

At London's Heathrow Airport, Virgin Atlantic Airways is testing a new part-tracking system it hopes will cut the cost of locating high-value items.

By Claire Swedberg

Aug. 16, 2005—[Virgin Atlantic Airways](#) is using radio frequency identification to track the airline's inventory of airplane parts at London's [Heathrow Airport](#). The airline launched the first phase of the pilot in June and intends to continue to test the RFID tagging of airplane components in the Heathrow warehouse for another 12 weeks. The system could eventually be expanded to Virgin warehouses at other airports.

The system is intended to save Virgin Atlantic the cost of searching for missing high-value parts for airplane servicing. "Misplacement of high-value parts is a real concern," says Peggy Chen, group product manager for Oracle's RFID and sensor-based services. Virgin Atlantic spokesperson Charlotte Tidball adds that traceability is an economic concern for the airline because added time spent locating parts is an expense for the airline.

The Phase One implementation consists of three RFID interrogators (readers), a smart label printer-encoder and several handheld readers. Under Phase One, Virgin Atlantic tags serviceable airplane parts that pass through the company's Heathrow warehouse. When an item enters the warehouse, employees use a desktop computer to enter the item into the [Ultramain](#) aviation maintenance and parts-inventory tracking system the airline already uses. The next stage is a full inspection of the part. If it passes inspection, the part is given a Goods Receipt Number (GRN), which triggers the generation of an RFID label. Virgin Atlantic employees then attach the label to the container holding the part. They also attach a tag to a bin, into which numerous components can be placed. The tag data is uploaded by Oracle Sensor Edge Server middleware to an Oracle database, and integrated with the Ultramain system.

Once the containers and bins are tagged at the warehouse's entrance and inspection area, the items and bins are either placed on storage racks or sent out of the warehouse for immediate use on an airplane. Before a part is brought onto the plane for installation, however, the tagged container is discarded, so a tag never follows an item onto the aircraft.

A total of three Symbol MC900G readers were deployed for this system: one at the warehouse's entrance, one at its shelving area and one at the exit. Virgin is also using a Printronix SL5000R RFID label printer-encoder to print the RFID labels, which contain passive UHF tags that comply with the EPC Class 1 standard. Employees carry additional handheld readers they can use in the warehouse to locate and identify items they need by scanning the tags on the item containers or bins.

This system, if successful, could eventually expand to other Virgin Atlantic warehouses, allowing employees to locate parts they need at airports around the world. The airline has yet to determine which of its other airport warehouses would use it. Chen says the Oracle system can also run analytics on

data that comes from the Virgin RFID system, providing other information such as how long certain items are in the warehouse and when there are too many or not enough.

"At the end of the day, it's about how to better manage data to offer improved visibility," Chen says.

"Each and every company has to look at its own black holes of information," she adds. The Oracle system, says Chen, can be integrated onto each company's individual software system to give them access to the kinds of data a particular company needs.