

RFID Speeds Border Crossings

Chinese customs hopes to reduce smuggling and improve the flow of traffic by using RFID at Shenzhen border.

Oct. 15, 2002 - The border crossing between Hong Kong and Shenzhen is one of the busiest in the world. And even though Hong Kong is technically part of China, the border between China's special economic zone and the former British colony, which remain a free port, is highly regulated.

It's common for some manufacturers in China to make counterfeit goods and then try to slip them into Hong Kong to be sold or exported without paying Chinese duties. The customs officials in China have tried to crack down on the problem. This year, Shenzhen Customs seized 20 times more contraband telecommunications equipment than the previous year. But closer inspections have brought their own problems. Legitimate shippers complain about the long delays at the border, and commuters can't get from Hong Kong to their jobs in the Shenzhen.

To help improve the situation, the Shenzhen authorities have installed an RFID system from TransCore, a privately held transportation services company based in Dallas, Texas, to facilitate the flow of "low-risk" traffic and goods and to help combat smuggling.

Shenzhen Customs assigns unique electronic identity numbers to both drivers and vehicles. The numbers are encoded in tamper-resistant RFID windshield tags. One tag is permanently mounted on the windscreen of the vehicle and one another is assigned to the driver. The driver inserts his/her tag in a hanger mounted on the windscreen when he/she is in the car.

Companies planning to ship goods across the border must file papers with the Shenzhen authorities several days before the shipment. The papers indicate the driver's ID number, the vehicle's number, the type of shipment (toys, clothes, etc.), the weight of the truck and the weight of the shipment. This information is entered into the customs department's computer system.

As the driver and vehicle approach the customs weigh station, RFID antennas placed alongside traffic lanes scan the vehicle and driver's tags to see if they match the data stored in the computer system. If the driver's ID, vehicle ID, and weight of the truck and shipment match what's in the database, the vehicle is allowed to pass quickly through the border checkpoint. If there are any discrepancies, the driver is directed to a special area so that customs personnel can inspect the truck and determine why the driver, vehicle ID or weight did not match.

TransCore's eGo windshield tag does not use a battery. It operates in the 915 MHz band and has a maximum read range of seven meters or a little more than 21 feet. It can store 1,024 bits of memory, which can be overwritten or stored permanently, depending on the application. Shenzhen officials use about 250 bits of data, according to Tony Lee, TransCore's area vice president for Asia operations.

The tag is designed to withstand extreme temperatures, sunlight, humidity and vibration. Shenzhen Customs

has already tagged more than 35,000 trucks and installed UAP/915 readers in 80 traffic lanes. The system may be expanded to the entire border crossing from Guangdong Province, where Shenzhen is located.

"China is dedicated to providing a world-class border crossing system that will serve as a model within the country and to the international community," said Xu Ji-ren, director and general manager of Sichuan MCS Engineering Co., Ltd., the system installer and integrator of TransCore's RFID sensor equipment for this project.

This is not the first installation of TransCore's technology in China. In 2000, Sichuan Provincial Public Security Bureau was the first government agency to deploy TransCore's eGo tag technology for an electronic vehicle registration system that allows authorities to automatically monitor vehicles for registration and inspection compliance, as well as for emissions, taxation and traffic record status. TransCore products are also used in Beijing, Chengdu, Dalian, Nanjing and other cities.

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