



Greater Media in Boston handles round-the-clock security with IP video from Milestone Systems.

"One of the nice things I like is that I can check everything from home through the web. Milestone allows me to go to the web to look at any of the camera recordings or live images and define the views. That's a really good feature that was well thought out."

- Paul Shulins, Director of Technical Operations, Greater Media Inc. in Boston, Massachusetts



◆ The Situation

To improve the protection of their sophisticated radio equipment, Greater Media Inc. wanted to upgrade their old analog videotape security with a networked solution after they moved into a new building. They also wanted to cut the cost of using a security guard while ensuring that nightshift employees felt safe. Remote transmission locations require monitoring, too.

◆ The Solution

Milestone Systems XProtect software operates a combination of Axis 2100 network cameras and some older analog models converted with an Axis 2400 video server, plus one Panasonic network camera mounted on the Prudential Tower. Greater Media uses CISCO routers and switches, with many hubs in the building connecting their network together. Their firewall and VPN are also from CISCO.

◆ The Advantages

Greater Media now has central control of their security monitoring round-the-clock, and remote access via the web to check any location from anywhere, anytime. The network approach is cost effective and flexible, allowing them to easily add new cameras in future, and the software settings let them control the system's use of their bandwidth.

"I've been with Greater Media since 1988. It's a good company, where we have a great engineering support staff, and the corporate management is very supportive of all our efforts, making sure that we live up to all the highest standards there are in engineering. We have a lot to be proud of," says Paul Shulins, Director of Technical Operations at Greater Media Inc.

This includes a new networked security solution using Milestone Systems software, that was implemented after Greater Media moved into a building renovated for them.





Consolidation and network technology

With a change in the FCC rules in the mid-80s, it became possible to own multiple stations in one market. Greater Media Inc. was the first company in the U.S. to take advantage of that on a large scale. They previously owned only two stations: WMJX FM and WMEX AM. Now they own five FM stations in the Boston area: 92.9 WBOS, 96.9 TALK radio with the popular 'Imus in the Morning' show, Country 99.5, Classic Hits 105.7 WROR, and Continuous Soft Rock MAGIC 106.7 WMJX. Greater Media also owns radio stations in Philadelphia, Detroit, and New Jersey.

"When we bought the five Boston stations, they were spread over three different locations. We consolidated all of them into one place when we moved, to give us the economies of scale that we're enjoying now," explains Paul Shulins. "It all came together then with our IT setup: we built up our infrastructure for the whole network system. We changed to new technology with our commercial playback systems, too: instead of using the tape cartridges everyone had, we went to computers and hard disk so that all of our audio is on computer now. We were one of the first major market stations to adopt that approach so broadly, using almost exclusively computers to play back audio. But suddenly we had mission critical systems on the network that needed security - we never had to deal with that before."

Protecting assets and people

As far as security goes, the company's has to protect millions of dollars worth of equipment in the building. 200 people are working there, including about 60 very active sales people and deejays who also have nightshifts.

"When we first moved to this building, we had a security guard at the front desk from the time the receptionist left in the evening till she came in the mornings, and on weekends; about 15 hours a day we were paying for that. When a new General Manager came 4 years ago, we looked at cost-saving measures and found that the guard wasn't doing too much, mostly sleeping or watching TV! So we decided to eliminate that cost (approximately 10-15,000 USD per year). But this made a number of employees nervous: overnight there's only half a dozen people at work - live DJs - and it's a big building. Some are women, too, who don't feel comfortable being isolated at night," says Shulins.


Adding digital network video

Greater Media has their own cable TV system that allows them to put events from their stations on cable. Each studio has a television set and there are televisions throughout the building in people's offices and the cafeteria.

"We can tune in the closed circuit TV cameras on those television sets, but that wasn't enough for our security needs. We still had problems with theft in the first year. We had a videotape logger, one of those time-lapse videotape recorders, but it wasn't really reliable and didn't give us the resolution we wanted. We had to change the tapes all the time, too, so it wasn't a good solution," concludes Shulins. "With our network infrastructure and remote locations, it was going to be too much trouble to have videotapes all over the place, just ridiculous. So I started to look at PC-based solutions."

