

**Philips Semiconductors says it will have RFID tags based on the next-generation EPC protocol on the market in late 2004.**

Dec. 29, 2003—The final specification for the next version of the Class 1 Electronic Product Code (EPC) protocol is still a long way from formal approval. But [Philips Semiconductors](#) says it expects to have a Class 1, Gen 2, microchip-based on the draft specification ready by the fourth quarter of 2004.

[EPCglobal](#), the nonprofit organization created by the Uniform Code Council and EAN International to commercialize EPC technology, set up a Hardware Action Group (HAG) to develop the Class 1, Gen 2, specification. One aim of the new specification is to merge the existing Class 0 and Class 1, which are not interoperable. In order to enable that interoperability, the air interface—the way tags and readers communicate—outlined by the proposed Gen 2 specification is significantly different than the air interfaces used by the existing EPC specifications.

Work on a draft specification for the next-generation EPC protocol was begun under the auspices of the Auto-ID Center. But work on the draft has been temporarily halted while EPCglobal and participating RFID tag and reader makers agree on an intellectual property policy (see [Two EPC Vendors Go Royalty Free](#)).



*Dirk Morgenroth*

EPCglobal and the vendors in the HAG are expected to come to an agreement on intellectual property in January. Then, the Class 1, Gen 2, spec will be submitted to EPCglobal as a candidate recommendation and will go through several stages before being approved. But the process of ratification, which is expected to take at least six months, usually doesn't involve major changes to the spec.

"Our engineers are already working on the silicon in order to achieve our goal of having silicon based on the Class 1, Gen 2, spec in full production by the fourth quarter of 2004," says Dirk Morgenroth, segment marketing manager for Philips' logistics applications. "We feel comfortable enough at this point in time that the spec is solid enough for us to begin building technology for it."

The Class 1, Gen 2, specification calls for RFID tags that are one-time programmable and carry a 96-bit Electronic Product Code, plus another 32 bits for running error correction and a kill command. It will have a strong anticollision algorithm so that an RFID reader can quickly read many EPC tags in its read field. These features are similar to those of the current Class 1 EPC tag, but the new air interface will be optimized to work in any country that allocates part of the UHF spectrum for RFID systems.

Like the current Class 1 tags, those based on Class 1, Gen 2, will feature a kill command that renders the tag inoperable. "At point of sale or wherever it [killing the tag] should happen, the tag can be destroyed and never turned on it again," says Morgenroth. "There has been some talk of adding extra

security, such as encryption capabilities, but since Class 1, Gen 2, will be used mainly in the supply chain at this point in time, the feeling is that the kill command will reduce the privacy concerns."

Philips currently offers the [UCODE HSL](#), an RFID chip based on the ISO 18000-6 proposed international standard for UHF systems. The UCODE HSL is a read-write chip with 2 kilobytes of memory. "[The Class 1, Gen 2, EPC tag] is another product in our UHF strategy," says Morgenroth. "And it surely won't be the last one."

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