

RFID in Vehicles

New uses for the technology allow companies to offer self-service rentals and track deliveries more effectively.

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In recent years, more and more applications are being found for RFID technology, ranging from airports to casinos to self-service kiosks. Vehicle rental and tracking is the latest innovation. The technology can be used for everything from renting out cars and bicycles to tracking vehicles to vehicle-mounted RFID readers that can more efficiently complete an inventory. Vehicle-mounted RFID technology gives companies flexibility in counting their inventory and in increasing efficiency by confirming pick-ups and drop-offs of materials on the spot.

This white paper, sponsored by Parma, Italy-based Custom, discusses how RFID can be used in a variety of vehicles and shares the story of successful deployments in mobile transport.

Cars

RFID makes self-service car rentals possible. Customers of a car service are issued a card with an RFID chip implanted. The user waves the card in front of an RFID sensor, unlocking the car. The key is in the car, and only can be accessed once the RFID chip has been recognized. Rentals



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RFID technology makes self-service car rentals possible.

can happen at any time of the day or night, without the need for a service person, and the RFID chip enables monitoring by the rental company, deterring theft.

RFID technology for cars already is being used in France. In October 2011, the Autolib project kicked off in Paris. Autolib created a service that allows Parisians to access cars for short-time use. Custom provided printers that feature RFID antenna for remote ticket reading and Ethernet interface for remote control via the Internet. Currently, the project has 66 cars in 33 open stations scattered throughout the city, with more expected by the end of 2012.

Bicycles

In a project similar to Autolib's car rental service, cities across the world are unveiling bike sharing programs, allowing people to rent a bicycle for short-term usage.

These programs function as an extension of a city's public transit system, reducing traffic and pollution. Currently, bike sharing programs are being used in a number of cities, including Washington, D.C.; Boston; Minneapolis; Denver; New York and London.

In the past, such systems have required customers to swipe a credit card at a kiosk. However, installing a kiosk and a credit card reader in bike rental locations can be expensive and difficult to implement. Kyle Azevedo, chief executive officer of Atlanta-based viaCycle, said his company is unveiling RFID technology at its bike sharing kiosks starting in early 2012.

With the RFID program, when customers sign up for memberships, they receive a membership card with an RFID tag. The biker then taps the RFID card on the reader to unlock one of the bicycles. The lock is electronic, which eliminates the need for the expenditures on kiosks or bicycle racks.

"It makes authentication almost instantaneous," Azevedo said.

And because the RFID technology does not require cellular connectivity, the system is relatively inexpensive — a savings passed on to customers.

Potential uses for RFID in vehicles

- Car rentals
- Bike rentals
- Shipping yards
- Checking inventory
- Tracking delivery
- Maximizing efficiency in garbage and recycling pickup

Other uses

Shipping. Vehicle-mounted RFID can be used on forklifts, instructing the driver where to drop off a pallet via GPS and then tell the driver where to pick up the next crate or pallet. On a similar note, yard shunts can use RFID, allowing the driver to find the right trailer for his tractor. The RFID reader also can confirm it is the right trailer before it is picked up, reducing the likelihood of human error and saving everyone valuable time.

Inventory. At a military base on Blount Island, Fla., the administration has equipped a golf cart with an RFID reader to check on the inventory in the base's vehicle yard. In the past, it would take a day for a person to walk through the yard and manually check each vehicle in the inventory. Now, it can be done in under an hour thanks to the mobile RFID technology.

Delivery. For delivery services, items can be tracked through their entire chain of

custody through portable RFID readers, enabling people to know exactly when an item was delivered and to what location. Instead of wondering where a package is on its journey, recipients and shippers can know where it is on its route and be given regular updates on the package's progress.

Garbage and recycling pickup. In Charleston County, S.C., RFID was used to improve the recycling program. The county used RFID to identify where and when recycling containers were being picked up, allowing the county to identify recycling participation and increase the collection productivity.

Why is this helpful? In the past, different trucks would run routes very close to each other. Some neighborhoods had more trucks than necessary, while other neighborhoods were underserved. With RFID tracking, the county is able to maximize efficiency in recycling pickup.

“They could better understand how their trucks were being utilized,” said Kurt Mensch, principal product manager for RFID at Intermec of Everett, Wash.

In addition, the RFID technology gave a more accurate picture of how much work was being done and by whom. Some drivers were claiming to be busier than they were. With the RFID tracking, management could determine exactly how much work a driver was doing in a given day.

RFID technology in vehicles gives operators flexibility, improves self-service and allows for more efficient business practices.

***About the sponsor:** Parma, Italy-based Custom designs and manufactures dedicated printers and printing solutions for the industrial sector, retail stores, the gaming market and for all applications for kiosks and ATMs. Custom kiosk printers feature several RFID encoders for covering all markets and are the perfect match for public-service uses, such as tickets for travel, parking, banking and cinema/theater seats, maps, site layout in retail stores, stations, airports and places with high consumer flow.*