

**The airport has fitted GPS-enabled Wi-Fi tags to 80 dollies used to transport cargo and baggage, enabling it to track their usage and prevent the carts from getting lost.**

By Rhea Wessel

Oct. 21, 2009—After getting positive results from a current pilot project employing radio frequency identification to track cargo and passenger baggage dollies as they move about its outdoor ramp, apron and gate areas, [Munich Airport](#) has decided to continue using the technology after the pilot ends in December 2009. At that point, the airport will decide whether or not to expand the application, said Marc Lindike, the airport's VP of IT consulting, at [RFID Journal LIVE! Europe 2009](#), held this week in Germany.

Munich Airport, the seventh busiest in Europe, served more than 15 million passengers and moved more than 100,000 metric tons of freight in the first half of 2009. In July, the airport began a test using [AeroScout](#)'s T6 GPS-enabled Wi-Fi active RFID tags to track freight dollies, and to integrate that information into its airport process management (APM) software. The goal was to enable managers to locate dollies instantly, and to know immediately which were available for use.



*Marc Lindike, Munich  
Airport's VP of IT  
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The test showed that tracking freight dollies prevents delays or interruptions due to misplaced or lost dollies, improves asset management—by enabling the airport to plan in advance for the dollies' use, as well as make sure they are in the right place at the time they are needed—and optimizes inventory and maintenance processes by eliminating lengthy searches for dollies that need to be repaired or inspected due to regulatory requirements. In addition, the airport will also be able to charge cargo companies more accurately, based on their use of rented dollies.

As part of its test, the airport outfitted approximately 80 freight dollies with RFID tags. It focused the test on freight dollies, Lindike said, because they were the "hardest to find." In addition, it attached tags to 10 dollies for LD-2 containers, which are used to store up to 120 cubic feet of cargo, and to two baggage dollies. "We tagged containers and baggage dollies because we wanted to find out the right place to mount the tag on these specific [types of] equipment," he explained. "The LD-2s and the baggage dollies are usually positioned near the terminal

buildings. The freight dollies are situated in the open-air areas."

The tags were attached to a dolly's frame or to the hitch used to connect one dolly to another. AeroScout and Munich Airport are still working to determine the best location to mount the tags, Lindike said, since some were damaged during the test phase due to the rugged industrial environment.

The battery-operated tags include GPS modules for determining a dolly's location outdoors. This GPS data is transferred to the central database by the airport's existing Wi-Fi network, which covers 15

million square meters of the facility, including the terminals, aprons, gates, hangers and runway edges. For Lindike, this was an additional benefit. "We don't need a separate reader infrastructure outdoors," he said.

If a dolly is inside the facility, its tag detects this, and the system switches modes to calculate the asset's location, based on the specific Wi-Fi access points that receive the tag's signal.

The T6 tags have a battery life of roughly 0.5 to 3 years, and include a motion sensor that slows down the signal rate whenever the device is not moving.

Occasionally, such as when a freight dolly carries an LD-2 or other Unit Load Device (ULD), the tag's signal may be temporarily blocked and can not be read by a Wi-Fi access point. "At any given time," Lindike stated, "10 to 15 percent of the dollies' tags are unreadable—but this is not a problem for us, since we can see in the system where the dollies have been, and determine the approximate location of the asset."

The company's next related research project, Lindike indicated, will focus on finding a way to include additional power sources—like solar panels—to expand the application.

Another organization using AeroScout's T6 GPS tags is the [U.S Air Force's 309th Aerospace Maintenance and Regeneration Group](#) (AMARG), which is utilizing the tags to help it track equipment and tools at its 110-million-square-foot compound at the Davis-Monthan Air Force Base in Arizona (see [Air Force Base Deploys Wi-Fi/GPS RFID System Across 2,500 Acres](#)).