

Intralogistics 4.0

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Abstract— The six-claims (“rights”) of logistics: The right goods, in the right time, at the right place, in the right quantity, with the right quality, to the right costs are valid furthermore. But nowadays the goods have to interact additionally with other goods, with the material handling machinery and control and via i.e. smartphones also with humans. Also machinery communicates with other machines, handling, transport and storage equipment.

The evolution of the last years with smart labels, cloud computing, WLAN, NFC, worldwide GPS etc. makes a big change in industry also in logistics. We change from centralized systems to decentralized systems with autonomous carriers, smart boxes and smart conveyors organizing the material flow among themselves.

New approaches like Internet of things and Physical Internet are combining these technologies to new solutions. With “Industry 4.0” the German government started a hype including the most of this technologies.

The lecture will give a look and overview to those technologies.

- Introduction
- Overview – Industry 4.0 - Intralogistics 4.0
 - Industry 1.0 – industry 4.0
 - Smart factory – man-machine-interface
 - Cyber Physical Systems
 - Augment reality
 - responsible utilization of resources
- Topics from Logistikwerkstatt Graz 2015 “Intralogistics 4.0?”
 - General Insight “Logistikwerkstatt Graz”
 - Industry 4.0, importance for logistics and management trends
 - Decentralized control of autonomous and independent carriers for material handling processes
 - Physical Internet
 - Visions for Intralogistics 4.0 – intelligent automation concepts
- Actual and future projects at the Institute of Logistics Engineering (ITL) in the field of intralogistics
 - technical and operational availability of intralogistics
 - Performance of postal sortation processes
 - Modular boxes for the Physical Internet (MODULUSHCA)
 - Parcel handling and separation solutions
- Conclusion

Key words— intralogistics, material flow, control, new technologies.

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