

Hiccups Expected for Gen 2

RFID chip designer Impinj, which has helped develop EPCglobal's Generation 2 standard, warns that realizing Gen 2's benefits will take work.

By Jonathan Collins

Dec. 14, 2004—With the [EPCglobal](#) UHF Generation 2 standard nearing ratification, one company closely involved in the development of the standard believes users need to be prepared for an improved RFID technology but not a perfect one.

"The RFID industry is in for some stumbles as we turn the corner into some real deployments in 2005 and people realize Gen 2 doesn't necessarily work as robustly as they would hope," says Bill Colleran, CEO and president of [Impinj](#), a Seattle-based manufacturer of passive RFID tags.

End users, according to Impinj, must be aware that while Gen 2 will bring a number of key advantages over existing EPC standards, such as faster read times and interoperability between tags from rival vendors, performance improvements will depend on how systems using Gen 2 equipment are configured and managed.

"What needs to be emphasized is the Gen 2 is a framework," says Chris Diorio, Impinj's founder and chairman. Diorio has served the cochair of the EPCglobal Hardware Action Group (HAG), which is charged with developing the Generation 2 specification. "It has sufficient flexibility and capability to engineer a solution, but the specification itself is not a solution, and it's going to take time for companies to engineer systems that really work."

According to Impinj, RFID users should be particularly careful when it comes to selecting readers for their Gen 2 deployments because EPCglobal plans to certify three different levels of Gen 2-compliant readers.

At the lowest level, readers will be certified to work only when there are no other readers within a 1km radius. The next level will be for readers capable of being deployed with several readers within a 1km radius. The highest level will be certified to work alongside 50 or more readers within a 1km radius.

"This is technical knowledge that people who wrote the [Gen 2] spec know, but end users don't," says Diorio. The different levels, or grades, of Gen 2 certification will enable existing readers to be upgradeable to the EPC Gen 2 standard, although they may not be suitable for operation in all environments. "Users have to get educated that not all EPC compliance is the same. If you can upgrade only to the lowest grade, you are not going to get multireader performance," he says.

Impinj maintains that its concerns over the capabilities of Gen 2 readers have pushed the company to develop its own Gen 2 reader designs, which it will license to manufacturers looking to enter the RFID reader market. "We are taking a systematic approach to avoid the problems we expect to see in Gen 2 deployments," says Colleran. "We have developed our reference design for readers because we saw the need to seed the market with high-performance Generation 2 readers."

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