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Clothing Manufacturer Invests Its ROI in RFID

Gardeur AG's RFID pilot to track garments from production to its warehouse using reusable tags was so successful that it plans to roll out the system company-wide.
By Rhea Wessel

Aug. 21, 2006—Gardeur AG, based in Moenchengladbach, Germany, manufactures pants and jeans for men and women, and supplies them to department stores and upscale boutiques. The company sews its garments at wholly owned plants in Germany and Tunisia, and at order manufacturers in Eastern Europe. Founded in 1920, Gardeur reported sales of 93 million euros in 2005, delivering 2.8 million garments—about half of which were exported. Gardeur also runs more than 630 boutiques in stores worldwide.

In 2003, Gardeur decided to deploy an RFID system to get a better view of its supply chain, reduce shrinkage (the loss of goods), increase its efficiency and gain experience with the technology. At the time, the company didn't know how many garments arrived at its main warehouse and distribution center, nor was it able to confirm that all goods shipped from production sites were actually delivered to the warehouse. And when garments did arrive, employees had to spend a lot of time manually sorting and counting the different styles, sizes and colors. In addition, as a supplier to Galeria Kaufhof, a Metro Group member that plans to use RFID across its supply chain, Gardeur knew it would be required to tag garments in the future.

Gardeur chose to work with Infineon's RFID division because it felt secure about the company's technology know-how, says Dominik Berger, managing director of RF-iT Solutions GmbH in Graz, Austria. Infineon's RFID Software and Solutions division spun off and became RF-iT Solutions in June 2005. For the RFID pilot, the company decided to track clothes moving from its production site in Augustfehn, Germany, to its central distribution warehouse in Moenchengladbach. Individual items were tagged and placed on a trolley. Before loading them onto trucks, workers read the tags as the trolley passed through a gate equipped with an RFID interrogator. The tags were read again when the clothes arrived at the central warehouse and distribution center.

Deployed in October 2004, the pilot ran for three months. Gardeur continued to use the system to track inventory for a year and a half, then decided to roll it out company-wide. Within the first year of operation, the RFID system met the goals Gardeur had set-and more: It produced a return on investment sooner than expected.

"RFID has helped us reduce manual labor and allowed us to better account for goods shipped and received," says Thomas Ballweg, who heads the project at Gardeur. He attributes the ROI to the fact that the system reuses RFID tags, reducing the cost of hardware. Other ROI benefits come from better inventory management, more precise fulfillment of manufacturing orders, less shrinkage and fewer customer rebates due to a more reliable delivery process.

"Our savings will allow us to invest in the extension of the RFID solution," says Ballweg. "The system's functionality is so convincing that our customers on the retail side have already shown interest in extending the solution to their part of the supply chain."

The RFID system was combined with Gardeur's bar-code tracking system, which retailers still use to identify items. A bar-code printer produces two labels; factory workers in Augustfehn attach one to the individual garment with a tagging gun, slipping the other around the neck of the hanger. They then attach a credit-card-sized passive 13.56 MHz Infineon transponder to each item using the tagging gun, which has a unique identification (UID) number that can't be erased. Tagging dates are recorded in the system and linked to each tag's UID, allowing each tag to have a "new" ID upon reuse.

After RFID-tagging the clothes, workers use one of two available handheld Casio DTX PDAs that include Microsensys RFID modules and run RFIT's operating software to read the bar code and write the information from the bar code onto the chip. The Casio DTX terminal transfers the data to Gardeur's custom-designed information system via wireless LAN, after which bar-code numbers and ID numbers are linked in Gardline, Gardeur's proprietary enterprise resource planning and warehouse management system.

Workers place all garments on hanging carts—about 100 on each cart—and wheel them through a 2-meter-high gate fitted with an RFID antenna from Germany's TBN GmbH and an interrogator from Scemtec. Here, interrogators read the tags once more and send the data to RF-iT's You-R® OPEN operating software. You-R® OPEN functions as data

and device management middleware, and also offers an administration suite that e-mails the IT administrator if an interrogator fails. You-R® OPEN collects and processes all the data from devices, then formats it to be compatible with Gardline. Gardeur also runs RF-iT's You-R® Smart "fashion solution," which allows managers to make sure all goods shipped from Augustfehn actually arrive in Moenchengladbach.

"Gardeur now knows what's in the warehouse, and if everything shipped was received," says Berger. "When they receive a truck load, goods are scanned and managers know immediately if a delivery was complete. The system is basically event-driven."

Workers can glance at a computer screen to confirm that data from the portal interrogator was transferred to the You-R® OPEN software. Information from You-R® OPEN in Augustfehn is synchronized automatically with the central database in Moenchengladbach several times per day, allowing managers to see which items are on their way to the warehouse.

When goods arrive at the Moenchengladbach warehouse and distribution center, the tags are read again as they pass through an RFID portal identical to the one set up in Augustfehn. Gardeur says its read rates average near 100 percent, allowing managers to confirm that they have actually received all shipped goods. "We are very pleased with the accuracy of these readings," says Ballweg. "It is much more precise than bar codes or manual counting."

After the tags are read, they are removed from the garments and returned to the Augustfehn plant. There are currently 20,000 tags in circulation, each of which can be reused 20 to 30 times. When prices drop to roughly 12.5 cents, Gardeur plans to implement one-way tags so garments can be tracked from the factory line to the retailer.

At present, Gardeur pays about 50 cents for each durable, reusable tag. During the initial phase of operations, Gardeur had expected tag prices to drop, and had prepared the system to switch over to one-way tags. But tag prices did not come down as quickly as hoped, and Gardeur decided to stick with reusable tags until tag prices eventually decline. At that point, the company explains, everything will be in place for a quick change-over to one-way tags.

As a result of the pilot's success, Gardeur has announced plans to deploy the RFID system in three Tunisian factories, using its ROI to help cover the cost. The company hopes to install the system, which will track garments from Tunisia to Germany, by September 2006. It once again expects a quick ROI since it will reuse the tags. Gardeur will need 250,000 tags in Tunisia and six handheld interrogators—four for daily use, plus two backups.

In addition, the company is considering taking the system to an independent Romanian plant that supplies Gardeur, but no time-frame has been defined for this project. In later RFID implementations, the firm envisions using the technology to manage its warehouse better by knowing what goods have been shipped and which garments were moved to

different storage zones. It will also use RFID to sort items for quick shipping.

Meanwhile, the company is evaluating other hardware. "We are constantly evaluating new chips, antennas and readers to make sure we always have the latest improvements available," says Andreas Ferstl, a senior engineer for installation and customer projects at RF-iT. "When we expand to Tunisia, we could implement what we are already using in Germany, but we want to see what is available now on the market to get an even more robust system and optimize the costs."

Gardeur and RF-iT are working with the Fashion Group RFID to create a coordinated textile industry solution. Fashion Group RFID is an industry consortium backed by Gesellschaft für Consulting und Synergie mbH (GCS) near Munich, in cooperation with standards setter GS1 Germany. Consortium members include: H&M, Karstadt Warenhaus GmbH and Kaufhof Warenhaus AG. Fashion Group RFID is one of several groups of businesspeople working to influence industry standards.

Gardeur's goal is to establish best practices that can be used worldwide. The firm wants to develop a textile smart label and standards for embedding RFID tags permanently into garments. It also hopes to negotiate for volume discounts for the industry, and to educate the public about privacy issues.

Gardeur supports the Fashion Group RFID because it sees the organization as a way to protect its investment by ensuring that the industry adopts compatible technologies. "We are convinced that our positive experiences can be transferred to other companies in the textile sector," Ballweg says.

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