

RFID System Keeps Track of Evidence

With an RFID-based evidence-tracking system already being tested by law officials, Pro Squared says it will launch an expanded version by early 2006.

By Jonathan Collins

Feb. 23, 2005—Building on an RFID-based system being tested by Indiana's state arson investigators, RFID startup Pro Squared says it will deliver an RFID-based evidence-tracking system ready for deployment by federal, state and local law officials by early next year. RFID will offer significant benefits over bar code labels that many police departments currently use to track evidence, according to Pro Squared.

The RFID system used in the Indiana pilot had been developed by longtime RFID systems developer Sysgen, which sold its RFID business in late 2004 to Pro Squared—a Houston-based division of IT project management company The Project Group. Indiana's state arson investigators had used bar coded labels prior to deployment of the trial RFID-based system in late 2003.

"Bar codes get dirty or scrapped off by accident, and read rates were around 80 percent," says Feldman. "The RFID system is achieving rates between 98 and 99 percent," meaning that 98 percent to 99 percent of read attempts result in a successful reading of the tag data. The Indiana trial has used around 1,500 passive 13.56 MHz RFID tags made by Texas Instruments, with five Texas Instruments readers deployed in a number of buildings where Indiana state arson investigation material is stored. State arson investigators use the system to identify and trace evidence collected from arson sites.

According to Pro Squared, tracking evidence—at the crime scene, during a criminal investigation and presentation in court, and while in storage—is an operation that is vital to the functioning of the U.S. legal system, but sometimes mistakes are made by law enforcement personnel. Last year, for example, the Houston Police Department said it had found 280 mislabeled evidence boxes in the department's property room.

Pro Squared says it will approach the Houston Police Department with the goal making Houston the first pilot site for Pro Squared's RFID-based evidence-tracking application. "We want the first beta to be in testing with the Houston Police Department by August this year," says Raphael Feldman, president and CEO of Pro Squared. Feldman expects its first commercial system to be available in February next year. Until then it will be available only for demonstration to the law enforcement community, says Pro Squared.

The demonstration system would deploy a mix of passive 915 MHz UHF RFID tags from Alien Technology and 13.56 MHz HF tags from Texas Instruments, depending on the requirements of each situation and the nature of the items of evidence set for tagging. Using the system, law enforcement personnel would be able to put RFID tags on evidence and record important details about each tagged item. Investigators could use PDAs with RFID readers to do this as they collect evidence at the crime scene, or they could bag evidence, label it with a numbered or bar-coded paper tag and record details in a book, as they have traditionally done, and then put RFID tags on the items and enter the item details into a database after they bring the items back to the evidence room.

"Using the mobile capability of the PDAs would mean a change in evidence-collecting processes, which would take a while to get used to, so we expect police departments to go with the existing bag-and-tag process," says Feldman.

Once the evidence is tagged, the details of the item along with the unique serial number of the RFID tag attached to it is recorded into a Microsoft SQL database using an application developed by Pro Squared. Fixed RFID readers placed at various locations throughout law enforcement offices and courthouses would read each tag as it passes within range, creating a record of each item's last known location. In the evidence room, for example, each evidence desk would be fitted with a reader to record an item's location. Readers placed on exits from the evidence room would ensure that no unauthorized removal could take place by initiating a preselected security procedure (such as sounding an alarm or locking doors) should an attempt to remove evidence be made without first obtaining permission from the evidence room staff. The serial number of each tag would be linked to a database record for that item and could include all the relevant details regarding the item.

In addition to enabling police departments to track the location of evidence, the system would also track custody of each item so that as the item moves from the police department to district attorney's office to the court, a note can be made in the custody record of that item. The issuing of smart cards to police officers, administrative staff, clerical employees, court officers, prosecutors, defense attorneys and other individuals requiring access to the evidence room, the company says, would enable the readers to detect which individual was in possession of each item of evidence.

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