

Bachelor thesis, master thesis, project thesis

Potential Applications of Multimodal Transport Systems (UAV & AGV)

Intralogistics, particularly in established production environments, faces the challenge of supplying sources and sinks efficiently, flexibly, and in a space-saving manner. Automated guided vehicles (AGV) can perform these tasks automatically, but they reach their limits in situations involving narrow traffic routes, hard-to-reach workstations, or constrained layout structures. Multimodal transport systems that combine AGV with unmanned aerial vehicles (UAV) offer the potential to link ground-based and air-based transport. The aim of this work is to investigate specific use cases, potential benefits, and operational limitations of this approach compared to traditional AGV systems.

Your tasks

- Research into existing approaches to intra-facility material transport using AGV, UAV, and multimodal systems
- Analysis of typical production layouts and identification of suitable use cases for multimodal transport
- Investigation of when UAV-based material transport offers advantages over a pure AGV system
- Comparison of both approaches based on logistical, technical, and economic evaluation metrics
- Derivation of design guidelines, operational limits, and decision-making criteria for companies
- Development of specific research questions and recommendations for further work

Your profile

You are studying one of the following subjects:

- Industrial Engineering
- Mechanical Engineering
- Production and Logistics
- or a comparable degree program

You are interested in automated material flow concepts and production logistics, particularly automated guided vehicles (AGVs).

In addition, you ideally have knowledge of material flow analysis or cost-benefit analysis.

Good written and spoken German skills are required for the job. Good English skills are desirable, especially for literature research.

You work in a structured manner, enjoy analyzing technical and logistical issues, and want to translate research results into practical application scenarios.

We offer

- Independent work
- Flexible hours
- Well-equipped workstations
- Work from home
- Long-term collaboration (if applicable)



Bitte sende deine aussagekräftige Bewerbung in einer einzigen PDF-Datei an jobs@iph-hannover.de.

Die Bewerbung muss Anschreiben, Lebenslauf sowie Prüfungsleistungen des Studiums / Zeugnisse enthalten.

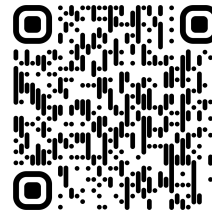
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