EUMETSAT

CAP-EP: EUMETSAT's profile on the Common Alerting Protocol

Doc.No. : EUM/OPS/TEN/11/2551
Issue : v3
Date : 9 October 2012
WBS :

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Document Change Record

Issue / Revision	*Date*	*DCN. No*	*Summary of Changes*
v1	12 June 2012		Initial version
V2	21 June 2012		Review comments addressed
V2A	21 June 2012		Additional review comments addressed
V2B	17 July 2012		Final review comments addressed
V2C	17 July 2012		Document change record updated
V2D	18 July 2012		Typographic error in appendix corrected
V3	9 October 2012		Correct order of coordinate pairs in polygon definition to be consistent with the CAP v1.2 standard

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1 INTRODUCTION

1.1 Purpose and Scope

The Common Alerting Protocol (CAP) is a simple but general format for exchanging hazard emergency alerts and public warnings over all kinds of networks. CAP uses a simple standard format based on XML. CAP v1.2 was approved as a standard in July 2010 and is described in [AD1].

The CAP standard caters for the representation of all types of alert messages and as such is open to some degree of flexibility and interpretation. It is therefore constructive to define a profile which can be applied to the standard in order to define the types of CAP message which EUMETSAT produces.

Corresponding CAP profiles have been defined by the German Weather Service, DWD [RD2], the U.S. Federal Emergency Management Agency, FEMA [RD3], and the Canadian Association for Public Alerting and Notification, CAPAN [RD4].

1.2 Process

This profile is under development and will be refined to reflect EUMETSAT's use of the CAP.

1.3 Terminology

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY" and "OPTIONAL" in this document are to be interpreted as described in [RD1].

The terms "alert", "CAP message" and "warning" are used as synonyms within the scope of this document.

1.4 Applicable and Reference Documents

Applicable Documents

AD1 Common Alerting Protocol Version 1.2 (http://docs.oasis-open.org/emergency/cap/v1.2/CAP-v1.2-os.pdf)
AD2 WMO-No. 386 (Manual on the Global Telecommunication System)

Reference Documents

RD1 Key words for use in RFCs to Indicate Requirement Levels, S. Bradner, IETF RFC 2119, March 1997 (http://www.ietf.org/rfc/rfc2119.txt)
RD2 CAP-DWD-Profil v1.6, 05 August 2011
RD3 Common Alerting Protocol, v. 1.2 USA Integrated Public Alert and Warning

	System Profile Version 1.0 (http://docs.oasis-open.org/emergency/cap/v1.2/ipaws-profile/v1.0/cap-v1.2-ipaws-profile-v1.0.pdf)
RD4	Canadian Profile of the Common Alerting Protocol (CAP-CP) Introduction and Rule Set (http://capan.ca/uploads/CAP-CP/CAP-CP_Intro_Rules_Beta_0.4.pdf)

2 CAP-EP: CAP EUMETSAT PROFILE

2.1 File names

The CAP messages disseminated by EUMETSAT are contained in files named according to the WMO's GTS file naming convention, [pp II-15/25 to II-15/28 of AD2]. This allows the parsing of the file names by the many systems already conversant with this naming convention.

2.1.1 Volcanic Ash Detection

Info	**Format of the filename for volcanic ash**
Format	W_XX-EUMETSAT-Darmstadt,SING+LEV+SAT,<SAT>+VOL_C_EUMG_<DATE><TIME>.xml
<SAT>	Satellite identifier, e.g. MET08
<DATE>	Date in form YYYYMMDD
<TIME>	Time in form hhmmss
Example	W_XX-EUMETSAT-Darmstadt,SING+LEV+SAT,MET08+VOL_C_EUMG_20110816070000.xml

2.1.2 Active Fire Detection

Info	**Format of the active fire detection**
Format	W_XX-EUMETSAT-Darmstadt,SING+LEV+SAT,<SAT>+FIR_C_EUMG_<DATE><TIME>.xml
<SAT>	Satellite identifier, e.g. MET09
<DATE>	Date in form YYYYMMDD
<TIME>	Time in form hhmmss
Example	W_XX-EUMETSAT-Darmstadt,SING+LEV+SAT,MET09+FIR_C_EUMG_20110816070000.xml

2.2 XML/CAP Format

The content of the CAP messages will be comprised of the following parts.

