

Axis joins the Queen City's guard.

Cincinnati Police Department embraces smart security technology to improve public safety.



Organization:

Cincinnati Police Department

Location:

Cincinnati, Ohio, USA

Industry segment:

City surveillance

Application:

Law enforcement, public safety, city operations

Axis partners:

Federal Signal, Genetec, Firetide, Cambium

Mission

Cincinnati, Ohio is an historic American city of 300,000 with a highly developed downtown, diverse neighborhoods and over 20 miles of shoreline along the Ohio River. Working with Federal Signal Corporation, a security and safety systems integrator and Axis partner, the Cincinnati Police Department decided to enhance their operations by installing several analog cameras downtown in 2008. However, in just two years, the CPD decided the analog camera technology was not delivering the image clarity it needed. It decided to retire its analog cameras in favor of more advanced, high-definition network camera technology.

Solution

The CPD asked Federal Signal to design and install a new IP-based, citywide surveillance system comprised of nearly 100 Axis high-definition pan/tilt/zoom (PTZ) managed by Genetec Security Center, the unified security platform which includes the Omnicast video management system.

Most of the critical locations did not have a communications backbone, so Federal Signal, a wireless broadband expert, designed and deployed a wireless streaming solution featuring a secured Firetide mesh network and Point-To-Point licensed backhaul utilizing Cambium PTP 810 microwave transmitters for longer distances.

Result

While the Axis cameras are used to help the CPD deter and apprehend criminals, they also play a vital role in public safety. Cameras monitor the downtown business districts, neighborhoods throughout the city and the riverfront to protect the welfare of residents and visitors to the area. They have been used to rescue boaters on the Ohio River, monitor weather conditions on city thoroughfares and help contain hazardous spills.



Building a comprehensive video solution

Situated on the north bank of the Ohio River, Cincinnati is the third largest city in the state of Ohio. With a police force of 1,000 officers, the Cincinnati Police Department (CPD) is committed to using the best law enforcement tools available to protect residents, businesses and visitors within the city's 77-square-miles.

To provide its officers with additional support, the CPD consulted with other departments and citizens' groups to discuss the benefits of installing cameras in the city. Together, they developed a plan and deployed the first analog video cameras in the downtown business district in 2008. Two years later, the department was ready to expand the coverage into neighborhoods and along the riverfront. At that point, they decided a more advanced IP video solution would deliver far better image quality than the original analog technology.

Immediate incident response

Axis partner Federal Signal recommended high-definition AXIS Q6034-E and AXIS Q6044-E PTZ Network Cameras for the job.

According to Nirmal Chudgar, Director of Business Development/Professional Services for Federal Signal, reliability was a key factor in recommending Axis. "From past experience we knew that Axis technology always worked and technical support would always be there when we needed it," Chudgar said.

All cameras are managed through Genetec Security Center video management system at a sophisticated operations center at police headquarters. The video travels over the City's fiber optic network, as well as by wireless technology. Firetide mesh nodes allowed the City to add Axis cameras in critical areas without wired connections. For longer distances, Cambium Networks' PTP 810 microwave transmitters provided a reliable high bandwidth backhaul for the video traffic.

Highly efficient H.264 compression technology retains HD resolution without overwhelming the mesh network's throughput or consuming excessive data storage. The video is stored for 14 days on a 64 TB Dell Compellent SAN as well as on SD cards inside the cameras for backup.

"When an incident occurs, officers on duty in our Real Time Crime Center (RTCC) can grab control over the Axis PTZ cameras and zoom in for a closer look," said Barry Whitton of the Cincinnati Police Department Technology and Systems Section. The cameras can also be accessed on video walls in the Emergency Operations Center (EOC) and 911 Center during major events.

The readily accessible video allows the CPD to quickly assess situations and determine the most appropriate response. Whitton recalled one instance where the department received a report alleging a fight involving 20 people armed with guns and knives.

"There was a camera right there," Whitton said. "We were able to see, almost as the incident was being dispatched, that the report was not correct. The crowd was small, and there were no guns and no knives."

In 2013, the CPD added the mobile application from Genetec Security Center to push video out to officers in the field. "This has been an especially valuable tool in covert operations and emergency response situations on the streets and along the Ohio River," Whitton said.

In addition, the CPD operates a mobile command van that tows a trailer housing lights and Axis cameras mounted on a boom for events in open fields, parking lots or other temporary locations. Whitton stressed that the department is very conscious of the balance between public safety and individual privacy, and they have strict guidelines on who can operate the cameras and for what purpose.

"Everything we do is audited," Whitton said. "We keep close tabs on who has camera access, and we tightly control who has permission to use them and request archived video."





Providing digital back-up on the road and in the water

"Video cameras don't replace police officers in the field, but they do give them another set of eyes," Whitton said. Those extra eyes have been particularly valuable in recovering stolen vehicles. When the Real Time Crime Center gets an alert that a stolen car has passed a license plate recognition camera, an RTCC officer takes control of the nearby Axis PTZ cameras, if available, to follow the car as it drives through the city streets.

"We had one case where we wanted to make a safe, controlled stop to apprehend the car thieves. We didn't want them jumping out of the car and fleeing the scene. We watched the vehicle on the Axis camera and radioed the officers near the scene to execute the stop when the car reached the bottom of the hill."

The CPD also uses Axis PTZ cameras to support maritime security efforts along 25 miles of the Ohio River shoreline. They often share the video with the US Coast Guard and other regional maritime first responders from Ohio, Kentucky and Indiana.

In one incidence, an intoxicated man crashed his car on the Kentucky side of the river and tried to flee by swimming to Ohio.

"I was able to track him as he swam along the shore and direct the police boat where to fetch him out of the water," Whitton said.

Sharing the benefits of public safety cameras citywide

As the system grew, its role evolved from policing crime to enhancing public safety and increasing the City's overall quality-of-life. The CPD shares the real-time video with other city departments, including Fire, EMS and Traffic Engineering. The video has been used to support such diverse efforts as directing first responders during medical emergencies and diesel spills, tracking snowfall on major roadways and charting the progress of highway construction projects.

In addition, the CPD partnered with a major local university, parks, metropolitan housing authorities and a casino to add cameras along the perimeter of their properties to ensure the safety of those heading to and from those locations.

According to Chudgar, "What makes this such a successful public safety tool has been the strong collaboration among everyone involved in this mission critical initiative – our Axis and Genetec technology partners, our wireless broadband vendors, ourselves and the Cincinnati Police Department."

"Axis is the flagship of our fleet of cameras. The digital zoom is so clear we can read details like a license plate number from two blocks away."

Barry Whitton of the Cincinnati Police Department Technology and Systems Section.

"With strong collaboration among multiple agencies, this solution is serving as a core platform for protecting people in greater Cincinnati area – setting a classic example of interoperability."

Nirmal Chudgar, Director of Business Development/ Professional Services, Federal Signal



About Axis Communications

Axis offers intelligent security solutions that enable a smarter, safer world. As the global market leader in network video, Axis is driving the industry by continually launching innovative network products based on an open platform – delivering high value to its customers and carried through a global partner network. Axis has long-term relationships with partners and provides them with knowledge and ground-breaking network products in existing and new markets.

Axis has more than 1,600 dedicated employees in more than 40 countries around the world, supported by a network of over 60,000 partners across 179 countries. Founded in 1984, Axis is a Sweden-based company listed on NASDAQ OMX Stockholm under the ticker AXIS.

For more information about Axis, please visit our website www.axis.com.