

Use Case Forklift 4.0



How to accelerate business processes and reduce development times with sensor data.

For the best possible automation of all forklifts and data driven optimized performance in the warehouse of the future, a world-leading manufacturer of forklifts and warehouse equipment relies on modern software solutions and cloud technologies by aicas.

In modern intra logistics, nothing works without data driven software solutions. For strategic corporate decisions and the analysis of all units of goods, information, and products, the evaluation of data is at least as important as the actual transport of goods from A to B. Forklifts drive manually, semi- or fully automatic – digitization, interconnectedness, automation, and app management are the buzzwords for modern material flow processes making the warehouse of the future more efficient than ever.

Embedded Specialists Meet Leading Forklift Manufacturer

A forklift manufacturer relies on the latest software solutions when it comes to the reading of relevant data. The company is a world leading manufacturer of forklifts and warehouse equipment, and also offers services and solutions around intra logistics. With a distribution and service network in more than 100 countries, the company is represented in all key areas of the world.

Since 2016, the company in our use case has been relying on aicas' software solutions for its IoT and embedded segment. aicas is a global high-tech company with branches in Europe, the US, and Asia, founded in 2001 by technology leaders from the Karlsruhe Institute for Technology (KIT). aicas' embedded software solutions connect more than 23 million devices and vehicles for the largest automotive and industrial companies.





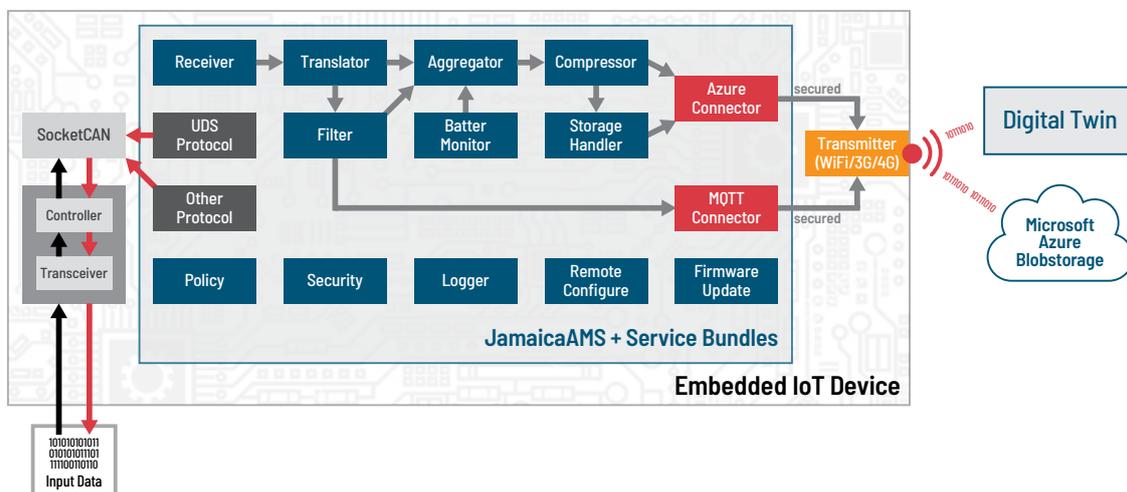
Interplay of Sensors, Machines, Software, and Cloud Technology

Modern machines constantly collect data that provides relevant information regarding status and utilization. Connected vehicles continuously inform the user about the logistics status in production or warehouses. Data creates transparency and makes the fleet safer and more economical. Availability and lifetime of every individual vehicle increase. Safety is a vital issue in warehouses, to which vehicle data provides important information.

The result is service optimization and customer satisfaction. But which data is relevant for the customers? And how does data from the forklift get to the right user? The constantly growing amount of data requires an intelligent selection of expedient data.

To this end, aicas provides a software stack for the forklift manufacturer. In combination with various service packages, aicas EdgeSuite collects and processes vehicle data from the forklifts. The purpose of this solution is to collect, save, process and visualize data in forklifts, the cloud, and remotely via the cloud in realtime.

The generic software provided by aicas and adjusted for the purposes of this forklift manufacturer, collects sensor data, processes, compresses and filters it, so that the original raw data from the forklift can be read and provides insights regarding speed, motor, or capability of the forklift steering.



An aggregator groups the data: which is related to the motor? Which to the fork? Which to speed? At the same time, it compresses data to a smaller size to upload it to the Microsoft Cloud without delay.

The realtime capabilities of the framework guarantee up-to-datedness, connectivity, and security, so the data is safe and transmitted to where it belongs. aicas' EdgeSuite ensures remote updating of the embedded device's operating system via "Firmware Update" and upgrades to the latest software status via remote configuration. The EdgeSuite simplifies the management of software running on embedded systems in connected device environments over the entire software life-cycle.

Accelerate Processes with Data

IoT-applications of this kind ensure the forklift can always provide information about location, status, and capabilities of the respective components via sensors. Through Digital Twin, the life-cycle of the forklift is mapped digitally: Digital Twin works as a simulation model and is a carrier of information.

The collected data allows the company to react a lot quicker to customer requirements. At the same time, the collected data allows the forklift manufacturer to draw conclusions regarding current use, meaning that defects become apparent more quickly and wear and tear is noticed in short term and can swiftly be fixed. It is easier for their development department to identify corresponding patterns and to address them, thereby reducing development time for new models and accelerating processes. Maintenance of the vehicles is data driven and preventive.



VALUES AT A GLANCE

- » Accelerate processes with data
- ▣ Reduce development times with data
- 🕒 Quicker reactions to market demands
- ✓ Full access and management of logic and data
- ✂ Reduced complexity

Get in touch with us to learn more about our solutions!

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