CAP Profile Meteoalarm

From the Meteoalarm-Wiki (https://www.meteoalarm.eu/mediawiki3/index.php)

Category CAP

This chapter summarizes the specifications for the adoption of the CAP- Common Alerting Protocol within Meteoalarm

The CAP Standard has been designed to allow a consistent warning message to be communicated simultaneously over different systems. By standardizing on a format, technology developers and vendors in the emergency, incident, and business continuity fields will be able to take a huge step forward in sharing this critical, and potentially life saving, information.

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Abstract

The XML-based Common Alerting Protocol (CAP) format enables the exchange of emergency and public warning information over data networks and computer-aided detection systems. By limiting transport - specific nomenclature CAP remains fully compatible with existing public warning systems , including those developed for multi-lingual and special needs populations , as well as XML applications, such as Web services.

Status

The CAP export is under development and will be adapted to the requirements of MeteoAlarm and partners. This document is updated regularly. Send comments about this document to the editor.

The import of CAP messages is also under development.

Planning

The long term goal is to switch from the XML-based import of warning messages to CAP-based warnings.

Introduction

Target

Meteoalarm pursues the single voice principle in its alerts. This requires that warnings from different partners fit together and not disagree. The CAP v1.2 format defined in this respect, although the framework for XML -based files, but can be interpreted quite different content . It is therefore necessary to define a profile to be published according to which warning messages in CAP format, especially when different systems generate these files .

The Common Alerting Protocol (CAP) provides an open, non - proprietary digital message format for all types of warnings and messages. It is not addressed to specific applications or bundled to dedicated communication path.

Process

This profile is in development and will be adapted to the requirements of the meteorological alarm to the CAP format.

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 [RFC2119]. The words warning, alert and notification are used interchangeably throughout this document.

The term "coordinate pair" is used in this document to refer to a comma-delimited pair of decimal values describing a geospatial location in degrees, unprojected, in the form "[latitude],[longitude]". Latitudes in the Southern Hemisphere and longitudes in the Western Hemisphere are signed negative by means of a leading dash.

References

[RFC2119] S. Bradner, Key words for use in RFCs to Indicate Requirement Levels, http://www.ietf.org/rfc/rfc2119.txt, IETF RFC 2119, March 1997.

CAP v1.2 Meteoalarm profile

The following subsections specify the necessary elements for the CAP v1.2 MeteoAlarm profile based on CAP v1.2.

Import of CAP messages

Warnings can be imported via SOAP interface.

No filename has to be specified for warnings provided via SOAP. Each file contains a maximum of 1 warning of one area but it can use more info-blocks for multiple languages!

Please follow here to CAP Webservice Description

XML/CAP Format

The design of the CAP-messages is specified by the following keywords:

Enconding: UTF-8
Specification: <?xml version="1.0" encoding="UTF-8"?>
Namespace: CAP v1.2
Specification: <alert xmlns="urn:oasis:names:tc:emergency:cap:1.2">
The general XML schema definition for a CAP v1.2 document is available from :
Oasis XSD File

A validator for the Meteoalarm-CAP-Profile is in our webservice included.

Structure of the Meteoalarm CAP messages

Only mandatory segments with additional specifications compared to CAP v1.2 are given below. All segments not explicitly quoted retain their definition according to CAP v1.2. Some segments are mandatory for Meteoalarm CAP messages.

<alert>

The <alert> segment contains one individual warning for one area. For the same warning in different languages different <info> segments have to be specified.

<identifier>

The identifier is a string which uniquely identifies the CAP message.

Example

```
<identifier>
2.49.0.3.0.AT.150112080000.52550478
</identifier>
```

Syntax
2.49.0.3.0.AT.150112080000.52550478

blue -> Your WMO Organisation ID
green -> Your Country ISO Code
orange -> Your File Date/Time "YYMMDDHHMMSS" in Syntax Example
it is the 12 january 2015 08 o'clock
red -> your warning ID (CHAR max Len: 20 / special characters are not allowed only a-Z 0-9 and "_")

See Also

- Your WMO Organisation ID
- IsoCodes
- WMO PDF - ADMINISTRATIVE PROCEDURE FOR REGISTERING WMO ALERTING IDENTIFIERS

Info

The identifier is part of the reference, if you update/cancel a warning.

