Wal-Mart Opts for EPC Class 1, V2

Wal-Mart tells its suppliers that they can use EPC Class 0 and Class 1 tags for now, but it will make Class 1 version 2 of the EPC specification its standard.

Nov. 5, 2003—Back in February, Wal-Mart first began telling suppliers that they would be required to put RFID tags on products shipped to the retailer's distribution centers and stores. This week, representatives of more than 120 top suppliers gathered at a hotel outside of Bentonville, Ark., near Wal-Mart's headquarters, to learn exactly what that mandate would mean.

Wal-Mart CIO Linda Dillman and Rollin Ford, head of Wal-Mart's logistics operation, spoke to suppliers. They said that the retailer would eventually require all pallets and cases to have RFID tags based on the Class 1, version 2 specification of the Electronic Product Code (EPC); it is being developed under the auspices of EPCglobal, a joint venture between the Uniform Code Council and EAN International, charged with commercializing EPC technology. The tag will carry a 96-bit serial number and be field-programmable. That is, suppliers will be able to write serial numbers to the tags when they apply the tags to products.

"We said we would be initially be accepting any EPC-compliant tags in the UHF band," says Tom Williams, a spokesperson for Wal-Mart. "The two main parts of that are EPC data format on the chip and one of the existing communication protocols, Class 1 or Class 0. Wal-Mart and other end users who are members of EPCglobal are driving for one open globally accepted communication protocol, and that is Class 1, V2."

The Auto-ID Center's Hardware Action Group began a draft of the specification. That work will be taken over by EPCglobal. It could be the second quarter before a specification is drafted and approved. It would likely take another year for companies to develop, test and produce products. But Wal-Mart executives hastened to add that support for V2 would not slow down its deployment at all. They encouraged suppliers to use readers that can be upgraded through software to enable them to manage the transition.

"This was a landmark event in the history of the RFID industry," says Tom Pounds, VP of corporate development and product strategy at Alien Technology. "They have taken a very sensible approach and are starting straight up with the EPC vision—nothing fancy. They aren't doing anything fancy with programming on the fly, adding data downstream, or adding security on the tag, so we feel very comfortable that EPC Class 1 is right in the sweet-spot of what they are looking for."

The current Class 0 and Class 1 specifications of the EPC protocol are open standards that any vendor can produce product with, but they are not interoperable. That is, a single reader can't read both tags unless it is a multi-protocol reader. The second version of Class 1 is expected to incorporate the specifications for both Class 0 (currently a factory programmable tag, but a read-write version is in the works) and Class 1 (a tag that lets the end user write the serial number to it). Some are also pushing for Class 1, V2 to be interoperable with ISO018000-6, an emerging standard for UHF tags. It will take time to work those issues out without sacrificing performance.

"This is good news for the industry," says Bill Allen, eMarketing Manager at Texas Instruments RFid Systems. "Version 2 will be a globally acceptable protocol."

Wal-Mart's decision to support EPC Class 1, V2 was expected. The question now is how will the second iteration of the specification be drafted. Will the specification merge with international standards being developed by the International Organization for Standardization? Will it have an additional memory block that end users can read and write to? Will it deliver good performance in all regions of the world?

Wal-Mart, the Department of Defense and other end users that belong to EPCglobal will provide input on what performance and features they would like to see in V2, and then the vendors, including Alien Technology, Matrics and Texas Instruments, will work together to create the Class 1, V2 specification and answer those questions.

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