

# Cogiscan Developing RFID Labels to Automate Electronics Manufacturing

Together with Fuji, Juki and Siemens, the company is working on an HF system for identifying reels of components to automate the setup of machines used to produce circuit boards and other electronics.

By Beth Bacheldor

Feb. 27, 2007—[Cogiscan](#), a maker of material-tracking systems for manufacturing, is partnering with several companies on an RFID project to help spur the use of standards-based RFID technology in the electronics manufacturing industry.

The Canadian company is working with the [Fuji Machine Mfg. Co.](#), [Juki Automation Systems](#) and [Siemens](#) to design and test RFID smart labels that can be affixed to reels of components to automate the verification and setup of machines used in the production of electronics, such as circuit boards.

"We've been working on RFID ourselves for about seven years, says François Monette, VP of sales and marketing at Cogiscan. Monette, along with Vincent Dubois, president, and André Corriveau, VP of product development, founded Cogiscan in 1999 to develop trace, track and control systems for electronics manufacturing. Currently, the company offers RFID Smart Feeder systems, which integrate RFID technology into reel feeders and component-placement machines called pick-and-place machines. "We've been very focused on our industry, but now we are moving from a closed-loop factory solution to the supply chain," Monette says.

Cogiscan's RFID Smart Feeder system leverages low-frequency RFID that operates at 125 kHz. Tags containing unique ID numbers are affixed to the feeders, which hold reels of electronics components that are fed to the pick-and-place machine (which also contains a 125 kHz RFID tag) that puts the components onto circuit boards. The tags communicate to an array of RFID antennas using a proprietary-based air-interface protocol to verify that the correct feeders are attached to the right pick-and-place machines at the right time.

To manufacture a single circuit board, companies typically use hundreds of reel feeders in conjunction with a pick-and-place machine. To ensure that the correct feeders and electronics components are in place, companies typically scan bar-coded labels attached to the feeders. "Bar coding requires human intervention," Monette says. "It is fairly time-consuming to scan all these hundreds of feeders."

Now, Cogiscan and its partners want to further automate the process by adding RFID tags to the reels too so companies can automatically identify each reel of electronics components inside the feeder and verify it is installed correctly in the pick-and-place machine. With bar coding, errors can still be made because a person could scan the correct reel but then put it on the wrong feeder.

Cogiscan is working with its partners to test RFID smart labels that use high-frequency (HF) RFID tags operating at 13.56 MHz. Monette says the group plans to use RFID that complies with the ISO 15693

standard and the EPCglobal HF Gen 2 specification, which is slated for ratification later this year. "Our challenge now is to define the format of the smart label—how big it should be, what shape and where it would fit on a reel, and then develop a reading solution that could be embedded in the feeders and [pick-and-place] machines," Monette says.

RELATED\_ARTICLES Cogiscan and its partners will test the technology in Cogiscan's lab in Bromont, Quebec, and hope to have a working prototype of the smart label and reader system within the next three to six months. Once the prototype HF-based RFID smart-label and reader system is ready, the company plans to showcase it at conferences and demonstrate it to reel manufacturers and other companies in the electronics manufacturing industry. "This is really to show that RFID can technically work on the reels," Monette says. Monette and his colleagues hope the prototype will encourage the industry to adopt RFID. "We have to show the value in the manufacturing process, to justify the expense of the tag."

In other news, Cogiscan announced that it had partnered with Panasonic Factory Solutions Company of America to develop an RFID Smart Feeder kit for Panasonic's Integrated Process Assembly Cell, or IPAC, a pick-and-place machine that works with feeders and is used to assemble microelectronics products. Cogiscan's RFID Smart Feeder system is added to the IPAC, thus enabling track, trace and control functions. The RFID Smart Feeder has also been integrated with Panasonic's IPAC PanaCIM software, to automatically verify that an IPAC machine has been set up correctly. The RFID Smart Feeder system is available now on new IPAC machines, and existing tape feeders of any model and vintage can be upgraded into intelligent feeders by attaching the RFID tag.

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