

Research Activities

- Active and passive safety
- Safe environment detection
- Safety in bad weather
- Protection of vulnerable road users
- Development, testing, and validation of automated driving
- Security of new mobility concepts
- Simulation-based stochastic impact analysis
- Driving tests for autonomous vehicle interventions
- Ergonomics and human factors
- Predictive accident detection and reduction of the consequences of accidents
- Machine learning for vehicle safety systems
- Sensor-/disturbance simulation with a focus on weather effects
- Virtual safeguarding of vehicle safety systems
- Cooperative intelligent traffic systems
- Car2x and cyber-physical systems
- IT security in mobility
- Safety of aircraft structures
- Accident analysis
- Firefighting
- General inspection
- Safe battery systems and e-mobility



Cooperation Opportunities

Are you looking for scientific expertise to solve your challenges or work on innovations? Whether it's contract research or publicly funded projects - we already work in partnership with politics, civil society and business in many places, regardless of whether they are large companies, SMEs or start-ups. The opportunities for cooperation are many and varied:

- Contract research and scientific studies
As the client, you specify the objective and scope of the assignment.
- Research collaborations
In public funding programs (state, federal, EU, international), we work together on practical solutions for social challenges.
- Use of our infrastructure
Would you like to use our laboratories or the Outdoor Test Facility for your projects? Then please get in touch with us.

CARISSMA is involved in a large number of research projects at state, federal and European level.



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Location



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Photography: Oliver Jaist, THI



CARISSMA

Automotive Safety Research

Overview

CARISSMA, a research and test center at the Technische Hochschule Ingolstadt, stands for "Center of Automotive Research on Integrated Safety Systems and Measurement Area". This facility aims to conduct applied research in order to enhance traffic safety in Germany and abroad. The system, which consists of driver, vehicle, and environment, is considered as a whole, because not only the vehicle occupants but all road users should be protected.

In order to optimally fulfil its function, CARISSMA has three locations: The main building with the Indoor Test Facility is located on campus at Ingolstadt and is directly integrated into the teaching activities, while the Outdoor Test Facility with a workshop building is situated in an industrial estate east of the city. A battery abuse test area is in Schrobenhausen.



Facts and Figures

- Main Building: approx. 4.000 m²
- Outdoor Test Facility: approx. 12.000 m²
- Indoor Test Facility: approx. 1.800 m²



Further information
www.carissma.eu

Research and Institutes

The research and test center CARISSMA has been designed as Germany's leading scientific center for vehicle safety. The 123-meter-long building was opened in June 2016. With more than 4,000 square meters of floor space, it houses ten state-of-the-art test facilities and 3 institutes. 17 professors and over 120 scientific employees conduct interdisciplinary research on ground-breaking innovations.



Three Institutes at CARISSMA

CARISSMA Institute of Safety in Future Mobility

C-ISAFE

Predictive accident detection and accident consequence mitigation

CARISSMA Institute of Automated Driving

C-IAD

Development, testing and validation of automated driving functions

CARISSMA Institute of Electric, Connected, and Secure Mobility

C-ECOS

Safe e-mobility, accident analysis, Car2X communication and automotive IT security

Testing Facilities

View of the indoor test facility for integral security systems



CARISSMA's facilities, for example, include the following:

- Indoor Test Facility
- Indoor Crash Facility
- Outdoor Test Facility
- Drop Tower
- HiL-Lab
- Mobile Robots
- Battery Lab
- Battery Abuse
- Car2X-Lab
- Simulation Cluster
- Hexapod / Driving Simulator



Further information
<https://www.thi.de/en/research/carissma/>