

# Internorm Finds RFID Does Windows

The Austrian window and door manufacturer is using RFID to track containers of its products as they move between the company's three production facilities.

By Rhea Wessel

Feb. 18, 2008—Austrian manufacturing company Internorm is using RFID to track containers of the doors and windows it makes as they move between its three production facilities. The system enabled Internorm to eliminate the manual processes it employed to track containers, and the errors those processes could cause. It also helps the firm get more use out of its containers, as well as double-check the accounting work of the external trucking companies it hires to move goods among its sites in Traun, Sarleinsbach and Lannach, and among its sales partners.

Internorm does not sell directly to consumers; rather, about 1,000 sales partners and dealers purchase more than 900,000 doors and windows each year, many of which are made to order. The manufacturer uses a just-in-time production process to keep inventory low and to improve quality, since every move of a door or window can potentially damage it. The company sends out its wares in 800 containers that usually return to the factories within a month after shipment.

At the point of manufacture, the company applies a bar-coded label to every window and door it makes. Each label is encoded with a unique serial number associated in a database with a description of that item. Before loading windows and doors into the containers, workers scan their bar codes so that the logistics planning software is updated regarding which items are being shipped in which particular containers.

Before the firm installed its RFID system, workers manning its gates had to manually write down which containers departed or entered a facility. Other workers then typed these handwritten notes into the database, providing an overview of the location of vehicles, containers and goods.

In 1999, Internorm began seeking a better solution, according to Alexander Stroh, the company's RFID project manager, who is in charge of shipping and logistics. "We wanted to know which truck brought us which containers," Stroh explains, "so we could trace any damages to the containers back to the trucking company or the customer which kept them at its premises." In some cases, he notes, trucking companies would claim to have delivered a specific container they had not actually delivered.

The following year, Internorm installed the current system, which uses semi-passive 2.4 GHz RFID tags containing a Siemens chip. Each plastic-encased tag contains a battery guaranteed to work five years, though Stroh says most have run for seven. The system, provided and installed by ID Systems, includes 800 tags and two readers installed at each location's gates. One interrogator is set to read tags on inbound containers, the other on outbound containers. All are mounted on posts about 1.3 meters high and protected from snow and rain via a plastic enclosure.

About 40 trucks that make regular deliveries for Internorm also carry the semi-passive tags. When the trucks approach the gate, the interrogator excites the tags attached to the truck and the container. The tags then

transmit their unique ID numbers—the only information saved on them. When the ID numbers are recognized by the database at the gate, the gate arm raises and the system records the arrival or departure of a load and particular truck. The gate computer then updates Internorm's logistics software regarding the goods' whereabouts.

When Internorm installed the system in 2000, the read distances for passive tags then on the market were only about half a meter, which was insufficient for the application. Therefore, the company opted to employ semi-passive tags. Although the firm has never calculated an ROI, Stroh estimates it has saved substantially on labor.

Internorm plans to continue using RFID, but says it can no longer purchase replacement tags for the original system. It requires approximately 60 new tags per year, since the batteries in a number of old tags are almost depleted, and it frequently needs to tag new containers put into circulation. The company is presently in negotiations with two suppliers of a new system using passive EPC Gen 2 tags.

RELATED\_ARTICLES Internorm has not yet tested any EPC Gen 2 tags or readers. Instead, the company says, the vendor it selects will install and test the system. Once the system's read rates have proven acceptable, Internorm intends to purchase it. By May of this year, the firm expects that it will rip out its eight-year-old RFID hardware and replace it with the new EPC Gen 2 system. Internorm estimates it will cost less than €50,000 (\$74,000) to make the switch, including all necessary interrogators, tags and software. The company plans to utilize the new system in the same way it uses the current one.

Given its positive experience with RFID, Internorm says it plans to extend its use of the technology to its manufacturing processes within the next 10 years. The company envisions storing production information on passive RFID tags, but has not further defined specifications at this stage. The tags, expected to remain attached to doors and windows for decades, would allow for better quality-control checks during production, and would ease the job of repair workers. If glass for a window frame needs to be reordered, an employee carrying a mobile RFID reader could extract the original production information from the tag and put in an automatic order for the part.

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