

Garbage Prevention by Radio

RFID improves the management of returnable container systems



Retailers can be supplied with goods in returnable containers and this ensures that no trash occurs at the destination. The expenditure for durable transport boxes quickly pays for itself – provided that the container management system functions properly. Rhenus keeps its watchful eye on every container using RFID technology.

The latest use of Radio Frequency Identification (RFID) involves supplying 56 German markets belonging to the office equipment specialist Staples. In addition to pallet deliveries, the branches have been receiving their goods in returnable containers that are marked with radio tags since May 2007. Staples and Rhenus have developed and implemented a concept, which makes use of two different types of containers: one box with a hinged lid holds 21 liters and the other container holds 183 liters; this type is placed on trolleys for transportation purposes and can be closed using a separate lid. In all, 3,400 containers are in circulation between the logistics center in Dortmund and the various Staples markets.

Relief for the Environment and Employees

Rhenus picks 5,100 items for Staples every day. That means 50 tons of outgoing goods. Each market on average receives goods from Dortmund every two or three days. This would create tons of trash if the returnable container system was not used. Non-returnable cartons would have to be disposed of at the destination and the film wrapping from pallets would be another item ending up in the trash can.



The fact that Staples and Rhenus jointly switched to multiple-use plastic boxes not only helps in handling natural resources in a responsible manner, but also makes economic sense. Instead of spending time separating trash and disposing of it, employees can now dedicate their working time at the branches to customers. After they have been emptied, the boxes are folded and stored in a space-saving way. This means that the space available in the markets can be used to the best possible degree. Last but not least, intrinsically valuable products like laptops or printers are given better protection from damage in transit in a closed box than on a pallet wrapped in film.

On average the plastic boxes pay for themselves after approx. 100 round trips. Rhenus IT keeps its eye on each individual item thanks to RFID – this prevents the loss of any valuable boxes with hinged lids, separate covers or trolleys. Each component has a radio tag, which is read out when the box leaves the logistics center. This ensures that there are records of which box is at which branch. Staples has access to the data via the “Rhenus Integration System for Logistics Services” (RIS) quality management platform and can intervene immediately if the container cycle is in danger of coming to a halt. Boxes that are returned from the branches are recognized in the incoming goods department as a result of their radio tag and are then removed from the system. The UHF technology speeds things up, for huge amounts of information can be transmitted quickly using decimeter waves. The system can register a stack of up to 120 trolleys, lids and containers with lids within one minute.

Transfer of Expertise from Media Logistics

Rhenus has brought into the partnership with Staples experience that it has gained using RFID tagged returnable boxes for the bookseller Thalia. The Dortmund logistics center supplies 150 Thalia branches in all and transports 23 million books every year. The goods travel in plastic boxes that can be stacked and closed with a hinged lid. The containers are specially designed – for example, the slanting side walls prevent the RFID tags from rubbing against each other in transit and getting damaged. Depending on the time of year, up to 7,000 containers may leave the logistics center every day. There are approx. 70,000 boxes in circulation.



So far the returnable containers have only been used between the logistics center and the linked branches. But Rhenus still has to handle non-returnable packaging at its incoming goods department. Goods for Staples often arrive on pallets wrapped with film – the packaging trash has to be collected and disposed of. So the office equipment specialist and Rhenus are thinking ahead: They want to integrate suppliers in the returnable container program in the next stage so that the environment is spared and costs are reduced on the purchasing side too.