

**In the latest phase of its RFID deployment, the drugmaker is serializing cardboard shipping containers by means of EPC Gen 2 tags.**

By Claire Swedberg

June 13, 2008—International biopharmaceutical company [Cephalon](#) plans to enter a new phase in deploying RFID technology in its supply chain by affixing passive ultrahigh-frequency (UHF) RFID tags to cardboard shipping containers, and by serializing the Electronic Product Code (EPC) numbers on those tags that leave their third-party distribution center in Tennessee. All shipments leaving the warehouse are slated to be tagged by the third quarter of 2008.

This container-serialization system, incorporating software and integration provided by [OATSystems](#), is the next in a series of steps intended to make Cephalon e-pedigree-enabled, using RFID and item-level serialization, by 2009. Following this latest initiative, says Randy Bradway, Cephalon's VP of commercial operations, the company hopes to begin tagging at least one product at the item level by the end of 2008, and more next year.



*Randy Bradway,  
Cephalon's VP of  
commercial operations*

Although the [California State Board of Pharmacy](#) is delaying implementation of its e-pedigree requirement until 2011 (see [All Eyes on FDA for Drug E-Pedigree](#)), Cephalon hopes to remain focused on the state's previous 2009 deadline to have itself and its wholesalers implement a system for electronic drug pedigrees.

For the past several years, Cephalon has been testing RFID tags on pallets, cases and saleable units containing placebo products (see [Cephalon Announces Item-Level Pilot](#)). In 2005, the company's research team attached EPC Gen 1 tags to units, cases and pallets, moving them around the Tennessee DC to measure the tags' read accuracy. RFID hardware provider [ADT Security Services](#) supplied interrogators for the pilot, which it and OATSystems helped develop and execute.

In 2007, Cephalon began tagging cases and pallets of Fentora, a pain medication and a Schedule II narcotic, at its Salt Lake City manufacturing facility, using [Alien Technology](#) Squiggle EPC Gen 2 tags (see [Cephalon to Tag Cancer Drug at Point of Manufacture](#)). With the latest phase, the drug company intends to tag all shipping containers leaving the Tennessee distribution center en route to wholesalers, capturing reads at the DC as the cardboard boxes are sealed for shipping.

As an order is received and approved, a label is generated that references the specific products that will be packed into a shipping container. In the past, that label has included only a bar code and text. For the new system, it will also contain an Alien Squiggle Gen 2 RFID tag, encoded and printed by a [Zebra Technologies](#) printer. Workers will take the label, along with a tote, and pass through the warehouse, picking up items to be shipped. The picked items will be placed in a shipping container. The box will be

sealed, and the RFID label will be attached to it. It will then pass by an [Impinj](#) Speedway fixed RFID reader with connectivity to the company's back-end system.

When the data is transmitted to Cephalon's [SAP](#) All system, OATSystems' software allows the tag ID number to be linked to that particular product's stock-keeping unit (SKU), as well as such details as expiration dates, lot number and type of product, according to Prasad Putta, OATSystems' cofounder and a member of the company's board of directors. Cephalon is currently shipping about 3,800 containers per month, and anticipates tagging all shipping containers by the third quarter of 2008.

As pharmaceutical wholesalers and retailers further deploy their own RFID technology, they can begin capturing RFID reads as well, and sharing that data with Cephalon. In the meantime, the drug company can start building further toward a full e-pedigree system by beginning to tag individual product units with RFID tags. The units' serialized ID numbers will be linked to the shipping containers' serialized EPC numbers in the firm's back-end system.

"We started building a partnership early," says Brian Brown, Cephalon's associate director of logistics and analytics, to develop an RFID solution, working with ADT Security Services, OATSystems, [SAP](#), [SupplyS](#) and [Systech International](#). He describes the group as an internal think tank: "We've built a very strong brain trust, and in doing so have a very strong understanding for what we are doing today, and what we will be doing in the future."

What Cephalon is doing today, he explains, is staying in line with California's previous goal of implementing an e-pedigree system in 2009 so pharmaceutical companies, wholesalers and pharmacists can share data on products and shipping containers. With certain elements already in place as part of the earlier pilots—including the [SAP](#) All system, as well as the OATSystems software and [Impinj](#) readers at the distribution center—Cephalon has been preparing for its next step.

"We thought serialized shipping containers would be a great way to further our progress," Brown says. "We have a history working with OATSystems, and we like their tools, and we like their people. We said, 'Let's go back to the initial project—RFID enablement of the warehouse—and upgrade to Gen 2.'" By implementing this latest program, Brown says his company "will continue to drive the value down the supply chain." Cephalon is hopeful that wholesalers will join in the effort to use those RFID tags to begin sharing data with the drugmaker.

The greatest research on this phase of the deployment, according to Bradway, will be focused on data analytics. "This is less about the technology, and more about data," he says. "It's easy to generate thousands of data points, but you have to come to terms with, What does that data mean?" As a package moves out of the warehouse, Cephalon will track the data that comes in, determining what type of information it acquires through the system, how quickly and accurately, and what the drugmaker can and cannot do with that data.

Cephalon will need the participation of wholesalers to make that information truly valuable, Bradway

## Cephalon Moves Ahead With Its RFID E-pedigree Plans

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adds, since it allows the manufacturer to track its product beyond the distribution center. "There are 20-some wholesalers in various levels of implementation of RFID and e-pedigree," he states. As those wholesalers begin utilizing the RFID tags on containers and sharing read results, Cephalon hopes to analyze the resulting data, as well as how well it is transferred between members of the supply chain.

Bradway discourages those in the pharmaceutical industry from becoming complacent because California extended its e-pedigree deadline by two years. "Anyone who thinks 2011 is a long way off," he says, "hasn't been paying attention to how fast the last six months went by. We need to move fast. I think it's naïve for anybody to back off of the 2009 deadline."