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:: Utilizing RFID in the Legal Environment

Radio frequency identification (RFID) is a proven tracking technology at law firms and legal departments, with the earliest implementations beginning in 2001. The technology has received a lot of publicity in recent years, and the diversity of applications has created some confusion and misunderstanding. What's needed is a practical foundation in the application of RFID and critical considerations for implementation of the technology.

Background

Before considering the use of RFID technology for your firm or department, it's important to understand the capabilities and limitations of the technology within your environment. RFID has a lot to offer. Plus, dramatic changes in this unique technology recently have opened a whole new world of possibilities.

RFID has provided many advantages over bar code technology since the mid-1990s. The ability to read stacks of tagged files at once without requiring line-of-sight was one of RFID's chief advantages. However, the cost of tags at about one dollar each and short read ranges (10 inches at best) prevented wide-spread adoption. It would take a whole new generation of RFID technology to make it economically viable.

Gen2 Technology

In November 2005, a new RFID standard called Gen2 fixed the limitations of high frequency (HF) RFID. Gen2 operates at a frequency of 915 MHz and was designed primarily to meet the requirements of supply chain management. These requirements are not dissimilar from the requirements of tracking in a legal environment: tracking items that move among many locations, unattended capture of tracking data, a high degree of accuracy and a long read range.

In contrast, HF operates at a frequency of 13.56 MHz, has short read ranges and is attended (requires deliberate action by a person). While HF will continue to be used in entrenched markets such as a library, the bulk of all research and development money as well as manufacturer production will be for Gen2.

Gen2 delivers significant advances in RFID capabilities, including:

- A reduction in the cost of RFID tags by 50 to 60 percent
- Read ranges increased from 10 inches up to 12 feet
- Read cycles increased to 400/second
- Interference eliminated with shielded electrical devices
- Tag-dense scanning improves reading

The improved performance and lower cost of Gen2 technology have made RFID viable for law firms and legal departments of all sizes.

The Disposable Tag

One result of Gen2 technology is that RFID tags are finally considered disposable. Many of our clients who implemented HF RFID, such as the U.S. Department of Labor and NIST, devised special procedures to reuse their tags because of their high cost. Clients implementing Gen2 solutions are not reusing tags; the cost of labor to remove and reapply the tag is higher than the cost of the Gen2 tag.

Relaxed Tag Placement

Another result of Gen2 technology is that placement of RFID tags is no longer a concern. With HF RFID, clients needed to be trained to place tags randomly because tags that were aligned in a stack of files would not be read. The tag-dense performance of Gen2 makes it cheaper to buy folders and filing media pre-tagged, which saves a lot of labor.

Passive Tracking

The new capabilities of Gen2 RFID have allowed us to pioneer the concept of passive tracking. Passive tracking provides continuous automatic tracking as files move from desk-to-desk and office-to-office without need for staff compliance. The files virtually tell the system where they are located.

One of the downfalls of bar code tracking systems is they require active participants. The fact that attorneys and staff will not use the tracking system is so widely accepted that many law firms have none. These

firms see little value in knowing who checked out a file when the file never remains with that person.

Other firms have remedied the shortcomings of bar code tracking by implementing an audit process. Each week, staff use portable scanners in every cubicle and office to update the locations of files. Even with this effort, the tracking system is only accurate once per week and somewhat accurate for the next few days.

RFID solves the problems of the bar code tracking system, eliminating searches and saving labor. In the lowest-cost implementation, RFID cuts audit labor by over 80 percent. At one firm, the weekly audit of 5,000 to 6,000 files at 200 offices and cubicles used to take 32 hours. It is now done in about 4.5 hours.

In a full RFID implementation, passive tracking captures every movement of every file, from desk-to-desk and office-to-office. Sophisticated middleware, designed to accommodate the processes found in law firms and legal departments, manages communication with Gen2 RFID readers and forms transactions for the RM system.

In a full RFID implementation, attorneys and staff go about their normal activities. With proper placement of readers, files virtually tell the system where they are. One large law firm that has implemented RFID discovered happily that with full coverage, there is no longer a need to perform the check-out or check-in processes in their RM system.

How You Can Use RFID

RFID is a powerful technology for automating processes in law firms and legal departments that are currently performed manually or by using bar codes. There are several locations where processes can be impacted by RFID technology.

File Room Workstations

A key place where RFID is implemented is at workstations in the file room. At these workstations, an RFID reader is connected directly to the PC and is used to automate basic processes such as check-in and check-out.

The RFID reader at a clerical workstation is also used in the most critical RFID process, cataloging new items. As new files are being created, an RFID tag is applied. Depending on your choice of methodologies, the reader will either be used to program the tag with a value or to retrieve the value from a preprogrammed tag.

The decision of whether to program tags or use preprogrammed tags is important and has ramifications. However, the choice may be made for you by the selection of a vendor.

After-Hours Workstation

Many law firms have workstations set up to make it convenient for attorneys to check out files they take from the file room after-hours or on weekends. Compliance is generally reported as being very low.

RFID eliminates the need for compliance. In most cases, the attorneys can only access the file room using their security badge. The combination of a badge reader and a Gen2 RFID reader makes the check-out process automatic. A monitor displays it all for the attorney to see, raising awareness that a new tracking technology is in place.

Automatic Check-In

RFID can be used to eliminate the check-in task in the file room. This saves time, and avoids the wasted effort of having staff search for a file they think is checked out when it's actually sitting in the file room waiting for someone to check it in. A pair of RFID readers inside the file room door automatically reads tagged files that come in the door.

