Tracking traffic with the Virginia DOT.

Axis video servers give the public and first responders access to real-time traffic video.

Organization:
Virginia Department of Transportation

Location:
Virginia, USA

Industry segment:
Transportation

Application:
Traffic monitoring

Axis partner:
TrafficLand

Mission
When the Virginia Department of Transportation (VDOT) wanted to improve its traffic control center and monitoring system, they needed an upgrade that was cost-effective, simple to implement, and would enable Virginia commuters to access real-time traffic and road condition information.

Solution
Working with the VDOT, TrafficLand, a traffic systems specialist, decided to digitize the department's existing analog camera monitoring system. TrafficLand selected Axis video servers and then developed both a public Internet site and a video distribution system accessible only to first responders.

Result
There are now more than 100 cameras broadcasting live from the roads and byways of northern Virginia every day, and the system has expanded to more than 240 state and local public cameras throughout the Washington, D.C. metropolitan area. This helps area traffic flow more smoothly and enables first responders to react more quickly in emergency situations.

Emergency response
TrafficLand, which was founded in 1999, heads a consortium of companies that manufacture, integrate and support a range of video surveillance, monitoring, storage and control systems. Its mission is to install video technology along roadways to provide travelers, first responders, and transportation and media organizations with continuous access to live traffic conditions.

In order to help travelers avoid traffic congestion and choose the best possible routes, information must be made available in real time. Because of this, TrafficLand knew that the VDOT's most viable solution for updating its existing analog system would be to digitize the video feeds with Axis video servers. This would enable the video to be transferred over the Internet, making it accessible to anyone with an Internet-connected device.

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"The Axis video servers are so dependable that they have served up more than 500 million web pages and not one of them has crashed in the years we have been running the system."

Larry Nelson, President of TrafficLand.

"The VDOT always wanted to share video and data with the public, but previous technology options were too expensive," said Jim Robinson, assistant division administrator for VDOT's mobility management division. "Thanks to TrafficLand and Axis, we were able to meet this goal at a very low cost."

The system was put to the test on the morning of September 11, 2001, when the terrorist attacks hit Washington, D.C. Because so much misinformation was being disseminated in the wake of the attacks, millions of Virginia residents began trying to access the VDOT website for reliable, up-to-date traffic information. Though the VDOT's system was still in its final testing stages, TrafficLand was able to make the system go live. The website handled more than 1.5 million hits that day as residents anxiously attempted to view the aftermath of the terror attacks and determine evacuation routes for themselves and loved ones.

"We went live in response to the disaster," said Mr. Robinson. "In this case, a picture really was worth a thousand words – people started using our video to make decisions."

Building on success

Because the Internet is the least expensive method for distributing images to millions of users, network video technology offered a cost-effective solution to the VDOT. In addition, the system took little time to deploy, and its flexibility allows expansions and upgrades to be easily implemented.

Due to the overwhelming success of the network video system, TrafficLand was approached to coordinate a similar system for the entire Washington, D.C. metro area. In addition, the VDOT found that firefighters, state and local police, and other rescue workers in the Washington, D.C. area also relied on the live video in the aftermath of the September 11 attacks. As a result, the state funded a project for TrafficLand to set up a special high-speed video sharing system, accessible exclusively to first responders.

"After the emergency management teams saw the TrafficLand system, they realized the tremendous need they also had for such a system on a state-wide basis," said Mr. Robinson. "The same value that TrafficLand is providing to highway incident management can be easily transferred to homeland security and emergency management forces."

Although the video servers are capable of full-motion video, they are configured to provide traffic images once every second. Most other traffic monitoring applications update images only once every few minutes, so providing a fresh image every second allows VDOT officials and first responders to observe traffic patterns in real-time and act accordingly. In cases of highway construction and accidents, this immediate footage enables workers to quickly and easily analyze traffic flow issues and implement a plan.

"The Axis video servers are so dependable that they have served up more than 500 million Web pages and not one of them has crashed in the years we have been running the system," said Larry Nelson, president of TrafficLand. "With the extreme demands placed on this system, we needed to choose the most advanced and reliable components, and Axis makes the highest quality equipment in the industry."

For the installation in the Washington, D.C. area, TrafficLand won the Virginia Governor's Award for Public Private Partnerships. The award recognized the value of the system to commuters and first responders across the region. The website receives approximately 400,000 hits per day, and more than 3.5 million visits have been made to the system since going live.

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