Case Study | Secure Power Facilities

Enhancing In-Building Wireless Coverage Infrastructure For High-Security Electric Power Generation and Distribution

OVERVIEW

Ensuring Seamless Communications Within Utility Facilities

Utilities across national, regional, and local levels, including sectors like power, gas, and water, face stringent security requirements and must adhere to comprehensive regulations. The loss of even one facility can disrupt critical national infrastructure, impacting essential commerce, industry, and public health services.

Constructed with a focus on security and durability, these facilities are designed to withstand various threats. However, their robust structures often inhibit effective communication signals, posing significant operational continuity and safety challenges.

One of the nations largest independent electricity transmission companies, recognizing the urgency to bolster communications within their critical facilities, initiated a thorough evaluation at two of their key sites in the Midwest.

The assessment uncovered that their existing communication systems were not only inadequate but also posed substantial safety risks.

To address these critical issues, they turned to ComSource, which has since become part of the MCA family of companies in 2022.

Now integral to our In-Building Wireless Solutions (IWS) team, ComSource was tasked with enhancing the safety and reliability of communication systems at these pivotal utility sites.

Ensuring Communications Coverage and Capacity Within Key Utilities

Deploying Public Safety and Neutral Host DAS Solutions in the Energy Sector

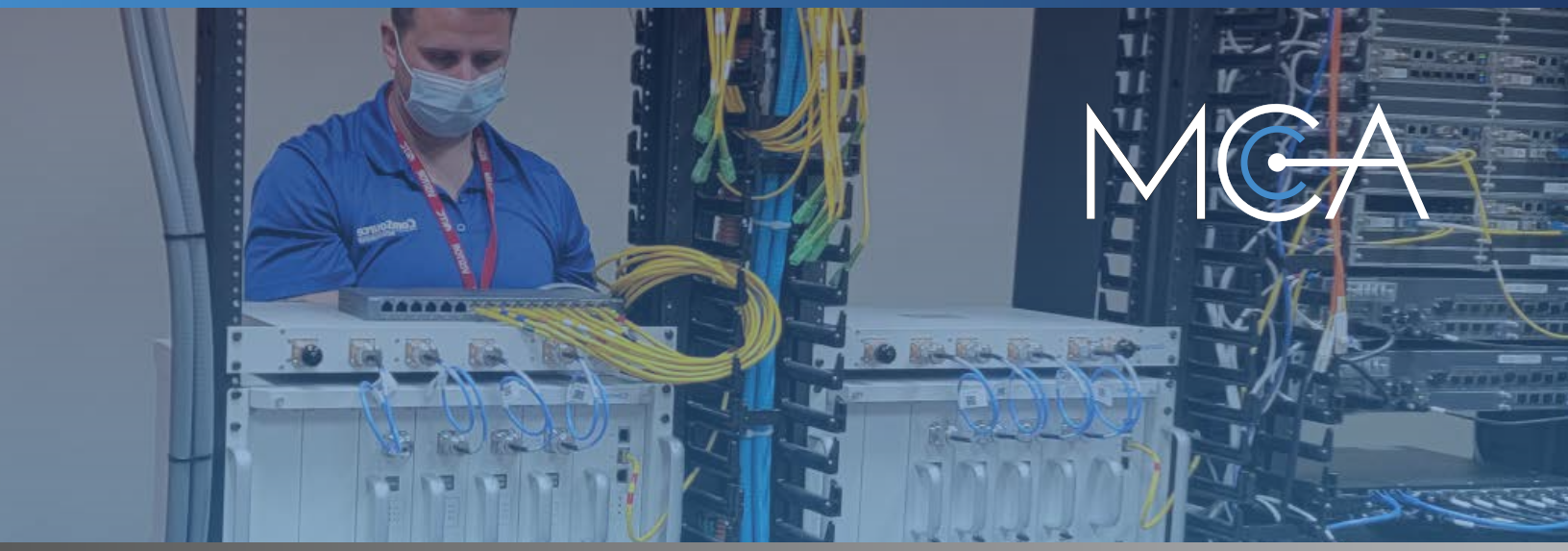
Superior Network Performance

Enhanced Voice Clarity and Cellular Coverage

Seamless Integration With Existing Infrastructure

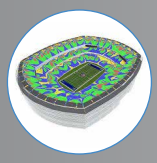
From No Coverage to Complete Coverage

Future-Proofed Architecture



Emergency Responder Communications DAS

Neutral-Host Cellular DAS Deployment



iBwave RF Engineering and Design Services

"Police, fire, and EMS teams now have the peace of mind that they can easily communicate with both external units and central dispatch" said Account Manager Mike Wriggelsworth. *"Where there was once no link to the external world beyond a landline — the coverage in both buildings is now exceptional. Our client is ecstatic."*

CHALLENGE

Addressing Critical Coverage Gaps in High-Security Utility Facilities

Two secure utility sites in Michigan, encompassing a combined area of 40,000 square feet, presented a formidable challenge with their bunker-like construction that effectively blocked any radio and wireless signals. MCA Technician Dan Dugan highlighted the severity of the situation, noting, *"our measurements revealed that there was literally no coverage anywhere in these buildings."*

