

# TNT Steps Up China-Germany RFID Trial

The Dutch logistics and shipping company is expanding an RFID trial that tags and tracks laptops from a manufacturing plant in China to a distribution center in Germany.

By Jonathan Collins

Dec. 21, 2005—Netherlands-based logistics and shipping company [TNT Express](#) is expanding an ongoing RFID trial that tags and tracks laptops from a manufacturing plant in China to a distribution center in Germany. Having completed the trial's first phase, which showed that RFID technology could be used reliably, TNT has embarked on the second phase, which will share data collected across its RFID-enabled supply chain, as well as add another PC manufacturer's shipments to the trial.

TNT believes there are plenty of areas where RFID can prove its value by reducing costs and increasing efficiency within its operations. "There is the potential for reduced shrinkage, reduced error rates and reduced labor costs [by using RFID to replace existing bar code scans]," says Sybren Tuinstra, RFID project leader for TNT Express, based in Amsterdam. "It's not a question of if we deploy RFID, but how much we deploy, how fast we deploy it and how much capital we invest."

During the trial's first phase, which lasted four months and ended in October, TNT and the other participants—including one of the top five PC manufacturers in the world and a German computer distributor—tagged and tracked 2,000 individual laptops and the pallets on which they were shipped to ensure RFID could deliver reliable results. The company says it used [Alien Technology's](#) EPC Class 1 ALN-8338-R "Squiggle" tags and managed to ensure a 100 percent read rate for all tags attached to pallets. However, it was not able to read every tag attached to each laptop's packaging. Instead, read rates for the laptop tags were between 80 and 87 percent. Without a higher read rate of each laptop tag, TNT maintains, RFID tagging of each item would not be able to help detect shrinkage within the supply chain.

For the trial's second phase, TNT will use the ALN-8354-R "M" tags—which have larger antennas—on each laptop's packaging. So far, the test results are encouraging, according to Tuinstra. "We have been getting 100 percent read rates from the new tags in the lab, but we'll have to wait to see what the results are in the working environment," he explains.

The first phase enabled the reporting and tracking of laptops at the item and pallet level, throughout the extended supply chain. At the manufacturing plant, workers applied tags to the packaging of each laptop and each pallet, loaded with 40 to 45 laptops. The tags were read as the pallets left the plant, and again when they arrived at the airport and were loaded onto planes. The tags were next read on arrival at TNT's major distribution center in Arnheim, Holland, first through sorting, and again as they left the distribution center. The tags were also read when the laptops arrived at TNT's local distribution hub in Hamminkoln, Germany, and then, finally, upon arrival at the distributor's DC in Germany.

The second stage of the trial began in October. TNT is working to provide access to RFID-collected data to all the participants in the supply chain, as well as to integrate that data with other applications, such as manufacturing or warehouse management systems. Collecting and sharing the data should help each company

determine its own business case for deploying RFID systems in its operations.

According to TNT, the new network capabilities will enable it to deliver additional shipment information to its distributor customer. "At TNT, we are not interested in detailed data from the manufacturer, such as the purchase order number, customer order number or production line number—we just need the serial number of the item and pallet. Still, our distributor customers want that additional detail, and the network will make handing over that data possible," says Tuinstra.

With another PC manufacturer joining the RFID trial, the network will have to ensure that companies don't gain access to rivals' proprietary shipping data. Tuinstra says, however, that the data will be secure. "It is an interesting challenge when it comes to the management of shared information, but logistics is already a complicated business, with many competitors sharing the same shipping networks and logistics suppliers," he says.

TNT is using RFID interrogators (readers) from Alien Technology and RFID printer-encoders from Zebra Technologies, while U.S. RFID specialist Xterprise has been tapped to set up and integrate the RFID network with existing applications being used by the trial's participants. "We will integrate with the manufacturers' production system and the distributor's SAP enterprise resource planning system, as well as our own business applications," says Tuinstra.

In a separate RFID trial with one of the world's largest manufacturers of medical diagnostic products, TNT is testing an UHF RFID network using active tags to track and monitor the temperature of shipments of medical chemical reagents from a TNT-managed regional distribution center in Singapore to two strategic distribution points—one in Bangkok, the other in Shanghai. The trial builds on experience gained by TNT in a similar trial run last year between Copenhagen, Denmark, and Oslo, Norway, and will focus on the potential benefits of tracking shipments for both temperature control and replenishment requirements.

"Temperature monitoring is at an early stage, and companies have no [regulatory] incentive to prove the quality of their goods at each stage in the supply chain, so we are examining the potential of using RFID to help with product replenishment," says Tuinstra. "Also, there is more potential to monitoring temperature across Asia given the climate."

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