Research areas at SAFER

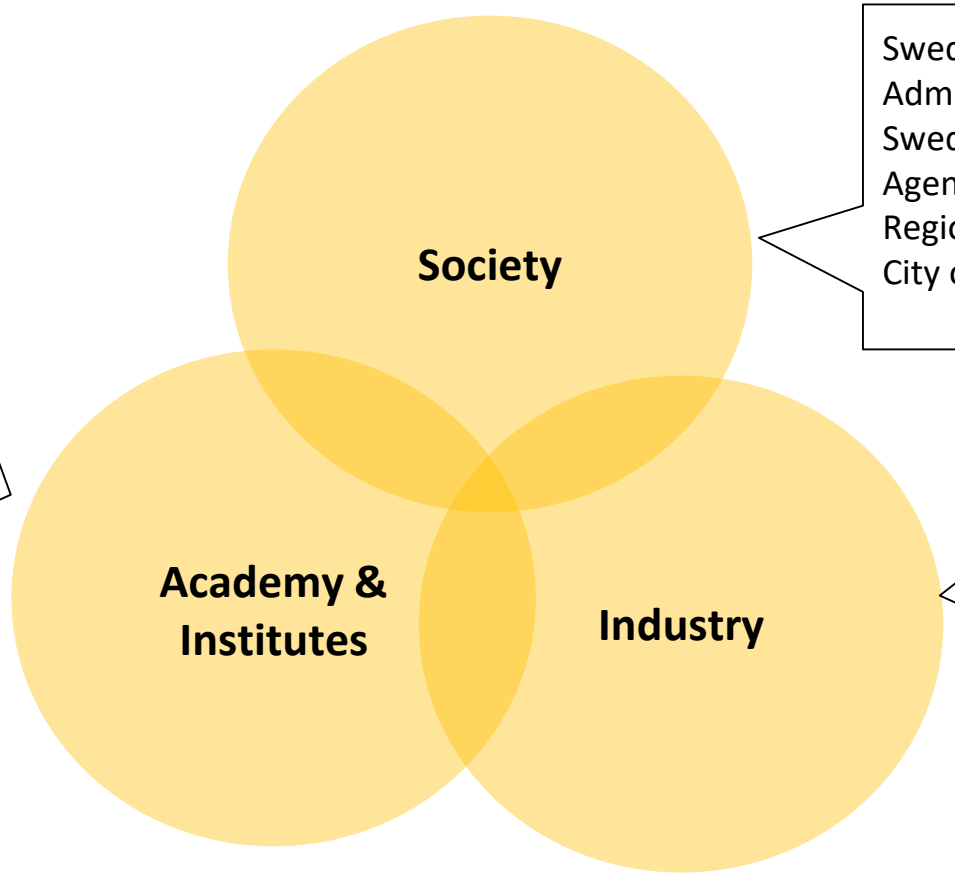
Vision

Excellent inter-disciplinary research, innovation and collaboration to secure close to zero accidents and injuries in traffic and enable Sweden to hold global leadership in traffic safety.

Traffic safety will be a key factor for implementing a sustainable, connected automated traffic system.

32 partners in collaboration since 2006

Hosted by Chalmers and localized at Lindholmen Science Park



Swedish Transport Administration
Swedish Transport Agency
Region Västra Götaland
City of Gothenburg

Chalmers University of Technology
University of Gothenburg
Halmstad University
KTH
RISE (Acreo Swedish ICT , SP, Swerea IVF, Swerea SICOMP, Viktoria Swedish ICT)
TÖI
VTI
Mälardalen University
University of Borås
University of Skövde
University West
Umeå University

AB Volvo
Autoliv
Cycleurope
Folksam
Scandinavian Automotive Suppliers
If
Lindholmen Science Park
Volvo Car Corporation
ÅF
IRezQ
Malmeken
Trivector

Partners in italics are members (associated partners)

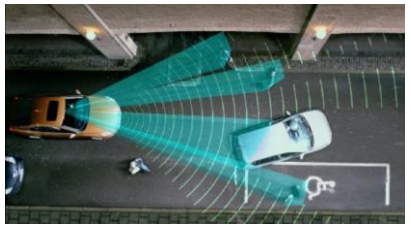
SAFER's Research areas

The research at SAFER is conducted in **research areas**, each with a governing *reference group*, led by a Research Area Director (RAD), which is supervising the project portfolio. The research areas are the formal arena for partners to meet and identify key issues and initiate needs-driven research. The reference groups include one representative from each SAFER partner (partner level 1 & 2) and representatives from the competence areas. The group is the base for establishing world-class competitive project portfolios.

