

Chinese Railway Switching to RFID Transit Cards

Finnish smart card provider Confidex has announced a five-year contract with the transit company for 125 million high-frequency payment cards.

By Mary Catherine O'Connor

Aug. 30, 2006—Five years from now, China's Guangshen Railway Co. (GSH) expects Chinese commuters to consume 125 million RFID-enabled single-use tickets annually while commuting between the cities of Shenzhen, where the railway company is located, and Guangzhou (the railroad connects the two cities). That's how many RFID tickets the railway recently ordered from Finnish company Confidex as a five-year supplier contract, with 25 million tickets deliverable each year.

Confidex, based in Nokia, Finland, designs and manufactures ultra-high-frequency RFID tags and also contract-manufactures reusable Gen 2 tags. The company says the entire market for these types of RFID tickets in 2005 was only 30 million, according to figures it obtained from integrated circuit manufacturers. The 125 million-ticket contract is one of the largest single orders for RFID tags thus far, it says.

To fulfill the contract, which starts in October, Confidex will establish a subsidiary in Guangzhou, Guangdong Province, in southern China. The subsidiary, XinTag, will market the tickets it produces there under the XinTag brand. Confidex expects other railway companies in China to follow Guangshen's lead in migrating to RFID-based ticketing, because it enables a more automated and secure system than what many transit companies currently have in place.

The company also expects the Guangshen Railway to expand the use of RFID tickets to its other rail lines in China. In total, 3 billion commuters use the system annually. Today, Guangshen personnel use bar-code scanners to process the single-use bar-coded transit tickets passengers purchase before entering a train.

Ticket fraud is a "major problem" for the Guangshen Railway, says Confidex CEO Timo Lindstrom. "The current bar-code tickets," he adds, "can easily be duplicated using a photocopy machine."

Moving to RFID tickets will enable the company to eliminate counterfeit tickets, Lindstrom explains, because the RFID inlays in the tickets will be factory-encoded with an encrypted number that train personnel will read using authorized handheld interrogators. Once the railway completely transitions to the RFID-based tickets, he says, it may replace the manual ticket-checking process with RFID readers embedded into turnstiles, which patrons would need to pass through before boarding.

The Confidex tickets are made of paper, with a high-frequency (13.56 MHz) RFID inlay containing a Phillips MiFare chip compliant with the ISO 14443 air interface standard.

According to Lindstrom, the Guangshen Railway Co. will develop the RFID transit ticket in-house, rather than hiring a third-party integrator. High-frequency cards are already widely used for mass transit in China.

Most buses, subways, ferries and even taxis in such large cities as Guangzhou, Beijing, Chengdu and Shanghai, already accept RFID-based payment cards (see [China Embraces RFID Smart Cards](#)). China is also embedding high-frequency RFID tags into its national ID cards.

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