SAFER
VEHICLE AND TRAFFIC SAFETY CENTRE AT CHALMERS

BORDERLESS RESEARCH FOR SAFE MOBILITY

WELCOME TO SAFER.
WE BRING PEOPLE TOGETHER
TO CREATE RESEARCH AND
KNOWLEDGE THAT SAVE LIVES,
PREVENT INJURIES AND ENABLE
SAFE MOBILITY FOR PEOPLE
AND GOODS.

All road users travel safely in the road transport system – that's our drive and overall goal. We are the open research arena where researchers and expertise work together to create safe mobility. Our traffic safety approach covers people, vehicles and the infrastructure – and together we contribute to safer road transports and smarter, more sustainable cities. Join us!

ONE MISSION, FOUR RESEARCH AREAS

Traffic safety is as important as ever. Every year around 1.4 million people are killed in traffic accidents and 20–50 million injured. And SAFER is dedicated to reduce these numbers. Traffic safety is also essential in the creation of liveable, smart cities and sustainable, automated transport systems. This requires more in-depth knowledge about what really causes accidents and how to avoid them, together with excellent, collaborative research in the area of safe mobility.

SAFER is hosted by Chalmers University of Technology and is Sweden's traffic safety research hub. By applying a unique interdisciplinary approach we deliver knowledge and research that enable people and goods to be transported safely and sustainably.

SYSTEMS FOR ACCIDENT PREVENTION AND AUTOMATED DRIVING

How can active systems and automation predict and prevent collisions? Through creative system development research on new technologies as well as by innovative research and development of new verification and validation methods, based on field data analysis. This research area includes e.g.:

- Understanding basic principles relevant for safety performance of collision avoidance and mitigation systems
- Principles of sensors and algorithms relevant for safety performance in more complex conflict scenarios
- Connected traffic systems where infrastructure, vehicles and road users interact to enhance safety

ROAD USER BEHAVIOUR

How do people behave in the traffic system and how can we support safe behaviour? Taking a deep, wide approach in the area of human behaviour, this research area is about developing scientific methods and tools to create prerequisites for safe behaviour.

This research area includes e.g.:
- Development of methods and tools to investigate road user state and behaviour
- Road user monitoring to ensure safe interaction in traffic
- Implement nudging solutions into traffic systems
- Road user experience

SAFETY PERFORMANCE EVALUATION

How do we develop the best methods for predicting and assessing real-world vehicle and traffic safety? In this research area we focus on the development of innovative methods to manage and analyse field data and assessment procedures for safety performance using data from both real and virtual environments. This research area includes e.g.:

- Accident data analysis
- Naturalistic driving studies
- Field operational tests
- Method development
- Standardisation for data recording, data sharing and other general aspects of data analysis

HUMAN BODY PROTECTION

How do we best protect people in a traffic accident? By understanding the biomechanics and tolerances of humans in addition to their postures and behaviors; tools and methods are developed enabling creation of countermeasures to prevent injuries. This research area includes e.g.:

- Biomechanical injury mechanisms, responses and consequences, incl. pre-crash
- Principles for protection including usage and pre-sensing input
- Structural requirements (design guidelines) regarding crashworthiness (self and opponent protection)
- CAE tools for material and structures
- Mechanical and mathematical occupant and unprotected road user models for complete crash sequence

THE SAFER CONNECTED RESEARCH RESOURCES – STRONG ASSETS FOR REAL-WORLD TRAFFIC SAFETY RESEARCH

As a SAFER partner you get access to SAFER's open research arena and, through relevant projects, research resources available within the network. Also, expertise to use these research resources is available within the community. The overall idea – and one of our strategic cornerstones – is that research should be easier, better and more efficient through collaborative partnerships.

ASTAZERO PROVING GROUND

AstaZero (Active Safety Test Area Zero) is one of the most advance full-scale test environments in the world for a safe, sustainable and connected automated mobility road traffic future. Different traffic environments make it possible to test advanced safety systems for all kinds of traffic and traffic situations.

