

Port of Oakland Sees Signs of Security in RFID

The port's goals for its 2.4 GHz active-tag system also include shortening truck waits at the gate and increasing the visibility of traffic.

By Claire Swedberg

March 15, 2007—California's Port of Oakland has launched an RFID system for trucks entering any of its nine terminals. The goal is to automate security, shorten truck waits at the gate and increase the visibility of truck traffic within the port. The fourth largest port in the United States has purchased 1,700 active 2.4 GHz RFID tags for trucks entering the port. So far, the Oakland International Container Terminal (OICT), which is operated by the Stevedoring Service of America Marine (SSA Marine), is the first to deploy RFID interrogators capable of reading the tags. Eventually, the port's eight other terminals—APL; Ben E. Nutter; Outer Harbor; Charles P. Howard; Hanjin Terminal, Maersk Sealand; TransBay Container; and TraPac—may eventually do so.

Participation by trucking companies is voluntary. WhereNet is providing the technology for the system, which was put in place in late February. So far, 300 trucks have been equipped with RFID tags, says port spokesperson Marilyn Sandifur, who adds that she has been delighted by cooperation from that many truck drivers.

This effort should help improve efficiencies toward meeting U.S. Coast Guard security measures. Under a directive from the Department of Homeland Security, port terminals are required to participate in a Coast Guard security measure to obtain information about those entering the terminal. Just how to go about this varies from port to port and terminal to terminal, but in one way or another, all terminals are required to record the name of the trucking company and either the truck license plate number or the driver's license number. All terminals must then present a "Facilities Security Plan" document to the U.S. Coast Guard that demonstrates the terminal's compliance with Coast Guard security regulations.

The Port of Oakland is landlord-based, meaning it owns and operates the port itself, but separate terminal operators are responsible for each terminal. The port encouraged terminals to deploy the automated RFID tracking system to replace slower, manual security operations at the gates; those operations involve security checks as the driver waits, often resulting in a long queue of idling trucks waiting their turn to enter the port. Oakland is paying for the first 1,700 truck RFID tags as an incentive to use RFID.

With the new SSA Marine system, drayage truck drivers attach active 2.4 GHz RFID tags, which comply with ISO 24730-2 draft air-interface standard for real-time location systems, to the driver-side mirror of their trucks. Encoded to the tag is an ID number associated with the truck carrier, as well as the truck's identification number and a list of drivers authorized to use it.

When the truck comes to one of the approximately 20 lanes at the OICT terminal, a WherePort magnetic exciter mounted at the lane excites the tag. This, says John Rosen, WhereNet's director of product marketing, triggers the tag to send a transmission to the terminal's one WhereLAN RFID reader. The tag sends its own ID number, as well as that of the WhereNet exciter, indicating which lane the truck is approaching.

Using WhereNet Visibility software, that data is then directed to the WhereNet server, which resides on the port's premises and is maintained by terminal staff. The WhereNet Visibility software searches for details about the vehicle and its authorized drivers via [eModal](#), a portal that offers the transportation community detailed container, vessel and terminal information, a trucker status service and more. It then sends that data to the terminal operating system, alerting it that the truck is about to arrive. When the truck reaches the gate, the driver has only to provide a license confirming his identity, thus avoiding the wait for a guard to begin the security process.

Although WhereNet has a similar system in use at California's [Port of Long Beach](#) (see [APM Terminals Readies its RFID System](#)) and another at Washington's [Port of Seattle](#), the users at those ports are carriers.

RELATED_ARTICLES Reducing wait times for trucks to enter the port, Sandifur says, also reduces emissions from idling trucks. And with the infrastructure in place, the port and the terminal can expand the system to provide real-time tracking of the trucks as they pass through the port terminals. The port has already purchased readers to be deployed on public roads in areas around the terminal, enabling the port to track which vehicles are entering or exiting. Terminals can also deploy antennas around their sites to provide real-time tracking of any tagged vehicle that enters through the gate. "For the port, this adds a layer of security," Sandifur explains. The port, however, will not deploy additional RFID readers until more trucks are equipped with RFID tags.

Approximately 2,000 trucks enter and leave the port each day. "Three hundred [tagged trucks] is a good start," Rosen says. The port, the fourth busiest in the United States, moved a total of 2.4 million 20-foot equivalent units (TEUs), inbound or outbound, loaded or empty, in 2006. A TEU is a standard measure of cargo capacity equal to that of a container 20 feet in length, 8 feet in width and 8.5 feet in height.

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