

The Florida State Attorney's 15th Judicial Circuit is using a real-time location system to quickly identify the floor and office where particular files can be found, thereby preventing legal snafus and reducing labor costs.

By Beth Bacheldor

Dec. 5, 2007—The [Florida Office of the State Attorney's 15th Judicial Circuit](#) is using passive RFID tags integrated with a real-time location system (RTLS) to track the thousands of felony case files the court system processes annually.

The 15th Judicial Circuit has always found it challenging to track all of its active felony case files, which move from various divisions and offices in the 45,000-square-foot, four-floor building in Palm Beach County. Over the course of a year, the 15th Judicial Circuit typically considers 120,000 criminal cases for potential prosecution. Of those, as many as 18,000 come into the office each year for review and processing. At least half of these 18,000 cases are plea-bargained or have warrants issued on their behalf because a criminal got away; the other half become active files within the court system. The files move through a number of steps during the life of the case, and can be transferred between divisions and offices.



Dan Zinn

When an attorney requires a specific file, it can be difficult to track down. "It is not that they are misplaced," says Dan Zinn, CIO for the Office of the State Attorney's 15th Judicial Circuit. "It's just that no one is sure where the files are in the process." Zinn began considering methods to help track files in 2004, but at the time, the available technologies were not adequately advanced. Fortunately, Zinn says, the 15th Judicial Circuit state attorney, Barry E. Krisher, has been championing the project from the get-go. "My state attorney is very visionary," he states. "It is his vision and his support that made this happen."

In July, the state attorney's office began installing [InnerWireless'](#) RTLS technology (which the company acquired upon merging with PanGo Networks in March), as well as [ThingMagic](#) Mercury5 RFID interrogators and a [Zebra Technologies](#) RFID label printer-encoder—which, according to Zinn, has programming and read capabilities consistent with those of ThingMagic readers.

The RTLS includes PanGo Platform middleware, which aggregates the unique ID numbers the interrogators cull from the RFID tags, then calculates locations and passes that information to the state attorney's office's file-tracking software, known as STAC. Staffers can access STAC and, in two keystrokes, determine a file's whereabouts on a graphically presented floor plan. The system can identify the floor and office containing the file, as well as how long it has been in that location. In addition, the system can present a list of cases located within a particular area, and staffers can drill down to find more information on a specific file listed.

To identify the files, the state attorney's office is fitting them with 1-by-4-inch paper labels with embedded [Alien Technology](#) EPC Gen 2 RFID tags. "This tag size fits the files and is comfortable for staff to use," Zinn explains.

Many real-time locating systems rely on active RFID tags, but the PanGo system can acquire location information from both active 2.45 GHz Wi-Fi-based tags (compliant with IEEE 802.11 b/g standards) and passive ultrahigh-frequency (UHF) tags based on [EPCglobal](#) and [ISO](#) standards. The system includes so-called Location Source Providers—software components able to accept location data from various sources, such as active and passive RFID tags. It also utilizes a location engine, a software component that receives the signals (including those from Wi-Fi-based active tags) over standard wireless networks and other wireless systems, such as Cisco's Aironet. "Although we started in RTLS with active tracking, it really is a generalized tracking system and works equally well with passive RFID," says Richard Barnwell, InnerWireless' VP of product development.

The RTLS went live at the state attorney's office in September. Currently, there are several interrogators on the first floor in the intake room—the division of the state attorney's office that reviews evidence to decide whether a case should go to court, or be plea-bargained or dropped—in the mailroom and at doors at the building's entrance. About 12 interrogators are installed on the third floor, in the felony division, where files are handled by prosecutors and their support teams. The fourth floor, where the criminal research team works, has four. Each reader typically has two antennas, though a few have three. "Two antennas were selected to be conservative," Zinn says. "Each reader can be expanded to four antennas, but we have no plans to do so at this time."

Eventually, the state attorney's office expects to add more interrogators to improve the granularity of location information. Tag read ranges seem to be about 20 feet, Zinn notes, though no detailed analysis has been conducted. The antennas are positioned at all access points in the felony division, and in areas with a lot of traffic. "We are getting a 95 percent read accuracy in these areas," he says. "The only problem that we found was when files are grouped together in a box and not close to an antenna, some files are missed. This was known in the beginning, and as we increase the number of antennas and the antenna positions, this will go away. Staff is aware of these short-term read issues, and are taking measures to fan or space out the files."

On the first day the RTLS was used, Zinn says, the office successfully located a specific file it had previously thought lost. "The attorney couldn't find the file—supposedly in one division, but it wasn't there. The file number was input into STAC, and it was discovered that the file was sitting in the mailroom, waiting to be transferred between divisions. It was critical that the file be located, because they needed that case to go into a courtroom."

This story illustrates why the RTLS is vital to the state attorney's office, Zinn says. While searching for and locating files can be time-consuming and pull employees way from more important work, if files aren't found, case outcomes can be jeopardized. "We have a serious risk here if files can't be located,"

he explains. "There are timelines for filing; there are judges' schedules. And when we have to react to an unplanned event—for instance, a judge has accelerated a case—we have to find the file quickly. If we can't find the file, the case can literally be thrown out. For every case, there is a victim, and if we don't do our job, then the victims get hurt. You can't put a value on that."

Zinn says the RTLS is expected to pay for itself within a year. By calculating the cost of five workers each spending a half hour searching for 150 to 200 cases a year, he adds, "that gave us a general idea that we'd be getting our money back." The passive RFID-based RTLS has proven such a success that the state attorney's office is now planning to use EPC Gen 2 tags embedded in all employee badges. That way, the RTLS will not only be able to track file locations, but also which person last handled a particular file. Zinn says the office expects to begin implementing the technology in January.

Using RFID to keep tabs on files is gaining traction with a range of organizations, but many such implementations rely on passive 13.56 MHz tags. Austrian bank [Hypo Landesbank Vorarlberg](#) (HLV), for instance, has been utilizing [Thax Software's](#) Findentity RFID-enabled tracking system for more than four years (see [Austrian Bank Finds RFID Yields Big Returns When Tracking Loan Files](#)). The [7th Judicial Circuit Court for Prince George's County](#) in Maryland, meanwhile, is using an EPC Gen 2 UHF-based RFID solution from [FileTrail](#) to track files for 30,000 to 40,000 cases annually (see [Maryland Court Tries UHF RFID File-Tracking System](#)). Neither HLV nor the 7th Judicial Circuit Court employs an RTLS, however. Rather, workers at both organizations use the respective systems to record when they take possession of a file, similar to how a library patron utilizes RFID to check a book in or out.