Making the city safer with smart crime-busting technology.

Hartford Capital City Command Center fast-tracks investigations and solves crimes using a comprehensive surveillance solution.

Organization:
Hartford Police Department

Location:
Hartford, Connecticut, USA

Industry segment:
City surveillance

Application:
Smart city, crime prevention, safety and security

Axis partners:
Vulcan Security Technologies, Milestone Systems, BriefCam, Live Earth

Mission

The Hartford Police Department (HPD) had a lot of fragmented, under-utilized investigative technologies that couldn't communicate with each other. As a result, crucial details sometimes failed to reach beat officers and detectives until it was too late to act. HPD began looking for a way to tie all these systems together under one roof so that they could expedite the flow of information to first responders. Because much of the information would stem from a wide network of city-owned Axis cameras as well as private surveillance cameras, they also needed an analytic tool that could help them swiftly sift through all the footage and key in on specific details to crack the case.

Solution

Vulcan Security Technologies, a systems integrator and Axis partner, worked with HPD to create a new Capital City Command Center (C4) for synthesizing vast amounts of data and video into actionable intelligence and pushing it out to officers as needed.

Built as a complete solution, C4 uses the Milestone XProtect® Corporate video management software (VMS) to monitor a wide network of cameras feeding into the center. C4 is designed on an open standards platform, allowing the department to seamlessly integrate third-party crime-fighting applications such as BriefCam video content analytics. Civilian crime analysts monitor streaming video displayed across a wall of television screens and compile, catalog and push information and video out to the field through a bank of desktop computers.

Result

As an integrated information hub, C4 has been instrumental in helping officers quickly find missing children at busy street festivals as well as track and apprehend pickpockets plying their trade. C4 analysts often use video analytics to assist police in locating and confiscating drug stashes and getting dealers off the street.

AXIS COMMUNICATIONS

Solving crimes in real-time

Like many metropolitan cities, Hartford has its share of crimes. And solving those crimes usually involves sifting through an overwhelming amount of data. Despite the array of technology the Hartford Police Department (HPD) had on hand, systems were fragmented and not being used to their full potential. As a consequence, officers on the scene sometimes received information too late to act on it. It was time to modernize the department's approach to police work and integrate all their disparate systems into one cohesive smart city solution.

With help from Vulcan Security Technologies, a systems integrator and Axis partner, HPD unveiled its real time command center in 2016, gathering a wealth of data intelligence under one roof. Within the walls of Hartford's Capital City Command Center (C4) civilian crime analysts catalog information from incident reports, raw intelligence from beat officers and real-time video from a wide network of city-owned Axis high-definition surveillance cameras as well as private business and residential security cameras that feed into the center. Analysts also compile information from license-plate readers and a ShotSpotter system that triangulates the location of a shooting based on the sound of gunfire. C4 staff even mines social media, looking for inflammatory language on Facebook and Twitter in an effort to head off threats to the community.

The smart city solution is built on a scalable, open standards platform and controlled through Milestone XProtect Corporate video management software. Because all the components are integrated, analysts can pull up camera views, map overlays, analytics and other crime fighting applications all within unified screen displays, which is a big time saver.

Adding BriefCam video synopsis analytics to the technology mix has elevated police work to another level. "What used to take days of searching to find now takes minutes," said Lieutenant Johnmichael O'Hare, Hartford Police Department and a supervisor at C4. "We've gone from fishing with a net to fishing with a spear."

Finding a needle in a haystack

Because BriefCam can detect and extract objects within a frame of video, along with information about the type, attributes and behavior of those objects, C4 analysts are finding it invaluable when trying to track specific individuals, vehicles, even animals. They can quickly search through hours of video to locate and isolate something or someone of interest by size or color, its speed or direction. They can even map a car or person's dwell time at a particular location.

"I can take 10 hours of video in a busy festival in a park and find all the people wearing a certain colored shirt, isolate them out and track them down in seconds," shared O'Hare.

As an example, when a call came into C4 about a pickpocket wearing a green shirt, O'Hare's team used BriefCam to locate all the green shirts in the live video streaming from the scene. In seconds they were able to isolate and follow the perpetrator and convey her location to officers in the vicinity who quickly apprehended her.

Analysts used a similar technique to screen video from city bus cameras and make two separate homicide arrests. "In one case, we got the license plate off the get-away car, something we couldn't have captured before," said O'Hare. "In the other, we got the location of the suspect because he jumped on the bus. We were able to scrub the video and find out where he was dropped off and send officers to pick him up."

