

RFID Takes a Swing at Ticket Fraud

By embedding RFID tags into tickets for the Tennis Masters Cup 2005, organizers were able to curtail counterfeiting, increase revenues and speed patrons' entry into the stadium.

By Mary Catherine O'Connor

Dec. 22, 2005—As 100,000 tennis fans entered the Shanghai Qi Zhong stadium last month to attend the Tennis Masters Cup 2005, they waved RFID-based tickets past RFID interrogators (readers) stationed at all 16 gates of the stadium. The interrogators read each ticket's section and seat number, the date of the game and a unique ID associated with this data. If the data matched similar information in a database, the automated gate admitted the ticket-holder. The RFID ticket format was used to fight ticket counterfeiting.

Texas Instruments RFID (TI-RFid) Systems supplied the 13.56 MHz Tag-it HF-I RFID inlays embedded in the tickets, which were compliant with the ISO 15693 standard. TI worked with a number of local vendors to deploy the ticketing solution, according to Jeff Kohnle, TI-RFid's director of sales and marketing for the Asia Pacific region. Three firms provided systems integration services: Shanghai HSIC Application System, Shanghai Shenbo Intelligent ID Technology and Shanghai East Ticket. Hua Shen supplied the stationary RFID interrogators deployed at the admission gates, as well as the handheld readers stadium officials carried to spot-check tickets during the event. SATO Shanghai provided its CL408E-HF RFID printer-encoder for printing the tickets and encoding the inlays.

All of these vendors worked with Shanghai Ba-Shi Group, the city's largest mass transit company, which is hosting the event from 2005 to 2007. The event had been held in Houston for the past two years, and in Shanghai in 2002.

Because it knew the RFID tickets would be authenticated at the gates, and that the embedded tags would be impossible for outside parties to counterfeit, New Sports and Entertainment (Shanghai) Co.— the Shanghai Ba-Shi Group subsidiary that served as the event's promoter—was able to begin selling tickets five months before the event, rather than one month in advance, as it did in 2002. This longer sales cycle, combined with the new ticket format, proved successful. Ticket revenue for the 2005 event was double that of past events with comparable ticket sales and prices.

The RFID tickets were delivered to patrons by mail, Kohnle says, accompanied by literature explaining that they contained RFID tags. "The tickets are printed on heavy stock and are large—roughly the size of an airline ticket," he says. They are neither ripped nor folded upon entrance, he adds, and patrons often keep them as mementos or collector's items.

Previously, patrons did not receive their tickets prior to the event. Rather, they were mailed ticket vouchers to be exchanged for tickets upon arrival at the event. This was done to deter counterfeiting of the tickets, but the practice was not as fail-safe as the RFID system, which authenticates each ticket upon entrance to the stadium. In addition, the old two-step process made the entrance process more time-consuming.

According to Kohnle, no personal information was encoded to the RFID tag embedded in each ticket. Instead,

the unique ID encoded to the tag was associated with the ticket-holder's identity and payment information in a secure database. Next year, the Shanghai Ba-Shi Group plans to issue RFID tickets that patrons can also use as payment devices during the event. Merchants within the stadium will link RFID interrogators to point-of-sale systems, and patrons will present their tickets to the readers to pay for food and other items. Kohnle says he does not know exactly how this system would work, just that payment could be charged to the credit card account used to purchase the ticket. This account information could be retrieved from patron profiles stored in the secure ticket database.

TI says some attendees tried to work around the RFID authentication system by smuggling out tickets that had already been used to enter the stadium. These tickets were then given or sold to other people, who then tried to use them to gain entrance.

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