

## Wireless Network Helps United States Marine Corps Base Proactively Manage Energy Use and Save Time and Money

The largest Marine Corps base in the world needed a better way to connect the energy management system devices installed in 244 buildings. RESOLUTE Partners, working closely with the Base's energy management team, engineered and deployed a wireless solution that not only saved the Corps significant time, money and labor, it also eliminated longstanding barriers to growth.



### The Challenges of Fiber on a Military Base

The Marine Corps Air Ground Combat Center (MCAGCC) in Twentynine Palms, California, has an energy management network that relied on fiber connectivity from individual buildings to the central control application. Many locations were unreachable via the wired network. Most of those that were connected suffered daily or weekly outages for a variety of reasons. Heavy vehicles often broke fiber strands. Construction projects regularly tore up roads and severed the fiber optic cable. Haboobs - dust storms with winds of up to 80 miles per hour - are known to blow through the area, pulling down aerial cable infrastructure. Wired connections on the Base were failing.

Installing and maintaining fiber connectivity became a major challenge. Fiber is inconvenient, costly and slow to deploy. Installation of conduits and underground cable was difficult when temperatures outside swung from 130° F in summer to 8° F in winter. "And if one section of the network broke," says Daniel Kariuki, energy projects manager for the MCAGCC, "we lost control of everything in that loop."

"The aging fiber network had become unreliable, and the cost of bringing fiber to new sites was high," says Aaron Ezrilov, director of federal sales at RESOLUTE Partners. The Base's energy management team and the contractor that installed the energy management system, Johnson Controls, were searching for solutions.

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#### Aaron Ezrilov

Director of federal sales at RESOLUTE Partners.

### A Military-Spec Wireless Solution

At the time, RESOLUTE Partners had been providing Wi-Fi services at MCAGCC for five years. "We had a long history of providing wired and wireless network solutions to the federal government," says Michael Blanco, chief executive officer of RESOLUTE Partners. "The Marine Corps was comfortable working with us as partners."

RESOLUTE Partners teamed up with Johnson Controls and proposed a pilot project to install wireless connections to about 50 buildings. Once RESOLUTE Partners received the go-ahead, it moved quickly. "Within weeks, we were turning wrenches and activating devices," Mr. Ezrilov says. "Ten weeks later, we had completed the pilot install."

RESOLUTE Partners connected Johnson Controls' network automation engine at each building with a radio on the roof. Signals were then transmitted to a series of base stations, each serving 30 buildings. Data was then sent to a central control point and aggregated in Johnson Controls' management system. Every step was wireless.

In the pilot project, wireless functioned as a backup to fiber. Today, the network is fully wireless, with 99.99% reliability.

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### Client Benefits

The system that RESOLUTE Partners has deployed provides immense operational and cost benefits to the MCAGCC. It has seven layers of security, can accommodate multiple platforms, and is impervious to interference from other Wi-Fi and wireless devices on the base.

If power to any building fails, batteries keep the system running for four hours, and when power resumes after a longer outage, the system comes back without human intervention.

“Previously,” Mr. Kariuki says, “if a building lost heating or cooling, the customer would call the trouble desk, which would notify the HVAC shop. An HVAC technician would drive to the building and make the repair. Now, the HVAC shop simply looks at the graphics and fixes the problem remotely or dispatches technicians – sometimes before the customer complains.”

Data gathering has been greatly simplified. Instead of physically reading meters at each building, the energy management team

simply views the data from a single location. Receiving data from distant buildings is never an issue. “We set up a connection to a remote base station 13 miles away and connected 12 buildings as easily as if they were next door,” Mr. Ezrilov says.

“By choosing RESOLUTE Partners’ wireless system over fiber, MCAGCC saved more than \$1.5 million,” says Dennis Wolf, senior project manager of Johnson Controls. The time to make each building operational dropped from 3 months to 3 days.

“I’m very pleased with RESOLUTE Partners and their responsiveness,” Mr. Wolf continues. “Every time a new building went up on base, they expanded the base station and provided new bandwidth. If a building’s height was raised or we lost line-of-sight between antenna and base station for any reason, the company reconfigured their system. They always stuck to a problem until they solved it.”

“RESOLUTE Partners has lessened my workload,” Mr. Kariuki says. “They are highly professional, very reachable and have done a great job for us. I don’t know where we would be without their wireless network.”

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**Dennis Wolf**

Senior project manager of Johnson Controls.

Contact us to learn more about our portfolio of wireless networks, professional services or to arrange a VersiWorks demonstration.

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