

Portuguese Manufacturer Opens Doors With RFID

Vicaima, a maker of wooden doors and doorframes, is using passive UHF tags to monitor production at its manufacturing facility in Portugal.

By Laurie Sullivan

May 25, 2007—Portuguese wooden door manufacturer Vicaima has integrated RFID technology into its Vale de Cambra manufacturing facility. The company's goal is to reduce costs and improve production efficiencies.

CreativeSystems, a systems integrator based in Santa Maria da Feira, Portugal, designed and installed the RFID system. It consists of Squiggle RFID EPC Class 1 Gen 2 labels and ALR-8800 readers from Alien Technology, based in Morgan Hill, Calif.; and RFID printer-encoders made by Printronic, in Irvine, Calif.

Vicaima invested hundreds of thousands of dollars to deploy the RFID system, estimates Pedro Franca, a CreativeSystems engineer who designed and installed Vicaima's RFID system. Vicaima executives say that was money well spent. The company expects to cut production costs by 1.5 percent annually at the 430,557-square-foot manufacturing facility by gaining greater visibility—in real time—into its manufacturing lines, as well as automating some processes and managing inventory more efficiently. "We incessantly seek new technologies that maximize the quality of our products and services," says Filipe Maia Ferreira, Vicaima's managing director.

Installation of the RFID system began in January, and the rollout concluded in May. The RFID tags are affixed to the wooden doors and frames so the products can be tracked as they move through the manufacturing process.

As doors and frames travel on conveyor belts in the manufacturing facility, a fixed interrogator stationed at each production line reads the unique identification number encoded on each RFID tag. The ID number, associated with the product's stock keeping unit (SKU), documents when the product is on the assembly lines and when it is completed and ready for delivery. Currently, Vicaima isn't sharing its RFID data with any trading partners, though it could do so using software based on EPCglobal data-sharing standards, such as Electronic Product Code Information Services (EPCIS).

Middleware from CreativeSystems captures, filters and formats the data before sending it to Vicaima's enterprise resource planning (ERP) software housed at a facility in Oporto, Portugal. The ERP software, which stores and processes such manufacturing and shipping information as a product's SKU, size and color, correlates all the data before finished doors and frames are shipped out through the Vale de Cambra facility's dock doors.

As with many RFID deployments, Vicaima's encountered challenges. Metal on the production lines, Franca explains, interfered with the interrogators' ability to read every RFID tag affixed to the doors and frames. In addition, determining the interrogators' positions on the lines also proved to be a problem, because the doors

and frames rarely end up on the conveyer belt in the exact same position. The system initially only read 90 percent of the tags, but this has since improved to nearly 100 percent. Franca declines to provide details on how the company overcame the obstacles and achieved near-perfect read-rates, adding, "That's the secret."

RELATED_ARTICLES Vicaima plans to expand its RFID system to other manufacturing facilities—five in Portugal, one in the United Kingdom—later this year. Once this is complete, the manufacturer will upgrade and install RFID technology at its logistics centers, integrating it at six warehouses in Portugal and one in the United Kingdom. The expansion will enable Vicaima to monitor product shipments across the supply chain, from their manufacturing facilities to warehouses, then on to customers.

Vicaima generates about \$90 million in annual revenue from its industrial business. The company expects most of the benefits to come from the ability to track and locate products in real time, rather than relying on its current systems, which processes batches of data overnight. Vicaima executives always thought RFID would become a major advantage for the company, Ferreira says, but waited for the technology to mature before seeking out a systems integrator to build and install it.

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