

Forest Service Intermountain Region Ranges Far with MARC



"Our MARC systems have given the Forest Service an unprecedented level integration into our communications infrastructure." — Ray Gonsales; Southwest Zone Area Manager, USFS / ISO

The Challenge

The Forest Service (*USFS*) manages national forests across the United States. The Southwestern and Intermountain Regions alone are responsible for twenty-three national forests and nearly 300 ranger stations in Utah, Nevada, Idaho, Wyoming, New Mexico, Arizona and California. Although each of these national forests had its own sophisticated Land Mobile Radio (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 firefighting aircraft coordination required constant handoffs as planes flew in and out of radio coverage. As the cost and scope of their firefighting efforts grew, the Forest Service needed a flexible and affordable system that could extend emergency communications throughout these regions.

The Solution

The Forest Service turned to NICS for help. NICS, a technology firm focused on delivering converged IP based communications interoperability solutions, helped the USFS implement a converged communications infrastructure bring voice, data and radio services to the USFS national enterprise IP network. Nationwide access to these communications resources from any IP endpoint is being provided by NICS MARC server. Individual servers are deployed in specified locations and are configured to support one and other during disruptions throughout the enterprise network using off-the-shelf products. 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 can now maintain constant communications with firefighting aircraft and coordinate emergencies that span multiple forests. MARC'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 2 or 3

days' horseback ride from civilization. MARC also provides interoperable communications between dissimilar radio systems operating on different frequencies.

The Benefits

Shared and Backup Dispatch: Radio channels from one ranger station can now be delivered to multiple dispatch centers. Dispatch centers can now work together to provide better coverage for the Forest Service at reduced cost. Virtual dispatch capabilities are now achievable from any IP client on the USFS network.

Flight Following: A single dispatcher can now maintain constant radio communications with aircraft in the region, even if the plane traverses multiple national forests. This improvement in *Flight Following* means increased safety and a faster turnaround time for firefighting aircraft. These crucial flights will return without dumping their loads if confusion or communications difficulties prevent safe operation.

Radio Bridging: Dispatchers can now bridge multiple LMR radio channels in seconds using MARC, even if the radios are on different frequencies or are in non-adjacent regions. Users on PCs and phones are also able to communicate with radios in emergencies.

Strategic Investment: The Forest Service was able to ease away from managing and supporting three separate networks for voice, data, and two-way radios. MARC's ability to bridge between Cisco CallManager IP phones and LMR radios means the Forest Service can now administer a single converged IP network that supports all their communications traffic.

Cost Savings: Base station personnel can use the MARC Desktop Communicator to talk with radios directly from their PCs. The Forest Service no longer needs to provide an expensive radio console to everyone at the ranger station who needs to communicate

The Feedback

The Forest Service is pleased with the flexibility and reliability of NICS *MARC* interoperability solution, and continues to find new ways to use NICS technology for everyday and emergency communications needs.

The Future

NICS is now working with three other Forest Service regions to replicate the success of the Intermountain Region's MARC system. Once these projects are completed, Forest Service communications will be fully interoperable over the Western United States. NICS is working closely with the Forest Service as they continue to extend the reach of their interoperability solution.

About the USDA Forest Service

The Forest Service 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. Gifford Pinchot, the first Chief of the Forest Service, summarized its mission as, "to provide the greatest amount of good for the greatest amount of people in the long run." Visit the Forest Service on the web at www.fs.fed.us.

About NICS

Network Integration & Consulting Services, or *NICS*, is a technology firm based in Salt Lake City, Utah. NICS specializes in packet-switched IP-based Land Mobile Radio and converged IP based interoperability solutions offering a host of communications interoperability solutions networking design, integration, sales, and management services. Visit NICS on the web at www.nicserv.com.