

# Smart Labels for Higher Education

China uses PicoTag smart labels from RFID chip developer Inside Contactless on students' ID cards.

By Jonathan Collins

Nov. 24, 2003—[Inside Contactless](#) has delivered a total of 10 million of Inside's PicoTag smart labels and microchips to China's Ministry of Education.

"This project makes us the number one supplier of RFID labels in China and second for contactless chips after Philips," says Didier Serra, vice president of sales at Inside Contactless, which is based in Aix en Provence, France.

Made of paper and polyethylene terephthalate (PETE) plastic and backed with a pressure-sensitive adhesive, PicoTag smart labels measure 70mm by 40mm. Chinese universities and colleges across a number of provinces have applied the smart labels to their students' ID cards.

Inside Contactless worked through its Chinese partner, Beijing Global Card Technology Center, to supply the schools with its smart labels. In addition, Beijing Global Card Technology Center and local systems integrators have installed more than 10,000 readers using Inside Contactless reader engines at nearly 3,000 universities and four main railway stations. The company will also supply an additional 2 million to 3 million PicoTag smart labels each year for cards issued to new students and as replacements for labels that stop functioning.

The main reason for the RFID deployment, which began in February 2003, was to prevent fraud. China's Ministry of Railways and its Ministry of Education have had a difficult time authenticating genuine student ID cards. This was a particular problem on railways, where Chinese students are entitled to discounted train travel. Now with readers deployed at the nation's four main railway stations, students have their status verified quickly by means of the smart label attached to their ID card.

The ID card's ISO 15693-compliant chip, which can hold up to 2 KB of data, operates at 13.56 MHz at a distance of up to 1.5 meters when read by a long-range reader and antenna. At present, the smart label stores only a student's identification data. "The next step will be to store all the diploma's and degree information on the tag," says Serra.

One of the smart label's essential features, according to Serra, is its security capabilities. In addition to using cryptographic algorithms, the tag also has a tamper-proof design that causes the antenna or the connection to the chip to be destroyed if the smart label is removed from the card.

Chinese colleges and universities are finding additional uses for the smart-labeled ID cards. Chinese schools are deploying readers in libraries so that the smart-labeled student IDs can be used as contactless library cards for checking out books. The schools also plan to let students use the smart-labeled cards instead of money for photocopiers and vending machines and to control student access to some areas on campus.

Established in 1995, Inside Contactless has developed products and technologies for contactless markets and supplies contactless chips and readers to markets including transport, access control, payment, identity and electronic identification. So far it has delivered 40 million chips and 80,000 readers for the access-control, logistics, transit, payments and ID applications. Its products have been deployed in systems used by the U.S. Customs and Border Protection Bureau and the U.S. Navy.

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