



Technology @ Work

by Joan Engebretson, Contributing Writer

VIDEO OVER WIRELESS MESH

Small but Growing Town Finds all Kinds of Uses for Its Surveillance Cameras

In December 2006, television viewers nationwide were stunned by video imagery of the drunken driver of a parade float loaded with children attempting to flee from police in a high-speed chase. The man, who apparently decided the parade wasn't moving fast enough for him, was apprehended – and the video, which came from a municipal camera system, was important evidence against him. Fortunately, no one was hurt in the incident.

The municipality is Anderson, S.C., and the eight-camera video surveillance system that captured the wayward driver on a digital video recorder was installed by Blue Ridge Security Systems, a 65-employee systems integrator also based in Anderson, a company that ranks No. 63 on the SDM 100. Today the video system continues to protect the downtown business area and has been expanded to other parts of town.

“The city and the community have invested a lot to revitalize downtown,” explained Mark Cunningham, information technology director for the City of Anderson. “There are a lot of new businesses coming in and the city wanted to make sure people coming downtown felt secure.”

Until a few years ago, no one lived downtown, but at that time, condos and

second-floor loft apartments began to appear. As Cunningham noted, “It’s becoming a 24-hour place to be.”

Before the surveillance system was installed, some of the new downtown infrastructure was attracting vandals. “There were two new fountains that were constantly being hit,” Cunningham said. On one occasion, pranksters pointed a nozzle out of one of the fountains, which caused the fountain to run dry and

the motor to burn out. Another time, someone put a bottle of dish soap in the fountain, which created suds 20 feet high and took a whole day to clean out. “It sounds comical, but it was costly,” Cunningham recalled.

Another important city treasure that needed to be protected is an antique generator that helped Anderson get its nickname “The Electric City.” The city was one of the first to transmit hydroelectric power over power lines. The generator, which is now on display in a city park and has been painstakingly



The wireless mesh-based video surveillance system has curtailed vandalism of public fountains and other important landmarks in Anderson, S.C.



PHOTOS COURTESY OF CITY OF ANDERSON, S.C.



A vintage generator commemorates Anderson, S.C.'s heritage as a pioneer in providing electricity to its residents. Video cameras installed by Blue Ridge Security Systems help ensure that the hard work of restoring the generator is protected.

restored thanks to citizen contributions, originally was located at a river outside of town. Now that video cameras have

time to patrol cars.

The City of Anderson received several bids in response to its request for proposal. It chose Blue Ridge Security Systems, in part, because the company also was located in Anderson. Another consideration was that Blue Ridge quoted a system based on wireless mesh technology. That approach enabled Blue Ridge's quote to come in considerably lower than those of some other systems integrators that pitched systems based on leased lines.

Anderson's wireless mesh system is based on equipment from Firetide of Los Gatos, Calif., that uses transceivers co-located with all cameras, which communicate wirelessly with one another. Rather than communicating with a central receiver, all transceivers in a wireless mesh system are equally intelligent, eliminating the need for each one to have line-of-site to a central point. Instead, as long as a transceiver has line-of-site

The connectivity helps attract people to downtown restaurants and public outdoor areas, Cunningham said. "We can monitor the system to see that we have several people logged in every day," he notes. "Especially with iPhones and iPods, a lot of younger people are taking advantage of that."

As Ksenia Coffman, marketing communications manager for Firetide, explained, the video surveillance cameras are on a separate network from the public WiFi network. The two systems share backhaul connectivity but, unlike the public WiFi network, the security network uses a proprietary communications method.

"The WiFi is on a VLAN so people on the WiFi network have no access to the wireless images," Hubbard acknowledged.

Wireless mesh isn't for every application, Hubbard said. It's most cost effective for municipalities and campus environments. As part of a conglomerate that also owns a local power company, Blue Ridge has used a wireless mesh system from Firetide at its own corporate campus. The security business also has pitched the system to some large companies in the area.

The installation in downtown Anderson took about three weeks. Six technicians worked on it at various phases of the project. The generator was added later and since then, the system was expanded further to include two city parks.

"Firetide wireless mesh is ideal for phased applications because as you expand, you don't have to redesign the system," Coffman said.

The City of Anderson was so pleased with the work that Blue Ridge Security Systems did on the video system that it has since enlisted the company for an access control system.

“ People accepted the idea once they understood that no one was sitting around watching them. ”

been installed to watch both fountains and the generator, vandals have steered clear of all three landmarks.

Images from all eight cameras in the Anderson system are recorded 24/7. Some residents initially were concerned about the "Big Brother" aspect of the system, Cunningham said. But people accepted the idea once they understood that no one was sitting around watching them and that imagery would be reviewed only in the event of an incident. Future plans call for creating a link to the police department that can be called up in real time — and for making video images available in real

time to at least one other transceiver, it can communicate with all other transceivers in the system.

To enhance system reliability, explained Ed Hubbard, senior project consultant for Blue Ridge Security Systems, "we added some access points that are not on cameras to improve redundancy; the more redundancy you have, the stronger the system gets."

Another advantage of using Firetide's wireless mesh equipment is that Anderson was able to easily add public WiFi capability to the system, which is available at no charge to downtown users.



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