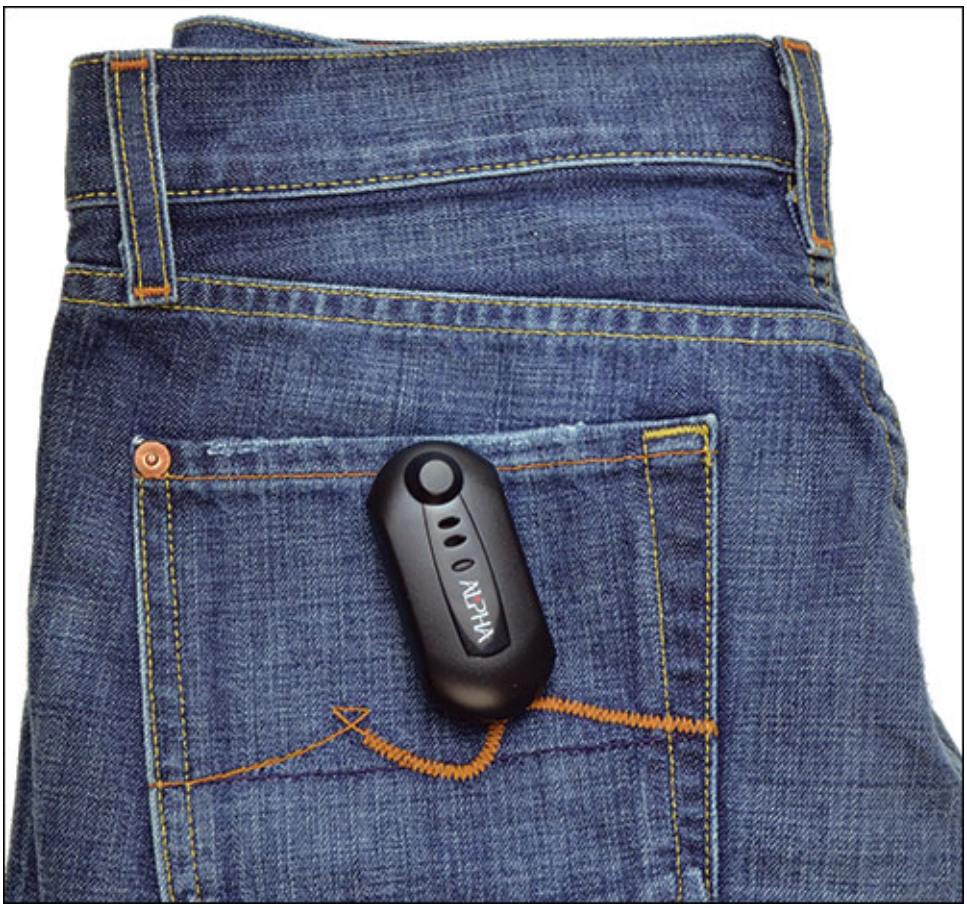
# Checkpoint Offers RTLS Solution for High-Value Retail Goods

Checkpoint Systems has developed a real-time location system (RTLS) known as 3Si, with companies selling high-value items in mind. The solution features electronic article surveillance

(EAS) tags containing battery-powered transponders that transmit 800 MHz signals based on the ZigBee protocol. The 3Si tags work in conjunction with similar transponders known as locators, each of which transmits a unique ID number correlated to the locator's specific location. Typically, at least three locators would be installed together, in order to create a zone that is defined in the S3i cloud-based software. The tags would then receive transmissions from locators and forward that data to a receiver known as a coordinator, which is connected to a server.

