

# Travis County Fire Marshall Uses RFID to Manage Evidence

The Austin, Texas, agency is employing both passive and active RFID tags to inventory and secure evidence in active and archived investigations.

By Claire Swedberg

April 24, 2008—The Travis County Fire Marshall in Austin, Texas, is employing RFID to manage 2,500 items of evidence. The office is utilizing the Clues system, provided by Intelligentz, to monitor the location of each piece of evidence for active cases, as well as those for archived cases up to 10 years old.

Some of these items are stored in the agency's office, while others are sent to multiple labs during investigations. Tony Calloway and Tate Markey, deputy chiefs at the Travis County Fire Marshall's office, described the system at last week's RFID Journal LIVE! 2008 conference in Las Vegas.

The agency investigates fire-related events including arson, accidental fires and explosions. In the past, when a case was under investigation, the office staff salvaged such evidence as cigarette butts, gas cans and matchsticks at the scene, manually writing data about each item, which was then stored in plastic or paper bags, or metal containers. Upon reaching the office, the items were placed in the evidence room. Employees maintained a written record for each object, indicating, for instance, which case it was connected to and when it was taken from the evidence room to a lab.

Travis County kept an Excel spreadsheet to track the items, Calloway told attendees. But over the past few years, Texas has extended its statute of limitations on the prosecution of arson and other crimes from five years to seven, then to 10, and the office began having trouble tracking all of the active and archived evidence.

Calloway said he and Markey believed his organization's records-tracking system was antiquated compared with those employed by other agencies around the country, so the two began searching for technology solutions about one year ago. What they found with some research, however, was that most other offices and laboratories were no more advanced than their own when it came to tracking evidence.

"We contacted other agencies to see what they were doing," Calloway said, adding that he found that nearly every office had the same problems he and Markey faced. One, however—the South Padre Islands Police Department—was working with RFID solutions vendor Intelligentz, and recommended that the county do the same. The police department there holds a large volume of seized narcotics as evidence, and Intelligentz was providing an RFID solution that alerted police if anyone attempted to move an item.

After meeting with Noel Arredondo, VP of Intelligentz's government division, Calloway was convinced RFID would offer a superior solution to bar coding. Intelligentz provided software and integration services for the Travis County deployment, installing a fixed Motorola EPC Gen 2 XR 400 interrogator and four Motorola AN 400 antennas at the doorway. Intelligentz also deployed an RF Code RFID reader in the back wall of the evidence room for reading active 433 MHz RFID tags.

Evidence arriving at the Travis County Fire Marshall's office falls in two categories: high-security items such as DNA, rape kits, drugs, guns and money; and low-security items such as bicycles and clothing that are neither likely to be stolen, crucial to the case, nor expected to be returned to the original owner. The high-security items require a higher level of tracking, so the agency is employing 433 MHz RFID active tags to alert personnel as soon as such items are moved. Others, tagged only with EPC Gen 2 UHF passive tags, will transmit an alert only if removed from the office.

When an item—regardless of its security level—is brought into the office as evidence, the staff assigns it a case number and inputs a description of that evidence, as well as the date and time of arrival, into a back-end system. Employees use a Datamax RFID printer to print and encode an EPC Gen 2 UHF passive label with a unique ID number. A staff member applies the RFID tag to the item and reads it with a handheld MC 9090 Motorola interrogator, linking the tag's ID number to the case number and a description of the item, as well as the date and time it was processed. High-security items are also given an RF Code 433 MHz active RFID tag, and the active tag's ID number is entered into the back-end system as well.

The back-end system and all data are hosted on a Web-based server operated by Rack Space, enabling the information to be located in several geographic locations. In the event of a natural disaster, for example, the data would not be lost, as it was in some courts in the New Orleans area following Hurricane Katrina.

If Travis County workers remove an item from the evidence room, they use the handheld RFID interrogator to read its EPC Gen 2 tag and input details indicating where the item is going and who is taking it there. If the item is removed without approval, the fixed RFID reader at the exit will capture the tag's ID number, as well as the direction—in or out—in which the item is being taken, then transmit an alert via e-mail to Calloway and Markey's BlackBerries. If a high-security item is moved in the evidence room, the 433 MHz RF Code interrogator sends a similar alert to both of them.

The system also helps the department manage its archived material, Markey says. At the end of the 10-year statute for a specific case, he explained, the Clues software sends a message indicating that archived evidence related to that case can be destroyed.

RELATED\_ARTICLES The agency began installing the system in late 2007. During that time, the county was moving its evidence room to a larger office 15 miles away, and using the fixed UHF RFID reader, temporarily installed at the first office, to track when evidence departed one location. It then installed the reader at the new site, where it scanned evidence again as it arrived.

In the future, Calloway said, the office hopes to use RFID tracking for other purposes. The fire marshal's staff works in the same building as the county's Office of Emergency Management, he noted. In the event of a hurricane or other disaster, RFID tags could be employed to link evacuees with their pets so that if they became separated during temporary housing, they could be reunited by capturing the identical ID numbers on their tags. Calloway said he would eventually like to expand the system to allow the attaching of labels to evidence while still at the crime scene, before it reaches the evidence room.

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