

The plane maker plans to submit a proposal to the FAA by month's end, requesting that the agency issue a policy allowing active tags aboard airplanes.

By Mary Catherine O'Connor

Sept. 15, 2006—In a recent Samuel L. Jackson blockbuster movie, snakes on a plane caused serious havoc. In a recently concluded test conducted by [Boeing](#) and [FedEx](#), however, active tags on a plane were shown to have no effect at all on the operation of aircraft. In an attempt to prove that actively transmitting UHF active tags are safe to carry on a plane in flight, the test created the potential for causing electromagnetic interference with a plane's instrumentation and communication systems: Forty tags distributed throughout the plane transmitted their IDs at three-second intervals for 90 continuous days, while the FedEx MD-10 cargo plane they were aboard flew its daily routes to deliver FedEx parcels.

According to Ken Porad, program manager of the automatic-identification program for [Boeing Commercial Airplanes Group](#), the findings of the test were very encouraging. "There was no reported electromagnetic interference," Porad says.



Ken Porad

The test began in mid-May, when a team from FedEx, Boeing and [Identec Solutions](#) attached the tags to parts of the plane at FedEx's Memphis headquarters, before the aircraft was loaded with parcels and flown to San Francisco (see [Boeing, FedEx Test Active UHF Tags](#)).

The absence of electromagnetic interference is what both Boeing and FedEx were hoping for, and it is this main finding that Porad will use as the foundation for his formal request that the [Federal Aviation Administration](#) (FAA) generate a policy statement allowing for actively transmitting tags to be carried on aircraft, including those in flight. This would be similar to the guidelines the FAA issued in 2005, allowing passive tags to be carried aboard airplanes (see [FAA to Publish Passive RFID Policy](#)).

That prior ruling carries some restrictions regarding the passive tag's operational settings. This time, however, Porad hopes the FAA will issue an "unconditional" policy approving the use of active tags on planes, as he believes there can be valid reasons for reading the tags during a flight. The passive-tag policy says the tags can be interrogated only on the ground, when the airplane is not in operation. Still, any policy the FAA issues would have to include one important condition: To prevent interference with aircraft systems, the frequency used by the active tags must be outside those used by the aviation industry. The FAA's ruling on passive tags already carries a similar condition.

In addition, Porad says he wants the FAA's policy to be national, covering all types of planes. He notes, however, that even if the FAA puts restrictions on how or when active tags could be used, some type of

policy statement will act as a building block and open doors. "Anything we can get from [the FAA] is a step forward," he says.

If the FAA decides active tags can be carried on planes, it would open up a number of potential applications for Boeing, FedEx and hundreds of other companies that build and maintain planes or use them to transport goods. Linking the tags to sensors would allow active tags to provide environmental data showing the temperature, shock, gravity force or other conditions to which airplane parts are exposed during flight. Active tags linked to sensors could also be used to track the temperature of perishable goods in transit. In addition, if tags for tracking purposes remained attached to reusable carts, products or other assets onboard a plane, this would save shippers the trouble of having to remove the tags prior to a flight and reissue them after the plane lands.

None of the 40 tags aboard the MD-10 failed to function properly during the test period. While all parties—Boeing, FedEx and Identec—expected or hoped for this result, one goal of the test was to ascertain whether extreme temperatures, such as those found in the vicinity of the landing gear, would cause tags to fail. There was also some question as to whether fluctuations in altitude could detrimentally impact tags placed in nonpressurized portions of the plane. No such detrimental impacts were reported.

The 90-day in-flight test was the first in a two-stage active tag test Boeing and FedEx had planned. The second part of the test, scheduled to run from mid-August to mid-September, was involve the encoding data to and reading data from 10 Identec tags using demonstration software developed by [Silverstroke](#), a German provider of auto-ID middleware and application software.

These tags were attached to parts on the plane at the beginning of the 90-day in-flight test, but were not among those transmitting data. The goal of this 30-day software test was to prove the software would work as expected. However, just two days after the 90-day test wrapped up, Porad received a call from FedEx, saying the MD-10 carrying the tags had been called in for heavy maintenance, where it would remain until October 2. (The FedEx team had known maintenance had been planned to take place soon, says Porad, but had not anticipated it happening before mid-September.)

Conferring with FedEx, Identec and Silverstroke, Porad decided to cancel the software test. "The FAA only really cared about the first 90 days," he says. "The second part is no technical challenge." Porad says the tags will soon be removed from the MD-10 and returned to Identec.