

KPN to Use RFID to Track Phones

Trial participants will apply tags to packaging of individual mobile phones and track them as they are transported between a distribution center and retail stores operated by the Dutch telco.

By Jonathan Collins

Dec. 23, 2005—Hoping to benefit from radio frequency identification as both a consumer of the technology and a provider of RFID services, Dutch telecom carrier KPN plans to launch a trial in 2006. Dubbed "Tellitrace," the trial will apply tags to the packaging of individual mobile phones and track them as they leave the distribution center of TNT Logistics, KPN's logistics provider, and arrive at KPN-operated stores to be sold. The tag will be removed at the point of sale.

Additionally, staff at KPN's stores will apply tags to returned or unsold phones so RFID can be used to improve reverse logistics, as well. During the trial, KPN will also provide such RFID services as developing and hosting the application that collects RFID data, and making the RFID data available to all trial participants.

KPN and TNT will work with RFID equipment vendors Symbol Technologies, which will provide EPC Class 1 Gen 2 UHF RFID tags and readers, and Zebra Technologies, which will supply RFID label printer-encoders. Each company—KPN, TNT, Symbol and Zebra—will pay their own costs for involvement in the pilot. According to KPN, the goal of the trial is to create an industry supply chain solution that can be used as a developing tool and future customer reference application for all four companies. KPN also hopes to assess the effects of RFID technology on its business operations.

The trial, set to begin in January 2006 and last for two months, is part of KPN's effort to simplify its logistics chain for mobile phones. "Currently, we have a separate 'warehouse inside a warehouse' for mobile phones, and separate business processes to handle them," says Jan Kroon, KPN's RFID project manager. "This is because the phones are small, valuable and desirable, and using the normal logistics would result in too much shrinkage. We hope that by using RFID technology for checking the processes, we can handle all merchandise with a single logistics process again." With RFID automatically tracking and monitoring individually packaged phones, the company believes it can replace the additional security measures it currently uses—which comprise cameras, a separate storage area and additional manual security checks.

On the reverse logistics side, Kroon says his company could gain a lot from using RFID to bring a uniform process to what is currently a time-consuming and costly ad hoc system for dealing with returned merchandise.

During the trial, workers at a TNT distribution center in The Hague will encode the tags using Zebra printer-encoders, attaching them to the packaging of 2,000 mobile phones from multiple handset manufacturers. The workers will then move the phones to the locked storage area—a caged "warehouse within a warehouse"—where phones are kept securely.

In total, six RFID read stations and five RFID read-write stations will be deployed to serve the supply chain—from TNT's distribution center to the two KPN Primafoon consumer stores and two Business Center stores taking part in the trial. KPN operates 100 retail outlets, 83 of which are Primafoon stores and 17 of which are Business Centers. The tags will be applied to phones as they enter the DC and read when the phones are placed in the secure area or removed from it, when they move by conveyor past an RFID reader and when picked and packed for shipment to a retailer. The tags will also be read when the phones leave the DC and read again when delivered to the retailer's secure back room. The tag will be read one final time when a phone is taken from the back room to be sold, prior to the tag's removal.

While the downstream logistics supply chain will use tags encoded with an Electronic Product Code, the upstream logistics from the stores will use the same 96-bit tags but encoded with a KPN-generated number identifying the phone, as well as the reasons for its return. These could range from being the wrong color to specific faults or reasons for the return. Once programmed in the store, the tags will be read when the phones arrive at TNT's DC. There, the company will send nonworking phones out for repair and redirect working phones—returned, for example, because of a wrong color—back into the retail supply chain or to the manufacturer.

"We distinguish between reverse logistics for unsold phones—those remaining after special promotions are over—and reverse logistics for phones returned by customers, for whatever reason. Both types of reverse logistics will be piloted. The idea is to tag the to-be-returned phones with a special 'return' RFID tag, and to write all relevant information onto the tag. This way, all parties involved will have the necessary information available, without having to develop a shared information system. We will use the RFID tag as a traveling database that contains all relevant information for the reverse logistics," says Kroon.

KPN also believes that as an extension of the trial, one of its phone suppliers may start adding RFID tags to the packaging of individual mobile phones before they are shipped to KPN. No date has been set for when that would happen.

KPN is already involved in a number of RFID trials, including one at Dutch wholesale groceries and supermarket services company Schuitema (see Dutch Supermarket Plans RFID Trial). The firm says it will use its phone-tagging pilot alongside others to help develop services for companies deploying RFID in their own operations. "RFID managed services are very new, and we want to get experience supporting business processes with real-time information exchange," Kroon says.