The team in C4 uses Live Earth as a real-time data visualization tool.

"Having an integrated smart city solution doesn't replace cops on the streets. What it does is help us arm them with real-time intelligence to make them more efficient and effective."

Lieutenant Johnmichael O'Hare, Hartford Police Department.

Targeting drug busts

Sometimes knowing who the drug dealers are in the neighborhood isn't sufficient to make an arrest. You have to catch them in the act. O'Hare sees the situation as a perfect opportunity to showcase what BriefCam can do to help police make a bust.

"We use BriefCam to help us see patterns," said O'Hare. "The software uses a combination of heat mapping and dwell time analysis, to show us where a dealer hangs out most often, when he's most active."

What the analysis revealed in one investigation was a dealer pacing his corner. As he was making sales he was pulling his drugs from three separate stashes along his path – a tire, a hole in the wall and behind a brick. With technology pointing the way to the evidence, officers were able to make the bust and the recorded video helped make the drug charges stick.

In another instance, HPD knew there was a drug house somewhere in a neighborhood but was having difficulty pinning down the address. C4 set up surveillance cameras and used BriefCam to track foot traffic along the street. The heat map showed that in a 24 hour period 313 people went to one particular door. The next day the police had a warrant to search the property and made arrests.

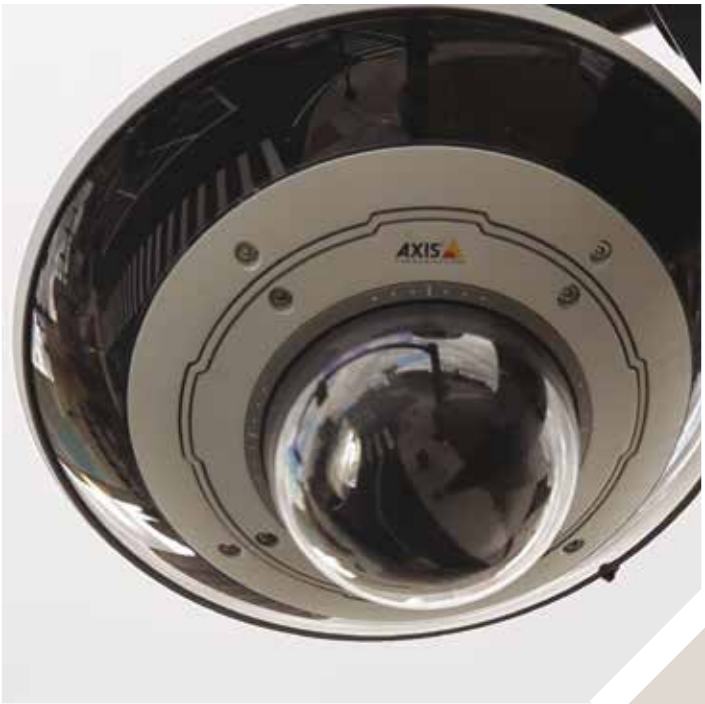
"This is the new way we're doing things," said O'Hare. "We're doing this on every street, house-by-house, block-by-block, neighborhood-by-neighborhood. We're accumulating data on crime migration patterns and vehicular and pedestrian traffic that indicate drug markets and going in for the arrest."

Using analytics to boost commercial enterprise

While O'Hare's focus to date has been on solving crime, he is quick to recognize the potential of analytics to help improve other areas of city life. "Analytics like BriefCam can help us recognize areas of the city that might benefit from a little re-engineering," said O'Hare. Using analytics to track cyclist volume could be used to justify bike lanes on certain city streets. Or tracking the frequency of jaywalking near a particular school could be used to justify a cross-guard or a footbridge over a busy street.

Now that so many commercial businesses are linking their cameras into C4, O'Hare would like to explore how HPD might share its intelligence model with businesses to help them increase their revenue. "For instance, if we can show a restaurant the pattern of foot traffic past their property throughout the day, it might help them justify extending their hours to make a lot more money," suggested O'Hare.

"As police officers, it's not only our job to protect and serve," said O'Hare. "We want to help make this city an inviting place to stay, work, play and invest in local businesses."



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Axis enables a smarter and safer world by creating network solutions that provide insights for improving security and new ways of doing business. As the industry leader in network video, Axis offers products and services for video surveillance and analytics, access control, and audio systems. Axis has more than 3,000 dedicated employees in over 50 countries and collaborates with partners worldwide to deliver customer solutions. Axis was founded in 1984 and has its headquarters in Lund, Sweden.

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