

DHS CLAIMS BREAKTHROUGH IN WIRELESS BROADBAND INTEROPERABILITY



by David Silverberg
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New system allows responder radios to communicate with laptops, PDAs for the first time

Department of Homeland Security (DHS) officials and private sector engineers have succeeded in creating a system that allows first responders to communicate on what is effectively a single network using existing land-mobile radios as well as new broadband devices like personal digital assistants and laptops, significantly advancing interoperability while keeping costs low.

The new system, being piloted in Washington, DC, is called the Radio Over Wireless Broadband (ROW-B), and is the result of collaboration by the DHS Science and Technology Directorate (S&T), the District of Columbia Office of the Chief Technology Officer and the company ISCO International, Elk Grove Village, Ill.

“This is the world’s only 700MHz broadband network,” Emil Olbrich, a senior systems engineering consultant with Protiro Inc., Denver, Colo., told a Capitol Hill gathering on Aug. 27 in a presentation introducing the system. Protiro consulted on the program.

David Boyd, director of S&T’s Command, Control and Interoperability Division, hailed ROW-B as “an important milestone in our efforts to advance interoperability progress.” It will allow non-radio users to communicate with response units in the field, he stated.

ROW-B allows traditional hand-held or vehicle-mounted radios to communicate with separate, wireless broadband devices that are served by proprietary commercial networks, which were not designed for such communication.

Boyd emphasized that the program was designed to use the equipment already existing in most first responder departments without requiring costly new replacements. The guiding principle was “What can we do now with what we have?” he explained.

The system was tested during July and August and connected the District of Columbia’s existing radios with broadband devices using a Bridging Systems Interface. It also used geographic information system (GIS) databases to identify the locations of vehicles, equipment and responders.

The project was based on a survey of over 311,000 public safety users conducted in June 2007. According to Olbrich, the survey received a return rate of over 140 percent and revealed that the top five applications that responders felt were critical for a broadband network were: direct, unit-to-unit communication (required by 57 percent of respondents); push-to-talk voice communications (50 percent); GIS (42 percent); e-mail (41 percent); and automatic vehicle location (39 percent).

Based on these results, the project partners, which included Raytheon JPS, Raleigh, NC, designed the Bridging Systems Interface.

S&T’s involvement in ROW-B will end at the end of September, according to Boyd. As promising as the technology is he said it would be a long time before ROW-B was launched in other cities, each of which has legacy systems that complicate its adoption of the technology. Further, he cautioned: “Don’t expect to have a single system coming to the nation any time soon.”

Demetrios Vlassopoulos, deputy fire chief and chief information officer of the Washington, DC Fire Department, said that the system will continue to be tested. “I’m eager to see it work and I want the applications,” he said. “We have some testing to do but we’re excited about this technology.”

Washington, DC has a unique Regional Wide Broadband Network at 700 MHz for public safety users, which covers 80 to 95 percent of the District’s 69 square miles. It has no conflicts with cellular or commercial users and supports commercial roaming at 1.9 GHz and was provided by a special, temporary authorization from the Federal Communications Commission. It is high speed (a latency rate of 30 to 50 milliseconds) and entirely based on the Internet protocol standard. The Bridging Interface used in ROW-B was routed through servers located in Chicago, Ill.



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