

U.K. Seal Maker Puts RFID to the Test

AESSEAL assessed EPC Gen 2 tags and interrogators at GS1 UK's new RFID test center, with plans to deploy the technology to speed up the time needed to receive and locate products.

By Claire Swedberg

Dec. 11, 2007—After several years spent following RFID's growth and considering using the technology to track its products as they come from Asia into U.K.- and U.S.-based distribution centers, AESSEAL, a British maker of mechanical seals, evaluated RFID at a new EPCglobal RFID Test Center in Winsford, Cheshire. Last month, AESSEAL tested EPC Gen 2 RFID tags and interrogators in a setting that simulated one of its typical warehouses, to determine whether RFID could speed up the time required to receive and locate products. During the tests, tags were read successfully 95.5 percent of the time, says Stuart Welsh, head of IT at AESSEAL, adding that the results were very encouraging.

The center, which opened Nov. 15, is hosted by Intelligent as a GS1 UK service. The facility is designed to help organizations such as AESSEAL understand the business benefits that can be achieved from RFID, including cost savings, improved accuracy and increased efficiency.

AESSEAL markets its seals and seal parts to chemical processing plants worldwide. Most of the products are low-margin items selling for about \$10 to \$20 apiece, Welsh says. These items move quickly and in large volumes—tens of thousands can pass through a single distribution center each month, he says—and if employees are unable to locate a particular item, they might assume it to be out of stock. Unwilling to wait, the customer might then turn to a competitor for the part.

AESSEAL currently uses bar-coded labels to identify and track its products. In China, the product manufacturer affixes a bar-coded label to each item, linking the bar-coded number to the product's serial number in AESSEAL's back-end system. When the items arrive at the distribution center, employees scan the bar codes to create a record of the parts' arrival. But the required line-of-sight scanning makes capturing each bar-code number time-consuming, Welsh says, and checking in a large order can sometimes take several weeks.

For that reason, Welsh says, AESSEAL has spent three years searching for a system that could improve the visibility of goods moving between the manufacturer and the distribution centers, and that could also increase the efficiency and accuracy of its supply chain management, both in and out of the DCs. RFID promised to eliminate the manual bar-code scans, Welsh explains, and instead allow workers to document incoming goods by driving forklifts loaded with tagged products through RFID portals.

AESSEAL delayed using RFID, in part, because the company was concerned with IP infringements, Welsh says. When the manufacturer first investigated RFID technology in 2003, he adds, "we uncovered a family of patents held by 3M." Those patents seemed "to cover the use of RFID technology in a system that takes data from an RFID reader and writes it to a database. We raised our concerns with a number of different parties, including industry consultants, global corporations and the patent holders, but failed to reach a consensus as to the validity of these patents."

AESSEAL revisited the situation in 2006, Welsh says, and contacted GS1 UK. After a series of meetings and phone calls, he says, the organization "have given adequate assurance that the situation regarding RFID technology has changed, and that providing we adhere to EPCglobal standards, we will not infringe any intellectual property." Furthermore, at an RFID forum in London held in late 2006, Welsh says he attended a meeting and spoke with GS1 UK regarding RFID options. That meeting convinced him RFID was more than just hype. Indeed, he says, GS1 UK discussed plans for its new test center at that meeting, and AESSEAL scheduled a time to begin testing RFID tags in a scenario simulating its operations.

During testing, Welsh says, AESSEAL affixed RFID tags to "lumps of metal" similar to the seals the company ships. The lumps were packed into cardboard containers, and researchers at the center pushed stacks of the boxed products on hand pallets through a series of RFID portals built to resemble typical bays. "In addition to testing the speed and accuracy of the read, we also tested the direction [into or out of the warehouse]," he says, noting that all the reads were 100 percent accurate.

According to Welsh, the laboratory environment was similar to that in which AESSEAL products travel. "It's cold there," he says. "They have liquids, metal; they use real products—it makes it easier to visualize how it would work in our warehouse."

Testing included running simulated products past readers for about two hours. "We did try and break the system by going faster or slower," Welsh says, "and by scanning the same items to try and get duplication—but we could not break the system."

The test center's objective is to assist operational and technical teams of U.K.-based companies to find the best method for achieving the performance they require from RFID, says David Lyon, EPCglobal UK's business manager. "The center will help any organization from any industry deploy RFID in its business in the most effective way," Lyon states.

According to Lyon, the EPCglobal RFID Test Center offers users complete vendor independence in a non-sales environment. "The center will help dispel the myths about RFID in the market—show how the technology works, that the standards and regulations are in place. All that is left is for organizations to come to the center and discover the real business benefits of RFID," he says. "The center is not a showroom or museum to RFID, but a real-world environment aimed at helping U.K. businesses understand how it can work within their supply chains, and how it can be implemented effectively." Lyon adds that attendees will not be approached with a sales follow-up after visiting the center.

"It may be that in the course of testing the best combination of technology for a particular business issue, that RFID or EPC may not be the best fit," Lyon says. "The center will recommend the best approach for that particular business issue."

Welsh says the RFID experts he worked with at the center offered a common-sense approach, advising his company not to expect RFID to be a panacea, but rather to take a measured approach. "Certainly, there is a danger in thinking RFID will do everything for you," Welsh says. "And you can't do everything at once."

AESSEAL plans to analyze its current expense of shipping with the bar-code labels, including costs related to labor, lost parts and out-of-stocks, then compare those costs against RFID technology investments. With the results from the test center, he says, "we can go back to our warehouse and talk about the practicalities of tracking with RFID in our real-world environment."

RELATED_ARTICLES If AESSEAL finds that RFID technology is cost-effective—by providing a savings through reduction in labor and lost items—the company expects to implement the system in two distribution

centers: one in Darby, U.K., the other in Knoxville, Tenn. By May 2008, the plan is to install fixed RFID interrogators at the dock doors and apply RFID tags to the cardboard cartons of items shipped.

Eventually, AESSEAL hopes to implement RFID anywhere the technology can be used to track assets within its supply chain and DCs. Tags could be placed not only on product packaging, but also on shelves to help staff members locate a particular product quickly within a distribution center. It might also consider utilizing the technology to identify employees working in the warehouses. "We're open to having that kind of conservation," Welsh says. The company has three additional warehouses in the United Kingdom, and is currently in the process of acquiring more.

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