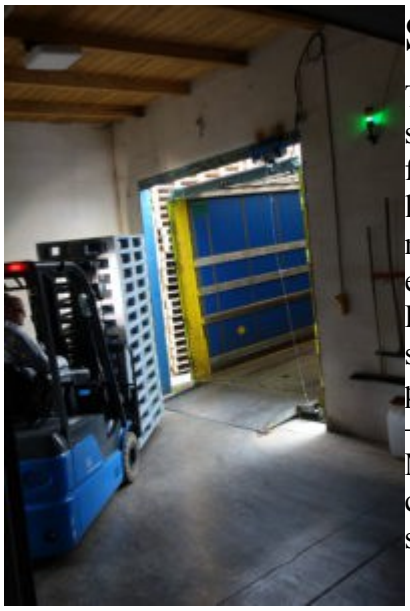
Zentek Pool System

Mastering Bulk Transport

Simply put, Zentek Pool System was looking for an RFID solution that could get the job done. Specializing in reusable pooling of plastic pallets on a rental basis, the German company had been experiencing less-than-smooth logistics flow recently and wanted to do something about it.

The required e-infrastructure was basically there: Each of the company's pallets features a unique number, consisting of a GS1 Global Returnable Asset Identifier (GRAi). At various process steps within a Zentek warehouse, this vital number is captured and transmitted to the Zentek EPCIS-based IT system.

It goes without saying that the corresponding GRAIs need to be captured in a fast and reliable manner throughout the chain. Speed and accuracy are of the essence here especially with regards to shipping and receiving processes as pallet stacks are being handled.



STAY SMALL, PERFORM BIG

The situation therefore called for a RFID-based solution that would support an efficient loading and unloading process, combined with a fast and reliable bulk reading of transponders. The company's loading bay area itself offered no space for bulky constructions, meaning that the implementation needed to be extra-fast and cost-efficient with minimal hardware and construction effort.
Dirk Freda, Head of Logistics & IT for Zentek Pool System GmbH, says that the company knew to turn to Nordic ID since they had had previous experience from collaboration with the company.
– We are successfully using Nordic ID Morphic and Nordic ID Merlin devices in other operations since a couple of years. We were confident that Nordic ID could help us overcome this challenge, too, says Freda.

NORDIC ID AR55 TO THE RESCUE!

Nordic ID and Zentek joined forces with software company Sydesoft to find the answers. Ultimately, they came up with a solution which consists of the fixed RFID beam reader called

Nordic ID AR55 and middleware named WS-RFIDGate, which communicates with the RFID hardware and sends information to a panel PC which provides a customized user-interface.

Furthermore, there is a online backend-system calling ZEPRA which receives and handles all collected data from the RFID gate. ZEPRA is an Electronic Product Code Information Services System (EPCIS). WS-RFIDGate generates standardized EPCIS events and addresses the capture service of the EPCIS.

– Also, there is a RFID handheld Nordic ID Merlin Cross Dipole to read RFID tags in case of incomplete gate-reading or to read barcodes in case of defect RFID tags, says Freda, adding that the RFID tags are located inside the plastic pallets

HOTSPOT READER

Under this new concept, the Nordic ID AR55 is deployed as a hotspot reader in a special reading area. To avoid reading outside the area, the movement function of the reader is used.

– The decision for this reader was made because of the multiple beams that we need to use individually in beam-collection for different processes. For incoming goods, we used another beam-collection than for outcoming goods, explains Freda.

The Nordic ID AR55 in question was mounted, fast and secure, to the ceiling, using a standard VESA mounting. Wifi is used to communicate between reader, middleware, handheld and web service of the Zentek EPCIS. The software on the panel PC transmits the shipping and receiving data to Zentek's IT system by addressing the capture service of the EPCIS and transmitting EPCIS events in realtime.

– The actual installation work took place on the 12th of January 2016, and we tested the system for ten days before we started the regular use on 22nd, says Freda.

ELIMINATING REFLECTIONS

Nevertheless, some bugs remained in the system. While the transponders of the pallets were reliable and fast read by the Nordic ID AR55, one needed to ensure that non-moving transponders are filtered out. Reflections caused by forklift trucks also required additional tinkering in reader settings and middleware algorithms, explains Walter Seibel from Sydesoft.

– To avoid reflections or reading of non-moving tags, WS-RFIDGate provides special algorithm and configuration to customer needs. WS-RFIDGate uses different beam-collections to detect moving tags that were in the hotspot area. Other tags, which are not in the hotspot reading area, will be ignored, says Seibel.

WS-RFIDGate also uses the movement-detection of Nordic ID AR55 firmware. In the end, the winning combination of movement-detection of Nordic ID AR55 firmware and beam-collection filtering solved the lingering problems of reflection and other unwanted reads.

– Working together with Nordic ID's experts in Finland, we were able to eliminate the remaining problems in a couple of weeks, Seibel looks back.

SAVING TIME

Now, the solution enables Zentek's warehouse to load and unload pallets in stacks while transponders are read simultanously − there's no need to prepare and capture pallet IDs in advance and/or use time-consuming barcode scanning.

– No costly or bulky RFID hardware was needed at all. WS-RFIDGate generates standardized EPCIS events and addresses to capture web service of the EPCIS, thus providing realtime data for the Zentek's IT system, comments Freda who was the project leader in the RFID venture.

– The time savings that we are able to achieve are approximately one hour per truckload on warehouse staff and forklift truck. Also, approximately 50 square metres of the staging area is saved for other use, he adds.

Furthermore, shipping and receiving processes are now being covered by one technical solution. Future roll-out to other warehouse processes and locations may be in the cards as well, since roll-out can now be achieved via configuration − there's no need for individual programming and hardware installation at all.

Quelle: http://www.nordicid.com/en/home/references/zentek