Paul got in touch with Torben Bernfeld at Shanix, Inc., an Axis partner in Rhode Island, who sold Greater Media their network video equipment and Milestone software in 2001.





"He was a nice guy who taught me a lot about the technology of IP video," affirms Shulins. "Milestone was a natural choice, and the ability to only record motion was a big consideration; we didn't want to waste a lot of hard disk space. Many of our building areas have no people in them at night where we'd otherwise just be recording film of nothing. And XProtect was very attractive for the Windows platform it runs on. We were convinced it was the solution for us."

"When installing the software, I was very impressed with the way the license key system worked. I thought that was very forward-thinking on the part of Milestone, to be able to add more licenses at any time of the day or night and get an email back with the authorization codes - that's really slick handling of the time difference doing business internationally," comments Shulins.

Greater Media started with four Axis 2100 network cameras along with the Axis 2400 video server that converts the old analog output to the digital system.

"We were so happy with the solution, that a year later we got another license for 16 cameras. Now we've got good coverage of our business with 200,000 square feet in this building and two transmitter sites," confirms Shulins.

Central control and remote access

In the radio industry, the transmitters are not always at the studio. Greater Media has a transmitter site for four of their stations at the Prudential Tower in downtown Boston (a couple of miles away from their office building), and one for another station located up in Andover, Massachusetts (22 miles away). The company also leases space on the Andover tower to tenants like cellular and two-way radio providers who need to mount their antennas. Greater Media maintains a building there for their equipment, and all of this is monitored with their IP video security system.

"We have a microwave link that ties this building in with the Andover site and the Pru site. Along with that link is bandwidth for our business network WAN," Shulins explains. "The Axis cameras work over the network: we are able to connect up to cameras in Andover and at the Prudential building, that come back to this central machine running the Milestone software, to view and log what's going on out there. And I like the XProtect email alerting from motion detection - that's a brilliant concept."

The company camera on top of the Prudential Tower captures images of what is happening in downtown Boston. With remote access, these can be seen at the office or at home, anytime.

"I wrote my own program to allow us to touch-tone and remote control that camera. We can dial up and move it around to see views of the whole city with focus and zoom and everything. We can check the traffic or any events occurring downtown, planes taking off at Logan airport, etc. It's a commercial television camera we got from Panasonic, a pretty small one, not too expensive, with remote control lens. We bought a ham radio type antenna rotor elevation device so we can move it around. We do a lot of neat custom stuff here!" says Paul, smiling.





Network scalability

"It is so convenient that the security system runs over the network. Especially with the off-premise sites: the network was already in place so we were able to just connect another camera there - that was really cool. We can add more cameras anytime without having to lay new cable," states Shulins.

Use of the network's bandwidth is a consideration for the company, as well.

"The flexibility of not tying up a lot of bandwidth on our network is important because we need it for our business. The ability to adjust certain settings in XProtect allows us to trade off the image resolution, for example, to better control the amount of bandwidth used. We save images as long as the hard drive can keep the files, as much as it can hold, which depends on the update rate we set," clarifies Shulins.

Flexible mix of hardware

"There's a lot of activity to keep track of, with 200 employees!" remarks Shulins.

Cameras are set up at the two remote sites, and at the big main building at all exits and entrances, in reception, the garage, parking lot, storage rooms, and the large computer room.

Greater Media is using mostly Axis 2100 cameras, but they also have some cameras that were provided by the construction company who renovated the building in 1998. They were black and white CCTV cameras with analog video.

"We purchased the Axis 2400 video server that takes four composite videos and puts it on the network - that's what you're looking at when you see some of the lower resolution images. We have two of those old analog video machines in our setup," he reports.

Milestone Systems develops its software with open architecture. This means that it can support the widest choice of hardware models in network video equipment, and a mix of different models that ensures the best coverage of each location, with different lighting or other conditions taken into consideration.

Evidence of incidents

Shulins tells about a couple of security incidences when he used the system to quickly check out what happened.

"For example, someone had removed something from the front desk and we just looked at the images recorded during the time we knew it had occurred, and we could see the person. We actually have three cameras set up in the lobby and entry vestibule now," adds Shulins. "The main benefit of our security system is as a deterrent and helping us to investigate theft."

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