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# **Delta TechOps Boosts Efficiency, Prevents Loss with RFID**

- [Delta Airline's TechOps In-Flight Entertainment and](#)

**Connectivity team is managing the flow of high value equipment for free Wi-Fi deployments with RFID**

- **The solution from RFID4U has helped the company locate misplaced items and prevent loss, including locating a kit that was delayed in Chinese customs.**

Delta Airlines has been rolling out free onboard Wi-Fi across its fleet of aircraft –a process that requires equipment installation in several thousand planes around the world. A hangar-sized warehouse in central Atlanta is the site where the kits are being received from vendors, assembled and shipped when needed.

The team responsible for that equipment, Delta TechOps, is conducting the In Flight Entertainment and Connectivity (IFEC) program, and leveraging RFID to track each item.

The solution is provided by technology company RFID4U and consists of its TagMatiks asset tracking enterprise software and Zebra handheld readers, said Archit Dua, senior director of strategic accounts at RFID4U.

Since the system was deployed, Delta TechOps has been able to locate \$4 million worth of assets that could have gone missing without the technology, said Joshua Stephenson, manager of IFEC programs at Delta TechOps.

## **Wi-Fi Kits Routed to Planes Around the World**

The Delta TechOps IFEC program consists of sending the right Wi-Fi kits for each Delta aircraft, when and where it is needed. The team of 25-30 people is responsible for aircraft installations taking place in Asia, Central and South America and the United States.

“We send materials and tooling around the world to support modifications, related to entertainment and digital systems,” said Stephenson. “Delta has gone through a big effort to upgrade Wi-Fi systems so my team’s been the enabler to that

goal.”

The project started in 2021 when Wi-Fi kits coming from multiple vendors began to arrive at the Atlanta facility, in full palletized packages, or in parts. With the manual method of asset tracking, the team had trouble keeping up with the kits, understanding when they arrived at the warehouse, where they were located, and when they shipped, to fill orders around the world.

“If somebody got on a forklift and put a box down in one part of the hangar, and then is off for the weekend, or on vacation, there was no way for us to locate where that box was,” Stephenson recalled.

The group chose to launch an independent RFID system to better manage the full kits or their components: cabling, wireless access points, servers, antennas and other pieces.

## **Getting Vendors Onboard**

The Delta TechOps team worked with technology vendors to include them in the planning. Vendors would need to apply passive UHF RFID tags to the packaging of their goods before shipping. The unique ID on the tag would then be linked to the details of that Wi-Fi kit or part.

“That was really the tallest hurdle to get past,” Stephenson said. “Working with companies, some of which already have certain programs in place for RFID.” In the case of this program, the vendors would need to apply dedicated tags specifically for Delta TechOps. The specialized tags were printed with Delta TechOps branding, and sent pre-encoded to the vendors.

Today, the company has about 5,000 tags in the software system.

“Getting the vendors to put the stickers or the tags on what

they ship us was really the first step. That took a few months," said Stephenson.

For the solution software, Delta TechOps then went to RFID4U for the company's TagMatiks asset tracking solution. "We needed something that was off-the-shelf, that we didn't have to develop in any way," Stephenson said.

## **How it Works**

When tagged goods arrive at the Atlanta facility, workers at the warehouse use Zebra RFD90 handheld readers to scan each tag.

The items are then put away throughout the warehouse which extends the distance of about one mile. Several times a week, a worker uses the handheld reader to audit the goods onsite. They walk the distance of the warehouse, reading all tags and collecting a full list of what is onsite.

If an item that should be in the warehouse is not being detected, they can set the reader in "Geiger Counter mode" to input the item in question and search for that item.

"We can walk around the warehouse until we get a really strong signal and it'll point us exactly to where it's stored," said Stephenson.

The handheld reader forwards read data to the TagMatiks software on a server via 4G cellular connectivity in the warehouse.

## **Locating a Kit Trapped in Customs**

Delta officials offered an example of how the system can help find missing inventory. Recently the IFEC team noticed the unexpected absence of a particular kit that had appeared in the regular weekly RFID-based audits, until suddenly it was no longer detected.

“We looked through our records and we saw that this kit has been scanned multiple times in our warehouse but it stopped being scanned at the end of February,” said Stephenson.

Based on that information they were able to view shipping details from the week in question and identified that it has been shipped to China where an aircraft modification had been ordered. Because it had not yet arrived, they could surmise that it was delayed in customs.

The RFID can't identify the location of an item in real time, Stephenson pointed out “but it gives us a starting point to go and find out what's going on.”

## **Reducing Loss**

Typically, the IFEC program may have 1,200 tagged items on hand in the warehouse. Losing even a single piece of equipment has a high impact based on their value—losing items, even temporarily, can delay an aircraft modification and affect air flight.

“We are moving through [the modification process] so fast that everyone is producing to their max capacity so a lost kit could delay an aircraft,” said Stephenson.

He added that's not acceptable to Delta TechOps or the IFEC team as “having high reliability for our customers is one of our key focuses, so if a 767 is on the ground for a day longer because we don't have a part for it, that's a pretty big impact to our operations.”

## **Potential for Future Projects**

Because RFID detects where goods are and when they leave the site, Stephenson said, “since we implemented the RFID program we haven't lost a single kit or piece yet—we've been able to locate about \$4 million worth of parts that might have otherwise gone missing.”

Once all the aircraft are retrofitted, the Wi-Fi enhancement project will end. However, the RFID technology will be kept for future projects.

Thus far the Wi-Fi project is more than half finished with about 700 airplanes equipped with Wi-Fi to date and about 600 left—mostly regional aircraft and B717 fleets are among the last. Stephenson predicted that work will continue until late 2025 /early 2026.

## **TagMatiks Visibility for Other Industries**

The TagMatiks solution is flexible for a variety of use cases, said Dua.

While Delta TechOps is using the system largely to simply locate when goods arrive and leave the facility, the software can offer extensive reporting so that users can receive alerts. For instance, if specific inventory minimum levels are reached, and view reports based on the flow of RFID tagged goods.

“So it’s not only about the data collection but also reviewing that data,” said Dua. For that reason, TagMatiks is in use by a variety of organizations outside of the airline space.

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