Integrating Public Alert and Warning to Improve Effectiveness

Submitted by: United States
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In the United States, we have been fortunate to develop and build, through partnership with private sector industry, academia, and federal, state, local, tribal, and territorial government offices, a system that enables public safety officials to create warning and alert messages using a single interface that can be sent to the public via multiple communications channels, platforms and technologies.

Effective public alert and warning entails communicating information and instructions to people in danger about an impending hazard early and clearly enough such that those people understand and take appropriate action to avoid and/or mitigate the impact of the impending hazard.

Integrating the warning message creation interface with access to multiple warning message dissemination channels improves the effectiveness of public alert and warning by:

1. Reducing the number of steps required by a warning official to create and send a warning message via multiple communications channels; and
2. Increasing the likelihood that the public will receive the warning message quickly.

The Federal Emergency Management Agency’s Integrated Public Alert and Warning System (IPAWS) in the United States provides warning authorities access to multiple communications systems for the delivery of emergency information to people. This is accomplished by using a standard message format called the Common Alerting Protocol (CAP). CAP is an international open information standard managed by the Organization for the Advancement of Structured Information Standards (OASIS). A single CAP message, created by a warning authority, contains standard information elements describing the hazard and appropriate protective action instructions. The IPAWS distributes the CAP message to the multiple communications systems. Each communications system utilizes information supplied in the CAP message to deliver warning information to people per that communications system’s capabilities. Currently the primary IPAWS interfaces for warning message delivery to people include radio audio broadcast, television audio and text display broadcast, and short message text broadcast to cell phones. The IPAWS, by enabling warning authorities to send one message that communicates warning to people via multiple communications channels, is improving the effectiveness of warning communication.

In the next year, we are focused on improving the key component of the system: the warning message creator. Efforts are underway to develop and deliver new training, guidance, and practices to improve the skill of authorities responsible for sending warning messages. Guidance for local warning authorities will include developing comprehensive public alert and warning plans at the local community level that include assessment of potential local hazard events, development of warning message templates for each hazard, documentation of procedures for regular practice and testing of warning systems, and periodic exercise plans which include sending test messages to the public.
In addition, we continue to pursue technological enhancements that reduce the number of steps for a warning official to originate an effective message during an emergency. One concept that may make warning messages significantly more effective will be improvements in the “smartness” of communications systems and devices, such that appropriate warning information and instruction is provided to each person based on the person’s geographic location in relation to the hazard.

Challenges to overcome in continuously improving public warning effectiveness in the United States include:

- Variability of language, culture, and perception of hazards and threats among national and local communities.
- Limited communication system availability in some geographic areas.
- Varying levels of resources in local public safety authority organizations.