CODING	UTF-8
Definition	`<?xml version = "1.0" encoding= "UTF-8"?>`
Namespace	CAP v1.2
Definition	`<alert xmlns = "urn:oasis:names:tc:emergency:cap:1.2">`

The general schema of a CAP message can be found here:
http://docs.oasis-open.org/emergency/cap/v1.2/CAP-v1.2.xsd

2.3 CAP Elements

In this section, the elements whose descriptions go beyond those given in the CAP specification are more precisely defined. EUMETSAT CAP messages may conversely contain elements which are not described in this section. In that case such elements just follow the standard CAP specification. Optional elements may but need not be given.

2.3.1 <alert>

A CAP message contains exactly one <alert> element which constitutes the fundamental information of the message. It can contain one or more <info> elements, each of which may contain the same warning in different languages.

The exact declaration, specifying the convention we are referring to is:

<alert xmlns = "urn:oasis:names:tc:emergency:cap:1.2">

where 1.2 stands for the current CAP version used.

2.3.2 <identifier>

Info	**Unambiguous identification of CAP alert**
Format	urn:oid:2.49.0.3.1.<P>.<SAT>.<SEQ>
<P>	Product identifier: 0 = active fire detection, 1 = volcanic ash detection
<SAT>	Satellite identifier: MET08, MET09, ...
<SEQ>	Alert sequence number: 1 ... n
Example	2.49.0.3.1.0.MET08.17

The characters “urn:oid:2.49.0.3.1” are the OID arc for alert messages originating from EUMETSAT. More information about OID object identifiers can be found here (http://www.oid-info.com/).

2.3.3 <sender>

Info	**Originator of CAP alert**
Format	<TEXT>
<TEXT>	“urn:oid:2.49.0.2.1”

The characters “urn:oid:2.49.0.2.1” are the OID identifier for EUMETSAT as an alerting authority. More information about OID object identifiers can be found here (http://www.oid-info.com/).

2.3.4 <sent>

Info	Time at which the message was sent
Format	<DATE>T<TIME>-00:00
<DATE>	Date in form YYYY-MM-DD
<TIME>	Time in form hh:mm:ss
Example	1969-07-22T09:30:00-00:00

The trailing characters "-00:00" indicate that the time zone is UTC.

2.3.5 <status>

Info	Status of the message
Format	<STATUS>
< STATUS >	"Actual" = actual alert message, "Test" = testing only, to be ignored

2.3.6 <msgType>

Info	Type of message
Format	<TEXT>
<TEXT>	"Alert"

2.3.7 <scope>

Info	Recipient of message
Format	<TEXT>
<TEXT>	"Public"

2.3.8 <info>

Under this tag, several elements can be provided, that are listed here below. A single CAP alert message can have several info sections, for instance corresponding to different areas of different certainty qualifications.

2.3.8.1 <category>

Info	Category of event leading to alert message
Format	<CAT>
<CAT>	"Geo" = Geophysical

2.3.8.2 <event>

Info	Type of event leading to alert message
Format	<TYPE>

< TYPE >	"FIRE" = active fire, "VOLCANIC ASH" = volcanic ash

2.3.8.3 <responseType>

Info	**Status of the message**
Format	<RESP>
< RESP >	"Assess" = actual alert message, "Monitor" = testing only, to be ignored

Messages with a response type "Assess" are for evaluation purposes only and should not be used for public warning applications. Because EUMETSAT is not issuing public warning but rather supplying information which may be used to help prepare these warnings, CAP alerts from EUMESAT all have the element <responseType> set to "Assess". The response type "Monitor" may additionally be used for the same message.

2.3.8.4 <urgency>

Info	**Urgency of message**
Format	<URG>
<URG>	"Immediate", as the alert is based in near real time data. Other possible values for this element are "Expected", "Future" (forecasts) and "Past".

2.3.8.5 <severity>

Info	**Severity of event**
Format	<SEV>
<SEV>	"Moderate" = Possible threat to life or property.

2.3.8.6 <certainty>

Info	**Certainty of the event leading to the message having taken place**
Format	<CERT>
< CERT >	"Likely" = probability greater than approximately 50%, "Possible" = probability less than or equal to approximately 50%

For alert messages relating to active fire detection, the legacy indications of certainty "possible" and "probable" correspond to the CAP certainty levels of "Possible" and "Likely", respectively.

2.3.8.7 <effective> (optional)

Info	**Time for which the message applies**
Format	<DATE>T<TIME>-00:00
<DATE>	Date in form YYYY-MM-DD
<TIME>	Time in form hh:mm:ss

Example	1969-07-22T09:30:00-00:00

The trailing characters "-00:00" indicate that the time zone is UTC.

