Multi-Band Radios to Provide Public Safety Interoperability

by Mickey McCarter
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First responders expect to start receiving first five-band radios later this year under DHS S&T program

The city of Phoenix, Ariz., will become one of the first metropolitan areas to receive prototypes of a new radio that enables interoperable communications through providing access to all radio bands used by first responders via a program under the Science and Technology (S&T) Directorate at the US Department of Homeland Security (DHS), officials announced Tuesday.

"In the case of incidents that compromise infrastructure or that are unplanned, the establishment of command and control for first responders has been exceptionally difficult. People come with their own radios, their own equipment, and their own gateways. Typically, first responders do not have that initial capability to talk to each other," Jesse Cooper, information technology project manager for the Phoenix Police Department, stated at the 2008 S&T Stakeholders Conference in Washington, DC.

DHS announced a 12-month contract award worth $6.275 million on Feb. 27 to Thales Communications Inc. for production of the multi-band radios. To date, first responders must carry multiple radios or establish special gateways or patches to communicate with one another on-scene, Cooper explained. Those efforts require time, resources, and skilled personnel-all of which are not always available.

The public safety community in Phoenix should have the multi-band radios by the end of the year, Cooper estimated.

To fulfill the requirement for the multi-band radios, Thales Communications produced the Thales Liberty, drawing from the company's experience with multi-band radios for the US military, Stephen Nichols, director of business development for Thales' DHS/Public Safety division, told HSToday.us.

"The Liberty radio is a single portable that operates on all of the major public safety bands--VHF, 136-174 megahertz, UHF, 380-520 megahertz, and 700-800 megahertz. In the past, you needed five radios to cover all of those different bands," Nichols remarked.

The radios adhere to standards published by the Telecommunications Industry Association under Project 25, which provides guidance for equipment that provides digital two-way radio communication for first responders.

However, Project 25 UHF radios cannot cross bands to communicate directly with Project 25 VHF radios, for example, but Liberty radios can do so through their multi-band capabilities, Nichols declared.

First responders who show up during an emergency situation would be immediately capable of communicating with each other, regardless of the radio band in use by their agency. The radios also are useful in scenarios where communications infrastructure has been destroyed. Should a hurricane knock out communications on one band, first responders could shift to another available band to enable communications, Nichols reflected.

"It's the standard radio that you use every day. It is not a special piece of equipment that you bring in at the time of the exercise or that you bring in at the time of the event or the hurricane. It's the radio you use every day, but the user can talk to a lot more people than he ever could before by moving the channel selector," Nichols said.

But technology alone does not solve the problems of interoperability, Jose Vazquez, director of First Responder Technologies at the DHS S&T Directorate, cautioned in remarks at a conference panel.

"People need to be able to exercise what they are going to do in case of an emergency so that when a calamity occurs, they have the procedures in place and they are able to quickly execute them," Vazquez said. "This is a tool that facilitates that. But at the end of the day, there is a lot more work required to truly achieve interoperability and a lot of that is training and governance."