

Let the Innovation Begin

This week EPCglobal will submit Gen 2 to ISO, marking a major milestone for the RFID industry.

By Mark Roberti

Jan. 24, 2005—It feels as if it's been a long time coming, but this week marks a major milestone for radio frequency identification technology: EPCglobal will submit the Gen 2 specification for UHF RFID tags to the International Organization for Standardization. It will be another year before the second generation Electronic Product Code specification is approved as an international standard, but the submission will help move the industry forward and ease concerns of end users and vendors alike.

For the past few years, end users and vendors have been concerned about investing in one of the two proposed protocols for tracking goods in the supply chain using UHF RFID tags—ISO 18000-6 or EPC. If end users invested heavily in tags and readers based on one protocol, they would have to write off that investment if the other became widely adopted. And if vendors invested in developing new products based on one, they would also have to write off that investment if the other caught on.

The last obstacle to EPC becoming an ISO standard involved eight bits of code on the tag. ISO requires an eight-bit Application Family Identifier (AFI) to identify the source of the data. EPCglobal wanted the option to assign those eight bits to either an Application Family Identifier or an EPC identifier. The solution EPCglobal came up with is to use one bit of extra code to signify whether the eight bits are an AFI or an EPC identifier. If, say, the bit is a one, it will mean that the numbers that follow are an AFI. If it's a zero, it will be an EPC identifier (see [Gen 2 Finds a Path to ISO Approval](#)).

End users I spoke to are clearly excited about the prospect of a single global RFID standard. Speaking at a press conference at the National Retail Federation trade show in New York last week, Metro CIO Zygmunt Mierdorf said that his company is not going to ask suppliers to put tags on cases until Gen 2 tags are available. That way, suppliers can feel confident that they are investing in technology that will be used by retail customers.

Tesco CIO Colin Cobain said at the same press conference that he was confident Gen 2 technology will be superior to existing UHF technologies, that it will provide faster read rates and more consistent reads. He indicated that Tesco is taking a practical approach and will roll out new RFID applications as the technology improves.

Mierdorf, Cobain and Wal-Mart CIO Linda Dillman all said the technology today is not perfect, but is still reliable enough to deliver value. While some recent news reports indicated that Wal-Mart was only able to read tags on cases 60 percent of the time, Dillman said Wal-Mart is reading tags on pallets nearly 100 percent of the time, on cases on conveyors 95 percent of the time and on cases at the trash compactor 98 percent of the time. (Metro is near 100 percent on pallet reads.)

Dillman did say that Wal-Mart is only able to read tags on cases stacked on a pallet 66 percent of the time, but the company never expected to read 100 percent of cases stacked on a pallet. That's nearly impossible with

today's technology and packaging configurations. That's because the technology is immature and because radio waves can't travel through metal cans, foil packaging and products containing water.

But it would be a mistake to think companies will *never* be able to read 100 percent of the cases stacked on pallets. The technology will improve over time, and companies can switch to RF friendly packaging materials or redesign their packaging so that every case has at least one side facing out. That way you don't have to read through water or metal; all you have to do is read a tag on the outside of a case.

Many commentators today are looking at what RFID can't do, but the retailers take a different view. Here's what Tesco's Cobain had to say: "We're focused on what the technology can do today, not on making it do what it can't do. If we can't do something today, we'll wait six months. If we can't do it in six months, we'll wait another six months. Eventually [the technology] will get there."

With the Gen 2 spec now settled within EPCglobal and on a path to ISO approval, vendors can start developing products that solve problems for end users, and end users can invest in RFID technology with confidence. It's an exciting moment. The only thing I can compare it to is the launch of the Netscape Browser in October 1994, which made the Internet accessible to millions of consumers and launched the Internet revolution. It's RFID's time. Let the innovation begin.

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