

## Operation Safe Commerce

In the keynote address at this year's U.S. Maritime Security Conference & Expo, Asa Hutchinson, Undersecretary for Border & Transportation Security of the U.S. Department of Homeland Security, reported that we now inspect about 5 percent of trade and travel that enters our country each day. He indicated that even if we could inspect 90 percent, it would be worthless if the 10 percent that we didn't inspect was dangerous. All conference speakers intoned the same message that we cannot impede the flow of trade and travel as we implement new systems to increase security.

The terms *invention* and *innovation* are often used to describe the basics of our technological world.

Photos courtesy of Supra Products Division of General Electric



**Photo 2—A component of the CommerceGuard system installed in this doorway provides tracking information**

My March 2004 *Tech Directions* column, "Improving Homeland Security," described some of the inventions that are now deployed to inspect shipping containers. (This column can be found at [www.technologytoday.us](http://www.technologytoday.us) by following the link to past columns.)

This year's U.S. Maritime Security Conference called for the use of

innovation to turn off-the-shelf existing technology into inexpensive guardian systems that can determine which of the eight million cargo containers that enter our



**Photo 1—GE's tamper-proof, "smart" container security device**

ports each year need further inspection. Robert Bonner, commissioner of U.S. Customs and Border Protection, Department of Homeland Security, emphasized the need for a cheap "smart shipping container" that can automatically report tampering so that "safe containers . . . can automatically be approved for green lane immediate passage through port security." He described how C-TRAP (Customs and Trade Partnership against Terrorism) and the CSI (Container Security Initiative) need a smart container to close the security gap that exists between outbound and inbound inspections.

A number of companies have accepted the challenge to design an inexpensive system that can turn our present-day dumb shipping containers into smart containers. Greg Burge, president of the Supra Products Division of General Electric (GE), introduced me to GE's new tamper-proof container secu-

urity device (CSD). (See Photo 1.) The beauty of the system is that it meets all criteria described by Commissioner Bonner using off-the-shelf technology that GE engineers combined into a new product.

Each CSD unit can be fabricated and installed using peel-and-stick permanent adhesive for under \$10 per shipping container. Over time, economy of scale will drive the initial cost down to \$5 per unit. The

CSD monitors door openings and registers and time stamps each event. If security on the container has been breached, the unit doesn't match the shipping container registry, or the shipping container doesn't send a proper signal for any other reason, the container would be pulled for quarantine

until it can be inspected. The initial design only covers door openings. However, sensors can be added to expand coverage to track and report on an unlimited number of variables.

The CSD on an individual cargo container sends its radio communication to the other parts of the GE CommerceGuard system, which provide tracking information to all members of the supply chain including participating governments. (See Photo 2.)

## Recalling the Facts

1. Why can't we just use high-tech machines to look inside all shipping containers?
2. How can a CSD determine that a shipping container is OK for green lane passage through port security?
3. How do C-TRAP and CSI help improve homeland security? (Students should perform a Google search of these terms to learn more about these programs.)

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