

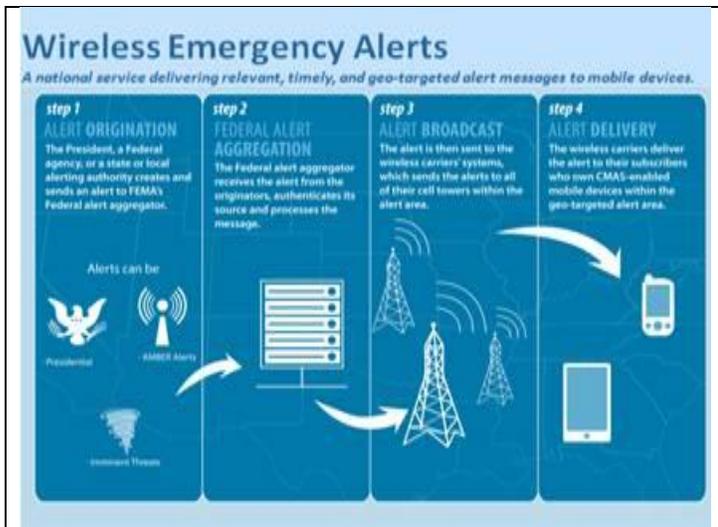
DHS Science and Technology Directorate

Wireless Emergency Alerts

Research, Development, Test & Evaluation

Keeping pace with a mobile society

As our nation has grown more dependent on mobile devices, mobile communications have become as critical as traditional media platforms (e.g., television, radio). Recognizing the importance of mobile communications, the Federal Emergency Management Agency (FEMA) continues to update the Integrated Public Alert and Warning System, a comprehensive national system that communicates emergency alerts and warnings to target mobile users. As part of this effort, FEMA led the development of Wireless Emergency Alerts (WEA), a system that sends geographically targeted notices to mobile devices (e.g., cellular phones, smart phones, tablet computers) to notify citizens of imminent threats and significant events based on their location. The geo-targeted WEA notifications are broadcast through specific cellular towers, enabling the system to deliver messages only to mobile users in the area.



WEA: Alert origination to mobile device delivery.

The Department of Homeland Security Science and Technology Directorate (S&T) and the Federal Emergency Management Agency (FEMA) have partnered with the Federal Communications Commission (FCC) and the wireless industry to create a national alert and warning capability that distributes Presidential alerts, AMBER alerts, and imminent threat alerts (e.g., hurricanes and tornadoes, where life or property is at risk) to mobile devices, including cellular phones and pagers.

Authorized by the Warning, Alert, and Response Network (WARN) Act of 2006, S&T and the FCC initiated WEA

Research, Development, Testing and Evaluation (RDT&E) to help advance and improve commercial broadcast WEAs.

Successful delivery of WEA to mobile devices requires four steps:

- An authorized alert originator, such as a state's Office of Emergency Management, uses a Common Alerting Protocol-compliant alert origination tool to send a geographically targeted alert to the federal alert aggregator managed by FEMA.
- The federal alert aggregator receives and verifies the alert's authenticity.
- The alert aggregator translates the alert into a standardized format optimized for dissemination, and sends the alert to the wireless carriers' systems.
- Upon receipt of an alert, the wireless carriers broadcast it to all WEA-enabled mobile devices serviced by their networks and located within the geo-targeted alert area, including those roaming from other carrier networks.

S&T's WEA RDT&E Program delivers targeted alert messages to elicit public response

S&T will identify research institutions, industry, government, and academia to perform RDT&E activities that address geographic targeting and public response performance gaps. This research will aid the operation of WEA as it exists now and it will also be knowledge that can be applied to future system iterations.

WEA RDT&E research focus areas

- **Public Response:** Research to better understand and improve public response to alerts and warnings.
- **Diverse Populations:** Research to better understand how to ensure the same timely and effective alerts reach diverse populations, including those with functional and access needs.
- **Geo-targeting:** Research to better determine when more granular geographic targeting is appropriate and to identify, test, and evaluate geographically targeting technologies.
 - Emergency Managers should work through their local National Weather Service Warning Coordination Meteorologist (WCM) for questions about NWS WEA.



Homeland Security

Science and Technology

To learn more about the Wireless Emergency Alerts Program, contact SandTFRG@dhs.gov.