

UgoRound



Common Alerting Protocol and Public Warnings

August 2017

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What is the CAP?

The Common Alerting Protocol or (CAP), has its origins in a November 2000 report by the US National Science and Technology Council (NSTC). It recommended a standard method be developed to relay all manner of warnings be it locally, regionally and nationally. In 2004, formal approval was given to CAP 1.0 by the OASIS Emergency Management Technical Committee. Globally, the International Telecommunication Union (ITU) adopted the CAP in 2007. Many other countries and agencies have since adopted the protocol as the standardised national warning architecture.

The benefit starts with the various agencies generating alerts. By simplifying the alerting methodology, systems can be backward compatible, integrated easily and consistent across the many types of early warning technologies and applications.

Let's Unpack CAP

The CAP is a data format that specifically normalizes “alert” data in a defined structure. The system is based on the XML data format and is backward compatible with existing alert formats such as the Specific Area Message Encoding used by in NOAA weather Radio. Specifications of CAP are available on the OASIS website.

“The first use of CAP protocol in a civil protection activity was in Italy 2009, in the aftermath of the Central Italy Earthquake. Fire Corps exchanged data with the Ministry of Cultural Heritage to coordinate their efforts in the implementation of measures for monuments and historical buildings.”

The standard is relatively straight forward to implement. The framework provides a systemized “checkbox” format that defines specifics about an alert. One example is the size or area of the alert. Area can be defined by a geofenced radius or even a complex polygon with decimal longitude and latitude points. Using these coded values makes it easier for various platforms to automatically integrate the alert.

Authorities will usually implement CAP in addition to their existing alerting processes. It normally requires very little investment in new technology. Below are some elements of a CAP alert. Some attributes are required, while others are optional. Refer the OASIS website reference for more on this.

CAP Message Elements	Detail
Alert	Describing the Alert Components
Identifier	The Identifier of the alert message
Sender	The Identifier of the sender of alert message
Sent	The time and date of the origination of the alert message
Status	The code denoting the appropriate handling of the alert message
Message Type	The code denoting the nature of the alert message
Scope	The code denoting the intended distribution of the alert message
Event	The text denoting the type of the subject event of the alert message
Urgency	The code denoting the urgency of the subject event of the alert message
Severity	The code denoting the severity of the subject event of the alert
Certainty	The code denoting the certainty of the subject event of the alert message
Geocode	The geographic code delineating the affected area of the alert message
Resource Description	The text describing the type and content of the resource file
Area Description	The text describing the affected area of the alert message
contentType	The identifier of the MIME content type and sub-type describing the resource file

Typical attributes of a CAP alert

Why do we need a CAP?

When it comes to dissemination of warnings to the public, authorities have relied on a commercial media such as radio and television. Online social media companies like Facebook and Twitter are often utilized to publish information as well. This information may not be output in the CAP format but for the public that is not as relevant. Google also now shows official messages on their search desktop and mobile pages.

Emergency Managers are often receiving information that is not immediately disseminated to the public. The CAP format allows them to analyse trends or monitor events as they escalate. Things like pattern detection and situational awareness are compiled and decisions need to be made by experts before a warning goes out to the public.

The important distinction here is anyone receiving this information must be confident the source is authoritative – that the CAP feed is official. For that, there is a CAP International register maintained by the World Meteorological Organization and the ITU.

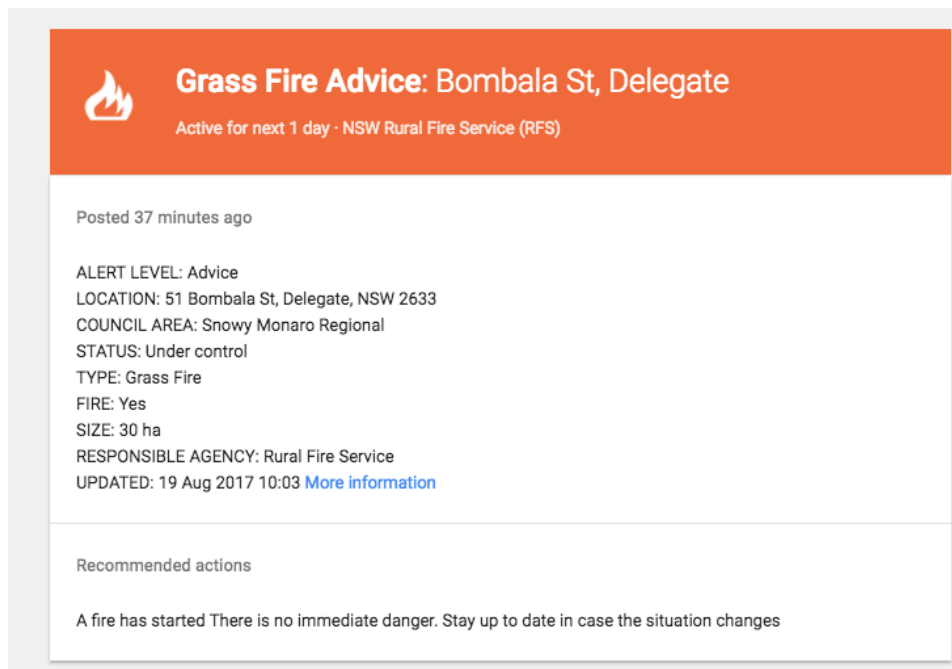
Google Public Alerts

Google launched a public alerts platform in 2012. It is available in mostly English speaking countries. The system essentially provides agencies a way to send an alert to Google via the CAP format. Google will ingest the data and output it to various Google properties – search and maps as an example. As to the question who can publish to google public alerts they define this on the developer page:

“Partners who publish a Google Public Alert must be:

- a public safety agency or a public alerts provider with information that affects people’s life and property, and
- the original and authoritative author of the alert information OR have rights from the original author to aggregate and/or distribute this information.”

