Summary: Task Team on CAP in Meteoalarm

Summary

This paper provides a summary of the recommendations proposed by the Meteoalarm Task Team to modify the existing CAP profile that meets the needs of Meteoalarm Members.

The Task Team reached an agreement on the following statements:

- The mandatory (core) components of the Meteoalarm CAP profile will be;

  Issue time, start time, end time, event type, headline / description, colour, area, identifier, sender, message type, status

- Further work is required to review and refine the 'optional' CAP components
- The Event Type categorisations, at least for now, should be based on the PRIMARY HAZARDS and the weather SYSTEMS driving these hazards according to WMO definitions

These recommendations will be presented to the Organization for the Advancement of Structured Information Standards (OASIS) for their consideration and endorsement in October 2018.

1. Background

A Task Team consisting of Meteoalarm experts and Heads of Forecasting was created in June 2018 to review and propose a version of CAP (a 'CAP Profile') that meets the needs of Members – see Annex A. This in turn could be used to influence the evolution of the CAP standard itself.

The team worked over a two-month period to reach an agreed position on what constitutes the core, mandatory components for the next iteration of CAP in Meteoalarm.

What is EMMA/Meteoalarm
EMMA is a multi-hazard programme created in the mid 2000s. Since its formation it has continued to expand and develop, involving 37 countries across Europe. CAP is used to transmit the warning from the originator, mostly from NMHSs, to Meteoalarm.

What is CAP
The Common Alerting Protocol (CAP) is an XML-based data format for exchanging public warnings and emergencies between alerting technologies. CAP allows a warning message to be disseminated simultaneously in a consistent manner to many applications.

The standard was created by the Organization for the Advancement of Structured Information Standards (OASIS), which is a global non-profit consortium that works on the development, convergence, and adoption of standards for security, Internet of Things, energy, content technologies, emergency management, and other areas (from wiki). The full

CAP 1.2 document is available here:http://docs.oasis-open.org/emergency/cap/v1.2/CAP-v1.2-os.html

Task Team Scope and Principles
To develop a 'minimal mandatory standard Meteoalarm CAP profile' and to formulate a profile based on the NMHS requirements. This will be achieved through adoption of the following key principles;

- It must allow preservation of the content of each NMHS warnings;
- CAP should not impose undue constraints on how each NMHS wishes to warn its citizens;
- Proposal should not incur undue cost or significant additional resources on NMHSs to implement, and;
- Must align to event type definitions proposed by WMO-led task team on cataloguing and recording extreme events.

2. Proposal

The Task Team proposed the following as the core, mandatory components of CAP within Meteoalarm. A fuller description can be found in Annex B.

CAP

CAP CORE COMPONENTS	Description
Issue time Start time End time	Date and Time
Event Type	Meteoalarm event catalogue
Headline	Headline brief text
Description	Open description text
Colour	Use eventCode element (Yellow, Orange, Red, Purple)
Area	Recognised spatial datatype (optional: area, circle, geocode, polygon)
Identifier	Identifies specific warning – assigned by sender
Sender	Originator (WMO register of Alerting Authorities)
Message Type	Message Type – indicate the nature of the message (Alert, Update, Cancel, Ack, Error)
Status	Handling of warning message (eg Actual, Exercise, System, Test, Draft)

Warning

3. Event Type definitions

The OASIS CAP subcommittee requested EMMA/Meteoalarm to review an Event Type definitions list that will become a core mandatory component of CAP and to contribute to the development of an Event Type classification catalogue to enable the recording of events as part of a WMO-led Task Team.

A WMO Task Team met in Offenbach, July 2018 to kick start the processes by which an event type list can be defined and endorsed. The team approached this task by defining some key principles, namely;

- Keeping it simple and feasible
- Considering the costs, resource and time to implement

- Preserving the right of each country to state how they choose to record and warn for hazards
- Initially restricting to Hydro-meteorological hazards
- NOT quantifying and qualifying hazard definition or express its severity (e.g. extreme, heavy, high)
- Aligning to emerging CAP for warnings to avoid duplication, confusion and misinterpretation

The proposal below represents the core, mandatory components for recording events. See Annex C for a fuller detail of definitions.

