

Autonomous Warehouse Optimization

A Cognitive Approach to Stocktaking

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Scenario:

Logistic optimization of storage processes in highly dynamic warehouse environments

Task and Challenges:

Enable logistic optimization without interfering with existing processes

- current technology is massively invasive and/or relies on manual input
- robot can explore and map warehouses autonomously using RFID readers
- storages are highly dynamic — observations are valid for a short time only, no consistent overall view possible

Approach:

- maps are only valid on a coarse level of abstraction
- use background knowledge to fill in missing pieces of information and to understand the logistic processes
- represent knowledge on different levels of granularity — multi aspect maps
- enable logistic analysis based on automatically acquired coarse knowledge