<sender>

Info	Email address of originator of warning.
Definition	Guaranteed by assigner to be unique globally. i.e. email address from contact/organisation with public contact for emergency situations

<sent>

Info	Date and time when CAP warning message has been sent.
Format	{A}+{B}
{A}	DateTime Data Type (Local Time) <yyyy>-<MM>-<dd>T<HH>:<mm>:<ss>+<hour>:<min>
{B}	Offset to UTC (e.g. CET: +01:00; CEST: +02:00)
Example	2010-05-18T12:24:18+02:00 (Tuesday, 18th of May 2010 12:24 Central European Summer Time)

<status>

Info	Used to distinguish between actual and test messages.
Actual	CAP-message will be processed, displayed on meteoalarm.eu and included in Atom-Feed

	CAP-message will be processed but neither stored in the database nor shown on the public website.
Test	
	Import only: Error messages will be sent to the <sender> address in case of FTP-upload.
Exercise	
System	*Import only*: Other CAP 1.2 attributes (Exercise, System, Draft) will be ignored.
Draft	

Normaly you should use

"Actual" for Public Server (also to publish it to google public alert)

or

"Test" for Test Server (to send it also to google testinterface)

<msgType>

Info	Used to distinguish between new warnings, updates or cancellation of warnings.
Alert	CAP-message contains one warning
Update	Updates and supercedes the earlier warnings(s) identified in <references> segment
Cancel	Cancels the earlier warning(s) identified in <references> segment **ONLY USE CANCEL IF YOU WANT TO ABORT A CAP WITH WRONG DATA!** use identical start and end-time
Ack	
Error	*Import only*: Other CAP 1.2 attributes (Ack, Error) will be ignored
See Example	

<source>

Info	Source of this CAP warning message
	Originator according to internal Meteoalarm specifications. Will also be included in the <identifier> element as numeric code (originating country and organization).

<scope>

Info	Used to distinguish between public and restricted warning information.
Public	Warning(s) for public website and Atom-Feed
Restricted	Warning(s) for meteoalarm-intranet or special users (e.g. day 3-5 warnings for ERC)
Ack	
Error	*Import only*: Other CAP 1.2 attribute (Private) will be ignored

<references>

Not allowed by msgtype "alert"! Only need by msgtype "update" and "cancel".

structure

<sender>,<identifier>,<sent>

example:

one cap file (MsgType Cancel) with two references.

```
<alert xmlns="urn:oasis:names:tc:emergency:cap:1.1">
       <identifier>2.49.0.3.0.AT.1427988602.57482906</identifier>
       <sender>owner@domain.com</sender>
```

```
        <sent>2015-04-02T16:30:02+01:00</sent>
        <status>Actual</status>
        <msgType>Cancel</msgType>
        <scope>Public</scope>
        <references>
                owner@domain.com,2.49.0.3.0.AT.1427982841.57478633,2015-04-02T16:30:02+01:00
                owner@domain.com,2.49.0.3.0.AT.1427986441.57481486,2015-04-02T16:32:02+01:00
        </references>
        <info>
        ...
```

update

more references allowed (seperate with whitespace " ")

cancel

more references allowed (seperate with whitespace " ")

<info>

The <alert> segment may contain the warning information in different languages. The <info> segments contain the individual warning in one single language! For the same warning in a different language a new <info> segment must be used.

<language>

Info	Specification of language for <info> segment
Format	RFC 3066 Specification: <language>-<COUNTRY>
Example	de-DE
Language-Codes	

<category>

Info	Code denoting the category of the warning
Met	Meteorological warning (including floods)
	Import Only: Other CAP 1.2 codes will be ignored.

<event>

For the CAP-Feed based on xml-Files the <event> segment will be populated with information derived from awareness_types and awareness_level.

Example: awareness_type=wind, awareness_level=2 -> "Moderate wind warning"

possible values = Keyword from Meteoalarm Awarness-Types

<responseType>

Code denoting the type of action recommended, typically set in cooperation with the civil authority

For minor (i.e., green) warnings the action "None" shall be used.

CAP-Standards for ResponseTypes:

"Shelter" – Take shelter in place or per <instruction>

"Evacuate" – Relocate as instructed in the <instruction>

"Prepare" – Make preparations per the <instruction>

"Execute" – Execute a pre-planned activity identified in <instruction>

"Avoid" – Avoid the subject event as per the <instruction>

"Monitor" – Attend to information sources as described in <instruction>

"AllClear" – The subject event no longer poses a threat or concern and any follow on action is described in <instruction>

"None" – No recommended action

<urgency>

Info	Urgency of the event
Immediate	Responsive action should be taken immediately.
Expected	Responsive action should be taken within the next hour.
Future	Responsive action should be taken in the near future.
Past	Responsive action no longer required.

Normally the code "Future" will be used. For flash warnings the code "Immediate" can be used.

<severity>

For the CAP-Feed based on xml-Files the <severity> element is derived from the MeteoAlarm awareness_level.

