

US Tests Satellite Security System

A field-test starting this week should prove that cargo containers can be secured anywhere in the world.

Feb. 25, 2003 - Later this week, a ship will leave Norfolk, Va., carrying containers equipped with small tracking devices and tamper-detection technology. The aim is to show that satellite tracking could improve port security by warning of a problem long before a container arrives in the United States.

The test is being conducted under Port Security Grants given out by the Department of Transportation's Transportation Security Agency (TSA). SkyBitz, a startup in Dulles, Va., has been awarded a subcontract to provide the tracking and communications technology.

RFID seals have been used to secure containers, but the problem with these seals is that if a container is compromised, authorities or shippers only learn about it when the container arrives at a port and the electronic seal is scanned by an RFID interrogator.

"If you hook up a radiation sensor to our tracking unit and someone tries to put a bomb inside a container, we'd pick up the radiation immediately and send an alert," says Matthew Schor, SkyBitz's founder and president. "Our system doesn't depend on a network of readers at the port, so it could send an alert about a problem at a roadside in Indonesia."

The system being tested will provide constant visibility during the trip from Norfolk to Oakland. If someone were to open a container with the tamper-detection technology, that information would be transmitted via satellite to the SkyBitz control center through the tracking unit. The test will be repeated later this year on containers traveling between Singapore and the Port of Long Beach.

The TSA has been exploring other technologies and other systems that could identify "low-risk" containers from known shippers. At some point, the government may mandate the use of some of these technologies for carriers that want to go through automated customs clearance.

It's not clear which technologies, if any, the government will favor. Schor says the SkyBitz unit could communicate with an RFID reader monitoring an RFID seal, but this test uses another detection technology that he declined to describe for security reasons.

SkyBitz's technology is designed to provide lower-cost satellite tracking than global positioning system (GPS) solutions. A GPS receiver gets a transmission from a satellite and then calculates its position. That information is typically relayed to a control station via a cellular connection, or a satellite connection when in areas without cellular coverage.

The SkyBitz system sends a signal from a communications satellite to a receiver on a container. The receiver then sends back a signal to the satellite. SkyBitz calculates the position to within 30 meters at its control center based on the time it took the signal to travel and some data gleaned from GPS satellites.

The system costs \$400 per container or trailer, not including the tamper-detection technology. The company

also charges \$7.50 per month for tracking based on one position fix per day, or \$15 for four position fixes per day. Data can be viewed in a secure area of the SkyBitz Web site, or transmitted in a standard XML format to fleet management software.

"We're seeing strong interest from the carriers in deploying our kind of solution to improve efficiency," says Schor. "If the government decides that this kind of technology will also improve transportation security, then everyone wins."

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