

# Bermuda's RFID Car Registration System Could Save \$2 Million/Year

The island nation will employ roadside RFID interrogators to automatically check that its 25,000 automobiles bear valid registration stickers containing passive UHF tags.

By Rhea Wessel

May 18, 2007—Bermuda's Transport Control Department will begin RFID-tagging all vehicles on the island in June in an effort to reduce the number of vehicles operating without a license. The nation loses an estimated \$11 million every five years because it is unable to enforce licensing requirements.

In 2004, the transport department contacted 3M's Traffic Safety Systems Division to inquire how the government ministry could automate the process of registering vehicles. Talks led to a discussion about the U.S. company's Electronic Vehicle Registration (EVR) system, which is similar to toll-road RFID-based solutions. All cars will carry a registration label with an embedded RFID transponder, and the tags will be read at the island's main traffic junctures.

The RFID interrogator is combined with a vehicle detection system. If a car arrives at an intersection and no interrogation of an RFID tag can be performed, the system will take a picture of the car's license plate. Using optical character recognition software, the system will read the vehicle's plate numbers and input them into a database so a citation can be automatically issued. The same system will be employed to detect commercial vehicles operating in restricted areas during rush hour without permits.

Bermuda is a tiny island with only 21 square miles of land. Some 47,000 moving vehicles operate in this space, according to Randy Rochester, director of the Transport Control Department, making it the most congested nation in the world. At present, traffic police manually enforce all vehicle inspection, emission, insurance and registration requirements.

3M began designing and developing the application in April 2005. A team visited the island to analyze the processes involved in vehicle registration, and held talks with all involved, including insurance companies, car dealers, police officers, the transport department and government lawyers. The company recommended interrogators be installed at 20 separate intersections around the island, but Bermuda's legislature ultimately approved only a smaller installation with four read points.

"We decided to start small and increase," says David Burt, an independent IT expert who works for the transport department and is involved in the project. "Additional readers meant an additional deployment risk."

Early in the planning process, the transport department thought it would install vehicle-detection systems embedded within the roads, closing the road each time a reader needed to be installed. Later, it decided to deploy a laser-based system that did not need to be installed beneath pavement. Both the RFID reader and the detection system are mounted at the side of a road. Bermuda will also deploy tripod-mounted and handheld interrogators to screen vehicles at random locations. The readers and tags to be used in the application will be

manufactured by Transcore. The passive tags will operate at 915 MHz and carry only a unique ID.

In May, 3M and the Bermudan government began implementing the system; tagging is due to begin next month. RFID tags, embedded inside tamper-resistant labels, will be placed inside the windshield on the left side (from the driver's perspective). Most cars in the former British colony are right-hand drive.

RELATED\_ARTICLES Bermuda requires annual vehicle inspections. The transport department estimates it will take about one year to tag all of the island's vehicles. Drivers who show up for their annual inspection will receive an RFID tag, while drivers with new cars will be required to come in just to obtain the tag. The department expects to utilize only about 25,000 tags, since 22,000 of the island's 47,000 vehicles are motorcycles, which will not be tagged during this phase of the project. The transport department is not sure if it will later tag motorcycles; it first wants to get the application up and running before making such a decision.

The system is expected to be operational by July 2008.

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