

EPAL Moves Ahead With RFID Pallet-Tagging Pilot

The European Pallet Association is successfully using EPC Gen 2 passive RFID tags to track 1,000 pallets in Switzerland, and plans to expand the pilot to additional countries in 2009.

By Rhea Wessel

Nov. 13, 2008—The European Pallet Association (EPAL), the organization that oversees the production, repair and inspection of more than 500 million so-called EURO pallets each year, is so pleased with its RFID pilot that it is continuing the project beyond its planned termination date, Harry Jacobi, the association's CEO, told attendees at last week's RFID Journal LIVE! Europe conference in Prague.

The pilot was designed to test the feasibility of employing radio frequency identification to improve EPAL's ability to monitor the pallets' quality, and to explore how the use of RFID could benefit product suppliers and retailers. With the information gained from the implementation, the organization has written a business case for further RFID-based pallet tracking.

"The results are so nice that we decided to continue the project," Jacobi said, noting his satisfaction with the system's ability to successfully read 100 percent of the tags, and with the speed at which pallets are identified.

The European Pallet Association began planning the trial in early 2007, then commenced a test of EPC Gen 2-based RFID technology in July 2008. EPAL had originally planned to end the test this month. One of the organization's partner companies, Holliger Pallet Logistics, affixed EPC Gen 2 passive RFID tags to 1,000 pallets in Switzerland. Holliger was selected because it manufactures, sorts and repairs pallets.

The RFID system tracks pallets as they move throughout Holliger's facilities. The first read point is after a pallet is produced and fitted with two RFID tags encoded with the same Electronic Product Code (EPC) number (each pallet has two tags so they can be read from either side). Pallets are carried by forklift through a portal reader prior to being shipped to a customer—in this case, retailer Migros. Once the pallets are returned, a forklift moves stacks of pallets through another RFID portal at Holliger's facilities, to determine which pallets have come back to the facility.

The next read point is after the pallets have moved through Holliger's automatic sorting machine. Interrogators are mounted along the belt of the machine that determines if the pallets are in a good state of repair. "Qualified" pallets—that is, those in a good state—are then stored for further use, while pallets deemed "unqualified" are moved to the repair area. The EPC number encoded to each pallet's two tags is associated in the database with repair-status information regarding those pallets. After the pallets are restored, their tags are read once more, and the pallets are registered as qualified.

EPAL's ultimate vision is to utilize RFID to identify each of the 500 million pallets it has in circulation. This would improve its control of production and repair processes, and help the organization have a better overview of the pallets' locations worldwide. "If we could get insight on the flow of pallets," Jacobi says, "that

would help us open future markets."

Testing for tag placement on the pallets and the readability of tags, given the pallets' widely varying contents, was conducted at the European EPC Competence Center (EECC) lab in Germany (see European EPC Competence Center Expanding Its Services).

EPAL tested six types of tags after reviewing 40 possible models. The tags had to be able to withstand temperature variations between -20 degrees Celsius (-4 degrees Fahrenheit) and +80 degrees Celsius (+176 degrees Fahrenheit). The organization tested them in five different positions, and determined that the best position was on the edge of the sideboard, and that each pallet should have two tags—attached to opposite sides of the pallet. It also found that tags—which are located inside a plastic casing, screwed onto the wooden pallets—should not be larger than the height of the cross board.

Readability tests were conducted when the pallets were loaded with aluminum coffee cans and plastic bottles of toilet cleaner. (The presence of metals and liquids can interfere with the transmission of RF signals.)

RELATED_ARTICLES If the project were expanded to EPAL's entire pool of pallets, Jacobi told attendees, users of those pallets would benefit from better quality assurance and access to information about a pallet's repair history. What's more, EPAL would benefit from being able to determine its worldwide pallet inventory, reduce administrative costs and automate its licensing and invoicing processes.

The next steps for the project, according to Jacobi, include GS1 in Europe's launch of the RTI Integrated Pallet Tag Definition Group, which will work to establish the specifications for tagged pallets in other use cases, such as tracking them as they are moved into and out of storage, as well as using them to manage inventory of goods and assets. In addition, EPAL plans to expand the pilot to additional countries, beginning in January 2009. In a six- to nine-month test, EPAL will add read points for pallets in Switzerland and Germany, and perhaps in Italy as well. The organization wants to gain experience collecting RFID data outside of Switzerland, Jacobi said.

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