Cubicles and Offices

One of the biggest issues with tracking systems in law firms and legal departments is that the files move after being checked out. After the first move, the tracking system is no longer accurate. Gen2 RFID provides the first practical solution to this problem.

The long read ranges of Gen2 RFID provide the ability to track files passively. With read ranges up to 12 feet, RFID readers can be placed in the ceiling, under the desk or in the wall to track the movements of files from desk-to-desk and office-to-office. Each reader is associated with a specific person via the middleware, allowing the RM database to be updated with the current location of each file.

There is a variety of readers available for the cubicle or office. In general, there are readers that connect to a workstation via USB or serial port and readers that connect to an Ethernet network by standard cabling. Determining which is best for each situation in your environment should be part of a vendor's site survey.

Common Areas

RFID technology also can be used to track the locations of files into common areas. In the normal workflow, files often end up coming to rest in a case room, war room, conference room or other area. Determining which locations have enough value to be worthwhile as a tracking location is something that your vendor can help determine.

RFID on a Portable Platform

A portable RFID reader is one of the most valuable time-saving tools for a law firm or legal department. Today's portable RFID readers are built on a standard PDA platform running Windows CE. A color touch screen makes operation simple and intuitive for anyone.

A portable RFID reader automates several common processes:

Locating Missing Files. The single most valuable function of a portable RFID reader is finding desperately needed files. The conventional approach involves manually searching every drawer, cabinet and stack in every office and cubicle. Gen2 portable scanners can be adjusted to read up to five feet. This makes sweeping through an office very fast and reduces the disruption to attorneys and staff.

Office-Wide Audit. A portable RFID reader can complete audits of desks and offices in about 20 percent of the time it takes to do a bar-coded inventory and five percent of the time for a manual inventory, with much less chance of inadvertently skipping files in the process. Locations of files will be updated. The ability to get a reconciliation report depends on the capabilities of your RM system.

File Room Inventory. A portable RFID reader can complete file room inventories quickly. An order-checking process can help you find misfiles. The portable reader will alert you to items that are out of

place. However, if you have more than a few thousand active files, using color coding is much more efficient from a labor standpoint.

Boxing Files. A portable RFID reader speeds the process of boxing files for storage. Typically, only the boxes are bar coded. Since most portable RFID readers also contain an integrated laser scanner, both the files in the boxes and the boxes themselves can be read as the vendor software on these readers typically is built to use bar code and RFID interchangeably.

Shelving Files. A portable RFID reader can assign files to a shelf. This is useful in an environment where the shelf-specific location is important, as when using a dynamic filing system where files are refiled on any shelf that has space and sorting is only done within the shelf. These file rooms typically do not use color coding. If you are using color coding, this capability has no value to you.

Practical Implementations

Implementing a practical RFID solution does not necessarily mean you will automate all of the areas discussed above. The unique attributes of your environment determine which areas warrant automation. Your vendor's site survey will determine specific needs.

Below are generalized descriptions of three scopes of automation that are common and areas where these are most applicable.

Full Coverage. Full coverage applies the passive tracking concept and automates tracking everywhere including the file room, cubicles, office and common areas. Files are tracked from desk-to-desk and office-to-office automatically, without any participation by attorneys or staff. Full coverage solutions are economically viable for IP practices of large law firms, boutique IP law firms and large (Fortune 500) legal departments.

Cubicle Coverage. Cubicle coverage automates tracking among the file room and staff cubicles. Files are tracked from desk-to-desk automatically, without any participation by staff. Cubicle coverage solutions are viable for IP Practices of large law firms and boutique IP law firms where person-to-person file transfers are normally handled by secretaries and require less hardware than full coverage solutions.

File Room Coverage. File room coverage automates all file room processes, including check-in, check-out, archiving and more. In addition, a portable RFID reader is used to conduct periodic audits. File room coverage solutions are economically viable for large law firms and small to medium-sized legal departments. They provide good results with a minimal investment.

Common Concerns

There are several common concerns and potential traps in an RFID tracking solution.

Over-Reliance on the Technology. Organizations acquiring a new technology tend to treat it as the solution to some issues for which it was not intended. RFID is a tool for tracking, as are bar codes. It can be used for detecting misfiles — files out of order on the shelf — but it is not as cost-effective for this as color coding. Even though you have a shiny new hammer, not everything is a nail.

Selection of Locations. It is easy to overdue the selection of locations for RFID equipment. Always keep in mind that you are looking for locations where files come to rest in common workflows. Your vendor will help you stay focused on the value of each candidate location during the initial site survey.

Too Much Too Fast. It is easy to get excited about RFID and its capabilities. However, practicalities of what can be done in a short time, as well as budgets, may mean you want to plan a multi-phase implementation. At the start of an RFID project there are many things to do that take time to complete, like tagging the active files.

Interference. All RFID equipment is FCC regulated to limit interference. It is possible that poorly shielded equipment containing speakers will be disrupted if very close to an RFID reader. This will not happen with quality office equipment. Any issues of interference should be discovered and resolved during a vendor's initial site survey.

Safety. Questions always arise about safety. All RFID equipment is FCC regulated to ensure safety in the work environment.

Architecture. An RFID solution should be well-architected with a full set of offerings. A well-designed application should leverage the investment by tracking files, library materials, equipment, artwork and other assets on a single RFID infrastructure. The ease with which tracking data integrates into the appropriate applications is important.

Summary

RFID is a proven tracking technology in the law firm and legal department environment. Recent advances in the technology have made it affordable to law firms and legal departments of all sizes. Gen2 RFID eliminates the issues of compliance that have been the downfall of bar code and HF RFID tracking systems. A vendor site survey will help answer a lot of questions and determine good locations for tracking as well as what type of equipment to place there.

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