

Warehouse and Container Management

Application Note

ZOMOFI®

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Concept, Customer Solution and Benefits

The warehouse of a large logistics firm in Germany was evaluating and selecting active RFID technology for the carrier-containers. Each container is tagged with Z-Tag. Indoor halls and outdoor areas are monitored by Z-Controllers. The system is networked with the existing wireless or wired LAN.

The main functions and benefits after the rollout of the solution are:

- Customer knows the location of each container at any time
- No delays caused by missing containers
- Lower inventory costs for containers
- Fully automated and 100% reliable RFID detection for localization

The system has been implemented in Spring 2008 for the German logistics firm. The participants were the hardware supplier (Albis Technologies), the software supplier (partner of Albis), the customers IT department, and some local electrical and structural installers.

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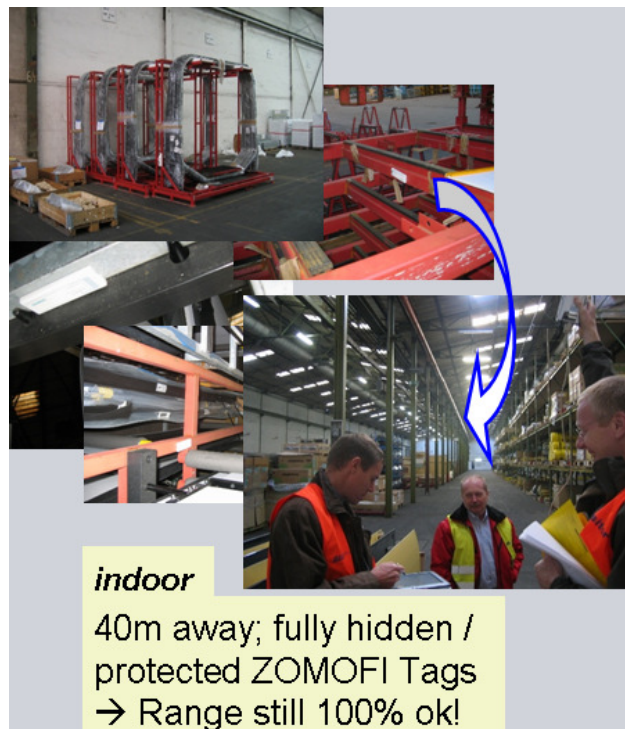
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The logo for Albis Technologies, featuring the word "albis" in a bold, lowercase, sans-serif font with a stylized green and blue swirl above the 'i', and the word "technologies" in a smaller, lowercase, sans-serif font below it.

