

**Division III – Mechanical and Electrical Engineering** 

Institute of Vehicle System Technology (FAST)

# **FLOOW** Flexible mobility and cargo system for plant traffic

FLOOW, on which KIT and the FZI Research Center for Information Technology are conducting joint research with industry, utilizes the main advantages of artificial intelligence (AI) methods to develop a new mobility system for humans and goods. A special focus is on the robust and precise localization of the used vehicles in indoor and outdoor settings. Further main topics are a generalized environment detection as well as risk-aware maneuver planning – based on specialized hardware for energy efficient computation.

#### **Cooperation between Research and Industry**

The Munich-based localization and navigation specialist ANAVS is conducting research into highly accurate localization in indoor and outdoor areas, and, in particular, in the transition between the

two. The FLOOW project addresses the challenges at hand with AI methods. Exemplary vehicles are automated guided vehicles (AGV), autonomous cargo bikes and specialized movers (Rolling Chassis) that are provided by SCHAEFFLER. The FZI Research Center for Information Technology in Karlsruhe develops specialized hardware to ensure cost-effective and energy efficient calculation of the AI methods. A final step is the integration of the heterogeneous vehicles in a mobility system on factory premises, provided by the Institute of Vehicle System Technology (FAST) at Karlsruhe Institute of Technology (KIT).

### Fields of application of FLOOW

The technologies developed in the FLOOW project are extremely versatile. Applications include automated transport of goods and



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people on factory premises, automated identification and localization of goods and tools from incoming goods to production, an optimized and automated logistics planning process, automated inventory monitoring, live monitoring of material flow, a pilot system on company premises for supplier vehicles, automated sweepers, automated security/surveillance and many more.



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## SCHAEFFLER





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