Vanguard, IRIS and DIS Unveil Printer-Encoders for EPC ID Cards

Able to simultaneously print and encode a plastic RFID-enabled identification card, the devices are slated for a border-crossing pilot but could also be used at ski slopes, large events and similar venues.

By Claire Swedberg

May 9, 2007—Vanguard ID Systems, a manufacturer of bar-coded and magnetic-stripe cards, has developed a pair of printer-encoders for use in conjunction with its UHF RFID cards. Developed in partnership with photo ID equipment company IRIS and ID printer manufacturer Digital Identifications Systems (DIS), the devices will be piloted by an unnamed party for border-crossing purposes later this spring.

Vanguard ID first approached DIS in March about developing a new printer-encoder. The border-crossing cards contain an embedded UHF EPC Gen 2 Avery Dennison tag and can be used to identify individuals crossing the U.S. border. They have an irregular shape, however, making it hard to run them through a basic ID card printer. As the companies worked on designing a printer able to accommodate such cards, says Ed Cochran, general manager of DIS, they discovered a second unique need in a printer—a solution in which the blank RFID-tag-embedded card could be encoded and printed at the same time.

All too frequently, Cochran explains, a card printed in one machine can be confused with another card when its tag is encoded. Consequently, a card's tag might be encoded with one person's information, while the outside of the card might be printed with another individual's data. No such concern exists, however, with the printer developed by the three companies.

DIS manufactures two version of the EDIsecure XID printer—the 570i, designed for higher image quality, and the 580i, built for higher printing speed. Both models are already on the market for use in printing ID cards. To create versions that could be utilized to encode RFID cards, DIS and IRIS integrated a ThingMagic UHF RFID EPC Gen 2 interrogator into both printers. IRIS also wrote the custom plug-in software. Although the new printer-encoders were developed for the border-crossing application, they could be used for a variety of other applications as well, Cochran says. These include ski slopes, universities or events at which a large number of people need to be identified quickly.

"We moved forward on development of this solution due to the interest of the large customer," says IRIS' vice president, Karl Ziegler, "but [an RFID printer-encoder such as this one] was already on our radar." That was due to the developing interest in encoding EPC Gen 2 RFID cards that IRIS expects to see in the ID card market.

With either of the new printer-encoders, the process begins when an operator takes a photograph of the ID-card recipient. At that time, the user can input the recipient's name, address and employee or student identification number, as well as other data, into a laptop or PC. The data and picture are directed through a cable connection to the RFID printer, after which the system prints the entered information onto the blank

RFID card and encodes it to its tag.

The design of the plug-in software, Ziegler says, will enable it to work with almost any custom or off-the-shelf ID card software on the market. "As long as the software includes an 'ID card design' function," he notes, "we are able to drop a text string onto the card design, which provides instruction for the RFID encoder to operate."

The printer-encoders are available only in prototype now, says IRIS' technical services manager, Brett Ryan. However, Vanguard, IRIS and DIS intend to pilot the product with the unnamed end user in May.

According to Alan Neves, Vanguard ID's national RFID account manager, there has been what he calls a glaring hole for UHF card printers. "We were looking for something from IRIS," he says, that would be a retransfer printer—one that prints its inverted image on film, which is then laid on the card. Such a process leaves an image that lasts longer than standard direct-to-card printers. Neves had been working with ThingMagic on an RFID reader, and says he "saw an opportunity: Why not put the two companies together [to design a card printer-encoder]?"

RELATED_ARTICLES Vanguard ID makes composite cards, as opposed to PVC cards. Thus, Neves states, when the RFID inlay is incorporated inside, the Teslin—a silica-polymer material that is printable like paper, but durable and waterproof like plastic—is wrapped around the chip, helping to protect it. The Teslin-inlay assembly is then laminated in polyester.

With the new ThingMagic printer-encoders, cards can be delivered partially printed, with one side blank so the customer can print specific identification information on that side. The UHF card chips for this border application can operate at up to 20 feet or more.