

ESTABLISHING HiL TESTBENCH FOR TRACTION DRIVE OF HEAVY MOBILE MACHINERY



TECHNISCHE
UNIVERSITÄT
DARMSTADT

Supervisors: Topias Tyni, topias.tyni@aalto.fi; Prof. Petri Kuosmanen, petri.kuosmanen@aalto.fi



BACHELOR THESIS

MASTER THESIS

ADP

AERO SPACE ENG. MECH. ENG. > Future Automotive Systems

Motivation

The establishment of a Hardware-in-the-Loop (HiL) testbench for the traction drive of heavy mobile machinery represents a significant step forward in the development and validation of traction drive systems. This thesis topic explores the comprehensive process of implementing such a HiL testbench, which facilitates real-time simulation and testing of traction drives.

Tasks

- Literature review regarding HiL for traction drive
- Connect the inputs and outputs of the testbench and simulation software
- Develop control system and drive test cycles
- Extra: Comparison with a simulated electric motor

Requirements

- Basic knowledge of control systems and dynamic simulations
- Experience on electric motors
- Independent and structured work style

Condition

Conducted at Aalto University (travel and living allowance payed by Aalto University)

More info: www.aalto.fi/en/department-of-energy-and-mechanical-engineering/fluid-power-laboratory

