HP Takes RFID End to End

The manufacturer of PCs and peripherals is tagging printers at a Brazilian factory and tracking them through shipping and reverse logistics.

By Mark Roberti

Feb. 28, 2006—Hewlett-Packard (HP) revealed that it is tagging printers as they are being manufactured at a facility in Sao Paulo, Brazil, and tracking the units through production and distribution to customers throughout South America. The tags in the printers will also be used to identify individual units that have been returned, repaired or recycled.

"The Brazil market is small enough for us to do everything end to end without spending gazillions of dollars," said Didier Chenneveau, VP of operations for Hewlett-Packard. "We're RFID-enabling the complete supply chain, including manufacturing, distribution, repair, reverse logistics and recycling."

Speaking at last week's AIM Global Annual Showcase in Newport Beach, Calif., Chenneveau said HP would like to tag all printers sold in the United States—as opposed to tagging the cardboard boxes in which the printers are packaged—because there are more benefits for HP, such as the ability to trace a defective printer back to the source and correct the problem.

At the start of the manufacturing line in the Brazilian factory, a Philips Gen 1 UHF RFID tag is placed on the printer's exterior plastic case. As the printer is assembled, data is written to the tag. For instance, when an application-specific integrated circuit (ASIC) is installed, its serial number is written to the tag. "We're recording the DNA of the unit as we make it," said Chenneveau.

After the device's interior components have been assembled and tested, the results of the test are written to the tag. If the components fail, the printer is taken off the production line and examined, while passing printers are routed to product completion, where HP writes the country of destination to the tag. This is so the manufacturer can make sure it ships the units to the proper countries.

Each tag's unique Electronic Product Code (EPC) is read again when the units are shipped, and the EPCs are compared against the purchase order to make sure the appropriate units are on the pallet. If a unit is returned, HP can read its tag's EPC and track it back through the supply chain. On the other hand, if a unit needs to be repaired, the tag can be used to record what has been done and track the repairs.

As the system is expanded to more facilities, HP could use the tags for quality control. For instance, if a consumer returned a unit, HP could scan the RFID tag and look up information associated with its EPC in a database. By looking up time, date and place the unit was built, HP could determine whether there have been problems with other units made by that manufacturer, or if a problem exists with an employee who might require more training.

Furthermore, Chenneveau provided details about the benefits HP gets by tagging boxes of individual printers in its Memphis distribution center for shipments bound for Wal-Mart. He said his company is using software

from T3Ci to analyze EPC data supplied by the retailer. One advantage of this is that when a discrepancy arises over exactly how many units were delivered, HP can use the data to support its claim. Thus, HP can save by reducing invoice deductions.

According to Chenneveau, HP tagged about 2.3 million of the 45 million printers it shipped worldwide last year. His company, he noted, has been paying about 25 cents for Gen 1 tags, but plans to move to second-generation EPC tags starting in April, which should cost less than 10 cents apiece. He added that vendors have improved the quality of their tags and interrogators, and that the failure rate of tags is much lower now than it was a year ago.

"My guys like to say the tags work the way they were designed to work," he said. "The tags weren't designed to read through water or metal. Obviously, our printers and cartridges have metal in them. We've done a lot of work with the placement and orientation of the tags to get the read rates we need. And where we can't read all the tags on a pallet, we use middleware to associate items with each other and the pallet, so if we have 10 items associated with one another on a pallet and we read items one, three, five and seven, we know we have all 10."