The 3Si transponders are incorporated in hard tags, CableLoks and Spider Wrap EAS products made by Alpha High Theft Solutions, a company that Checkpoint acquired in 2007. Alpha specializes in EAS tags for merchandise especially vulnerable to theft, according to Seth Strauser, Checkpoint's senior director of worldwide product management for EAS and RFID consumables. Like other electronic article surveillance solutions, Alpha's products can trigger an alert if they are detected at doorways via EAS readers (using magnetic or RF EAS technology). However, he says, retailers still did not have any way to know when a product could be moving in the direction of a doorway or leaving a predetermined zone, or when and where it was last seen if it ended up missing but was not detected at the door.



An S3i EAS hard tag on a pair of jeans

The other shortcoming for EAS tags, the company reports, is that a would-be thief could remove them from the merchandise to which they are attached if that individual were able to create his or her own magnetic-based detacher capable of successfully imitating the magnetic array employed by that retailer’s detacher.

The S3i version of a CableLok, hard tag or Spider Wrap transmits an electronic key that must be recognized by the S3i magnetic detacher before it will release the tag from the product. That action, along with a date and time stamp, is then stored in the software.

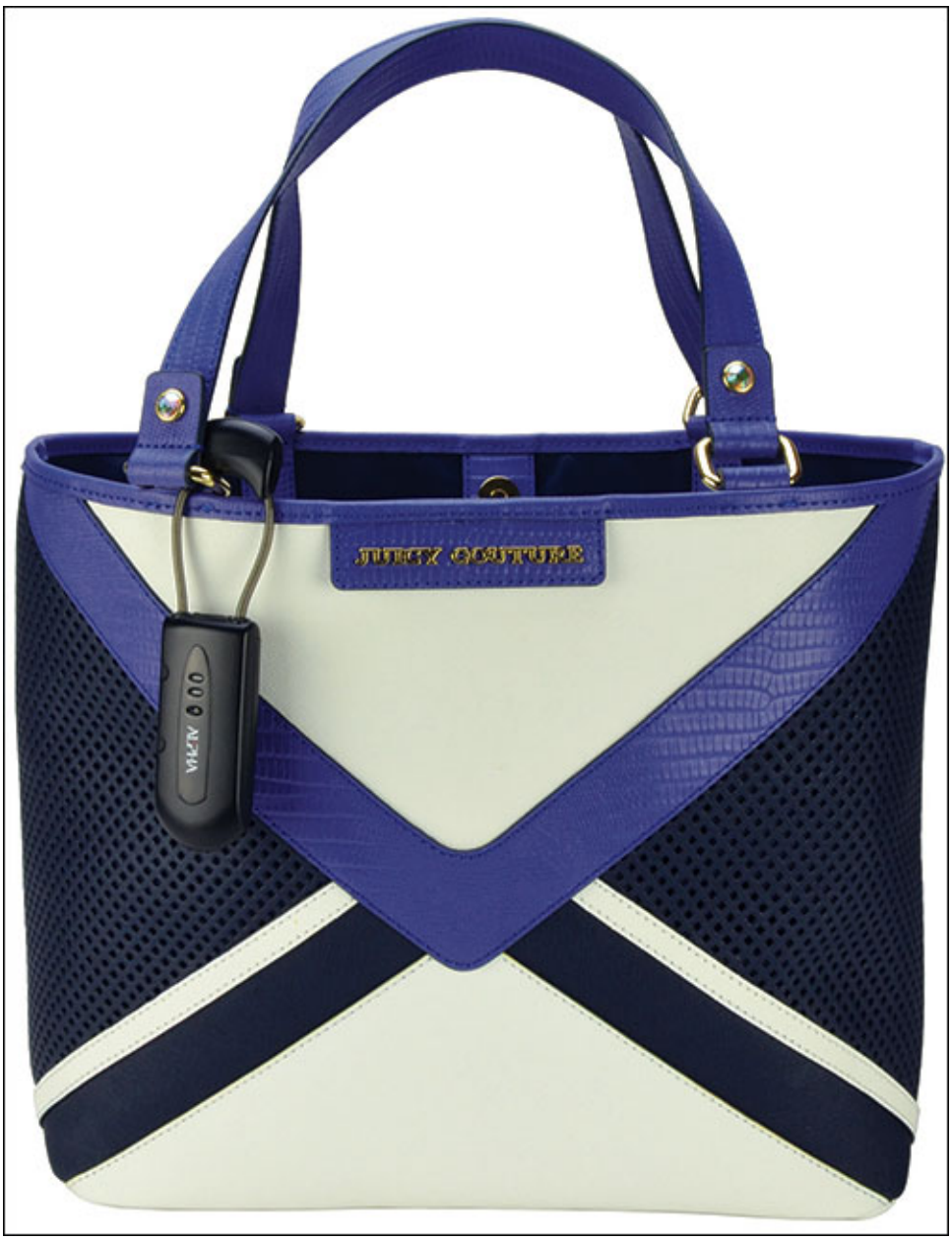
The S3i solution has been trialed by a handful of businesses in North America, Asia and Europe for a period of six months or less. The company is currently in discussions with several future adopters of the system.