The lack of public safety radio coverage came to the fore during a recent renovation when the local fire marshal identified this gap as a violation of local safety mandates. This discovery underscored the urgent need for the utility to proactively address these significant communication deficiencies to ensure compliance and enhance on-site security and operational reliability.

SOLUTION

Comprehensive In-Building Wireless Solutions for Enhanced Security and Connectivity

Focused initially on enhancing public safety communications, the utility client engaged MCA to implement an Industrial-Grade Distributed Antenna System (iDAS). MCA's solution included a 700/800MHz public safety radio system equipped with a bi-directional amplifier (BDA) for expanded signal reach, battery backup, and strategically placed below-ceiling antennas to ensure robust coverage throughout both Michigan sites. This setup is vital for protecting first responders and maintaining dependable in-building communication during emergencies.

Further extending coverage, MCA coordinated with leading cellular providers to boost wireless communication across the facilities.

Leveraging iBwave design technology, MCA's data solutions team crafted a holistic connectivity strategy that integrated seamlessly with the existing infrastructure.

The DAS systems were configured to operate redundantly, providing a robust continuity plan that allows each system to serve as either a primary or a backup. This dual-functionality ensures uninterrupted service and scalability, enabling the utility to accommodate future expansions or integrate additional carriers effortlessly.

This strategic approach not only addressed immediate compliance and safety issues but also positioned the utility to adapt to evolving technological and operational demands.

RESULTS

From No Coverage to Complete Coverage

"Police, fire, and EMS teams now have the peace of mind that they can easily communicate with both external units and central dispatch" said Account Manager Mike Wriggelsworth. *"Where there was once no link to the external world beyond a landline — the coverage in both buildings is now exceptional. Our client is ecstatic."*

In just a matter of days, the utility achieved 100 percent coverage, receiving commendation from the fire marshal for consistent and reliable communication across each building.

This improvement in connectivity has been crucial as the company transitions more employees back to the office, ensuring they can communicate seamlessly within and outside the premises.

Equipped with satellite phones, bi-directional amplifiers, and other advanced technologies, the utility continues to enhance its communications infrastructure.

Through its ongoing partnership with MCA, the utility expands its capabilities with a range of innovative wireless solutions, solidifying its operational readiness and connectivity.

"Our measurements revealed that there was literally no coverage anywhere in these buildings."

