

'Smart' Alarm System Provides Pinpoint Accuracy



When an alarm sends a trouble signal at this Ivy League campus, the central console displays the type of alarm, the exact location within the building and conditions that responders might expect to find. This quick, detailed explanation of the source increases the speed and effectiveness of the campus' emergency response.

BY TOM NELSON

WHEN IT COMES TO MONITORING ALARMS ON AN EXPANSIVE CAMPUS SUCH as Cornell University, the more information, the better.

That's certainly how Terry Freund, the university's program manager for Fire Protection and Emergency Services felt about replacing the fire alarm system at the 745-acre, 240-building campus. The system the campus had in place simply monitored reverse-polarity alarms that identified the building where the alarm was located.

"We had come to the end of life for the old system," says Freund. "We had upgraded it one time before, but the technology available today is significantly enhanced compared to the previous upgrade.

"This is a pretty expansive university with quite a bit of research going on. There is so much specialized stuff going on, we wanted to get more information than a general alarm that pops up on a central console."

System Pinpoints Data

Cornell upgraded to a state-of-the-art fire alarm monitoring system that pinpoints information from smoke alarms, heat detectors and other devices at more than 30,000 points. The new system identifies and provides details on the alarm source (for example, smoke alarm, building 123, first floor hallway by Room 230). This is especially important as a typical building may house 200 to 900 alarm points.

"This new system allows us to know point to point the hazards — device by device and I can identify definitive information about the device," says Freund.

The new system connects alarm points using a computer graphic management system that reports detailed information to a central PC console in the campus' 911 center. The computer terminal displays a map of the particular building, pinpointing the trouble spot and alarm conditions.

An icon depicts the room, the type of alarm and details about that point, such as action to take, whom to notify, time of response, and conditions that responders might expect to find.

Signals are multiplexed over telephone wires. A supervisory alarm reports a malfunction, such as a faulty control valve on a sprinkler system or a failed power supply on a smoke detector. A full-blown alarm summons full response by the Ithaca Fire Department and Cornell campus police. These alarms are also transmitted to alphanumeric pagers worn by key responders.

Computer-Aided Dispatch

In the installation, Cornell was able to use existing wiring, previously used for



Terry Freund, program manager for Fire Protection and Emergency Services at Cornell, says the upgraded alarm system provides critical information such as the exact location of the alarm within the building and conditions that responders might expect to find.

reverse polarity, to obtain all the addressable alarm information, including the actual alarm text message. This helped expedite the process — the installation took about three days, according to Freund — and reduce cost, since Cornell did not have to make any infrastructure changes.

Freund has three employees who are factory-trained to handle maintenance and service of the system. “We also pro-

CAMPUS AT A GLANCE

Campus: Cornell University, Ithaca, N.Y. Established in 1865, the 745-acre, 240-building Ivy League campus has seven undergraduate units and four graduate and professional units in Ithaca. About 14,000 undergraduate students attend the college.

Problem: Older alarm monitoring system only identified the building where the alarm was located.

Solution: State-of-the-art fire alarm monitoring system that runs on the campus’ existing communication network to pinpoint information from smoke alarms, heat detectors and other devices at more than 30,000 points.

Results: Quick and full identification of an alarm source, which facilitates fast and accurate emergency response.

vided training on how to use the system to the dispatchers at our 911 center and others as requested,” adds Freund.

Freund says the life-safety upgrade is all part of a plan to take the fire alarm system to computer-aided dispatch, not unlike the system already in place for security via the university police.

While the Cornell installation was a mix of wire and fiber, some college, university and medical campuses are running similar systems over Ethernet networks.

“The ability to mix and match communication criteria — in the case of Cornell, it was wire and fiber — and to work with existing alarm panels is a big plus,” says Elliott Klepner, sales engineer for Digitize Inc., the company that manufactured and installed Cornell’s system. “Because this system can run on wire, fiber, radio, Ethernet and RFID, installation costs can be greatly reduced.”



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