U.S. FOREST SERVICE BUILDS A FLEXIBLE COMMUNICATIONS SYSTEM WITH WAVE™

ENHANCING CRITICAL COMMUNICATIONS IN THE FOREST SERVICE'S FAR-RANGING INTERMOUNTAIN REGION

The U.S. Forest Service suffered from a lack of interoperability among its Land Mobile Radio (LMR) systems, which posed significant dangers in emergency situations. To address this concern, the Forest Service adopted a customized WAVE-powered solution that worked with off-the-shelf network equipment to connect LMR systems, extend the reach of its dispatch operations, and provide cost-effective flexibility and scalability to meet their evolving needs.

THE CHALLENGE

The U.S. Forest Service (USFS) was established in 1905 to manage national forests and grasslands. Today, the public lands administered by the Forest Service encompass 193 million acres, an area the size of Texas.

The Intermountain Region alone is responsible for 13 national forests and nearly 100 ranger stations in Utah, Nevada, Idaho, Wyoming and California. Although each of these national forests had its own sophisticated LMR system, the systems could not be linked easily, stranding the USFS with isolated islands of communications. Dispatchers and radio users were further constrained by the hard-wired analog circuits used to connect radio facilities with specific dispatch centers.

As a result, communications between forests were impaired, dispatchers were not able to back each other up in emergencies, and fire-fighting aircraft coordination required constant handoffs as planes flew in and out of radio coverage. As the cost and scope of fire-fighting efforts grew, the Forest Service needed a flexible and affordable system to extend emergency communications throughout the region.

"The WAVE-powered MARC systems have allowed the USFS and our sister agencies to extend and enable channels of communications to areas, personnel and geographies. That was unachievable prior to now."

John Burt, Telecommunications Manager, USFS Humboldt Toiyabe, National Forest/State of Nevada

WAVE SOLUTIONS FEATURES

Managed communications
Delivers radio channels from one ranger station to multiple dispatch centers, providing better coverage at reduced cost. Allows base station personnel to use the WAVE Desktop Communicator® to communicate with radios directly from their PCs.

Flight following
Enables a single dispatcher to maintain constant radio communications with aircraft in the region, increasing safety and ensuring a faster turnaround time for firefighting aircraft.

Radio bridging
Bridges dispatchers among multiple LMR channels, PCs, and phones, even if the radios are on different frequencies or in non-adjacent regions.

Cost savings. Strategic investment.
Eliminates the need for separate networks for voice, data, two-way radios, or individual radio consoles for everyone who needs to communicate

THE SOLUTION

The Forest Service turned to technology firm Network Integration & Consulting Services (NICS) for help. NICS, helped the USFS implement MARC—Multi-Agency Radio Communications—a WAVE-powered solution. The MARC system leveraged the WAVE Software Development Kit (SDK) and enabled individual servers to be interconnected on the IP network using commercial off-the-shelf network equipment.

Multiple MARC servers running WAVE are deployed throughout several regions. Once the radio traffic in each forest is brought onto the IP network, MARC handles the secure mixing, patching, and transcoding of the audio signals. Dispatchers maintain constant communications with firefighting aircraft and coordinate emergencies that span multiple forests. WAVE's ability to generate radio-control tones enables full utilization of the numerous radio repeaters installed in each forest, guaranteeing communications from base station staff to rangers who may be two- or three-days horseback ride from civilization.

The Forest Service appreciates the flexibility and reliability of their WAVE-based interoperability solution and continues to find new ways to use WAVE for everyday and emergency communications.

THE RESULTS

Multi-Agency Radio Communications
Radio channels from one ranger station are delivered to multiple dispatch centers, which work together to provide better coverage at reduced cost.

Flight Following
A single dispatcher maintains constant radio communications with aircraft in the region, even if the plane traverses multiple national forests, increasing safety and ensuring a faster turnaround time for firefighting aircraft.

Radio Bridging
Dispatchers bridge multiple LMR channels, PCs and phones in seconds, even if the radios are on different frequencies or in non-adjacent regions.

Strategic Investment
Since WAVE can bridges Cisco CallManager IP phones and LMR radios, the USFS no longer needs separate networks for voice, data and two-way radios.

Cost Savings
Base-station personnel use the WAVE® Desktop Communicator to talk with radios directly from their PCs, eliminating the need to invest in radio consoles for everyone who needs to communicate.

THE FUTURE

NICS has currently deployed MARC systems in 17 national forests, replicating the success of the Intermountain Region's WAVE-powered solution across nine states. Once these projects are completed, Forest Service communications will be fully interoperable over a wide swath of the Western United States.

For more information about the WAVE, please contact your Motorola representative or visit motorolasolutions.com/wave.

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