



Industry Week's RFID Strategy

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What does Gen2 RFID Strategy Mean to you?

Benefits likely to include falling prices and more stable technology

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EPCglobal Inc., the organization that is developing standards for data synchronization and communication of RFID data, has ratified the UHF generation 2 (Gen2) standard for RFID tag manufacture. But what does it mean to you? First, let's talk about the changes that were made from current tag standards. There are currently four different tag-manufacturing standards in production (ISO - 180006A from BTG, 180006B from Intermec Technologies Corp., Class 0 from Matrics Inc. (recently acquired by Symbol Technologies) and Class 1 from Alien Technology Corp.) Each company maintains intellectual property rights (technology patents) for their tags. The Gen2 standard incorporates and expands upon the standards from the tags I just mentioned.

One problem the Gen2 standards creates is potential license and royalty issues associated with Gen2 technology. For now, Intermec has suspended any royalties to encourage adoption of the standard and move the technology forward; BTG, Alien and Matrics (as well as approximately 60 other manufacturers) have signed EPCglobal's royalty-free license. Basically, this means that, although the Gen2 standard and use thereof are royalty-free, UHF RFID products (i.e., tags, readers, etc.) will not be royalty-free. Intermec still asserts that Gen2 standards-based products include intellectual property from several patents it holds.

The Gen2 tags have several benefits, all of which are customer-driven:

- **Open Standard.** This means the tags are available from multiple sources, which should bring prices down more quickly.
- **Memory and Password.** 96 bit memory plus password in chip. This provides greater storage capability and security against the chip being "hacked" in a retail store.
- **Size.** Chips will be two to three times smaller than current versions.
- **Cross-Vendor Compatibility.** All equipment from different vendors will be interoperable.
- **High Reliability.** Tags have extremely high read rates (close to 100% in tests run thus far).
- **Better Tag Identification.** This eliminates duplicate reads during multiple tag scans.
- **Kills.** Tags can be permanently killed by a reader.
- **Security.** Tags have better security encryption of tag data; readers do not broadcast tag data being read.
- **Timing.** Allows tags to enter reader field late and still be read; Gen 1 tags would be missed.

- **Global Frequency.** Spread spectrum, frequency hopping UHF with frequency-modulation capabilities to minimize interference with or from other wireless devices.
- **Read Rate.** This is ten times faster than current tags, which allows high speed automated operations to deploy RFID tags effectively.

You may have read about China and other Asia-Pacific nations wanting to be involved in the Gen2 standards body. The International Organization for Standardization (ISO) also has expressed some concerns. The second big issue surrounding the Gen2 standard is the standard itself. Although designed for global compatibility, the Gen2 standard doesn't meet ISO standards or all of the Asia-Pacific requirements. Gen2 complies with European and Asian UHF radio regulations, but EPCglobal still has to submit EPC numbering options for the Application Family Identifier to the ISO standard committee for approval. ISO requires 8 bits for that information, and EPCglobal would like the option to use those numbers for other information. Basically, this means true global adoption will come when EPCglobal and ISO come to an agreement on the standard.

The important facts to take away are that we should see falling prices due to competition, more stable technology to deploy in the field over the next year and the strong potential to cost justify RFID projects based upon normal cost benefit analysis.

We still have customer compliance requirements to meet, but Gen2 promises to make the job faster, easier and less costly than current technology allows.

Stay tuned for more developments.

***Chris York's RFID column appears twice monthly in IndustryWeek's RFID Strategy newsletter and on IndustryWeek.com. Click [here](#) to register for the newsletter.**