

Common Alerting Protocol (CAP) Working Group

Requirements for a Common Alerting Protocol

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Objectives

The Common Alerting Protocol will provide a standard format that can be used "to collect and relay instantaneously and automatically all types of hazard warnings and reports locally, regionally and nationally for input into a wide variety of dissemination systems." ⁽¹⁾

This will lead to a number of direct and indirect benefits to the public:

- Warning effectiveness will be enhanced by delivering consistent, simultaneous messages over various alert dissemination systems
- Responsible alerting officials will be enabled to do their jobs more effectively by providing them a single consistent method for using all available alert dissemination systems
- The needs of special populations, including the deaf and hearing-impaired, the blind and visually-impaired, and non-English speakers, will be better met by consistent messaging over multiple modes of alert dissemination
- Federal and state officials will have instant access to a comprehensive real-time database of alerting events, enabling rapid detection of patterns and trends

Requirements

The Common Alerting Protocol SHOULD:

1. Provide a specification for a simple, extensible format for digital representation of warning messages and data
2. Permit integration of diverse sensor, threat-evaluation and dissemination systems
3. Enable a distributed architecture of control and authority over warning systems
4. Be usable over multiple transmission systems, including but not limited to TCP/IP-based networks and one-way "broadcast" channels
5. Provide credible end-to-end authentication and validation of all messages
6. Provide a unique identifier (e.g., an ID number) for each warning message and for each message originator
7. Provide for multiple message types, such as:
 - Warnings
 - Acknowledgements
 - Expirations and cancellations
 - Updates and amendments
 - Dissemination results reports (from dissemination systems)
 - Administrative and system messages

8. Provide for flexible description of each warning's:
 - Geographic targeting
 - Level of urgency
 - Level of certainty
 - Level of threat severity
9. Provide a mechanism for references (e.g., links) to supplemental information (e.g., digital audio or image files, alternate-language versions, etc.)
10. Utilize an established open-standard data representation technology that provides for future evolution of format requirements (e.g., Extensible Markup Language - XML)
11. Be based on a systematic program of real-world cross-platform testing and evaluation. In other words, "a candidate specification must be implemented and tested for correct operation and interoperability by multiple independent parties and utilized in increasingly demanding environments" ⁽²⁾
12. Provide a clear basis for interface-compliance certification and further protocol evaluation and improvement
13. Be inexpensive to implement and to use

The Common Alerting Protocol SHOULD NOT:

1. Include, use or require any proprietary technology which has not been released for general use without charge under terms similar to those of the GNU General Public License ⁽³⁾
2. Rely on link or server security to maintain message authentication and validation

Discussion of these draft requirements will be conducted in the CAP Mailing List. Information about the list appears in the right column of this page.

References

(1) – 'Effective Disaster Warnings' Report by the Working Group on Natural Disaster Information Systems, National Science and Technology Council, November 2000

(2) – 'RFC 2026 - Internet Standards Process', S. Bradner (Harvard University), Network Working Group, Internet Engineering Task Force, October 1996

(3) – 'The GNU General Public License (GPL)', Version 2, June 1991,

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