



SIMUSAFE: SIMUlation of behavioural aspects for SAFEr transport

<http://SIMUSAFE.eu>

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This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N. 723386



Illustration of relationships between project simulators and real-world experience. Source: Courtesy of ITCL.

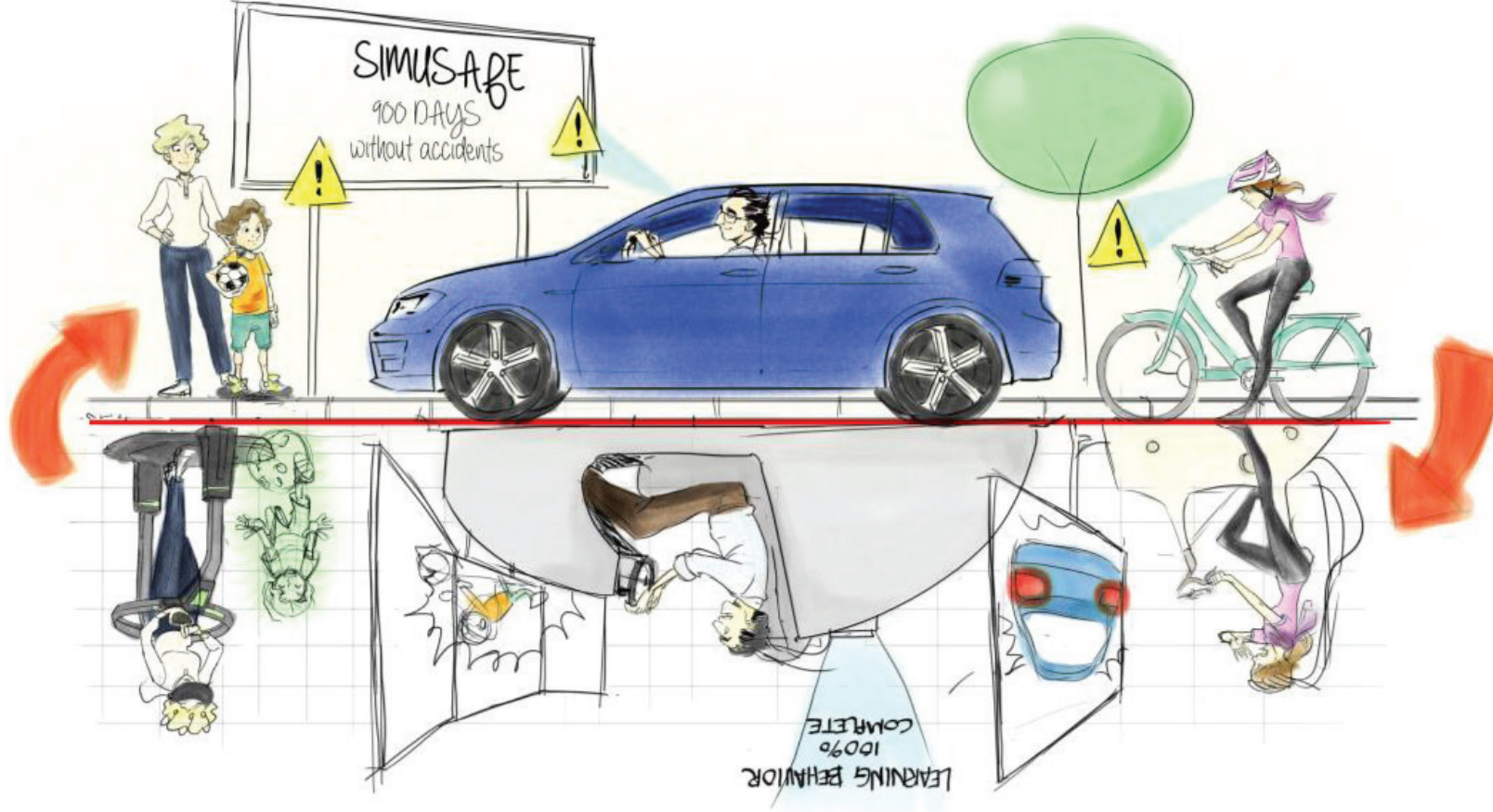
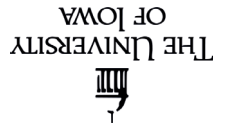
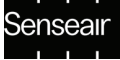


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Project Overview

SIMUSAFE aims to improve driving simulator and traffic simulation technology to safely assess risk perception and decision making of road users:

- Pedestrians
- Cyclists
- Motorcyclists and powered two wheelers
- Vehicle drivers

Currently, driving simulators and traffic simulation models have limited use in safety studies due to the limited realism of road users' behaviours in models.

SIMUSAFE will bridge this gap by collecting and integrating sources of road user behaviour to build more realistic simulation environments. The project is organised into three research cycles.

- First, project partners will collect naturalistic driving, riding, and walking behaviours in uncontrolled environments for a baseline.
- Second, we will collect behavioural and physiological responses under more controlled conditions to connect risk taking behaviour and cognition.

The above data-collection phases will be refined, correlated, and used to create more realistic multi-actor simulation models.

- Third, SIMUSAFE will study the behaviours and responses of road users driving, riding, and walking under high-risk situations and impairment conditions.

Project Goals

Behaviour modelling and data collection:

- Risk-taking across different transport modes
- Influence of infrastructure and environment

Naturalistic and simulated road user interaction:

- Analysis of driving and riding behaviour to develop more realistic simulator experiences
- Safe investigation of networked multimodal road users

Economic and social impact:

- Early identification of risky road user behaviours



Model bird's eye view of left turn. Source: Courtesy of ITCL.

SIMUSAFE will focus research on the most at-risk transportation situations by looking at dangerous road designs as well as the altered driving conditions that frequently impair road users.

Project expected outcomes will advance driver training programmes, our understanding of usefulness of vehicle safety devices, and the safer integration of new types of vehicles, i.e. automated vehicles.



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Pedestrian and driving simulators. Source: Courtesy of ITCL.