

Tests Detect RFID-Radar Interference

The DOD plans to look into tests conducted earlier this year suggesting 433 MHz RFID readers might disrupt nearby radar systems.

By Jonathan Collins

Sept. 1, 2005—The U.S. Department of Defense plans to reexamine whether its long-standing active 433 MHz RFID systems may, under certain circumstances, interfere with radar equipment. DOD personnel in charge of RFID deployment, however, maintain they have not been made aware of any interference problems between the two.

"Our RFID network has been operating for more than 10 years, and we have never had an incident [of interference], or a complaint, or have we been asked to shut down," Lt. Col. Beth Rowley, product manager of the DOD's Product Manager Joint-Automatic Identification Technology (PM J-AIT) office, tells *RFID Journal*.

The DOD uses active RFID technology operating at the 433 MHz band (433.5-434.5 MHz) to track materiel as it is shipped to U.S. armed forces around the world, including those in hostile environments such as Iraq. In addition, the DOD uses the 420-450 MHz for ground-based, shipboard and airborne radar.

Questions regarding potential interference between RFID and radar were raised in a letter by the National Telecommunications and Information Administration (NITA) when the FCC reviewed spectrum use for Savi Technology's 433 MHz RFID system. In April 2004, the commission issued new regulations for RFID systems in the 433 MHz band. Although the commission noted that active RFID systems could operate at 433 MHz without interference to U.S. government radar systems, it mandated certain precautions, including narrowing the 433 MHz RFID frequency band to 433.5-434.5 MHz, and forbidding RFID readers (interrogators) from being deployed within 40 kilometers (25 miles) of five U.S. radar sites (Beale Air Force Base, Calif.; Cape Code Air Force Station, Mass.; Cavalier Air Force Station, N.D.; Clear Air Force Station, Alaska; and Eglin Air Force Base, Fla.).

Concern regarding the potential of RFID transmissions to degrade the performance of critical radar systems was voiced by a senior DOD official last week. Speaking at the Army Knowledge Management/Directorate of Information Management conference in Fort Lauderdale, Fla., Marine Lt. Gen. Robert Shea, the Joint Staff's director of command, control, communications and computer systems, told attendees the DOD's units need to coordinate radio frequency better when deploying systems in the field to avoid interference between them.

Shea's comments are believed to be based upon the findings of tests conducted earlier this year in which RFID readers were found to interfere with an adjacent radar system. However, those in charge of the DOD RFID network say they had not been aware of such a report, or of any such tests being carried out.

"We have not seen any report, and no one I work with has any knowledge of it, but we are trying to get our hands on it. Until I can see the study, we will continue to operate [our active RFID network]," says Rowley. She currently doubts whether RFID readers and tags could interfere with radar systems. "We operate at a very

low power output—in the milliwatts. If anything, I would expect it to be the other way around, with radar interfering with us," she says.

Even so, Rowley maintains, Shea was right to point out that any DOD system using radio spectrum must ensure that interference between systems is not an issue.

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