

USE CASE

Tracking of Goods in Logistics



AT A GLANCE

- server-based localization of boxes
- height determination based on measurement of pressure differences
- location overview on digital map



The solution helps to improve the processes that workers use to move about the facility and pick items. Using this system enables revealing empty shelf spaces and supports pickers in making optimal route and picking order decisions. In this way, workers can save time and increase pick rates.

TECHNICAL IMPLEMENTATION

insoft Locator Nodes and insoft 360° Antennas are installed throughout the warehouse. Boxes are equipped with Bluetooth Low Energy (BLE) beacons with an integrated barometric pressure sensor. The insoft 360° Antennas detect incoming signals from the beacons and submit the scan data via USB port to an insoft Locator Node. From there, the data are sent to the insoft LocAware platform®, where the position of the beacon is computed and transferred to an output medium or an ERP system. Based on the angle and distance determined, it is possible to calculate the position with an accuracy of 1 to 3 meters. The pressure sensor allows for a determination of the height of the rack space. This method enables a 3D localization that is a favorable alternative to a high-precision Ultra-wideband based system, providing much lower costs per asset and a high scalability and portability. Using a mobile app or a browser application, employees can access the position data and see the location of the goods on a digital map.

If desired, it is also possible to realize a client-based positioning of the forklift drivers. In this case, the driver's mobile device detects Bluetooth signals from the insoft Locator Nodes. The position is calculated and displayed on the smartphone. The driver receives turn-by-turn directions and, if necessary, messages concerning his route.

PROBLEM DEFINITION

Warehouses are the heart of supply chains across the world. Consequently, it is crucial that managements keep their warehouse organizations operating in an environment that is as efficient and error-free as possible. Inefficient warehouse operations are associated with the emergence of unnecessary costs and/or delays. Pickers take longer to find items, slowing down the loading process and weakening overall labor productivity.

SOLUTION

Thanks to a tailored tracking system, warehouse managers can make great strides in improving visibility and functionality. At any time, the exact location of goods can be viewed in real time on a digital map. Thanks to a special localization method utilizing Angle of Arrival (AoA) technology and barometric pressure sensors, the localization is so precise that not only the shelf, but also the exact rack position in which an item is located can be determined.

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