

Korean Seaport Tests RFID Tracking

South Korea's largest and busiest port, the Port of Busan, is deploying a trial RFID container-tracking system to help secure and expedite shipments.

By Jonathan Collins

Mar. 10, 2005—South Korea's largest and busiest port, the Port of Busan, is deploying a trial RFID container-tracking system in a bid to investigate how the technology can help secure and speed containers that pass through its facilities. The smart container project is part of an RFID trial that has been in development since last December. The port will start tracking containers sometime this spring and will continue to do so until the end of August.

The project is part of the South Korean government's plan to enhance the efficiency and security of its global overseas shipping. So far, the government has pledged to invest \$18.6 billion over the next 10 years to modernize the country's ports. Busan processes 40 percent of South Korea's total marine export cargo and 81 percent of the nation's container cargo.

"The world is rallying round the issue of trying to keep trade lanes flowing, and South Korea, as a significant waterborne-trading hub, is looking for ways to leverage its redevelopment dollars," says Nick Cova, the director of collaborative network services at [Savi Technology](#), the Sunnyvale, Calif., cargo-tracking specialist that will supply the RFID equipment and software used for the port's pilot project. South Korea's largest IT service provider, [LG CNS](#), will manage and deploy the trial's RFID-based tracking system.

"The main driver for the government is to understand how the network works and how to support multiple tags for multiple types of shipments," says Cova.

Using RFID to secure and track containers could provide the ports with a way of increasing port capacity by speeding the process of checking and managing containers as they pass through the port. According to Cova, South Korea is interested in using electronic container tagging and tracking to streamline operations by providing automated advance notification of when containers are scheduled to arrive at the port. Armed with this information, the Port of Busan can then provide the appropriate staffing needed to check containers into its operations.

During the trial, a total of 1,605 containers will be tracked from two inland South Korean loading locations, where the containers will be loading with cargo and secured with RFID-enabled seals, through two of the port's terminals, where the containers will be placed on ships, and on to overseas ports, including those at Long Beach, Calif.; Rotterdam, Netherlands; and Felixstowe, U.K.

Two types of RFID tags will be tested on the containers: the Savi Tag ST-645, an electronic bolt seal; and, the Savi Sentinel, an RFID-enabled sensor seal. One of the two seals will be attached to each container being shipped during the program.

These tags, which operate at 433.92 MHz, can record and communicate key data—such as the container's

location and security status, as well as changes in light, temperature and humidity inside the container—in real-time to the Savi reader network deployed for the trial.

In addition to using three Savi Mobile Reader SMR-650P handhelds for sealing the containers, the trial will employ a combination of Savi SP-600-211 Signposts at the port entry gates and Savi SR-650 fixed readers mounted on cranes at each terminal. The Signposts are short-range transmitters that send a 123 kHz signal that wakes up Savi's active tags so that each tag within a Signpost's range begins to broadcast its data, as well as the ID of the Signpost that woke it up, thereby indicating the tag's location within a range of several centimeters, depending on the number of Signposts installed.

Containers will be tracked as they enter the port gates and again as they are loaded onto ships by the crane mounted readers. Data collected by readers will be monitored by Savi's Transportation Security System (TSS) software, which will be deployed locally. Savi's Site Manager software aggregates, filters and converts data from the readers and shares that information with the Savi TSS system, which in turn connects to the ports existing messaging application.

In a potential second phase of the project, the Port of Busan's network may be connected to additional ports, via the network operated by participants in [Smart and Secure Tradelanes](#) (see [Safeguarding Shipping Profitably](#)), the global industry-driven initiative aimed at improving both the security and efficiency of containerized cargo shipments. RFID readers may be deployed at other terminals within the port, as well as at additional ports within South Korea.

The Port of Busan deployment is at the center of a strategic alliance between Savi and LG CNS that will see the two companies working together to co-market, integrate and implement Savi's software and RFID offerings. The agreement calls for Savi to train and certify LG CNS employees on Savi sales, solutions and implementation practices, and LG CNS to provide industry expertise, project management and systems integration services to joint customers.

In recent years, Savi's RFID-based tracking technology has been use in a number of trials at ports around the world, including those in Namibia and the U.K. (see [African Beef Gets Tracked](#)).

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