Concept

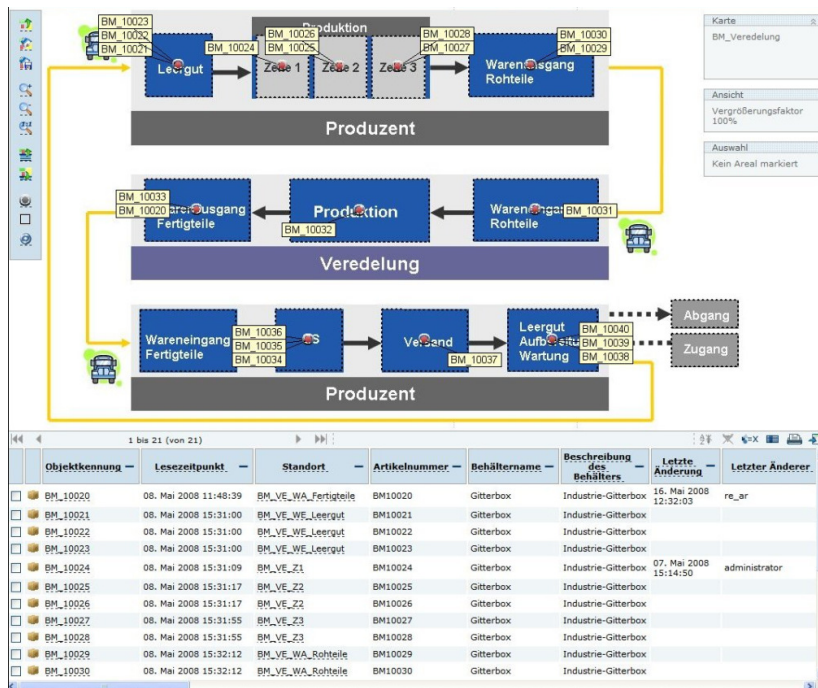
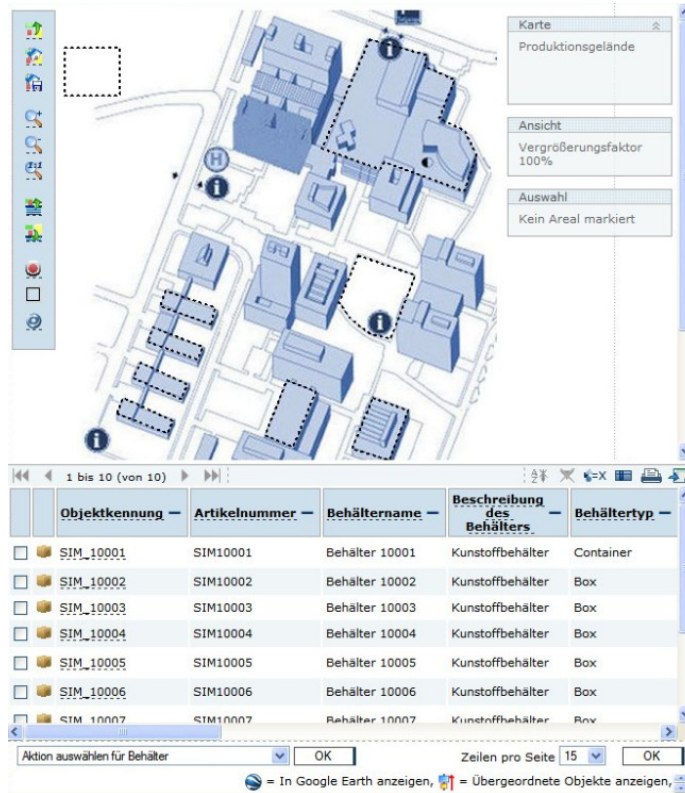
All carrier-containers have been equipped with a Z-Tag (active RFID transponder from Albis Technologies AG, Zürich). The readers are installed in the halls for covering the zones of interest. They are networked with the existing WLAN and LAN infrastructure. The Z-Edgeware and the SW-Application are running on a server installed in the IT server room. The IT infrastructure and the ZOMOFI components are operated by the customer's IT department.



The reliability of the localization is very good and the reading rate is 100% for the 5000 carrier-containers. No line of sight from transponder to reader is required due to the great transmitting performance of the ZOMOFI RFID components.

Application and GUI

The SW Application with the graphical user interface is web-based and runs on a common application server with possible logins from admin, users and management.



Workflows, search operations and statistics can be configured and viewed from the SW-Application. The location and the status of each individual container are updated at any point in time – fully automatically.

Customer Benefits

The benefits leveraging the RFID solution are:

- Know the inventory and availability of all carrier-containers at any given time.
- Reduced operational effort for searching containers.
- No delivery delays for the reason of unavailable containers.
- Less inventory of containers needed. Availability is fully managed.
- Automatic report of arrivals and deliveries.

Active RFID Detection	Status	Benefit
Container / Asset has been detected at ENTRANCE	Arrived at HH.MM on the DD.MM.YY	Fully automated. No manual action.
Located in the monitored halls	Ready for delivery	Localization data updated at any time.
Located in repair zone	Out of order. In repair.	List of available and unavailable containers.
Located outdoor	Free container	Available container. Number / type / readiness.

The implemented RTLS solution (real-time locating system) is optimizing the business process of the logistics in the warehouse:

- Reduction of person effort since the manual process is skipped
- Less costs for procurement of extra containers
- No penalties for delayed deliveries

Role and Responsibilities

The following roles and responsibilities have lead to a successful implementation of the project.

Customer	IT network, operations, project lead for constructive work and installations. Tagging the objects with Z-Tag.
Albis Technologies	RFID concept, installation guide, tests, configuration support.
SW Vendor	Delivery of SW-Application and installation.
Local electrician	Installation of Z-Controller and Z-Antenna.

Extensions

The installed RFID system can easily be extended to cover people tracking, asset tracking for tools or instruments or long range access control for the gates. Also remote locations can be added via GSM/GPRS Z-Controllers for simple integration into the existing system.