Radio Over Wireless Broadband (ROW-B)

Project Description

SNAPSHOT

The Radio Over Wireless Broadband (ROW-B) project successfully integrated radios operating on the District of Columbia's existing Land Mobile Radio (LMR) system with a broadband network, allowing for broadband devices such as computers and cell phones to communicate with radios on the LMR network. This technology enables public sector personnel to have seamless interoperation between broadband and LMR, and have location awareness of users. Not only can emergency responders use this service but it also can be extended to other personnel – such as bus drivers and crossing guards – so that critical information can be easily communicated during an incident.

BACKGROUND

Emergency responders typically use LMR systems that are either hand-held or mounted in vehicles to communicate. These systems provide first responders with critical capabilities (i.e., high reliability, one-to-many communication) often not available from commercial alternatives such as cellular networks. At the same time, responders are increasingly using commercial cellular phone networks as a secondary means of communications and gaining access to other advanced communication capabilities through high-speed, or broadband, wireless connections. As a result, public safety agencies are struggling with interoperability issues between LMR and broadband systems, which were not designed to interoperate.

AN INNOVATIVE APPROACH

Working with industry and the Department of Homeland Security Office for Interoperability and Compatibility, PSCR developed a common method (otherwise known as an implementation profile) to connect LMRs together from multiple manufacturers using the Internet Protocol. This profile, called the Bridging Systems Interface (BSI), leveraged work from PSCR's Voice over Internet Protocol (VoIP) project. PSCR piloted the BSI in August 2008 in Washington, DC. ROW-B demonstrates an innovative method to:

- Address a critical interoperability gap quickly and outside of the formal standards process.
- Provide public safety and other personnel access to a broad set of advanced features, such as Push-To-Talk (PTT) radio calls on wireless broadband mobile devices, which also connect to a LMR radio system and Geographic Information Sharing (GIS) system.

VALUE TO PUBLIC SAFETY

PSCR's ROW-B project demonstrates how:

- Localities nationwide can integrate legacy and emerging, cutting-edge communications systems to provide additional interoperability without having to build out additional expensive LMR infrastructure.
- A single user can reach multiple users through talk groups on the broadband cellular network, reducing the need to place several calls to coordinate a group and saving critical response time.
- Agencies will increase efficiency and effectiveness of response efforts by using real-time location mapping and location-based group calls, enabling emergency responders to access the locations of critical resources—such as equipment and personnel—in real time and to form dynamic talk groups based on proximity.
- The emergency response community can employ innovative technologies to create entirely new methods of communicating.

RESULTS

Interoperability between incompatible LMR and broadband systems has been a long-term goal until now. ROW-B will extend the capabilities of existing public safety communication systems and enable seamless voice communications between LMR and broadband systems. By demonstrating interoperability between broadband technologies and an existing LMR network, PSCR's ROW-B demonstrated how public safety can integrate new technologies with existing emergency response communications systems.

"I'm eager to see [ROW-B] work and I want the applications…. We're excited about this technology."

-Demetrious Vlassopoulos, deputy fire chief and chief information officer of the Washington, D.C. Fire Department, in *Homeland Security Today*