First, says Shobnah Patel, Checkpoint’s global product management director, a user would install the locators,

typically on ceilings. An S3i CableLok, hard tag or Spider Wrap is then attached to a product, and the bar-code serial number printed on the S3i unit is linked in the S3i software to the unique ID number transmitted by its transponder. The transponder receives the IDs transmitted by the locators and forwards that data to a coordinator, also via 800 MHz, which then sends that information to a server, where the cloud-based software identifies the device's location and determines if an action is necessary, such as displaying an alert. The location and alert are displayed on cloud-based software, Patel says, or on an Apple smartphone or tablet running the S31 app. In addition, the software and app provide analytics to help stores increase sales by determining where goods are located when they are not on the shelf, thereby boosting on-shelf availability and preventing shrinkage.

In some cases, such as with luxury handbags, a store may want to allow a customer to view a product unencumbered by an EAS tag (which could detract from the item's aesthetic quality). In such a scenario, a staff member could use the S3i detacher to remove the tag in the back room, and the software would store that event. The system could also issue an alert after a certain amount of time if a product's tag is not re-attached with the same detacher device, using the electronic security key.

In a typical installation, Patel says, approximately 12 locators might be installed in the ceiling above a 1,000-square-foot area, with three locators creating a zone. For this kind of installation, the location granularity would typically be about 7 or 8 feet. As such, the system may not record that a customer has taken an item off a shelf unless he or she moves the item several feet away from the shelf before putting it back. But if a customer, for example, carries the tagged product to a mirror and then back to the shelf, that action can be captured and stored.



An S3i CableLok on a purse

“When we set out to look for the best solution to track tags in motion,” Strauser says, his company considered Wi-Fi but opted against it “because we wanted purity of signal that Wi-Fi can’t provide.” With the ZigBee-based system, he explains, there wouldn’t be any other competing transmissions on the network, and the location granularity could be better than with Wi-Fi.

The companies currently testing the S3i system are retailers that sell primarily highly valuable goods, or items that are prone to theft. That can include luxury handbags, electronics and power tools. They can then track and trace the movements of those products through predetermined zones on the sales

floor, or within the back room. The tags, which cost about $21 apiece, are reusable for the life of the battery (about 20 months). The tags could be attached to goods at the point of manufacture or at a distribution center, but to date, they have been attached to products only at the store, removed when customers purchase an item and then re-attached to a new product.

Users can easily create zones and assign tags to a specific zone, Strauser says, by simply selecting and dragging those tag IDs in the software to that particular zone. They can also adjust the beaconing settings to spare battery life in the locators. For instance, some stores may not need the RTLS solution to remain in operation outside of business hours, so they could program the system to go dormant during those times.

The app is now available for Apple's iOS-based devices, Strauser reports, but is soon expected to be made available for Android-based devices as well.

"This solution provides easy, real-time data from a secure product," Strauser states, since the tags cannot be removed without a key. "We're in multiple discussions with new customers."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