The reference groups are responsible for development of road maps, which is considered to be the vision for SAFER's research agenda. Projects are initiated, discussed in the respective reference groups and recommended to the Management Group and the Board.

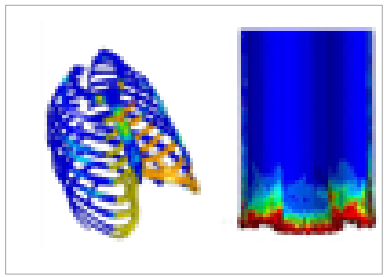
The reference groups meet four times per year to discuss projects. Those meetings are organized together with all research areas to make the meetings more efficient and reduce travel time for people attending in several groups. The reference groups also meet two additional times per year to discuss road maps and communication activities. Networking is an important part of the meetings.

SAFER's Research areas



Systems for accident prevention

Road user behaviour



Human body protection

Care and rescue

Real-world performance evaluation

Research area directors

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Real-world performance evaluation
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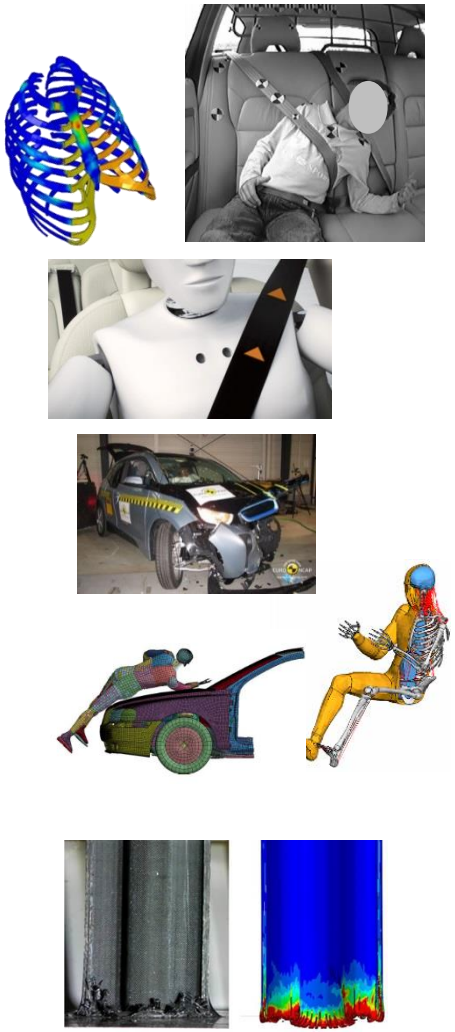
Human body protection

- Biomechanical injury mechanisms, responses and consequences – (incl pre-crash).
- Principles for protection including restraint usage and pre-sensing input.
- Structural requirements (design guidelines) regarding crashworthiness (self and opponent protection).
- Mechanical and mathematical occupant and unprotected road user models for complete crash sequence.
- Design and assessment tools (mathematical models and virtual testing) and system design optimization for vehicles.



Care & Rescue

1. Incident Detection & Actions
   a. eCalls, ACN (Automatic Crash Notification) and incident data for all road users incl. VRU
   b. Dispatch assessment, prioritizing and notification
   c. Support to C&R services en route

2. On-scene Activities
   a. Occult trauma detection
   b. Decision support and triage
   c. Extrication
   d. Post-crash fires
   e. Safety for care & rescue personnel

3. Reducing secondary effects of traffic accidents
   a. Eliminate additional accidents
   b. Reduce effects on traffic system

Road user behaviour

- Development of methods & tools to investigate driver state and behaviour (incl. different test environments, virtual testing, harmonisation between environments).
- Prerequisites for safe driving (incl. fitness to drive, effect of cognitive and physical impairments on driving performance).
- Human Machine Interaction (incl. adaptivity, multimodality, handover/transition problematic with automated driving).
- Driver Education and training (incl. driver education program, self-awareness, risk management).

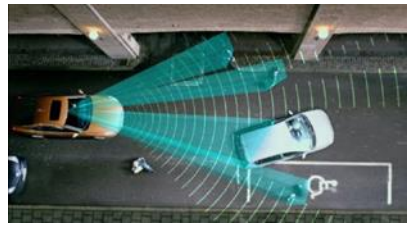
Real-world performance evaluation

This SAFER Research Area, covers:

- accident data analysis (including pre-crash analysis and simulation), naturalistic driving studies and field operational tests as well as analysis of data collected in controlled test environments and driving simulators.
- method development to process and analyse field data in new and innovative ways; moreover to standardize data recording, data sharing and other general aspects of data analysis.

