

San Bernardino Human Services RFID-enables File Warehouse

The agency is consolidating its files into one large depot, and plans to use RFID to identify, store and retrieve them.

By Claire Swedberg

Aug. 31, 2007—The San Bernardino County Department of Human Services (HS) will deploy an RFID and bar-coding system to help its staff track files and assets in its warehouse. The department intends to test the system beginning Sept. 4, and to take it live by January 2008.

Each of the department's files contains documents for a specific county resident who has received food stamps or other financial aid. Once a file becomes inactive, it remains in the agency's office for 90 days before being sent to the warehouse. Until now, the HS department has stored its 1.5 million inactive files in five warehouses in the city of San Bernardino. The agency is now in the process of consolidating those files into one large warehouse containing 10 rows of shelving measuring 160 feet in length and up to 19 feet high.

Inactive files are often needed for state hearings, or at the request of an HS agent, says Danny Tillman, the department's information services manager, and retrieving such files can be a manual and time-consuming task. Warehouse personnel search through rows of boxes for file case numbers printed on their sides. The boxes could be misfiled, or in use by someone else, making the search that much more time-consuming.

To help expedite file storage and retrieval, the department is adopting the Digital RFID Asset File Tracking (DRAFT) system, which will be implemented using integration services, hardware and system software supplied by Lowry Computer Products, in tandem with GlobeRanger's sensor-based middleware, iMotion Edgeware.

HS staff, Tillman says, will use eight RFID portal readers, two RFID label printer-encoders and six handheld units with bar-code and RFID reading capabilities. This will enable them to determine the specific box in which a file is stored, as well as the shelf on which it is located, then quickly identify it on that shelf.

As inactive files arrive at the warehouse, staff members will place seven to 15 of them into a box and affix it with a Lowry Smart Trac EPC Gen 2 UHF RFID label, encoded with an EPC number and printed with a bar-code ID number. The tag's unique RFID and bar-code numbers will be linked in the HS management system with the names of the files in that box. The box will then be shelved, and personnel can use a handheld device to capture the RFID or bar-code number of its label, and to scan the label affixed to the shelf on which it is placed, allowing them to record the box's exact location.

The label—which might be printed with only a bar code, or could also include an RFID tag—will provide an identifying number to assist in locating that box. Computers and other assets will also be tagged with an RFID label and bar-code ID as they enter the warehouse, and data related to those items will be stored in the same way. Later, if any of those tagged assets are removed from the warehouse, portal readers installed at the doors

will capture the unique ID numbers on their RFID tags and send that data via an Ethernet cable connection to the HS SQL database server.

Although RFID will be the primary technology for identifying the boxes, Mendoza says, the bar codes will be used as backup. "There are times when you have errors with the tags," he explains, in which case the bar-code scanner could be used. Conversely, if a box were filed on a high shelf where there was no clear line of sight with the label (rendering a bar code unreadable), the handheld device would use the RFID function.

Several RFID interrogator and printer models will be tested before the agency determines which works best, says Steve Eells, Lowry Computer Products' vice president of professional services. Once the system is deployed, agents in the HS office will be able to request files online, according to each file's case number.

At the warehouse, a pull list will be created and sorted by file locations within the warehouse. The files will be listed in an order designed to allow the warehouse operator to retrieve the boxes most efficiently. The operator will then remove each located file from its box, sign it out in the DRAFT system and assemble all pulled files for pickup by a courier.

The iMotion middleware integrates the asset and box ID numbers captured from the readers and directs that data to the HS back-end system. The Lowry software translates that data and provides it to the back-end storage and front-end Web-based systems, enabling warehouse employees to monitor the removal of each file or asset from the warehouse or shelf, or its return.

An HS Web server will host the DRAFT application. Lowry software will also provide HS with a Web-based dashboard that displays such items as overdue files (those taken out of the warehouse for too long), case files that need to be reboxed and pending file orders from HS agents. An agent or warehouse operator seeking a file or box will be able to tell, using the dashboard, if it has already been removed, says Pete Mendoza, HS' business application manager.

The agency is in the process of phasing in electronic storage for its files. About half of the file documents currently going into archives will be stored electronically, while the other half will remain in hardcopy and be kept in the warehouse. This, Mendoza says, will greatly reduce the quantity of files held in storage. Eventually, the department hopes to store all data electronically, making the warehouse system unnecessary.

Next month, the group will begin defining system requirements and testing the hardware's feasibility. By January 2008, says Eells, the system should be fully deployed, with labels attached to assets and file boxes, tracked via RFID and bar codes. Including hardware, software and middleware, the system is expected to cost \$153,000. Although the agency has not yet predicted a specific return on investment, Tillman notes that the improvement in file retrieval should allow one warehouse employee to do the work currently required of three or four workers.

RELATED_ARTICLES Eventually, the Department of Human Services hopes to expand the system to include providing its employees with ID badges containing EPC Gen 2 RFID chips. This should allow warehouse portals to document when a certain staff member takes a particular file or box. However, no date has been set for such a deployment.

Lowry and GlobeRanger are partnering to provide DRAFT as the first of many solutions, says Susan King, GlobeRanger's vice president of business development.