A REVOLUTION IN AUTOMOTIVE SIMULATION

In a groundbreaking collaboration between Technische Universität Dresden and AMST, the Dresden Driving Simulator (DDS) is the first of its kind, pushing the boundaries of automotive testing and development. This disruptive technology sets itself apart as the first self-driving simulator in the industry. With unmatched immersive experiences, combining advanced motion control and high-quality visuals, it elevates the fidelity of driving simulations to a new level. While the DDS is the flagship model, AMST aims to bring this cutting-edge simulator to the broader market, revolutionizing vehicle development and the validation of autonomous driving systems (ADAS and HAD).

The major challenge in simulator design to date has been closing the frequency gap between low motion frequencies by tilt-coordination and high motion frequencies by shaker or hexapod systems. State-of-the-art simulators (e.g. with x-y-rails) are limited in closing this frequency gap due to the spatial expansions, correlated high inertias and energy requirements.

The innovation of the DDS lies in its tire-bound motion platform. Four pairs of steering and drive motors can accelerate the total system mass of ~5 t omnidirectionally with ~0.8 g. Powered by an onboard HV battery, the platform moves autonomously within an open space, communicating via WiFi with a central control station. The self-developed motion control system can therefore be used flexibly and requires a travel area of 70 × 70 m to achieve the full quality of movement.

AMST-SYSTEMTECHNIK GMBH
LAMPRECHTSHAUSENER STRASSE 63
5282 RANSHOFEN · AUSTRIA

+43 7722 892 0
SALES@AMST.AT
WWW.AMST.AT

2024-09

SELF-DRIVING

DRIVING SIMULATOR

AUTOMOTIVE SIMULATION ACCELERATED

TECHNISCHE UNIVERSITÄT DRESDEN

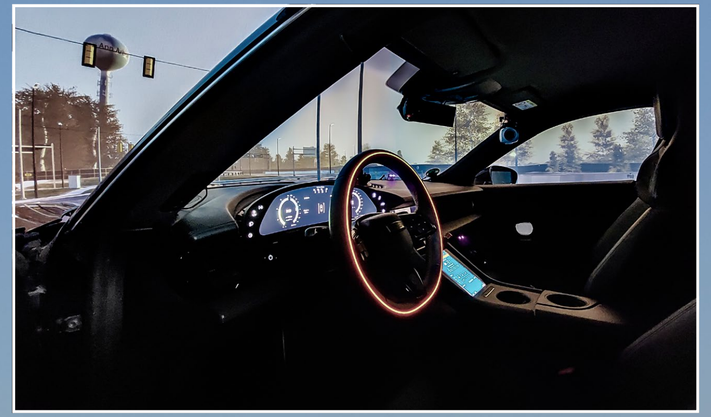
AMST BUILDING CONFIDENCE.

APPLICATION FIELDS

- Objectification of subjective sensations in vehicle design (comfort, dynamics, safety)
- Development and validation of ADAS (Advanced Driver Assistance Systems) in the context of UX/HMI (User Experience/ Human-Machine Interface)
- Human perception studies
- Traffic psychological studies on driver behavior and validation of driver models
- Traffic space planning
- Accident research and risk profiles for insurance companies

HIGHLIGHTS

- Sustained G-loads
- Dynamic maneuvers
- 10 controllable DoF
- Immersive visualization
- Modular and interchangeable mockups
- Hall and open space
- Portable
- Durable construction



FEATURES AND PERFORMANCE

- ~5200 kg total mass
- ±0.8 g real acceleration (via motion platform)
- 45 km/h top speed
- Dimensions: 5 × 5 × 5 m
- Low center of gravity: 0.93 m
- Area of motion: 70 × 70 m
- 225° × 40° field of view
- 10 Degrees of Freedom (DoF)
- Electric drive system (20 minutes charging time)
- Dynamic driving operation (motion platform): 45 minutes driving time
- Static driving operation (hexapod, yaw drive): continuous operation possible