

APM Terminals Readies its RFID System

Having completed tests of its RFID-based real-time location system at one of its largest port sites, the shipping terminal operator expects it to become fully operational in July.

By Claire Swedberg

May 9, 2006—[APM Terminals](#) has completed the testing of an RFID system at its port terminal in Long Beach, Calif. In July, the company intends to begin using the RFID and GPS system to help it stay competitive with other global ports and increase the efficiency of its operations.

APM Terminals had been testing the hybrid system since mid-2005 at Pier 400, which has been experiencing traffic growth with limited space to expand. The terminal is located at the end of the port, about 1.7 miles out from the mainland into the water. It currently occupies 484 acres but will use landfill to expand the terminal to as many as 800 acres by 2012, according to APM's West Coast IT operation development manager, Kwang Chen.

Chen presented the results of his company's pilot at the [RFID Journal LIVE!](#) conference, held last week in Las Vegas. For nearly a year, the company has been testing equipment and its integration for the automation system at Pier 400.

The inability to compete with the efficiency of overseas terminals, or to grow much further, has put pressure on many Long Beach shipping terminals to seek automated solutions to move shipments more efficiently through the port terminals, Chen says.

Labor lockouts in 2002, followed by resultant shipment congestion in 2003, led to major delays at the terminal. In the years since, labor has been in short supply, and shipment traffic has surged, especially from China.

"We really needed to automate our system," Chen says. The company hopes to improve customer service through better inventory management and improved port security by tracking the arrival of trucks and identifying drivers as they enter the terminal. It also hopes to increase safety for its own clerks, eventually moving them off the port site entirely to complete all their work from a safer, remote location.

The system they have piloted is a hybrid of RFID and GPS, consisting of [WhereNet's](#) RFID real-time locating system (RTLS), [Navis' SPARCS](#) terminal operating system, [APS Technology Group's](#) optical character recognition (OCR) system (for reading the identification information written on containers being loaded and unloaded), and a [Sattel](#) GPS system for locating containers. In 2003, [TraPac](#), a West Coast container terminal operator, piloted a similar solution, but without the use of GPS (see [Dockside Cranes Get Brains](#)).

The company has attached WhereNet active RFID tags to cranes and other equipment to track them as they move shipping containers on and off ships, railcars or trucks. The RFID system tracks which docking equipment moved which container and when, enabling APM to determine a container's status by tracking the equipment that transported it. Location sensors installed in 45 sections of the lot will triangulate the tags and

send data to the server over an Ethernet connection. GPS receivers, also attached to the terminal's container-handling equipment, allow APM to pinpoint exactly where on the dock the container is located. This makes finding and moving the containers a more efficient process.

APM is also attaching a tamper-proof WhereNet tag to each truck's windshields, which will contain information about the vehicle, its driver and its trucking company. WhereNet interrogators installed at the terminal's gates will read each tag and identify trucks as they arrive. In the future, APM also hopes to use WhereNet systems for electronic container seals.

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