Info	Awareness level
Minor	No particular awareness required
Moderate	weather is potentially dangerous
Severe	weather is dangerous
Extreme	weather is very dangerous

<certainty>

Info	Type of event
Observed	Observed
Likely	Likely (p >~50%)
Possible	Possible (p <~50%)
Unlikely	Unlikely(p < 5)

According to Meteoalarm specifications the codes "Likely" or "Possible" shall normally be used. The status might be changed for the message type (<msgType>) "Update".

<effective>

Info	Date and time when the warning has been issued.
Format	{A}+{B}
{A}	DateTime Data Type (Local Time) <yyyy>-<MM>-<dd>T<HH>:<mm>:<ss>+<hour>:<min>
{B}	Offset to UTC (e.g. CET: +01:00; CEST: +02:00)
Example	2010-05-18T12:24:18+02:00 (Tuesday, 18th of May 2010 12:24 Central European Summer Time)

<onset>

Info	Date and time for the beginning of the warning.
Format	{A}+{B}
{A}	DateTime Data Type (Local Time) <yyyy>-<MM>-<dd>T<HH>:<mm>:<ss>+<hour>:<min>
{B}	Offset to UTC (e.g. CET: +01:00; CEST: +02:00)
Example	2010-05-18T12:24:18+02:00 (Tuesday, 18th of May 2010 12:24 Central European Summer Time)

<expires>

Info	Date and time for the ending of the warning.
Format	{A}+{B}
{A}	DateTime Data Type (Local Time) <yyyy>-<MM>-<dd>T<HH>:<mm>:<ss>+<hour>:<min>
{B}	Offset to UTC (e.g. CET: +01:00; CEST: +02:00)
Example	2010-05-18T12:24:18+02:00 (Tuesday, 18th of May 2010 12:24 Central European Summer Time)

<senderName>

Info	Human-readable name of the originator of the warning message. Names in different languages may be provided.
Example lang=de	ZAMG Zentralanstalt für Meteorologie und Geodynamik
Example lang=en	ZAMG Central Institute for Meteorology and Geodynamics

<headline>

A brief human-readable headline. 160 characters MAY be a useful target limit for headline length. Actual we don't show the headline in meteoalarm. (For Export to Google we use i.E.: "Yellow Wind Warning for Austria - Vienna")

<description>

Info	Warning text message
Example	Gusts up to 80 km/h are expected.

<instruction>

Text describing recommended actions to be taken

Each partner decides on the content provided in this element. General recommended actions in all languages can be inserted automatically during the internal processing of messages (xml or CAP) sent to Meteoalarm.

<web>

Info	Link to website for additional information related to the warning.
Example	http://warnungen.zamg.at/html/de/heute/alle/at/niederoesterreich/

<contact>

optional

Contactinformation

Info

Example   <contact>Deutscher Wetterdienst</contact>

<parameter>

Used internally for the website meteoalarm.eu.

Info	**Meteoalarm specific code indicating awareness type and alert level**

Format	```<parameter>```
	 `<!--0=white,no_data, 1=green,minor, 2=yellow,Moderate,`
	 `3=orange,Severe 4=red,Extreme-->`
	 `<valueName>awareness_level</valueName>`
	 `<value>1; green; Minor</value>`
	 `</parameter>`
	 `<parameter>`
	 `<valueName>awareness_type</valueName>`
	 `<value>5; high-temperature</value>`
	 `</parameter>`

{valueName}   awareness type according to Meteoalarm specifications and alert level (1,2,3,4)
and {value}   according to Meteoalarm specifications

Example: Level 2 (yellow) wind warning

Import only: This segment is very important and mandatory for the import of CAP messages. It is used for the correct representation of the warning information.

```
awareness-level
1; green; Minor
2; yellow; Moderate
3; orange; Severe
4; red; Extreme

awareness-type
1; Wind
2; snow-ice
3; Thunderstorm
4; Fog
5; high-temperature
6; low-temperature
7; coastalevent
8; forest-fire
9; avalanches
10; Rain
12; flooding
13; rain-flood
```

<area>

Container for all component parts in particular for the <geocode> segment

<areaDesc>

Human-readable description of the areas affected by the warning.

<geocode>

Info	**Affected areas according to Meteoalarm specifications.**

Syntax
```
<geocode>
 <valueName>MeteoArea</valueName>
 <value>{AreaCode}</value>
</geocode>
```

{AreaCode}   Affected areas according to Meteoalarm specifications (AreaKey).
The NUTS classification shall be used wherever possible. For other areas the " FIPS 10-4 region codes" or the MeteoAlarm internal area codes(EMMA_ID) shall be used.

- Eurostat NUTS Nomenclature

Example Part Area

```
<area>
<areaDesc>Tirol</areaDesc>
<geocode>
 <valueName>NUTS3</valueName>
 <value>AT331</value>
</geocode>
</area>
```