Raytheon's ACU-2000 IP installed in Northern California region to enable interoperability during multi-agency critical response

The Yuba City Police Department (YCPD) has implemented a complete interoperability system to enable multi-agency regional response in the Sutter Buttes region of Northern California.

Yuba City is located in California's central valley, approximately 40 miles north of Sacramento and a few hours drive from the San Francisco Bay area.

The new interoperability footprint covers areas which have flooded in the past and also locations where emergency service personnel conduct multi-agency coordinated activities.

"In the past, public works, fire and other surrounding emergency service providers and federal partners who may respond to our area in a crisis or pre-planned event have not been able to adequately communicate with one another," said Richard J. Doscher, chief of police for the Yuba City police department. "Most law enforcement in Sutter and Yuba counties operate on UHF, while local fire agencies, public works and surrounding county law enforcement utilize VHF."

The Sutter Buttes Gateway project was started with a goal of purchasing and installing an interoperability system to solve the region's communications problems.

Raytheon's ACU-2000 IP was chosen as the interoperability gateway component for the project after extensive research by the YCPD and discussions with other peer agencies who are utilizing Raytheon interoperability gateways.

The entire system was designed and built by Sutter Buttes Communications, Inc., located in Yuba City, with the complete involvement of several agencies and department heads.

The area hosts several lakes and rivers as well as a solitary high-level mountain in the middle of an otherwise broad flat plain of the Sacramento valley.

YCPD placed their interoperability system on the mountain top to gain much needed radio coverage to enhance disaster response should a flood or other multi-agency emergency response need come to light.

In preparing for this new system, several state and federal mutual aid and interoperability frequencies were constructed on the high-level mountain top including low band, VHF high band, UHF, and 800 MHz repeaters and base stations.

"These frequencies are connected directly to the YCPD dispatch center as a standalone resource and the dispatch center is capable of enabling or disabling the resources as needed," Doscher added.

In addition, each resource is connected into Raytheon's ACU-2000 IP interoperability system to provide a seamless gateway patch between the various frequency resources on an as-needed basis.

"Not only does the ACU-2000 IP provide us with a seamless gateway patch with superior digital processing capabilities but it is very user friendly and gives us advanced radio over IP and session initiation protocol capabilities as well," said Doscher.

When arriving on-scene for routine or emergency response, public safety agencies had previously

experienced difficulty communicating as each operated on different radio systems and frequencies. Before installing the system, the groups had relied on swapping radios to be able to communicate or had used mobile interoperability equipment. While this method did work, it limited response by not providing the wide area coverage needed.

"Prior to the construction of this wide-area system, local agencies have relied heavily on the use of mobile interoperability systems – such as Raytheon's TRP-1000 and ACU-M - for pre-planned and emergency events," he said. "This system will incorporate the use of fixed frequencies for instant activation and the deployment of interoperability solutions have already proven successful in this community through the use of these mobile gateways."

The system has been tested and is capable of full operations since mid-November. During testing, the ACU-2000 IP allowed for cross communications with the local police, sheriff, public works, regional emergency service and state and federal personnel.

"The ability to remotely control or operate the unit using various methods and the ability to operate in standalone mode without relying on a computer to operate or an Ethernet infrastructure to function has been extremely beneficial to us," added Doscher. "It's also a relief knowing that with this system, computers and the network can fail but the critical interoperability infrastructure will still remain fully functional in a disaster situation."

Phase one of the project is now complete - the system is ready to be activated in the event of a disaster.

Communications personnel will complete training on the system by the end of the year and mobile/portable subscriber units of several local agencies are in the process of being reprogrammed to include statewide and federal interoperability frequencies.

"If agencies follow statewide and federal interoperability frequency plans, this system will be available for use by any local, state or federal public safety entity within the RF footprint of the system," added Doscher. The RF footprint of the system is capable of covering approximately a five-county region.

"We have been extremely satisfied with Raytheon's interoperability solutions," added Doscher. "The support we've received is phenomenal – the local dealership as well as factory sales and the technical staff have made themselves available through various stages of this project, including providing materials and information for development of proper standard operating procedures and memorandums of understanding."

Phase two of the project will consist of adding several local frequencies to the ACU-2000 IP, allowing routine and local gateway patches.

Raytheon Company
Civil Communications Solutions
5800 Departure Drive
Raleigh, NC 27616

Sales
Raytheon Company
5800 Departure Drive
Raleigh, NC 27616
acu.sales@raytheon.com

http://www.raytheon.com
Keyword: ACU-2000 IP

Raytheon