



Homeland
Security

Fact Sheet

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Contact: DHS Press Office at (202) 282-8010

RADIO OVER WIRELESS BROADBAND PROJECT

Background

With the increasing availability of wireless broadband technologies, emergency responders nationwide are gaining access to advanced technology and application capabilities. In a 2007 National Public Safety Telecommunications Council questionnaire on wireless broadband—representing more than 300,000 practitioners—respondents identified Push-To-Talk (PTT) and Geographic Information System (GIS) among priority wireless broadband applications.

PTT technology is similar to walkie talkies. PTT is the primary means of wireless voice communication used by emergency responders on two-way radio networks, also known as Land Mobile Radio (LMR). PTT calls are half-duplex communications, meaning that while one person pushes the button and speaks, the other person or persons listen. PTT over Cellular takes this existing PTT communication functionality and allows it on modern cellular and wireless broadband networks.

GIS technology refers to a host of technologies supporting location-based services. This includes location based on a map, location of other vehicles, equipment, or resources, and location of other emergency responders. The emergency responder locations are displayed on maps that are generated in real-time from GIS databases that contain important information such as roads, buildings, fire hydrants, or any type of GIS “layer” that is of interest. GIS technology will allow emergency responders to have real-time access to the locations of all resources in their area, as well as the ability to communicate to them as needed.

As industry develops new technologies, it is critical that emergency response agencies are able to integrate them into current and future systems and operations. The Office for Interoperability and Compatibility (OIC) has launched the Radio Over Wireless Broadband (ROW-B) project to field-test the integration of new broadband PTT technology and GIS applications with existing LMR systems and standard operating procedures. Emergency responders commonly use LMRs in portable handheld and mobile vehicle-mounted devices. Connecting PTT technology on broadband mobile devices with LMR will allow interoperability across different—and typically incompatible—types of communications systems.

ROW-B Purpose

To demonstrate the integration of PTT and GIS technologies over wireless broadband, OIC's ROW-B has partnered with the District of Columbia's Office of the Chief Technology Officer (OCTO), and Clarity Communication Systems Inc. ROW-B will assist interoperability with OCTO's existing LMR network and its pilot citywide wireless broadband network, the Wireless Advanced Responder Network (WARN). The WARN system is comprised of a Evolution, Data Only Revision A (DORA), wide area, wireless high-speed data network—similar to that of data network from a commercial cellular provider. The network speeds are comparable to wired Internet DSL. They are capable of providing multi megabit per second data to emergency users.

ROW-B will use a new standard from the Telecommunications Industry Association called the Inter-RF Subsystem Interface (ISSI), which is part of the Association of Public-Safety Communications Officials Project 25 (P25). This interface will provide a common connection point for the voice and data information between the disparate LMR and wireless broadband networks. PTT radio calls on wireless broadband mobile devices will be able to connect to ISSI-compliant (P25) LMR systems. This will allow LMR users and broadband users to be on the same PTT group call. ROW-B also introduces broadband data applications, including real-time location mapping and location-based group calls. It will test these products for use by multiple emergency response agencies.

ROW-B Impact

As an early deployment of cutting-edge technologies, ROW-B will provide emergency responders and the Federal agencies working on interoperability matters with an accurate assessment of the functionality of new products.

More importantly, it will demonstrate the extensibility of the ISSI as it relates to easing interoperable communications between different and incompatible systems. By demonstrating interoperability between broadband technologies and an existing LMR network, ROW-B will equip localities with needed information to integrate new technologies with existing emergency response communications systems.

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The Department of Homeland Security established the Office for Interoperability and Compatibility (OIC) in 2004 to strengthen and integrate interoperability and compatibility efforts in order to improve local, tribal, state, and Federal emergency preparedness and response. Managed by the Science and Technology Directorate's Command, Control and Interoperability Division, OIC is committed to developing technologies and tools—methodologies, templates, models, and educational materials—that effectively meet the critical needs of emergency responders in the field.