

**Although the test results were positive, no decision has been made about whether EPC Gen 2 RFID tags will supplement or supplant the active tags currently used to track cargo containers.**

By Rhea Wessel

Dec. 14, 2006—The [Surface Deployment and Distribution Command](#) (SDDC), which manages distribution operations for the U.S. military, says it has seen positive results from a trial using EPC Class 1 Gen 2 tags to identify its inventory of containers. However, no decision has yet been made as to whether the passive UHF tags will be introduced to supplement or supplant the active tags currently used to track cargo containers.

The SDDC currently uses active RFID technology to track its shipments on a global basis. The organization utilizes the Early Entry Deployment Support Kit (EEDSK), which includes an RFID reader that can interrogate the active tags within a 300-foot radius. Any decision to use passive tags to track containers would be made at the [Department of Defense](#) (DOD). Many of those tags operate at 433.92 MHz and were supplied by [Savi Technology](#), although the department recently a request for information (RFI) seeking other vendors of such tags (see [DOD Seeks New Active-Tag Suppliers](#)).

The military does not widely use passive tags on containers, but it does apply them to cases and pallets of goods. In 2005, the DOD requested that many of its suppliers begin applying EPC Gen 1 Class 1 or Class 0 EPC UHF passive tags on cases and pallets of goods shipped to its [Defense Distribution Centers](#) (DDCs).

In June, the DOD announced that starting Oct. 1, 2006, the DDCs would accept only tags compliant with the EPC UHF Gen 2 Class 1 standard (see [DOD Getting Gen 2-Ready](#)). However, on Oct. 16, Shay D. Assad, director of defense procurement and acquisition policy, issued a [memorandum](#) extending the sunset date for EPC Gen 1 Class 1 and Class 0 EPC UHF tags to Feb. 28, 2007, in an effort to "help ensure contractors are not left with large, obsolete inventories of Generation 1 tags."

The SDDC first tested the passive EPC Gen 2 tags on several hundred steel containers at the port of Norfolk, Va., then demonstrated the technology at the port of Shuwaikh in Kuwait, according to the [United States Transportation Command](#) (USTRANSCOM) at [Scott Air Force Base](#), in Illinois. "The military has been looking at passive technology in the transportation and logistics business area as a complement to active technology and other tracking technologies, such as GPS," says Paula Mihalek, information technology project manager for the SDDC. Mihalek notes that the test was designed to track and inventory the containers themselves, not their contents.

Passive tags are cheaper than active tags, and have longer operational lives because, unlike active tags, they need no batteries to function. Thus, passive tags offer a viable alternative to active tags. In addition, the smaller size of passive tags offers an advantage. "The footprint is smaller, so [the tag] can be permanently secured to the container without taking up much space. This should decrease the removal of the tags, which has been a common problem with container tracking," says Mihalek,

explaining that for a variety of reasons, personnel sometimes remove tags on purpose for various reasons.

As part of the trial, the SDDC compared manual and automated inventorying of 48 containers. Using a pen and paper, testers took approximately 12 minutes to review each container, plus another 10 minutes to enter the data into the spreadsheet. Two errors resulting from this process were identified.

Using a handheld reader and passive tags installed on the sides or doors of the containers—which measure approximately 19 feet long, 8 feet wide and 8 feet high—it took less than three minutes to inventory each container, with read rates reported as 100 percent successful at distances between 3 and 12 feet at ground level. About five out of 417 tags were inoperable and, therefore, could not be read at all, the command says.

When one container was stacked on top of another, the tag on the upper container was not readable from a distance of 12 or 9 feet at ground level, but was readable at 6 feet. With containers stacked three high, the reader was unable to interrogate the tags on the uppermost containers, regardless of how close personnel were to the containers. "There have been a variety of ideas for solving this problem. One of the better solutions is to have an extension pole for the reader," says Mihalek. Another suggested method involves conducting the reading from the back of a tall truck.

Though some light wind and rain were in effect during the tests, the tags' heavy plastic casings prevented them from being damaged by the weather, Mihalek says, and no negative impact was observed.

Companies involved in the trial included [Wireless Facilities](#), which conducted the tests, and [Frontweb](#), which manufactured the tags.

Separately, in early October, USTRANSCOM announced its appointment as the main organization in charge of implementing automated identification (auto-ID) technology, including RFID, for the DOD. The command organization is also in charge of developing a centralized approach for the military's use of asset visibility technologies.