2.3.8.8 <expires>

Info	**Time at which the message expires**
Format	<DATE>T<TIME>-00:00
<DATE>	Date in form YYYY-MM-DD
<TIME>	Time in form hh:mm:ss
Example	1969-07-22T09:30:00-00:00

The trailing characters "-00:00" indicate that the time zone is UTC.

2.3.8.9 <senderName>

Info	**Severity of event**
Format	<SEND>, the human-readable name of the agency or authority issuing this alert.
<SEND>	"EUMETSAT"

2.3.8.10 <headline>

Info	**Headline text identifying nature of event**
Format	<HEAD>
< HEAD >	"Fire detection report" = active fire, "Volcanic ash detection report" = volcanic ash

2.3.8.11 <description>

Info	**Descriptive text describing nature of event**
Format	<TEXT>
<TEXT>	Computer generated text message. Not checked by a human.
Example	Volcanic ash has been detected in the region from -28.18 to -24.21 deg of longitude and -61.31 to -60.17 deg of latitude (29 detected pixels out of 473). This is a computer generated report and has not been reviewed by a human.

2.3.8.12 <web>

Info	**Location of web page giving additional information**
Format	<TEXT>
<TEXT>	Absolute URI of HTML page.
Example	http://oiswww.eumetsat.org/IPPS/html/MSG/PRODUCTS/FIR

2.3.8.13 <resource>

Under this tag, several elements can be provided, that are listed here below.

<resourceDesc>

Info	**Description of resource at web page**
Format	<TEXT>
<TEXT>	"Sample picture on web page"

<mimeType>

Info	**Description of MIME type of web resource**
Format	<TEXT>
<TEXT>	"PNG"

<uri>

Info	**Location of web page contain resource**
Format	Absolute URI (created dynamically) of web page.
Example	http://oiswww.eumetsat.int/imagery/html/volcap/ 4F577A44/VOLCap_20110322020000Z_Box1.png

2.3.8.14 <area>

Under this tag, several elements can be provided, that are listed here below.

<areaDesc>

Info	**Description of the covered area**
Format	Free text
Example	Automatically defined polygon

<polygon> (optional)

Info	**Coordinates defining a polygon**
Format	List of space-separated coordinates pairs (latitude,longitude). The first element has to be repeated at the end to close the polygon: lat1,lon1 lat2,lon2 ... latN,lonN lat1,lon1
Example	-44.97,-64.76 -19.26,-32.48 -6.82,-32.17 -13.06,-61.74 -44.97,-64.76

<circle> (optional)

Info	**Definition of a disk area**
Format	center_latitude center_longitude radius (km)
Example	-4.694 -39.446 2.235

APPENDIX A EXAMPLE DATA

Example 1: Volcanic Ash CAP Product

```
<?xml version = "1.0" encoding= "UTF-8"?>
<?xml-stylesheet type="text/xsl" href="cap_alert_eum.xsl"?>
<alert xmlns = "urn:oasis:names:tc:emergency:cap:1.2">
  <identifier> urn:oid:2.49.0.3.1.1.MET9</identifier>
  <sender> urn:oid:2.49.0.2.1</sender>
  <sent>2011-03-22T02:15:00-00:00</sent>
  <status>Actual</status>
  <msgType>Alert</msgType>
  <scope>Public</scope>
  <info>
    <category>Geo</category>
    <event>VOLCANIC ASH</event>
    <responseType>Assess</responseType>
    <responseType>Monitor</responseType>
    <urgency>Immediate</urgency>
    <severity>Moderate</severity>
    <certainty>Likely</certainty>
      <effective>2011-03-22T02:00:00-00:00</effective>
      <expires>2011-03-22T02:15:00-00:00</expires>
    <senderName>EUMETSAT</senderName>
    <headline>Volcanic ash detection report</headline>
    <description> Volcanic ash has been detected in the region from -44.97 to  -6.82 deg of longitude and -64.76 to -32.17 deg of latidude (33315 detected pixels out of 218400). This is a computer generated report and has not been reviewed by a human.</description>
    <resource>
      <resourceDesc>Sample picture on web page</resourceDesc>
      <mimeType>PNG</mimeType>
      <uri>http://oiswww.eumetsat.int/imagery/html/volcap/4F577A44/VOLCap_20110322020000Z_Box1.png</uri>
    </resource>
    <area>
      <areaDesc>Automatically defined polygon</areaDesc>
      <polygon>-44.97,-64.76  -19.26,-32.48  -6.82,-32.17  -13.06,-61.74  -44.97,-64.76 </polygon>
    </area>
  </info>
  <info>
    <category>Geo</category>
    <event>VOLCANIC ASH</event>
    <responseType>Assess</responseType>
    <responseType>Monitor</responseType>
    <urgency>Immediate</urgency>
    <severity>Moderate</severity>
```

