



Multi-Band Radio Project

Issue Background

The advent of two-way radio communications in the early 1930s generated a need for public safety radio channels, or spectrum. To support emergency response radio communications, the Federal Communications Commission reserved radio spectrum within several different frequency bands for public safety use. Until recently, emergency response radios were built to operate within a single radio band. As a result, emergency response agencies and support units—such as the Federal Emergency Management Agency, the National Guard, and the United States Coast Guard—had to rely on the use of several single-band portable or mobile radios to maintain a level of interoperability with partner agencies. While some agencies swapped or shared radios, others employed time-consuming methods to exchange information, including relaying messages through dispatchers or using runners to hand-carry messages.

Multi-Band Radio Project Overview

To address these challenges, the Department of Homeland Security's (DHS) Science and Technology (S&T) Directorate awarded a \$6.275 million contract to Thales Communications, Inc. to demonstrate a multi-band radio (MBR) that enables emergency responders to communicate with partner agencies—regardless of the radio band. The MBR prototype is capable of operating in the primary public safety bands between 136-174 megahertz (MHz) and 380-520 MHz as well as in the 700 MHz and 800 MHz bands. Additionally, when authorized, the MBR is capable of operating on the Department of Defense bands in the 136-138 MHz and 380-400 MHz ranges as well two Federal Government bands: 162-174 MHz and 406.1-420 MHz. This capability represents a significant step for Federal agencies that need to interoperate with their local, tribal, regional, and state counterparts.

Carrying a price tag of \$4,000-\$6,000, the MBR is equal in form, factor, and cost to existing high-end portable radios. A significant difference is that the MBR equips emergency responders with the unprecedented capability of operating across the entire range of public safety radio bands. To communicate with another agency, users simply select the assigned channel.

Field Tests

S&T's Command, Control and Interoperability Division's Office for Interoperability and Compatibility (OIC) will test and evaluate the MBR through pilots nationwide. These pilots will focus on testing the radio's operation across multiple systems—analogue, conventional, digital, and Project 25 trunked—and multiple agencies, including local, tribal, state, Federal, and military. During these field tests, the primary users of the new technology will likely be responders in a command and control role or those involved in special operations that need to interoperate with multiple entities. These users include incident commanders; responders across all disciplines, including battalion chiefs; and Federal officials who coordinate with local agencies.

Future Customer Requirements

To successfully support emergency response communications and operations, it is essential that technologies align with users' requirements. In keeping with its user-driven approach, OIC is working closely with DHS customers to ensure that the MBR meets current and future operational requirements, such as personnel tracking, usage in locations where there is a danger of explosion, and responder health and well-being monitoring.