Cel-Fi QUATRA Helps Law Enforcement Agency Solve Cellular Signal Issues Inside Multiple Facilities

A law enforcement agency was having cellular coverage issues at many of its locations as it was transitioning from one service provider to another. The agency provided employees with cell phones, but they were unable to get a cellphone signal when inside its buildings. To resolve its cellular challenges for 10 sites (ranging in size from 30,000 to 240,000 square feet) from Seattle to Maryland, the agency turned to Atlantic Technology Group, a Rockville, MD-based provider of cellular solutions for the middleprise.

ABOUT THE PROBLEM

"There were a multitude of factors at the different locations that were causing the poor indoor signal," says Keegan Harrington, project lead at Atlantic Technology Group. "It could be RF blocking, building material, but it also could be the environment outside."

To solve coverage challenges for the agency, Atlantic Technology Group installed Cel-Fi QUATRA, an active DAS hybrid, at all 10 locations. Unlike analog boosters and passive DAS technology, QUATRA is designed to bridge the price-performance gap for the middleprise, and delivers a cellular signal that is up to 1000x stronger, utilizing CAT 5e cabling and Power over Ethernet, with no signal attenuation right to the perimeter of a building.

GETTING ENOUGH BLEED TO PUSH THROUGH

One location outside of Washington, DC was 240,000 square feet and had experienced cellular service issues since it was built. The building had a fire control laboratory where tests and investigations were done. Equipment to improve coverage could not be installed inside the labs due to the type of testing that was done.

"There was terrible service in the laboratories, especially in the basement. There were cinder block walls about two feet thick and a lot of windows," says Harrington. "We weren't allowed to put things in the labs so we put CUs in the hallways and office space to bleed through signal into the labs. We were able to push through the windows and cinderblocks because Cel-Fi QUATRA has 100 dB gain, so this strong signal made the bleed-through possible. With a passive DAS, you get only 72 dB gain."

Atlantic Technology Group installed five network units (NU), the head ends of the system, and put 20 coverage units (CU) – which are the remote internal antennas – in the hallways and office space. They installed 5 MIMO antennas on the roof as they wanted one antenna per NU to facilitate specific management of each individual NU.

He adds, "When we were done, we did a walk-through with the head scientist and he was pretty happy with how it turned out."

DIFFERENT LOCATION, SAME CELLULAR CHALLENGES

Another location in West Virginia was 175,000 square feet and was an older building with additions. Everything was mainly on one floor but it had a basement that was 35,000 square feet. The facility wanted to improve coverage for employees on the AT&T cellular network.

"They had cinder blocks everywhere. They had a phantom signal, where you have bars on your phone, but when you try to do something, you

THE CHALLENGES: Law Enforcement

- Law enforcement agency with multiple locations and research facilities ranging from 30,000 to 240,000 square feet
- Experienced coverage issues when transitioning from one service provider to another
- Cellular signal was blocked for different reasons at different locations

have no service. They just had no service at all inside," explains Harrington. "But other than that, the outside signal was good. There was not too much traffic up there. I liked the signal to noise ratio, which was up in the teens. They had a very strong signal that we could grab from outside into the network unit and then boost out onto the floor."

To achieve uniform cellular coverage inside the building, Atlantic Technology Group installed four network units configured for AT&T and 16 Cel-Fi control units with four Cel-Fi MIMO antennas on the roof.

SOLUTION

CEL-FI QUATRA: THE COMMON DENOMINATOR

While each building was unique with its own issues, Cel-FI QUATRA was consistently the solution recommended by Atlantic Technology Group in helping this agency overcome its cellular challenges while moving service providers.

"By leveraging Nextivity's products, we were able to go into 10 different locations, including some pretty big facilities, and within a few months got all these sites done to rapidly assist the client during their transition from one carrier to the other carrier," says Dan Connelly, president of Atlantic Technology Group.

Atlantic Technology Group

- Established in 2002
- Based in Rockville, MD
- Services include mobility applications, wireless devices and lifecycle management
- Customers include Healthcare, Fleet Management, Field Service, Business Continuity and Mobile Office

CEL-FI™ QUATRA | BEYOND BETTER COVERAGE

- **High-quality solution for the middleprise**
- **Supports multi-carrier 3G/4G/LTE voice and data**
- **Carrier-approved and unconditionally network safe**
- **Can be monitored and managed using Cel-Fi WAVE**

In-building Cellular Coverage

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