

EVERSAFE

EVERYDAY SAFETY FOR
ELECTRIC VEHICLES

www.eversafe-project.eu

The EVERS SAFE project aims at evaluating every day safety for electric vehicles (EV). This motivates investigation over a broad scope of areas covering user attitudes and vehicle safety issues addressing active and passive safety. Uncertainty in the consumer's perception of electric vehicles (e.g. safety of batteries in crash situations, risk of electric shock during charging, etc.) can lead to negative safety evaluations. To address these concerns focus group sessions were conducted.

In total, 25 safety concerns distributed over 4 distinct categories were identified. It was concluded that safety-critical aspects vary both in terms of type of interaction and human involvement. These results allow to further adjust technical testing at the same time as the general public safety concerns are addressed.

Passive safety considerations for vehicles with traction batteries were studied since the layout of vehicle components is sensitive to the mechanical loading in collisions. A review of the distribution of crash types involving high acceleration or deformations was performed, where side and rear impacts were identified for further study. A model of an electric vehicle and critical sub components are under development. The goal is to apply the load cases, identified from real world collisions, in simulations and establish critical conditions for the energy storage system (ESS) which are not fully addressed in current regulations and standards. In parallel to these investigations, the electro-chemical behavior of ESSs is also being investigated.

Under the active safety scope, faults in the powertrain of a vehicle were studied since they can influence dynamic stability during driving. This can compromise safety for occupants and surrounding traffic. With this in mind, specific faults in an electric power train were identified and simulated. Three typical faults in an electric power train were selected, i.e. an inverter shut-down, a short circuit in the electric machine and a failure in the regenerative braking system. These were taken for further analysis with real drivers at a test track experiment and in a driving simulator study.

PROJECT DATA

Funding/€	Total cost/€	Duration
1.408.398	1.617.576	24 months

Partners	Swedish National Road and Transport Research Institute, SE Technische Universität Chemnitz, DE Fraunhofer-Gesellschaft, DE Volvo Car Corporation, SE KTH, Royal Institute of Technology, SE Federal Highway Research Institute, DE
----------	---

The final outputs of the work done in the EVERS SAFE project will be compiled as recommendations for safety standards which can be used for future legislative actions and handling guidelines.

>> ELECTRICAL
VEHICLE
SAFETY <<



EVERSAFE