



'Smart' pallet-level RFID at Birkel

A retailer places so much pressure on one of its suppliers to employ RFID that it starts to sound like a requirement. Sound familiar? Only in this case, the retailer was Germany's Metro Group, and the packager was Birkel Teigwaren GmbH, Waiblingen, Germany's largest manufacturer of noodle products.

What began as occasional inquiries about Birkel's RFID plans around 2005 became increasingly frequent and pointed, according to Mathias Ihme, Birkel's IT-Services project manager. By early 2008, Birkel moved forward with its plans. It decided to reduce its ongoing RFID costs by making its systems fast and "smart": Only pallet loads requiring an Electronic Product Code (EPC) would be encoded with an RFID tag.

"Cost considerations drove us to a solution where we can decide which pallets will be tagged and labeled and which pallets will only be labeled," explains Ihme. An RFID tag adds about 15 cents to the cost of each label, he adds.

By late 2008, Birkel had implemented the RFID solution at its Mannheim production facility using two types of RFID-enabled, on-demand printing systems from **Logopak** (www.logopak.com):

- Online: Two fully automatic Model 920 PFK RFID FlagTag encode/print-and-apply systems accept pallets conveying directly from production.

The RFID tags are applied to the back of the labels by the system prior to application.

- Offline: Five tabletop VLP 210 RFID label printers are used to commission manually created pallets. They augment Birkel's five standard Logopak label printers.

The RFID deployment builds on the company's EAN 128 bar-code pallet-labeling program, which was initiated in 1998, also following a retailer-driven requirement. At the time, Birkel had selected Logopak printer/applicators "because of their reputation for quality and reliability," says Ihme. "That proved to be the right decision."

Metro recommended several RFID hardware suppliers that included Logopak, which provided Birkel a confident route to deployment. Birkel's strategy with RFID was to switch out the old printer/applicators for the new ones and keep the communications identical, Ihme says.

Automatically stretch-wrapped pallet loads arrive for RFID commissioning on two parallel lines, each with a Logopak 920 system. Birkel's Euro-standard pallets measure 80 x 120 cm (31.5 x 47.2 in.) and carry an average load of 32 cases. Although the lines operate at different speeds, rates average 40 pallets/min/line. There's only about a 6-ft distance from a stretch wrapper to each of the Logopak 920s. As the pallet travels from the stretch wrapper to the RFID systems, a case's EAN 13 bar code is read by a **Sick** (www.sickusa.com) bar-code scanner. Logopak's Logosoft™ software interfaces with the

warehouse software to generate a unique pallet number. The Serial Shipment Container Code, or SSCC, is used by the printer and for RFID tag encoding if appropriate.

The blank label is direct thermal-printed with all information online in real-time. The RFID tag is confirmed twice, immediately before and after it is applied. The UHF Gen2 tag is provided in rolls by **UPM Raflatac** (www.upmraflatac.com). The vendor had been recommended by both Metro and Logopak.

The 920 unit prints and applies a "flag tag," in which a scored, 1/2-in.-wide edge of the label with tag is bent up 90 deg by the Logopak system to improve RFID readability (see photo).

This commissioning process is all done in 16 seconds, according to Ihme. He estimates that 80% of the pallets receive RFID tags.

A standard, nonRFID label is always applied to the leading (shorter) edge of the load, then the pallet advances and the second label is applied to the longer side. This label is RFID-tagged and enabled if directed by the software. Both labels include EAN 128 bar-code data. The RFID "smart labels" are also printed with the EPC logo of **EPCglobal** (www.epcglobalinc.org).

Pallet loads then continue on the conveyor into the warehouse.

At this point, Birkel provides RFID-enabled pallet loads for two retailers, Metro and Rewe, though Ihme says several smaller customers have asked about Birkel's RFID capabilities.

Birkel does not currently experience any internal benefits from using RFID. Ihme says, "We rely on bar-code technology to fulfill all of our information needs."

However, the company has tested RFID portals for potential use at its dock gates. Ihme expects that would shave a few seconds off the current method of a hand-held bar-code scan. He may also consider forklift-mounted RFID.

Ihme's benchmark for read performance was 98.5%, yet he reports that they get 99.5%. He credits Logopak with good planning and communications for a smooth, successful deployment, and he acknowledges the benefit of EPCglobal's standards. "A clear and full definition of standards helps very much for implementation," Ihme says. "You know exactly what you have to do."

For Birkel, RFID implementation was as straightforward as boiling noodles. 🌐



ON THE WEB

RELATED ARTICLES For more, see packworld.com/rfid

SLIDESHOW To view additional photos of Birkel's RFID implementation, go to packworld.com/slideshow-27375