<certainty>Likely</certainty>
<effective>2011-03-22T02:00:00-00:00</effective>
<expires>2011-03-22T02:15:00-00:00</expires>
<senderName>EUMETSAT</senderName>
<headline>Volcanic ash detection report</headline>
<description> Volcanic ash has been detected in the region from -44.97 to -6.82 deg of longitude and -64.76 to -32.17 deg of latidude (33315 detected pixels out of 218400). This is a computer generated report and has not been reviewed by a human.</description>
<web>http://www.eumetsat.int/idcplg?IdcService=GET_FILE&dDocName=PDF_VOL_FACTSHEET&RevisionSelectionMethod=LatestReleased</web>
<resource>
<resourceDesc>Sample picture on web page</resourceDesc>
<mimeType>PNG</mimeType>
<uri>http://oiswww.eumetsat.int/imagery/html/volcap/4F577A44/VOLCap_20110322020000Z_Box1.png</uri>
</resource>
<area>
<areaDesc>Automatically defined polygon</areaDesc>
<polygon>-44.97,-64.76 -19.26,-32.48 -6.82,-32.17 -13.06,-61.74 -44.97,-64.76 </polygon>
</area>
</info>
</alert>

Example 2: Fire detection CAP Product

```
<?xml version = "1.0" encoding= "UFT-8"?>
<alert xmlns = "urn:oasis:names:tc:emergency:cap:1.2">
  <identifier> urn:oid:2.49.0.3.1.0.MET9</identifier>
  <sender> urn:oid:2.49.0.2.1</sender>
  <status>Actual</status>
  <msgType>Alert</msgType>
  <scope>Public</scope>
      <info>
        <category>Geo</category>
        <event>FIRE</event>
        <response>Avoid</response>
        <urgency>Immediate</urgency>
        <severity>Moderate</severity>
        <certainty>Likely</certainty>
      <effective>2009-11-20T14:00:00-00:00</effective>
      <expires>2009-11-20T14:30:00-00:00</expires>
        <senderName>EUMETSAT</senderName>
        <headline>Fire detection report</headline>
        <description> Fire detection. This is a computer generated report and has not been
reviewed by a human.</description>
        <area>
          <areaDesc>List of detected fires (latitude, longitude, radius)</areaDesc>
          <circle>  10.230  20.660   1.847 </circle>
          <circle>  10.229  20.629   1.548 </circle>
          <circle>  10.258  20.631   1.547 </circle>
          <circle>  10.960   1.735   1.547 </circle>
          <circle>  10.960   1.708   1.547 </circle>
          <circle>  10.988   1.708   1.928 </circle>
          <circle>  11.224  21.050   2.100 </circle>
          <circle>  11.253  21.084   2.102 </circle>
        </area>
        <web>http://oiswww.eumetsat.org/IPPS/html/MSG/PRODUCTS/FIR</web>
      </info>
      <info>
        <category>Geo</category>
        <event>FIRE</event>
        <response>Avoid</response>
        <urgency>Immediate</urgency>
        <severity>Moderate</severity>
        <certainty>Possible</certainty>
      <effective>2009-11-20T14:00:00-00:00</effective>
      <expires>2009-11-20T14:30:00-00:00</expires>
        <senderName>EUMETSAT</senderName>
        <headline>Fire detection report</headline>
        <description> Fire detection. This is a computer generated report and has not been
reviewed by a human.</description>
```

```
        <area>
          <areaDesc>List of detected fires: latitude, longitude, radius(km)</areaDesc>
          <circle>  4.115  9.725  1.526 </circle>
          <circle>  4.315  18.987  1.591 </circle>
          <circle>  4.415  16.825  1.572 </circle>
          <circle>  4.415  16.796  1.572 </circle>
          <circle>  4.442  16.825  1.572 </circle>
          <circle>  4.442  16.796  1.572 </circle>
          <circle>  4.442  16.767  1.571 </circle>
          <circle>  4.470  16.826  1.572 </circle>
          <circle>  4.503  18.051  1.583 </circle>
        </area>
        <web>http://oiswww.eumetsat.org/IPPS/html/MSG/PRODUCTS/FIR</web>
      </info>
</alert>
        </area>
        <web>http://oiswww.eumetsat.org/IPPS/html/MSG/PRODUCTS/FIR</web>
      </info>
</alert>
```