



Issues Brief

Leveraging the Common Alerting Protocol (CAP) for All-Hazards, All-Media Alerting

Despite today's amazing telecommunications services, there are still too many people in harm's way who do not get timely alerts so they can protect lives and livelihoods. This gap in effective alerting is especially acute in least-developed and developing countries, which are often the most vulnerable as well. Yet, one reason for the gap could be easily addressed: help those countries implement the same transformative approach already delivering greatly enhanced public alerting in the rest of the world.

Specifically, organizations interested in disaster reduction could help all countries fully leverage the Common Alerting Protocol (CAP) standard to communicate the key facts and the recommended actions for any emergency. Use of CAP greatly increases warning efficiency and effectiveness, primarily because a CAP message carries data intended for machine processing as well as information targeted to humans.

Leveraging the CAP standard should strive to involve all the willing actors in emergency management. This includes the commercial sector as well as governmental and non-governmental sectors. These various actors have many complementary and sometimes overlapping roles, ranging from alert origination through dissemination to adaptive emergency response using dynamic feedback.

The following seven issues highlight where a focus on CAP-enabled alerting would have major impacts.

1. New Media is Replacing Mass Media.

Much of today's public alerting infrastructure assumes that mass media, such as broadcast radio and television, is the best way to disseminate alerts to a large percentage of people in harm's way. But, as people increasingly substitute online media for broadcast radio and television, those people do not get emergency alerts sent as broadcast radio interrupts or television "crawl text". This issue must be addressed by various online media. Google has pioneered in leveraging CAP to get emergency alerts to people online using Google tools. Also, digital highway signs and billboards carry CAP alerts in some places, and amazing opportunities are emerging to automatically create or disseminate CAP alerts using "Internet of Things" technologies and "Smarter Cities" innovations.

2. Some Nations and Hazard Types are Missing Out.

Today, 75 per cent of the world's people live in nations that already have, or are currently developing, official news feeds with public CAP alerts at national-scale. However, as noted above, uptake of CAP-based alerting has lagged in developing countries even though they are often among the most vulnerable. Also, CAP uptake has been far stronger for weather than for other hazard types, and CAP remains unknown to most disaster management offices worldwide. The World Meteorological Organization (WMO), the International Telecommunication Union (ITU), the International Federation of Red Cross and Red Crescent Societies (IFRC), and the Climate Risk and

Early Warning Systems (CREWS) initiative have been supporting CAP outreach for years, but other international bodies such as the UN-led Emergency Telecommunications Cluster (ETC) could play an outreach role as well. The issue that some nations and hazard types are missing out on CAP can be addressed with concerted international efforts at basic outreach, and by increased support for the sharing of good practices, techniques, and technologies associated with CAP-enabled alerting.

3. People with Special Needs or a Language Barrier are Under-served.
Many people in harm's way are underserved with current public alerting because they are blind, deaf, cognitively impaired, or they do not understand the language being used in the alerts. These issues can be addressed by exploiting the data features of CAP and with automated translation.
4. Alerting Areas Should be Precise.
Trust in an alerting system is eroded when people get alerts not intended for them. This happens often in systems based on mass media broadcasting, but alerting coverage can be much more precise with various other means of alert dissemination. This issue is addressed with CAP alerts that include a precise area delineated by polygons or circles in addition to the textual area description.
5. Issuing Alerts Should be Quick and Easy.
Alerting authorities that have yet to implement CAP must contend with many separate methods for sending out alerts. Typically, this includes making phone calls, sending Faxes, sending e-mails, posting to a Web page, and posting to Facebook and Twitter, among others. This activity consumes valuable time and distracts from the mission of composing accurate and actionable alerts. With CAP, this issue is addressed in that a single CAP message disseminates over multiple alerting methods.
6. Situational Awareness can be Better Shared.
In managing any emergency situation, it is essential to assimilate relevant information of many types and from many different sources, at scales ranging from local to city-wide, provincial, national, regional, international, and global. This is called "Shared Situational Awareness" or maintaining a "Common Operating Picture". That key information includes real-time alerts, but such alerts are difficult to ingest, use, and share if they are communicated in a broad range of media and formats. This issue can be addressed by having alerts available in CAP format as much as possible.
7. Sudden-onset Events Require Immediate Alerting.
Some types of hazard occur so suddenly that seconds can mean the difference between timely, life-saving alerts and alerts that arrive too late. Example hazards include earthquakes, tornadoes, tsunami, flash floods, volcanic eruptions, landslides, avalanches, and active shooters, among others. This issue can be addressed by sending CAP alerts immediately to an online facility such as an Alert Hub which immediately disseminates those alerts by all available media. (In the case of mobile phone alerting, "cell broadcast" is immediate whereas SMS is often too slow.) Here it is noted that the digital aspect of CAP messages enables immediate action not only by people but by devices such as sirens, highway signs, train controls, and other automated mechanisms that help save lives.