

Hoboken RFID-enables Its Parking Permits

Armed with handheld RFID interrogators, the city's parking-enforcement officers can spot scofflaws in just a few seconds.

By Beth Bacheldor

June 12, 2006—More than a million cars park every year in Hoboken, a New Jersey city just outside of Manhattan that spans only 1 square mile. That's a lot of cars in a small space—and a lot of work for the city's parking-enforcement officers.

However, the workload is about to ease. The officers are now armed with handheld RFID interrogators (readers), and are using them to scan UHF RFID tags embedded in city-issued resident parking permits. Standing alongside a vehicle and waving a handheld, an officer can determine whether a car is legally parked with the proper permit. The process takes just a few seconds, saving the city time and money. Previously, officers might have spent a minute or more just trying to determine if a vehicle had a permit, and if so, to locate it. Sometimes, the permit wasn't positioned in the proper spot, or was hidden by tinted windows or other obstacles, adding additional time to the process.

The new RFID-enabled permit system provides other benefits, as well. For example, residents can now purchase and renew their permits online or over the phone without first having to obtain a new decal. In addition, it's much more difficult for someone to create a counterfeit permit or use a stolen one with the new design.

"Parking is a big industry," says John Corea, Hoboken's director of parking, adding that the city earns about \$20 million in revenue from parking permits and parking fines. The city spent about \$50,000 installing the RFID equipment and software, and Corea expects it to reap more than \$1 million in savings.

"The residents love it," he says. "More than anything, RFID will allow people to renew permits online—and fraudulent permits will be a thing of the past because if they are fake, we'll know."

Residents applying for permits have to provide such information as the color and make of their car, their driver's license and the vehicle's license plate number, all of which is stored in the database. Thus, an officer interrogating a permit's RFID tag can verify the tag belongs to that car. If a tag appears to be nonfunctioning, the officer can determine the permit's validity by manually inputting the permit's printed serial number or the vehicle's license plate number, or by scanning a bar code on the permit. If any of those fail to match the information in the database, the officer will issue a ticket.

The RFID-based parking system uses permits embedded with [Symbol Technologies'](#) passive UHF RFID tags, as well as 20 Symbol MC9000-G RFID mobile computers running Microsoft .Net-based RFID permit-management software from [Paylock](#).

According to Cory Marchasin, Paylock's president, the tags comply with the EPC Class 0 standard, each carrying a unique ID correlated with vehicle and permit information in the handheld, which defines where the

vehicle can legally park. The handhelds are synchronized daily with a back-end database, hosted by Paylock, to get batch updates of data so officers always have up-to-date parking information. Each handheld computer can hold information for all Hoboken-issued parking permits, which currently number around 15,000.

"That [much data] was a big concern, but the .Net framework provides an amazing array of ways to compress all this data, and it is incredibly fast," says Marchasin. Paylock also operates a round-the-clock call center so Hoboken residents can obtain and renew permits via a toll-free 800 number.

Hoboken first began looking into RFID about a year ago, after it had been using Paylock's permit-management software for several months. Since then, Corea reports, the software has boosted the city's parking revenue by about \$8 million. The city began issuing RFID-enabled permits to residents in January, and officers are testing the Symbol RFID handhelds now. Hoboken officials expect to roll out the system fully by year's end.

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