Below is typical example from Google Public Alerts:



The screenshot shows a public alert card with an orange header. The header contains a fire icon, the title "Grass Fire Advice: Bombala St, Delegate", and the text "Active for next 1 day · NSW Rural Fire Service (RFS)". Below the header, the alert is dated "Posted 37 minutes ago". The main body of the alert lists the following details: ALERT LEVEL: Advice; LOCATION: 51 Bombala St, Delegate, NSW 2633; COUNCIL AREA: Snowy Monaro Regional; STATUS: Under control; TYPE: Grass Fire; FIRE: Yes; SIZE: 30 ha; RESPONSIBLE AGENCY: Rural Fire Service; and UPDATED: 19 Aug 2017 10:03 with a link for "More information". A section titled "Recommended actions" contains the text: "A fire has started There is no immediate danger. Stay up to date in case the situation changes".

Public Alerts and the next phase

When an alert goes out to phones via SMS or even automated calls to landlines authorities don't make this decision lightly. This method is often subject to network availability and in an emergency people reach for their phones to either report the incident or check where their loved ones are. This has the effect of clogging the network. Authorities put out circulars advising people to limit the use of their phones.

There are things you can do with your mobile phone so when a disaster occurs in your local community you will be well prepared. During a major disaster affecting your area, being wise with how you use your mobile phone can reduce the load on mobile networks, may benefit other users, and will assist in the operation of vital emergency services such as **Triple Zero (000)** (www.triplezero.gov.au) and the national telephone-based emergency warning system, **Emergency Alert** (www.emergencyalert.gov.au).

From Australian government emergency alert brochure

There are some disadvantages using *mass* media such as radio and television and online platforms to disseminate vital information. In both circumstances the user must do something to receive the information. You need to be watching TV or listening to the radio and be on the correct station/channel. If you are online you could be searching or checking your social media news feed. The user in these circumstances is doing something, making a pro-active decision about accessing and using these services.

Alerting the public is about to undergo an improvement.

Your device (smart phone), packed full of sensors, knows where you are in the world. More and more apps are requiring *background location services* to be activated to provide you their service. Google Maps is the most obvious.

Public Alerts are a typical use case where geolocation relevant information would be beneficial. There are many examples, but take a terrorist event scenario. There is no point being told to “avoid the area” - in a place, city or country you are not in or even nearby. The user learning of this information interprets it either as a news item or something that will affect them. There is a big difference between a news item and a public alert. The problem with delivering this information on mass or social media, is that it is difficult to localise the information and the distinction between an alert advice and a news item is often blurred.

What is required is obvious....

“Everyone should be able to receive an alert based on where they are.”

Ideally, if you can receive an alert based on your geo location, you should not need to do anything to be the recipient. You become a passive receiver of information that might be relevant because it applies specifically to your location.

An alert sent to your phone would provide this scenario. In many countries, this is already happening via SMS. However, a push notification would be more effective.

SMS or Push Notification?

There are a number of differences between a Push Notification and a SMS.

- Cost – sending a massive amount of texts especially for businesses could be significant while Push is just about free.
- Opt in Opt Out – most apps have an opt out option when it comes to a Push while SMS, especially in an emergency is less controllable.
- Push Notifications include the ability to layer in Rich text or graphical information in a view which is optimal for the smart phone.
- A Push can contain all details which comply with the CAP format.
- A Push is reliant on downloading a mobile app which can provide much more intelligence of user behaviour. You can track reactions to a message.
- SMS requires access to or maintaining a database of phone numbers, while a push can be sent to the app without knowing any *personally identifiable information*.
- A Push saved in an App can be connected and attributed to an event. This means the user can be updated - which again complies with the requirements of CAP.

Both report a high open rate which is over 90% - much more effective than email.

A simple plan would be to ensure every citizen with a smart phone can be sent a public alert.

UgoRound Citizen Alerts

There are some measures cities and indeed countries can take to better inform the public and one is to make sure people know there is an App they should download. This can be further enhanced by involving stakeholders such as Telco's and mobile phone companies. An app pre-installed natively takes out the friction or educating the benefits of a public warning. The less people have to do the better.

UgoRound is an app that would benefit every citizen with a smart phone. If you can receive an alert based on where you are, not who you are – your city can step up and take your safety and well-being to another level.

The “city”, would not need to shoulder this responsibility on their own. The platform can be implemented and deployed with any agency tasked with citizen well-being. This multi-agency citizen interaction is happening anyway – normally through social media. The UgoRound app allows you to receive relevant and therefore much more personal information.

The result: You are more likely to react as intended when the message applies to You!

“A geo location CAP compliant Push Notification message can elevate public alerts to a new contextual and informative experience. In addition, a public alerts app on a smart phone provides much more data and therefore intelligence of the user behaviour and movement. This can easily be achieved without compromising user privacy.”

Gavin Bernstein Founder of UgoRound

Contact UgoRound for you CAP citizen communication plan.

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UgoRound will connect you
to your City

Wait...seriously?