

Raytheon deploys affordable P25net interoperable radios to first responders in eastern Idaho

By Jacob Goodwin

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Raytheon's Integrated Communications Systems division has recently completed the replacement of an aging radio system in five counties in eastern Idaho, an area covering 7,075 square miles, with its APCO Project 25 (P25) radio system for public safety agencies.

The company's P25net system is an advanced Internet protocol (IP) networked radio system that is fully compatible with all P25-compliant radios and includes the industry standard Inter RF Sub-System Interface (ISSI) for interoperability with other manufacturers' P25 radio systems.

According to Kevin Ball, Raytheon's lead engineer for the P25net group, the project was an overwhelming success for the five counties -- Bonnevill, Clark, Fremont, Jefferson and Madison -- because it enabled them to do something that any one of the counties may not have been able to accomplish by itself. The five counties are on the leading edge of a trend that is taking place throughout the country, in which regional systems are set up because individual government entities do not have the buying power to do such projects on their own, Ball added.

The goals that were presented to Raytheon, which was acting as a subcontractor on the multi-million dollar contract to Teton Communications, Inc., were to replace the former system that was not providing coverage throughout the region, to get better audio and seamless roaming, and to service all the public safety agencies in the Upper Snake River Valley, including sheriff's offices, fire and police departments and emergency medical services.

The counties also indicated that they wanted to migrate to a 700Mhz digital trunked radio system using the APCO P25 standard, which defines specific interfaces between radio systems to achieve interoperability. According to Director of P25net Solutions Karen Steinfeld, Raytheon handled the network infrastructure part of the deployment, while Tait Electronics furnished the subscriber equipment, such as mobile and portable radios.

"We believe that the customers should have choices," said Steinfeld, who noted that the system has been up-and-running since 2008, when it started with 300 deployed users. Current deployment is approximately

700 users on the way to a projected 900 users. County agencies, that did not originally participate in the system procurement, are now looking into joining the existing agencies in using the Raytheo P25net system, due to the success and excitement generated from the new system. Assessing the impact of the system, Steinfeld indicated that it has increased the level of radio coverage; offered seamless roaming because of the trunked system, increased the audio quality because of the digital technology; and included areas such as portions of Yellowstone National Park that previously had not had radio coverage back to the Rexburg area of eastern Idaho.

Steinfeld said that the audio quality is so much better with the new system that firemen wearing self-contained breathing apparatus do not need to use amplifiers, as in the past, because they can hear the radios clearly, even while wearing the breathing apparatus.



Other benefits to the system that she described were a flexible, distributed architecture that employs commercially available telecommunications-grade servers, natively inherent ISSI interface that enables interoperability with other P25 compliant communications systems without the need for a hardware based gateway. It also includes an RFSS Network Controller that utilizes Softswitch technology exclusive to Raytheon.

Raytheon's Softswitch technology provides communications network control and switching via software on a Commercial Off-The-Shelf (COTS) server, rather than a hardware-based switching solution, greatly reducing costs for hardware and the floor space to accommodate it.

The deployment also includes Raytheon's performance management system, which uses Genesis's Genwatch 3 technology to monitor network traffic, track how the network is utilized and determine if there are any bottlenecks.

Raytheon's philosophy, Steinfeld concluded, is that despite having to use snowcats to get to the top of the Idaho hills and mountainsides in the snow, the technology is the easy part. "Because of our focus on people," she said, "we understand that public safety officials need a trusted partner who listens and is flexible."