Cycling the distance with Axis.

Axis cameras help safeguard competitors and spectators at the
2015 UCI Road World Championships in Richmond, Virginia.

Organization:
City of Richmond

Location:
Richmond, Virginia, USA

Industry segment:
City surveillance

Application:
Outdoor surveillance,
safety and security,
situational awareness

Axis partner:
Johnson Controls

Event photos courtesy of Jesse Peters

Mission
When the city of Richmond won the bid to host the 2015 Union Cyclist International (UCI) Road World Championships, it knew it needed to draw on a host of resources – local, regional, state and federal – to ensure the 10-day event would go off without incident. The plan called for 24/7 situational awareness of race circuits that would be changing configurations on a daily basis. The goal was to establish a single unified command center where video feeds from the city cameras, motorcycle and helicopter cameras from the Virginia State Police and the FBI, as well as all of the raw footage from broadcast cameras covering the event could all be streamed. In addition, it would be stored and remotely accessed through a secure virtual private network (VPN) at any hour of the day or night by authorized users across multiple agencies.

Solution
Building on the city's existing video management system (VMS) platform, the event managers turned to Johnson Controls, an integrated security management partner, to help incorporate over 450 cameras from various agencies into the single unified command center.

In addition to the city's fiber backbone, the solution included two different wireless mesh node networks feeding into the system as well as two Axis video encoders to pull in the video feeds from the dozens of broadcast cameras covering the races.

Result
With all the situational awareness provided by the Axis cameras and other IP cameras temporarily integrated into the unified command center, all of the different jurisdictions were able to remotely access any of the live cameras and archived footage on demand through the VPN. They could seamlessly track the movements of specific individuals and suspicious packages and even reunite lost parents and children. This preparation aided in the success of the 10-day event, which concluded without a single major incident.

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> **"The 32x optical zoom on the Axis PTZ cameras was really impressive. We could zoom in on people three or four blocks away and identify who they were. Given their high resolution, we didn't need to put a camera on every street corner."**
>
> Derek Andresen, Deputy Coordinator, Office of Emergency Management, City of Richmond.

Planning a unified surveillance strategy

When the city of Richmond won the bid to host the 2015 UCI Road World Championships, organizers knew the international 10-day marathon of bike races would need to draw on security resources far beyond the city's limits. In addition to the Richmond Office of Emergency Management, the city's law enforcement and those in neighboring Henrico and Hanover counties, the event involved the Virginia State Police and the Virginia Department of Emergency Management, as well as the FBI and U.S. Customs and Border Protection.

"To make this race successful, we had to all work together off of a single plan from day one," said Derek Andresen, Deputy Coordinator in the Office of Emergency Management for the city of Richmond. That plan encompassed streaming all video surveillance from multiple jurisdictions into a unified command center. From there, they provided remote access to live cameras and archived video by authorized users such as crime analysts and intelligence officers, even if they were located in a different county.

Johnson Controls integrated over 350 AXIS Q6045 MkII PTZ Dome Network Cameras and AXIS P3364-LVE Fixed Dome Network Cameras used for city surveillance and over 100 IP-based cameras controlled by other agencies into the VMS. The solution leveraged the city's fiber network, two different wireless mesh node networks to stream video from motorcycle/helicopter/mobile command center cameras along the route. It also maintained two AXIS Q Series video encoders to pull in the unedited video feeds from the dozens of broadcast cameras covering the races.

With so many different parties involved in the system, bandwidth was a primary concern in handling so many external video feeds. "We set up a VPN connection so that analysts and police agencies could open up their own instance of the video management system and watch what they wanted to watch and even manipulate the Axis PTZ cameras when needed," said Thinh Pham, account executive for Johnson Controls.

"It was a unique and collaborative effort that led to a great single-source situational awareness tool," added Andresen.

Keeping a sharp vigil day and night

Johnson Controls recommended day/night AXIS Q6045 for its reliability and forensic clarity. With HDTV 1080p resolution and 32x optical zoom, the outdoor-ready cameras provided far better coverage than the city's previous street cameras. Of equal importance was their precise and rugged PTZ mechanism which would stand up well to 24/7 usage during the event.

"With AXIS Q6045, we could zoom in on people three or four blocks away and identify who they were. If there was a suspicious package our team was going to spot it," Andersen recalled. "These were fantastic cameras, no question about it."

Johnson Controls also recommended 1.3 megapixel AXIS P3364-LVE Fixed Dome Network Cameras with their Lightfinder feature to provide great IR illumination for any lowlight conditions. This was especially valuable for the first day's meet which was an amateur race that ran well into the night.

Intelligence officers continued monitoring the cameras throughout the night to ensure that nothing happened along the race course to disrupt the next day's meet.

No news was good news

From all reports, no major incidents occurred during the 10-day event, which was the outcome organizers had hoped for from all the advanced preparations and planning.

"At the end of the day, the feedback we got is that the camera system worked so well because it was so simple, so elegant," recounted Andresen. "It was one seamless platform."

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