

DHS Science and Technology Directorate Wireless Broadband Technology Demonstrator Program

Modernizing responder communications

Many changes in the responder communications operating environment have occurred in recent years, presenting both opportunities and challenges. Changes include the emergence of new technologies to communicate and share information during emergencies, such as broadband services or applications, as well as the modernization of networks, devices and information systems to support emergency communications. At the same time, federal, state and local responders continue to make significant investments in their land mobile radio (LMR) systems to ensure access to mission critical voice.

Today, the Department of Homeland Security's (DHS) operational users in the field primarily use mission critical voice via the existing LMR networks. The many different LMR systems owned and operated by federal, state, local, territorial and tribal partners make voice interoperability and collaboration challenging, however.

Through the Wireless Broadband Technology Demonstrator (WBTD) program, DHS Joint Wireless Program Management Office (JWPMO) and DHS Science and Technology Directorate (S&T) are partnering to identify emerging technologies that enhance the existing capabilities of current LMR systems. This joint effort conducts research, development, testing and evaluation of possible solutions to incorporate LMR functionality with wireless broadband and long term evolution (LTE) capabilities.

Evaluating potentially viable solutions

The WBTD program has identified four areas for evaluating potential technology solutions:

- **Mission Critical Voice Over Broadband:** The solutions must offer similar LMR network capabilities over a broadband network, including law enforcement grade of service.
- **Broadband Services to Tactical Users:** The solutions must provide data and video services.
- **Remote Radio Management:** The solutions must allow for remote device management and configuration using broadband networks and application pushes to update devices on broadband and LMR networks.

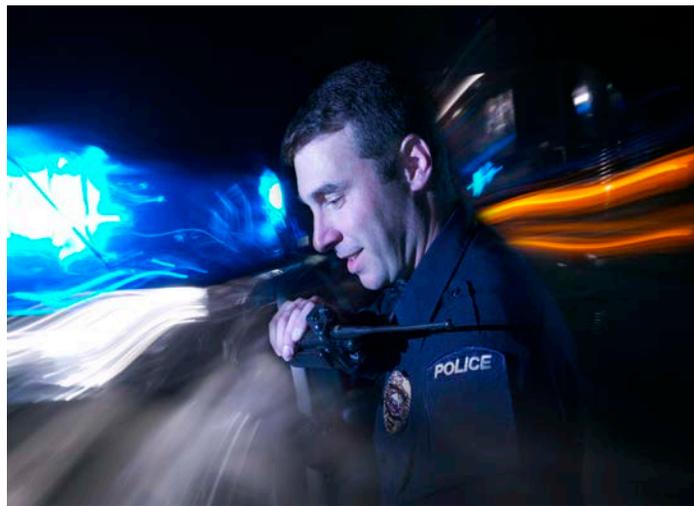


Figure 1. Law enforcement officer using a multi-band radio

- **Network Integration to Interconnect Public Safety and Commercial Networks:** The solutions should allow users to access and communicate with others using both public safety and commercial LTE networks via a single

Current activities and opportunities

The WBTD program has identified potential solutions. If these proof-of-concept solutions demonstrate that they meet the requirements in the laboratory environment, the solutions will move forward to limited field testing with operational end users. Results from lab testing and demonstrations are being collected and show potential for viable solutions.

The JWPMO and S&T will assess the viability of each solution for costs, applicability for field operations and assimilation into mission operations. These evaluations will help federal, state and local, territorial and tribal partner organizations better assess solutions that provide alternative capabilities in addition to the use of legacy LMR infrastructure.

WBTD partners

- DHS Joint Wireless Program Management Office
- DHS S&T First Responders Group
- Department of Commerce Public Safety Communications Research Program Boulder, Colorado



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To learn more about the Wireless Broadband Technology Demonstrator Program contact SandTFRG@dhs.gov.