REVERE RESEARCH LAB FOR ACTIVE SAFETY AND AUTONOMOUS DRIVING

Revere (Resource for Vehicle Research) is a research facility with a focus on for autonomous driving. It contains a research lab with resources such as technical equipment, test vehicles, and supporting personnel.

NATURALISTIC DRIVING DATA

The SAFER Naturalistic Driving Data platform is a secure, world-class platform for handling data from naturalistic driving data collection. We provide state-of-the-art data management, several large datasets and a leading research competence regarding naturalistic driving data.

DRIVING SIMULATORS

Sim IV at the Swedish National Road and Transport Research Institute has an advanced motion platform system. Cabs and passenger compartments can be exchanged quickly.

SAFER OPEN RESEARCH ARENA AT LINDHOLMEN SCIENCE PARK

All SAFER partners have access to our facilities at Lindholmen Science Park in Gothenburg. The SAFER office is a meeting place with workplaces as well as meeting rooms, analysis rooms, conference facilities and networking areas.

WORLD LEADING HUMAN BODY MODEL FUNCTIONALITY

SAFER provides a competence platform for SAFER partners as well as a natural contact point for external cooperation. SAFER's HBM vision encompasses a scalable, tuneable, human body models that can be used for predicting injury outcome in any impact situation/direction.

TEST TRACK AT STORA HOLM

SAFER's partner the road safety organisation NTF Väst offers our researchers to use a very closely located traffic training site. Stora Holm offers various test tracks and skid pad for tests and events.

CREATE SAFE MOBILITY.
BE A SAFER PARTNER.

Safe mobility can only be realized when talented and dedicated people work together with a clear vision, shoulder by shoulder. As a SAFER partner, you play an important role in the creation of sustainable and safe transport system. You get access to a unique competence and research infrastructure and can run projects that would not be possible on your own. SAFER is your open research and knowledge building arena, and it gives you unique possibilities to influence the safety agenda as part of the transport system and city develop-ment. Join us today!

THE SAFER PARTNERS

Afry, Aptiv, AstaZero, Asymptotic, Autoliv Development, BETA CAE Nordic, CEVT (China Euro Vehicle Technology), Chalmers University of Technology, City of Gothenburg, Combitech, Cycleurope, Folksam, Halmstad University, HiMinds, If Insurance, Institute of Transport Economics (TØI), Jönköping University, Malmeken, NEVS (National Electric Vehicle Sweden), NTF Väst, RISE (Research Institutes of Sweden), Scania CV AB, Smart Eye, Sustainable System of Systems Solution – 4S, Svanberg & Svanberg, Swedish National Road and Transport Research Institute (VTI), Swedish Transport Administration, Swedish Transport Agency, Trivector, University of Borås, University of Gothenburg, University of Skövde, Veoneer, Volvo Cars, Volvo Group and Zenuity.

SHORT FACTS ABOUT SAFER

- A competence centre where about 36 partners from the automotive industry, academia and authorities cooperate to create a centre of excellence within traffic safety research and safe mobility.
- Research is conducted within 4 areas: Systems for accident prevention and automated driving, Road user behaviour, Human body protection and Safety performance evaluation.
- Simplified access to research infrastructure including AstaZero real-world traffic safety proving ground, Revere – Resource for Vehicle Research – research lab for active safety and autonomous driving and simulators and simulation tools.
- Through projects access to SAFER's Naturalistic driving data platform with state-of-the-art data management, large databases and research competence regarding naturalistic driving data.

- Close to 400 projects and over 850 publications since the start of SAFER in 2006.
- Located at Lindholmen Science Park in Gothenburg, Sweden – an internationally acclaimed science park for sustinable mobility with around 350 companies and academic institutions.
- Hosted by Chalmers University of Technology.
- Part of the bigger purpose of saving lives, reducing injuries and building sustainable transport systems in cities and beyond.
- Collaborative multi-stakeholder research for enhanced competitiveness through the unique traffic safety research competence within the SAFER network.
- Open collaboration with research partners from the industry, the academia and the society.
- Inspiration and knowledge building through SAFER seminars and conferences.

READ MORE ABOUT SAFER AT WWW.SAFERRESEARCH.COM

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