

# Pfefferkorn Spedition Uses RFID and Video to Track Shipments

At the German forwarder's warehouse, workers employ bar-code scanners fitted with active RFID tags to record a package's location and link it to specific surveillance images.

By Claire Swedberg

June 20, 2007—German shipping company Pfefferkorn Spedition is using RFID as part of its video surveillance solution to quickly locate images of packages traveling through the warehouse.

The RFID system, provided by AeroScout, is being deployed in conjunction with video surveillance equipment from Deutsche Industrie Video System (DIVIS). This combination enables Pfefferkorn to identify the location of a specific package at any given time, as well as access video surveillance of that package's handling in the warehouse in a matter of minutes. Previously, finding such an image could require an hour or more spent researching volumes of saved data from several dozen warehouse cameras.

All German shipping companies are required by federal regulations to maintain records of package movement through their warehouses. Thus, if a package arrives at its destination damaged, goes missing or needs to be rerouted, the shipper can access the package's location throughout the supply chain, as well as provide video evidence of the package's handling while being loaded or unloaded at warehouses.

The system went live two months ago. Before that, the midsize parcel shipper used its cameras to record activity in its southern German warehouse in Heilbronn at all times, regardless of whether packages were being loaded and unloaded. In the event of a missing or damaged package, the Pfefferkorn staff had to search through old video images until finding activity related to that package.

Each package arrives marked with a bar code, and when a worker scans the bar code entering or leaving the warehouse, it generates a record. With the new solution, warehouse employees use handheld scanners to handle the packages. The 40 bar-code scanners come embedded with an AeroScout 802.11b active RFID tag, says Andris Berzins, AeroScout's managing director for Europe, the Middle East and Asia (EMEA). The tag uses a Wi-Fi communication protocol to transmit its unique ID number to location receivers in the vicinity. Pfefferkorn has about a dozen of these Wi-Fi receivers, deployed every 90 feet around the warehouse.

The receiver captures the tag ID numbers of handheld scanners in the vicinity and sends those numbers, together with the exact time each transmission was received, via an Ethernet connection to a Web-based server. AeroScout Engine software allows the system to calculate, through triangulation, the exact location of the handheld bar-code scanner, and to associate that location with specific cameras. Pfefferkorn has 89 such cameras deployed around the warehouse.

Based on this location data, the DIVIS CargoVIS software identifies which video images document package-processing activity and should, therefore, be saved by Pfefferkorn, as opposed to discardable video images taken when there was no activity in the warehouse. The software also associates the bar-code numbers

of the parcels scanned with the handheld device's location at any specific time, so that a future search of that parcel's bar code would immediately provide the locations and times of its movement throughout the warehouse.

"The software has zones that each camera view covers, in terms of coordinates on a map," says Volker Wittchow, DIVIS' director of sales and marketing, "[Once] a scanner's location is known, then the set of cameras is selected whose viewing zones overlap that location coordinate, provided by AeroScout, and then DIVIS knows which camera view images to keep."

RELATED\_ARTICLES According to Wittchow, workers scan a package's bar code a total of three times as it travels through the warehouse—first, as it is unloaded from the truck; then during a "hall check" after it is moved into the warehouse; and finally, as the package is loaded onto another outgoing truck. Pfefferkorn began installing the system in November 2006, Berzins says. He estimates that within a year, the company will install the system in more warehouses throughout Germany.

To date, approximately 500,000 packages have passed through the warehouse using the AeroScout/DIVIS system. "It's been working well," says Berzins. Pfefferkorn can now locate video footage of a package after it has passed through the warehouse, by pulling up the package's bar-code number. The system then provides the location and time of its movement throughout the warehouse. Not only can Pfefferkorn use this data to review the handling of a specific package, or to confirm the time and date it passed through the warehouse, the shipping company can also find a package that needs to be rerouted before it leaves the warehouse.

Copyright ©2005 RFID Journal, Inc. All Rights Reserved