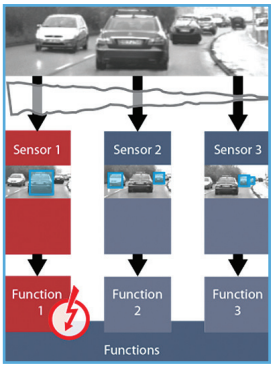
RobustSENSE

Robust and Reliable Environment Sensing and Situation Prediction

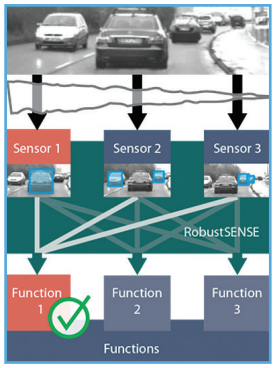
MOTIVATION AND OBJECTIVES

Today's driver assistance systems offer comfort and safety in sound environmental conditions. However, in harsh environmental conditions – when needed most – systems stop working due to reduced sensor information quality. Targeting on the area of highly automated driving, the improvement of perception, decision and planning under adverse conditions is one of the main challenges to be addressed. The goal of RobustSENSE is making sensing systems able to cope with real world requirements under all environmental conditions.

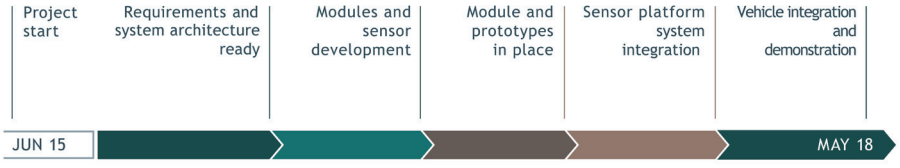


Today's systems decide in a binary manner on function availability.

Self monitoring across the system. It allows for adaptation to environment conditions at all levels.



PROJECT PLAN AND MILESTONES



Duration 36 months, June 2015 – May 2018

TECHNICAL APPROACH

RobustSENSE's main technical goal is to define, develop and evaluate measures for detecting performance degradation and for reacting to adverse conditions – for assistance systems on every level of an automated system all the way from sensor level up to strategy planning. The two key issues the project focuses on are:

- Each system component has to be able to monitor continuously its own performance and deliver this information to the other modules. This leads to a continuous overall system performance assessment facility, which will be used to adapt present driver assistance or automated driving capabilities to the envisaged system quality.
- Building on system redundancy and improved sensing performance e.g., with respect to the sensor setup and performance and available external data, embedded redundancy will be used to calculate the best environmental representation under given circumstances and present sensor reliability.

ACHIEVEMENTS

RobustSENSE aims at enhancing the robustness of all sensing methods and algorithms required for advanced driver assistance systems and automated driving. The project will contribute to enhanced road safety with a more reliable, secure and trustable sensing system:

- Reliable in harsh environmental conditions.
- Secure by self-diagnosis, adaptation and robustness.
- Trustable on every level of assistance and automation systems.

Budget	8.6 M€	**Funding**	3.3 M€
Duration	36 months	**Start**	June 2015
DG	Research & Innovation	**Contract n°**	661933
Coordinator	Werner Ritter, Daimler AG	**Contact**	werner.r.ritter@daimler.com
Partners	Daimler AG, EICT, AVL, Bosch, CRF, CTAG, Fico Mirrors SA, Fraunhofer, FZI, Modulight, Oplatek, Sick AG, UUlm, VTT		
Website	www.robustsense.eu		