



## **Alerting technologies to save lives in Forest Fires are effective with technology redundancies and multilingual CAP Event Terms basis. Design for worldwide consumer electronics adoption is preferable to reduce costs.**

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California wild and forest fires in 2017 resulted in over 100 fatalities. While WEA alerts were transmitted to mobiles in selected areas, the power and network outages limited their delivery. WEA is similar to the SMS Broadcast system used elsewhere. It does not require subscription, and can be geotargeted, usually by map polygon. There are already available and in development other alerting technologies. The Emergency Alert System on radio and TV in the U.S. has been in use for many years. It is a broadcast break-in system that overrides program content. This was used in one location for the wildfires, but not elsewhere as geotargeting is not possible with this system. It is an analog broadcast technology architecture. AM and FM Broadcast in the U.S. now has HD Radio that is mixed analog and digital. A limited data message can be carried and used for selective delivery of messages. DAB, DAB+ and DRM also can carry a message payload, which can be used for a selective delivery mechanism when the receiver has location position. This may be in a vehicle radio/navigation system. The current digital television system in the U.S. and some other countries is now being replaced by ATSC 3.0. This provided a superior modulation format, Layered Division Multiplexing (LDM) for delivery of program content and alerts to suitable mobiles. An IC for UHF reception and prototype mobiles have been developed. No external antenna is required. Both of these new technologies are tested as delivering alerts independently of the mobile network. Within the limitations of radio and TV propagation, such capabilities would provide technology redundancy. The television signal propagation may be limited in rural areas, but ATSC 3.0 is capable of having on frequency repeaters to make a single frequency network for improved coverage of program content and alerting. Multilingual alerts based on the CAP Event Terms list with Message Formats are being provided for.