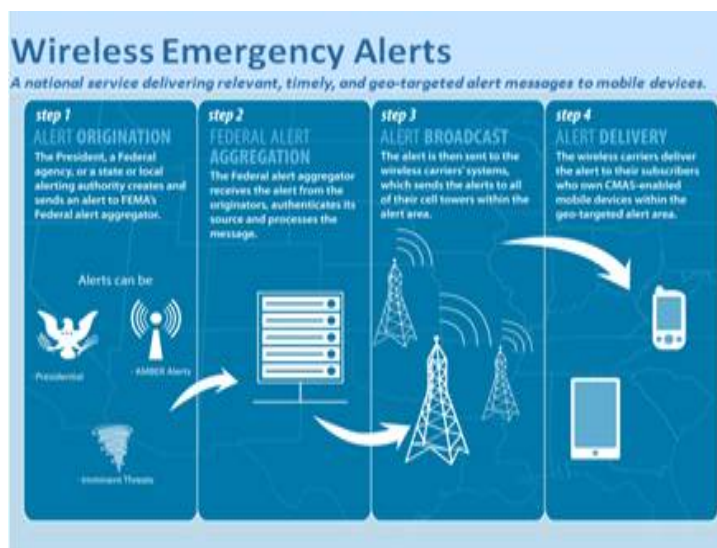# DHS Science and Technology Directorate
First Responders Group – Wireless Emergency Alerts (WEA) Research, Development, Testing, and Evaluation (RDT&E)

Keeping pace with a mobile society is an increasing challenge for governments across the country.

Citizens require alerts detailing the threat and how to respond before a tornado can sweep across a city or a hurricane can batter homes on the coast. While the Emergency Alert System continues to be responsible for broadcasting alerts and warnings over radio and television, technology has provided new options for communicating during emergencies. Following the sharp rise in mobile communications, government officials now use commercial broadcast wireless emergency alerts as an integral tool for distributing alerts and warnings.

WEA: Alert origination to mobile device delivery.

The U.S. 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 alerts and warnings capability that distributes Presidential alerts, AMBER alerts, and imminent threat alerts (i.e., emergencies, such as hurricanes and tornadoes, where life or property is at risk and the event is likely to occur) 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 Wireless Emergency Alerts (WEA) Research, Development, Testing and Evaluation (RDT&E) to help advance and improve commercial broadcast WEAs.

Successful delivery of WEA to mobile devices requires five steps to align seamlessly.

1. 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.
2. The federal alert aggregator receives and verifies the alert's authenticity,
3. The alert aggregator translates the alert into a standardized format optimized for dissemination, and
4. Sends the alert to the wireless carriers' systems.
5. 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 Research, Development, Testing, and Evaluation (RDT&E) Program enhances national capability to deliver geographically targeted alert messages to mobile devices that elicit the intended 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

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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 system iterations.

Note:

- WEA was formally entitled CMAS – Commercial Mobile Alert Service. More information is available at:
- http://www.fema.gov/wireless-emergency-alerts#0
- Emergency Managers should work through their local National Weather Service Warning Coordination Meteorologist (WCM) for questions about NWS WEA.

Visit: http://www.stormready.noaa.gov/contact.ht

To learn more about WEA and related activities, contact SandTFRG@DHS.gov