

EPCglobal and AIAG have proposed an RFID tag data structure allowing tire manufacturers to use both Electronic Product Code and existing data identifiers.

By Mark Roberti

Dec. 15, 2005—[EPCglobal](#), working with the [Auto Industry Action Group](#) (AIAG), put forward a proposal at an AIAG meeting last week that would enable tire manufacturers to use both EPC and auto industry data structures on a single tag. The compromise, if accepted, could pave the way for a radio frequency identification tag to be used in a tire, whether sold through a retail store, shipped to a carmaker for installation on a car or sold to the [U.S. Department of Defense](#) (DOD). AIAG is a nonprofit organization set up to resolve issues in the global automotive industry supply chain, while fellow nonprofit EPCglobal commercializes Electronic Product Code technologies.

"This is a step in the right direction," says Morris Brown, AIAG's program manager for materials management. "We are still in initial discussions. Nothing has been finalized yet, but it is a good starting point that we can work with going forward."

The U.S. Congress passed the [Transportation Recall Enhancement, Accountability and Documentation Act](#) (TREAD Act) in November 2000, which called for all tires on new model cars to be tracked individually. Following that, AIAG developed the B-11 Tire and Wheel Label and RFID Standard to standardize methods for identifying each individual tire with unique tire information stored in an RFID tag.

The current version of the B-11 standard calls for EPC information to be included in the tag in a "data identifier" (DI) format. DIs are codes that let software systems know what type of data follows, or the origin of that data. The auto industry uses a number of different data identifiers, including a [U.S. Department of Transportation](#) tire identification number, which indicates the plant where the tire was manufactured, as well as the week and year it was made.

Retailers and the DOD, however, won't accept DIs, so their computer systems wouldn't understand the code identifying the number as an EPC. For this reason, they told the tire manufacturers that tags using the current B-11 data structure would be unacceptable.

Therefore, the auto industry was faced with a choice. It could provide one tag on (or in) tires for retailers and others using EPC technology, and another tag for those using auto industry numbers. Or, instead, it could create a new numbering scheme entirely. Neither of those solutions was ideal, though, since both would force auto companies to change the back-end computer systems they used to track goods in the supply chain.

During a meeting in Detroit on Dec. 7, Sue Hutchinson, director of product development for EPCglobal US, in Lawrenceville, N.J., proposed a solution for the auto industry. Her proposal was to use a record indicator in the first memory position of the user memory portion of the tag. This record indicator (not

currently a feature of the EPC data structure) would include three fields: a record type, a record length and a current number of records. For the B-11 tags, the record indicator would show that information in the tag's user-defined memory is based on auto industry numbering schemes. The information would consist auto-industry-specific data such as the U.S. Department of Transportation ID number, customer part number, DUNS global location number (which identifies the facility where the tire is made), tire cure date and country of origin. It would be formatted in accordance to the ISO 15961/15962 standards, which were created as a standardized means of reading data from a tag.

Pat King, global electronics strategist at [Michelin](#), says the solution is something of a breakthrough because it bridges the gap between ISO and EPC, creating a solution that could satisfy all of the tire companies' customers. "EPCglobal hasn't figured out exactly how the additional memory [called for in the Gen 2 protocol] will be used," King says. "This is a breakthrough because it gives some definition to the extra memory, and the solution is specific to a vertical industry."

There are still issues that will need to be worked out, according to Mike Guillory, director of industry relations and standardization at [Philips Semiconductors](#). Guillory has been closely involved with the creation of ISO RFID standards. "Even if you assume that this proposal is adopted as a framework, there are issues around how to represent the data on the tag, and how the data will be used by [companies in the auto industry] that are not EPCglobal members."

AIAG plans to have another meeting on Jan. 25 to discuss the proposal further. Brown says the organization has shared the proposal with some groups not at the meeting, including those involved in the ISO standards development process, and with such overseas auto industry organizations as [Odette International](#) in Europe, the [Japan Automotive Manufacturers Association](#) (JAMA) and the [Japan Auto Parts Industries Association](#) (JAPIA).

It's important for any RFID tag data standard adopted by the auto industry to have the support of overseas groups, because without a single global standard, companies will be required to put more than one tag on tires shipped around the world, or to maintain separate inventories of tires with tags used in North America, Europe or Asia.

Brown says there are differences among tire manufacturers about whether UHF or high-frequency tags are best, but all understand the importance of reaching an agreement that will pave the way for one tag to be used on tires, regardless of region of the world or customer it is shipped to. "We have a lot of momentum behind [the push for a single tag data structure]," Brown says. "It will be solved and probably fairly quickly, perhaps by June."

This process demonstrates to the EPCglobal community that EPC technology has significance for a range of industries, according to Hutchinson. "Any time an industry looks to EPCglobal to help harmonize their standards, it brings us one step closer to our goal of a more efficient way to do business around the world," she says. "This latest proposal shows that EPC is relevant to all industries, in that the AIAG is considering how it can use EPC technology to meet its needs for tires and wheels.

We have seen this take shape already in CPG, healthcare and life sciences, transportation and logistics, and we expect other industries to follow."