

The CPG maker is using passive EPC Gen 2 RFID tags to identify and locate 900 trailers at one of its manufacturing facilities, saving hours of labor.

By Mary Catherine O'Connor

May 1, 2008—Consumer packaged goods maker [Kimberly-Clark](#) (K-C) has nearly completed a pilot project employing passive EPC Gen 2-compliant RFID tags to track the locations of trailers filled with finished goods or raw materials at one of its manufacturing facilities in Beech Island, S.C. The tests have been a major success, according to Corey Mingerink, the company's senior RFID packaging engineer.

Under K-C's manual tracking system, it could take up to three hours for workers to locate a specific trailer at the Beech Island site, which has five separate lots for trailer storage. It now takes minutes to locate a trailer using the RFID-based system. From a labor savings and productivity standpoint, Mingerink claims, the return on investment K-C stands to realize from the technology is clear.



Corey Mingerink

Mingerink notes that when his company began searching for a means of better managing the trailers, it shunned active real-time location systems, even though such systems are widely utilized for that application. "We looked at the market and we came across [PINC Solutions](#), which combines passive RFID technology and GPS technology," he told attendees at last month's [RFID Journal LIVE! 2008](#) conference in Las Vegas. "This is a great example of using more than one technology—coupling passive technology with GPS removes the need for active RFID tags."

K-C is using the Yard Hound trailer-tracking platform from PINC Solutions, based in Berkeley, Calif. A passive EPC Gen 2-compliant RFID tag is attached to each of the roughly 900 trailers within the facility's yard at any particular time, and a network of fixed and mobile readers is used to identify the trailers.

Although the pilot is scheduled to last another few months, it has virtually moved to a permanent deployment, says Mike O'Shea, K-C's director of Auto-ID sensing technologies—save for some infrastructure issues at the facility that are not directly related to the PINC technology. "Other [K-C] yards are fighting over who gets to deploy it first," he stated following the LIVE! session.

The PINC solution has three components, all of which K-C is currently employing. The Yard Hound Guard application is installed at a yard's security entrance and exit lanes, and consists of a fixed-position EPC Gen 2 interrogator and PINC software running on a computer in the guard post. As a truck hauling a trailer to be dropped off enters the yard, a passive EPC Gen 2 tag, encased in a hard plastic housing, is secured to the trailer by means of the tag's magnetic backing. The ID number encoded to the tag is interrogated by the fixed-position reader and associated, in the PINC software,

with shipping information pulled from K-C's existing yard management software. When that trailer is later hauled out of the yard, the tag is read once more, then removed so it can be reused for another incoming trailer.

The Yard Hound Locator application, utilized to track and locate tagged trailers within the yard, consists of an RFID interrogator built into PINC's Tracker appliance, which is mounted inside a yard truck (also known as a shunt truck) and used to reposition trailers in the yard. As the truck moves throughout the premises, it passes within range of each parked trailer's tag. Its Tracker appliance then collects that tag's ID, associating it with the location coordinates determined by its built-in GPS receiver.

Because the truck is in motion, the Tracker appliance also contains inertial sensors that measure such characteristics as the yard truck's acceleration and rotation. This data, along with the signal strength of the tag reads, is plugged into algorithms developed by PINC, to pinpoint each trailer's location.



Mike O'Shea

Tracker stores the trailer's location data, along with a time stamp, and transmits that information to PINC's Web-based software platform as soon as the appliance comes into range of one of the yard's Wi-Fi (802.11) access points. PINC's server collects data from the various yard trucks as they arrive, merges it with a map of the facility, and presents a real-time picture of yard activities.

Inside each yard truck, drivers employ the Yard Hound Director software, running on a touch-screen monitor, to receive orders regarding which trailers to pick up and where to take them. Based on the data collected from the Tracker appliance, the Director software guides the drivers to each trailer's exact location. Tracker also takes continual inventory as the yard trucks pass by all of the tagged trailers.

"K-C was definitely gaining value from the moment we starting tagging the trailers," Mingerink told attendees, adding that he doesn't believe end users need to have yards as massive as K-C's to benefit from the PINC solution. "You don't need a huge number of trailers."

In addition, the PINC system has allowed K-C to make more accurate driver staffing decisions, based on the visibility it has gained into where its yard trucks are located, as well as how often they move trailers during a given shift. Previously, Mingerink said, Beech Island managers relied on the recommendations of its third-party logistics company—which contracts out the yard truck drivers—to determine scheduling.

PINC Solutions has a number of other customers currently using its Yard Hound system as well, including home goods specialty retailer [Cost Plus World Market](#) (see [Cost Plus World Market Finds RFID Sweet Spot in Yard Management](#)).