Systems for accident prevention

Systems for accident prevention covers how different functions can predict a potential crash, and give input to the control of the vehicle to avoid it. Automated functions can even be designed to avoid hazardous situations. There has been a fast evolution since this topic was established some nine years ago and it continues to grow and expand due to the fast development of active safety systems, semi-automatic, fully automatic vehicles and connected traffic system research.

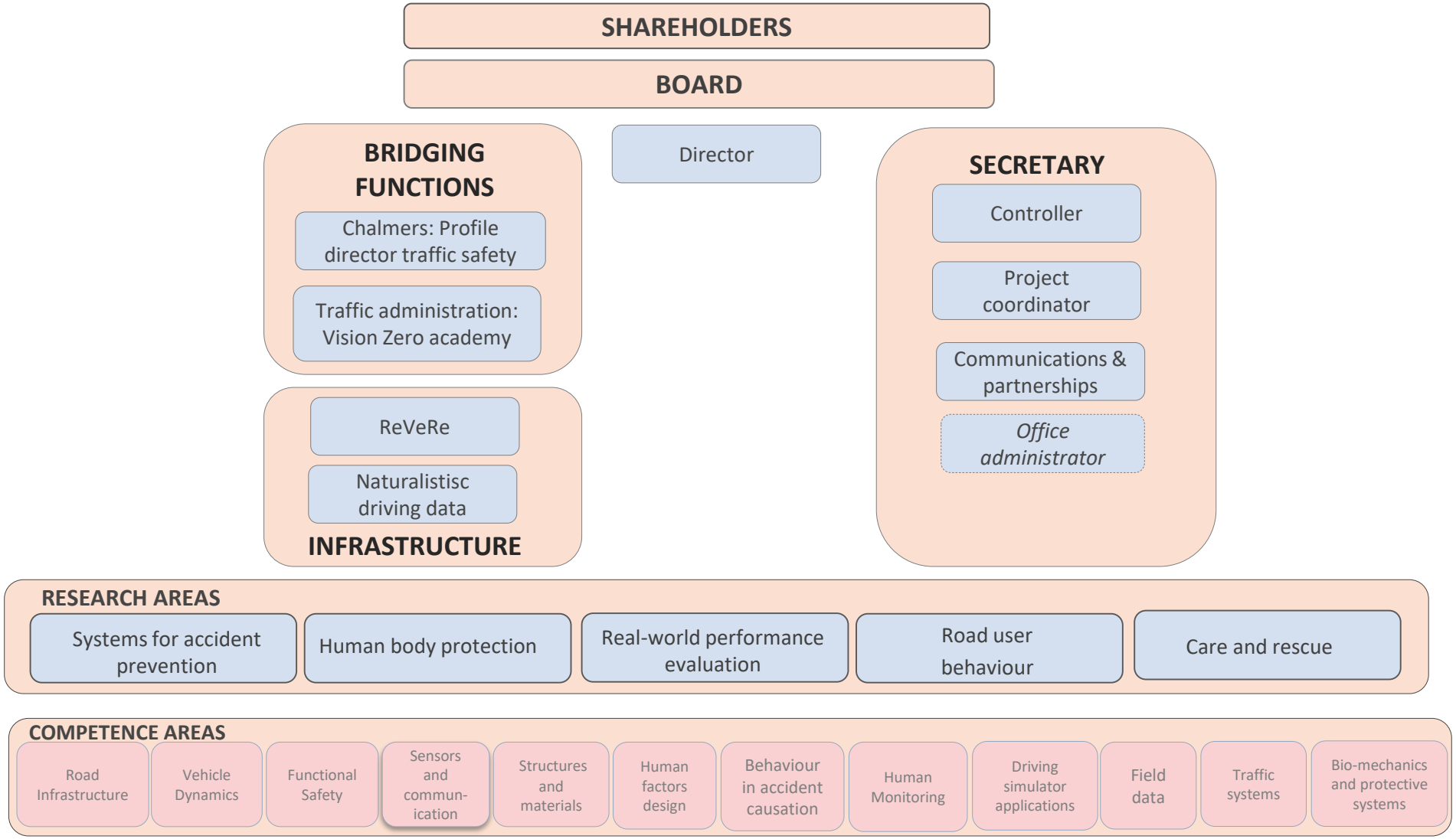


Reference group meetings 2017

Welcome to the meetings for 2017! Formal invitations will be sent out to the people that are going to attend in the reference groups. The set dates are:

- March 1
- June 1
- September 27
- November 7

SAFER'S ORGANISATION



SAFER's management team

- Director
- Controller
- Project coordinator
- Communications and partnerships
- Research Area Directors
- Bridning functions
  - Chalmers' profile director Traffic safety
  - Vision Zero academy
- SAFER's infrastructure
  - ReVeRe
  - Naturalistic driving data