

# Case Study



## RAD and Motorola Deliver Video & Analytics Solution in Time for Cleveland's Republican National Convention

### Smart City Application Connected Across Wireless and Fiber Network

#### Challenge

Deliver a reliable, high-quality video monitoring solution for a Smart City application across a combined wireless and fiber optic network to a central mission control center to enable intelligent and efficient allocation of the city's human and material assets.

#### Solution

A combination of RAD's broadband wireless radios and ruggedized, industrial switches along with Motorola's CommandCentral Aware integrated analytics and automation solution.



With a population of nearly 400,000 people, Cleveland is the second largest city in Ohio, second only to Columbus. Like many cities across the nation, Cleveland has looked to technology to make it not only safer, but smarter. A key component of any Safe/Smart City is the use of video monitoring. Cities use video feeds for everything from traffic pattern monitoring, crime prevention, incident response and remediation, event planning, investigations, and much more. This enables cities to more intelligently and efficiently allocate the finite resources at their disposal.

While these capabilities are appealing to any city at any time, Cleveland had an additional, more-immediate mission in mind: the Republican National Convention was coming to town in just a few months. For a 5-day span, the city would welcome more than 100,000 visitors including politicians, dignitaries, journalists, onlookers, protesters, vendors, and many more. Moreover, tens of millions of people around the globe would be watching. An exciting time for the city, and a challenging time for its public service entities. They needed a rock-solid solution for real-time monitoring and analysis of all of the activities surrounding the convention.

**"We are very pleased, not only with the quality of the solution in place, but with the level of commitment and professionalism demonstrated by both the RAD team and the Motorola team. This will be a tremendous asset to the city for many years to come."**

Larry Jones II, IT Program Manager,  
City of Cleveland



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To meet their needs for a more reliable solution they turned to Motorola Solutions Inc. and RAD. Motorola and RAD designed a video monitoring solution that featured video cameras positioned across the ward that were connected to Cleveland's municipal security control room (MSCR) through a combination of sub-6 GHz broadband wireless and fiber optic connectivity. The video feeds, along with an array of other voice, data, sensors, and social media inputs are analyzed, integrated and converted into actionable intelligence by a combination of live personnel and Motorola's CommandCentral Aware, part of their Intelligence-Led Public Safety (ILPS) Solutions portfolio.

To aggregate the feeds of the many camera endpoints they used RAD's point-to-multipoint radio, the Airmux-5000 (AM-5000), coupled with RAD's ruggedized industrial Ethernet switch, the SecFlow-2 (SF-2). A single AM-5000 base station can support up to 32 subscriber units and features SLA guarantees per link ensuring the quality of service for each video feed. The SF-2, in addition to its switching functionality, provides power over Ethernet (POE) for up to eight devices including the cameras, along with other periphery devices like Wi-Fi hotspots and digital display boards. To transport the aggregated video feeds from the AM-5000 base station back to the MSCR, they deployed RAD's Airmux-400H (AM-400H) point-to-point, sub-6 GHz radios.

With a capacity of up to 750 Mbps aggregated throughput, configurable multiband operation, and dynamic channel bandwidth selection for the optimized combination of maximum throughput and minimal interference, the AM-400H is an ideal solution for transporting the aggregated video streams across the congested airwaves of Cleveland's cityscape. In the same way as the AM-5000, these units were also coupled with the ruggedized SF-2 for POE and network interface.

The combination of the AM-5000 and AM-400 provide a reliable and cost-effective solution for transporting the video feeds and other peripheral services from locations across the network footprint back to the city's MSCR for analysis by the Motorola CommandCentral Aware ILPS. This enables the public safety officials to easily understand the variety of continuous diverse, real-time intelligence streams.

**"With the RNC convention coming to town there was a great deal of pressure to have a rock-solid solution in place that would operate as a force multiplier."**

Larry Jones II, IT Program Manager, City of Cleveland

### Features

- Connect security cameras, WiFi access points, display boards, and other sensors over fiber optics and wireless radios
- Turnkey deployment including consulting, communications, video surveillance and analytics systems, cameras, and sensors
- Central management to provision and control the communications network

### Benefits

- Highly reliable, broadband connection to transport video, voice, and data feeds
- Automation and analytics to transform mass quantities of multimedia input into actionable intelligence
- Proven solution ensuring smooth development within constrained timeframe

