

University of Illinois Eyes Its Assets at Engineering, Computer Labs

Reltronics Technologies' RFID system alerts the Chicago Police Department if an asset leaves its designated building.

By Claire Swedberg

Feb. 13, 2008—The University of Illinois at Chicago is expanding its RFID asset-tracking system to its Science and Engineering Office (SEO) building, following two months of testing at the campus' Grant Hall. The system, provided by Reltronics Technologies, enables the college to monitor the movements of laptop computers, iPods, projectors and other assets, and to sound an alarm at the Chicago Police Department's university branch if an item is taken from the building.

According to Cynthia Herrera Lindstrom, the school's assistant director of academic computing and communications, the RFID-based system is replacing the school's existing fiber-optic solution, which had been cumbersome and too confining. The fiber-optic system included a wired loop connected to the assets, physically holding them in place in the room in which they were housed. A person trying to steal an item needed to cut the wire, alerting the school that a theft was in progress.

However, says Reltronics Technologies' president and CEO, Sanjay Ahuja, this created problems when the school needed to remove an item for maintenance. In such a scenario, the individual taking the item first needed to advise the school that the item was going to be removed, then shut the system down before taking the item and follow the same process when returning it. In addition, Lindstrom says, the school wanted Grant Hall assets to be mobile, allowing, for instance, a student to take a laptop out of a classroom and sit in the lounge in the same building to work. The fiber-optic cable did not allow that.

The new system employs Wavetrend 433 MHz battery-powered RFID tags, which comply with the ISO 18000-7 standard. In the three-story Grant Hall building, 17 Wavetrend RFID readers, installed in December 2007, send tag data to Reltronics Technologies' "Smart Instrument" middleware, which calculates the tag's distance from the reader and pinpoints an item's location down to the room level.

If an individual begins walking away with a tagged asset, the detection of the tag's signal by another reader signifies that the asset is being moved. An alarm triggers if someone holding a tagged asset passes unusually quickly from one reader to the next—in which case the system deduces the item is being stolen—or if a tagged item comes within 20 feet of an exterior doorway.

The tags are embedded inside laptops and affixed to the exterior of desktop computers and projectors. Because exterior-mounted tags are vulnerable to vandalism, they are rendered tamper-resistant by means of a magnet, also attached to an asset. If an asset's tag is separated from its magnet, the tag sends an alert to the Chicago Police Department, indicating someone is attempting to remove the tag.

Reltronics Technologies is currently installing the system at the SEO building, a 15-story structure that will

include just two RFID interrogators—one in the doorway, and another inside one large 40- by 60-foot room containing multiple assets. Assets within the room are not intended to be mobile, and are generally all kept in that specific location, so readers are deployed to catch any movement of an asset away from the room.

Reltronics Technologies may install RFID readers in three additional buildings on campus as well. The goal, Ahuja says, is to deploy the devices throughout the school so that if an asset is taken out of one building, it can be tracked at other locations throughout the campus.

RELATED_ARTICLES "Initially, it is expensive to set up," says Lindstrom. "But the benefit is there is no wiring, and no tripping of wires." With the fiber-optic system, she adds, "there were quite a few false alarms. But with this system, I suspect that no one will be [accidentally] tripping it. If an antenna doesn't see an asset anymore, it's because it's not there."

Because Grant Hall is undergoing renovation and, therefore, closed to students, Lindstrom says, the asset-tracking system has not yet been fully put to the test. "We know it is working," she states. "We tried taking an asset out of the building, and it tripped the alarm."

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