The text describing the intended audience of the alert message (optional)	□

cap: target	message. target. code	The system-specific code identifying the intended audiences of the alert message (optional)	(1) Code Values: Any system-specific code for message targeting, in the form "*code_type=code*" where "code_type" is a user-assigned designator for the target system (e. g,, "`pge_outage_block=50`"). No spaces or XML-restricted characters (<, >, &, ','"). (1) Multiple instances may occur within a single "info" block. (1) This element may be used to provide triggering codes for recipients with prior knowledge of the code, but not to limit message distribution. Use the <restriction> or <address> elements and the appropriate value in <scope> if distribution should be limited or directed.
cap: effective	message. effective. time	The effective time of the information of the alert message (optional)	(1) The date and time is represented in ISO 8601 format (e. g., "`2002-05-24T16:49:00-07:00`" for 24 May 2002 at 16:49 PDT). (1) If this item is not included, it is assumed the same as in <sent>.
cap: onset	message. onset. quantity	The expected time of the beginning of the subject event of the alert message (optional)	(1) The date and time is represented in ISO 8601 format (e. g., "`2002-05-24T16:49:00-07:00`" for 24 May 2002 at 16:49 PDT). (1) If this item is not included, it is assumed the same as in <sent>.
cap: expires	message. expires. time	The expiry time of the information of the alert message (optional)	(1) The date and time is represented in ISO 8601 format (e. g., "`2002-05-24T16:49:00-07:00`" for 24 May 2002 at 16:49 PDT). (1) If this item is not provided, each recipient may set its own policy as to when the message is not longer in effect.
cap: senderName	message. sender. name	The text naming the originator of the alert message (optional)	
cap: headline	message. headline. text	The text headline of the alert message (optional)	
cap: description	message. description. text	The text describing the subject event of the alert message (optional)	

cap: instruction	message. instruction. text	The text describing the recommended action to be taken by recipients of the alert message (optional)	
cap: web	message. information. identifier	The identifier of the hyperlink associating additional information with the alert message (optional)	A full, absolute URI for an HTML or other text document that provides additional or reference information regarding this alert.
cap: image	message. image. identifier	The identifier of the hyperlink associating the image with the alert message (optional)	A full, absolute URI of an online image file that provides additional or reference information regarding this alert.
cap: audio	message. audio. identifier	The identifier of the hyperlink associating the audio with the alert message (optional)	A full, absolute URI of an online audio file that provides additional or reference information regarding this alert.
cap: contact	message. contact. text	The text describing the contact for follow-up and confirmation of the alert message (optional)	□
cap: parameter	message. parameter. group	The group listing of additional parameters associated with the alert message (optional)	(1) Code Values: Parameter label / value pair(s) in the form "*label=value*" (e.g., "`magnitude=4.7`"). (1) Multiple instances may occur within a single "info" block.

Part 3 - "area" Element and Sub-elements			
cap: area	message. area. group	The container for all component parts of the area sub-element of the info sub-element of the alert message (optional)	(1) May only occur within an <info>. (1) Multiple occurrences are permitted within a single <info>, in which case the target area for that "info" block is the union of all the included "area" blocks. (1) May contain one or multiple instances of <polygon>, <radius> or <geocode>. If multiple <polygon>, <radius> or <geocode> elements are included, the area defined is the union of those represented by all of the included elements.
cap: areaDesc	**message. area. text**	**The text describing the affected area of the alert message (mandatory)**	A text description of the target area.
cap: polygon	message. polygon. group	The group listing of the polygons delineating the affected area of the alert message (optional)	(1) Code Values: The geographic polygon is represented by a whitespace-delimited list of WGS-84 coordinate values [see WGS-84 Note]. (1) Multiple instances may occur within a single "area" block.
cap: radius	message. circle. group	The paired values of a point and radius delineating the affected area of the alert message (optional)	(1) Code Values: The circular area is represented by a central point given as a WGS-84 coordinate value [see WGS-84 Note], followed by a space character and a radius value in kilometers. (1) Multiple instances may occur within a single "area" block.
cap: geocode	message. geocode. code	The geographic code delineating the affected area of the alert message (optional)	(1) Code Values: Any geographically-based code to describe message target area, in the form "*code_type=code*" where "code_type" is a user-assigned abbreviation for the target system (e. g,, "`fips=06003`"). May not include spaces or XML-restricted characters (<, >, &, ','"). (1) Multiple instances may occur within a single "area" block. (1) Use of this element presumes prior knowledge of the coding system on the part of recipients; therefore, its use unaccompanied by equivalent and more generally understood <polygon> or <radius> representations should be avoided when possible.

cap: altitude	message. altitude. quantity	The specific or minimum altitude of the affected area of the alert message (optional)	(1) If used with the <ceiling> element this value is the lower limit of a range. Otherwise, this value specifies a specific altitude. (2) The altitude measure is in feet above mean sea level (per WGS-84 datum).
cap: ceiling	message. ceiling. quantity	The maximum altitude of the affected area of the alert message (conditional)	(1) May only be used in combination with the <altitude> element (2) The altitude measure is in feet above mean sea level (per WGS-84 datum).

Implementation Notes:

WGS-84 Note: Geographic locations in CAP are defined using WGS 84 (World Geodetic System 1984), equivalent to EPSG (European Petroleum Survey Group) code 4326 (2 dimensions). CAP does not assign responsibilities for coordinate transformations from and to other Spatial Reference Systems. A WGS-84 coordinate value is here represented as a comma-delimited latitude/longitude pair, measured in decimal degrees (un-projected). Latitudes range from -90 to 90 and longitudes range from -180 to 180. Coordinates in the Southern and Western hemispheres are signed negative with a leading dash.

Security Note: The OASIS WS-Security framework is recommended as the basis for ensuring message authenticity, integrity and (where applicable) confidentiality.

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