

Hamburg, 14.11. 2023

## **Thesis/project work at the Institute of Technical Logistics**

### **Title: Chassis/Drive System for a Mobile Robot Base on Sidewalks (Master's / Project Thesis)**

This research aims to provide a comprehensive solution by conceptualizing, designing, and prototyping a specialized chassis or drive system tailored for mobile robots operating on sidewalks. The primary objective is to contribute a systematic approach to address the unique challenges encountered in designing efficient and practical mobile robot bases for sidewalk navigation.

This research not only advances the scientific understanding of designing specialized mobile robot bases but also offers practical solutions that may significantly benefit urban planning, logistics, and public safety by enhancing the efficiency and reliability of robots operating within pedestrian environments.

#### **Task description:**

1. Research and familiarization with the scientific state of the art of the topic
2. Requirement analysis
3. Comparative study of diverse chassis types and components
4. Detailed design development of a selected approach, with a focus on component selection
5. Prototyping the manufactured chassis/drive system

#### **Requirements:**

- Prerequisite knowledge or willingness to independently familiarize yourself:
  - CAD (Computer-Aided Design)
  - Design Methodology
  - Basics of chassis engineering
- Independent and meticulous way of working