Event Record - Proposal

MANDATORY COMPONENTS   Description

Event		
	UUID	Universally Unique Identifier
	Record Creation	Record started Date / Time
	Start time	Start time of event
	End Time	End time of event
	Event Type	Record of event type – either System or Primary – based on catalogue list
	Area	Recognised spatial datatype (optional: area, circle, geocode, polygon)
	Sender	Originator (WMO register of Alerting Authorities)

The table overleaf shows the list of Event Types comprising both primary hazards and the weather systems that they originate (as defined by WMO Event Type List – Annex II). These could be used within the Meteoalarm CAP Profile, and the Task Team suggested that CAP could align to these definitions. Furthermore, the originator of the warnings can warn for either the primary hazard or the system responsible.

Thunderstorm warnings will form part of the primary hazard list with an asterisk* denoting that in terms of recording the event a thunderstorm will be registered as a system not as a primary hazard. This will also apply to cyclonic systems, such as named tropical cyclones (Hurricanes, Typhoons etc). Coastal Events will also be regarded as a primary hazard in addition to marine waves.

In summary, the core mandatory profiles for issuing warnings and the recording of events are broadly similar. The difference between the two profiles relates to the purpose of the message; CAP has a component to describe the warning 'Colour' and a 'UUID' is used to record events.

Event Type	
Primary	**System**
Rain Snow High Temperature Low Temperature Hail Fog Wind Frost Ice Haze Dust Sand Lightning Tornado Drought Floods Marine Waves Avalanche Thunderstorms* Coastal Events*	Cyclonic (e.g. Tropical, Extra-tropical cyclone, mid-latitude cyclone) Anti-cyclonic Convective (thunderstorms)

MEG Chair
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ANNEX A

Meteoalarm Task Team members

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ANNEX B

Parameter	Format	Description	Comments
Issue/Start and End time	Date/Timestamp		
Event Type	List (Controlled list – see table in body text)	System or Primary	Aligns to WMO definitions and covers primary hazards and weather systems
Headline	Text	Headline summary	Brief plain language headline summary of warning/alert Brief
Description	Text	Description of warning	Plain language description of the warning/alert. NHMS may choose to include detail of severity/certainty in this section if "Unknown" is used in <severity> and <certainty> elements.
Colour	Text	Warning colour	Allows inclusion of warning "colour" using free text. Colours used must be recognisable by Meteoalarm.
Area	Recognized spatial datatype	Area of event	Standard message element when area is to be defined. Multiple instances of <area> can be used to define multi-area warnings. TT requirement - at least one of <polygon>, <circle> or <geocode> must be used to define hazard area.
Identifier		Identifiers specific warning – assigned by sender	Number or string to uniquely identify the message
Sender	Text	Name	Plain text name of originating agency (additional to <sender> above which is Required (CAP) Originator – use WMO register of alerting authorities
Message Type	Text	Indicates warnings status	Nature of the alert message (Alert, Update, Cancel, Ack, Error)
Status		Indicate status of record	Handling of warning message (Actual, Exercise System, Test, Draft)In progress / Complete

ANNEX C

Parameter	Format	Description	Comments
UUID*	Alphanumeric number	UUID (32 character random sequence)	(e.g. 00112233-4455-6677-8899-aabbccddeeff)
Record Creation*	Date/Timestamp		
Identifier*	Text	Originator (Name of institution that is recording the event)	Institution that is recording the event
Start Time*	Date/Timestamp		
End Time*	Date/Timestamp		
Event Type*	List (Controlled list – see table below)	System or primary	Source of event (e.g. tropical cyclone) or primary (list of primary events)
Area*	Recognized spatial datatype	Area of event	
Headline	List (Controlled list – see table below)	Headline text e.g. event name, notable feature (e.g. Extreme heat)	Highly recommended to enter
Description	Text (Up to 240 characters)	Open description text	Description of event such as max temp, highest wind speed, Category
Linkage	Alphanumeric number strings	UUID reference link to source events	UUID of other events considered as source events (e.g. Tropical cyclone)
Status		Indicate status of record	In progress / Complete
Post processing		Quality control, verification	Not started / Ongoing / Validated