New RFID Technology Helps Kraft, P&G, Kimberly-Clark Go the Distance

The three CPG manufacturers have been piloting Mojix's RFID system, which employs a single interrogator to read tags from up to 600 feet away.

By Mary Catherine O'Connor

April 21, 2008—One of the most-discussed technology introductions made at last week's RFID Journal LIVE! 2008 conference in Las Vegas was the STAR system debuted by Los Angeles-based startup Mojix. During a panel discussion on Friday, representatives from three major consumer packaged goods manufacturers offered feedback based on their tests and, in one case, deployment of the STAR system. Mojix leverages phased array antenna technology to enable a single interrogator to read and also locate passive ultrahigh-frequency (UHF) RFID tags based on EPCglobal's second-generation air-interface protocol, within an area as large as 250,000 square feet (see Mojix Takes Passive UHF RFID to a New Level).

The Mojix system consists of the STAR receiver linked, via coaxial cable, to transmitters known as eNodes. The eNodes send out RF signals that interrogate and power up the tags, which then send the signal data back to a receiver as far as 600 feet away. A STAR receiver can manage up to 512 eNodes, which can be daisy-chained to cover a large geographical area, as well as mounted in a facility in an orientation enabling the STAR receiver to determine a tag's location in three dimensions.

Mark Pollock, Kraft Foods' director of customer development for integrated store logistics, told attendees that his company has tested and deployed the Mojix system at a Kraft warehouse in Germany, from which the firm shipped RFID-tagged product headed for German retailer Metro.

The timing was right for that German warehouse, Pollock said, because Metro had recently asked Kraft to ramp up the number of RFID-tagged Kraft products it shipped to its retail stores. This meant Kraft would need to outfit more of its dock doors with interrogators to accommodate that increase. Because a single STAR receiver can read tags at such a great distance, the company has been able to deploy a single interrogator in conjunction with multiple eNodes to cover all of the additional doors needed. "We're very pleased with the results [from STAR]," Pollock said, adding that the possibilities for using the Mojix technology are "limitless" in a large warehouse.

Mark Morrow, Procter & Gamble's EPC technology leader for corporate engineering, and John Onderko, scientist and packaging engineer for RFID at Kimberly-Clark, told attendees about their respective company's testing of the STAR system. Morrow said P&G has been testing the system for more than a year at its RFID test lab, and has succeeded in employing a single interrogator to read tags moving through a total of 49 dock doors, as well as tags outside the lab and others mounted on RF-unfriendly metal racks.

"Our primary use case for the reader is reading case tags, versus just pallet tags, on pallets moving through dock doors," Morrow explained. In tests, P&G consistently found that STAR was able to read case tags on pallets moving through five dock doors simultaneously, with the pallets carrying a mix of cases, some

containing products that tend to interfere with RF signals—such as Cascade dishwasher powder, which has foil-lined packaging.

When Kimberly-Clark first started testing the Mojix system last year, Onderko said, the company did not yet have a strong use case for the technology, though it eventually identified one. "We were having a hard time tracking tagged pallets of finished goods moving from a production facility to a warehouse," he says, "so we [installed the reader to monitor tags moving through] a few outbound dock doors. Honestly, it worked so well we got bored with it after a while, so we got creative and started tracking raw materials and the lift trucks that move them around the facility. This way, we could track the location of the raw materials and marry that with data on the asset [lift truck] carrying them. We are looking forward to developing more use cases for the reader."

All three panelists indicated their main focus for the STAR system would be leveraging the significantly long read range it provides, relative to conventional readers, in order to lower the incremental costs of expanding RFID reader coverage currently around just a handful of dock doors, to many or all dock doors within a facility. "This is the choice for driving scale across dock doors," Pollock stated. None of the three companies have conducted focused use-case testing of the STAR reader that exploits its ability to locate tags in 3-D, though Morrow said P&G has done small-scale location testing.

RELATED_ARTICLES Doug Wallace, chief operating officer of RFID solutions provider Xterprise, also joined the panel. Wallace said his company sees "massive opportunities" for deploying the Mojix hardware for a wide range of applications. As examples, he cited reading battery-assisted Gen 2 passive tags attached to objects in outdoor settings, as well as monitoring IT assets within a data center and tracking inventory in retail stores.

Linda Prosser, Mojix's VP of corporate marketing, said no pricing information on the STAR system has yet been released. According to Prosser, the company is currently working with RFID systems integrators to develop sales channels for the product.