Dan Dugan
Certified DAS Technician

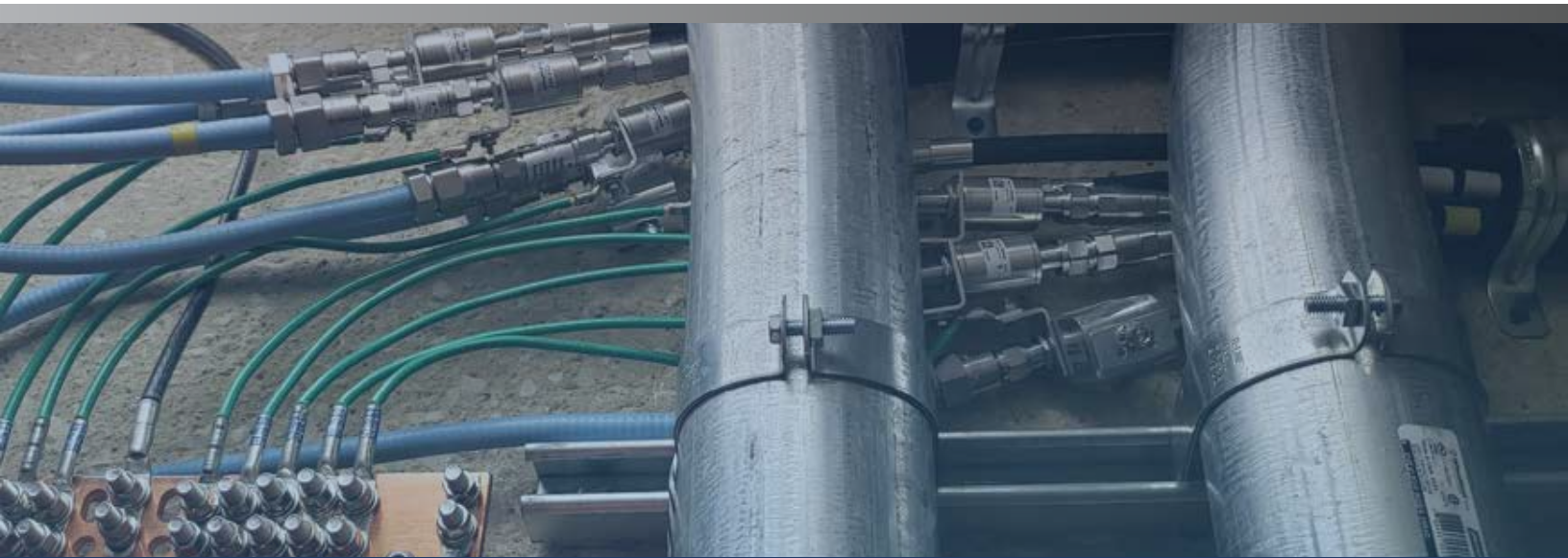
OUR TEAM

20+ Years of Experience with 10,000 +Successful DAS Deployments

At MCA, our In-Building Wireless Solutions (IWS) team is renowned as a top-tier integrator of in-building and expansive campus wireless solutions. Our engineers and technicians hold security clearances that enable them to handle Controlled Unclassified Information (CUI), ensuring they meet the high-security demands of various sensitive environments.

We offer unmatched engineering design, project management, implementation, commissioning, and maintenance services. Our extensive expertise includes engineering and installing Commercial Distributed Antenna Systems (DAS), Private LTE/5G systems, Public Safety ERRCS, Wi-Fi, and both multi- and single-operator systems within diverse public and private venues.

Our team's profound knowledge and innovative approach enable us to create customized, future-ready solutions that effectively address our clients' wireless coverage and capacity needs. By adopting a carrier-neutral strategy, we are able to deliver state-of-the-art, multi-operator DAS networks for corporate offices, hospitals, universities, airports, shopping centers, and more throughout the United States.



About MCA

MCA is one of the largest and most trusted technology integrators in the United States, offering world-class voice, data, and security solutions that enhance the quality, safety, and productivity of customers, operations, and lives.

More than 65,000 customers trust MCA to provide carefully researched solutions for a safe, secure, and more efficient workplace. As your trusted advisor, we reduce the time and effort needed to research, install, and maintain the right solutions to make your workplace better.

Our team of certified professionals across the United States deliver a full suite of reliable technologies with a service-first approach. The MCA advantage is our extensive service portfolio to support the solution life-cycle from start to finish.

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