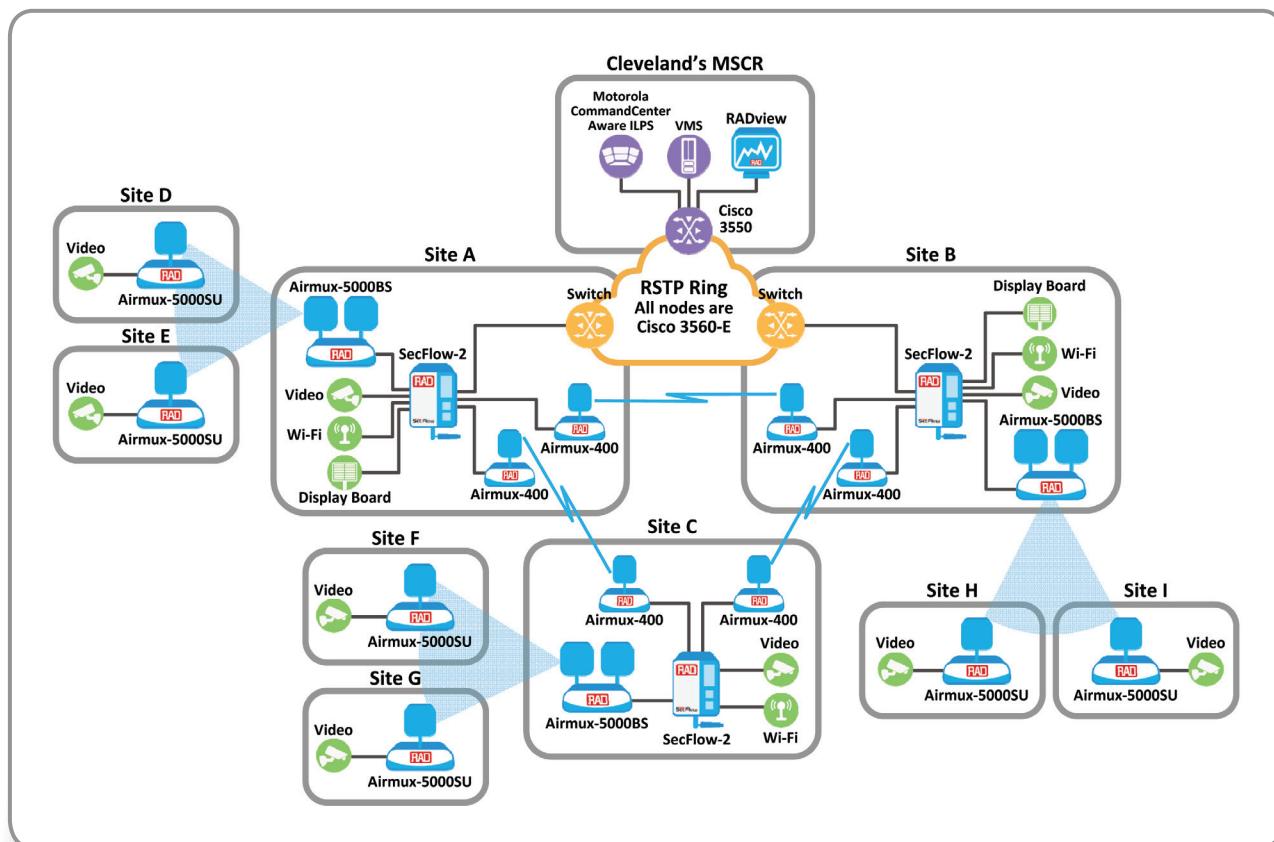


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Of course, it's not only important for the MSCR to receive and understand the collective intelligence, the many public safety entities (e.g. police, fire, EMS, etc.) across the city need to have real-time access to the intelligence that is relevant for them. These entities are connected to the MSRC via a fiber optic ring that traverses the city. The MSCR is able to share intelligence to the relevant entities via an Ethernet connection that is, in turn, converted for transport over the fiber ring by RAD's ETX demarcation and media converter device. In the same way, the ETX converts fiber transport back to Ethernet for delivery to the end-user consoles.

"With the RNC convention coming to town there was a great deal of pressure to have a rock-solid solution in place that would operate as a force multiplier", stated Larry Jones, IT Program Manager – Public Safety, City of Cleveland. "We are very pleased, not only with the quality of the solution in place, but with the level of commitment and professionalism demonstrated by both the RAD team and the Motorola team. This will be a tremendous asset to the city for many years to come", he concluded.



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