



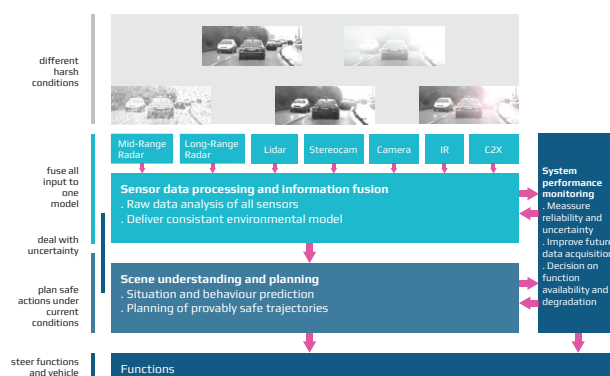
## Objectives

RobustSENSE develops a robust and reliable sensor platform for automated and autonomous driving. This platform overcomes the present problem of environmental perception systems failing in adverse conditions, and provides enhanced sensing performance. Such an improved platform is needed to achieve the necessary reliability of automated and autonomous driving functions for safe operation under all driving conditions.

## Relevance and Impact

European industry is leading the field of driver assistance systems, but OEMs from Japan and the USA have been catching up considerably in recent years. To maintain the lead in this important and fast growing technology field it is important to address the existing shortcomings of assistance systems, with a clear priority on the key one: the performance of the various available sensing systems. The functional range of driver assistance functions is limited, being useful only in close to ideal weather and light conditions because of limitations in the sensor components. This applies to the systems already commercially available as well as to new developments, especially self-driving vehicles which have recently been presented by Google and several automotive OEMs.

RobustSENSE will considerably strengthen Europe's position in the worldwide race towards autonomous vehicles by addressing precisely these sensorial shortcomings which at present make it impossible to provide reliable systems for automated and autonomous driving. These must support their user when support is needed most, namely while driving under adverse weather and light conditions.



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**Start** 1-6-2015  
**Duration** 36

**Total investment**  
M€ 10,74

**Participating organisations**  
15

**Number of countries**  
5

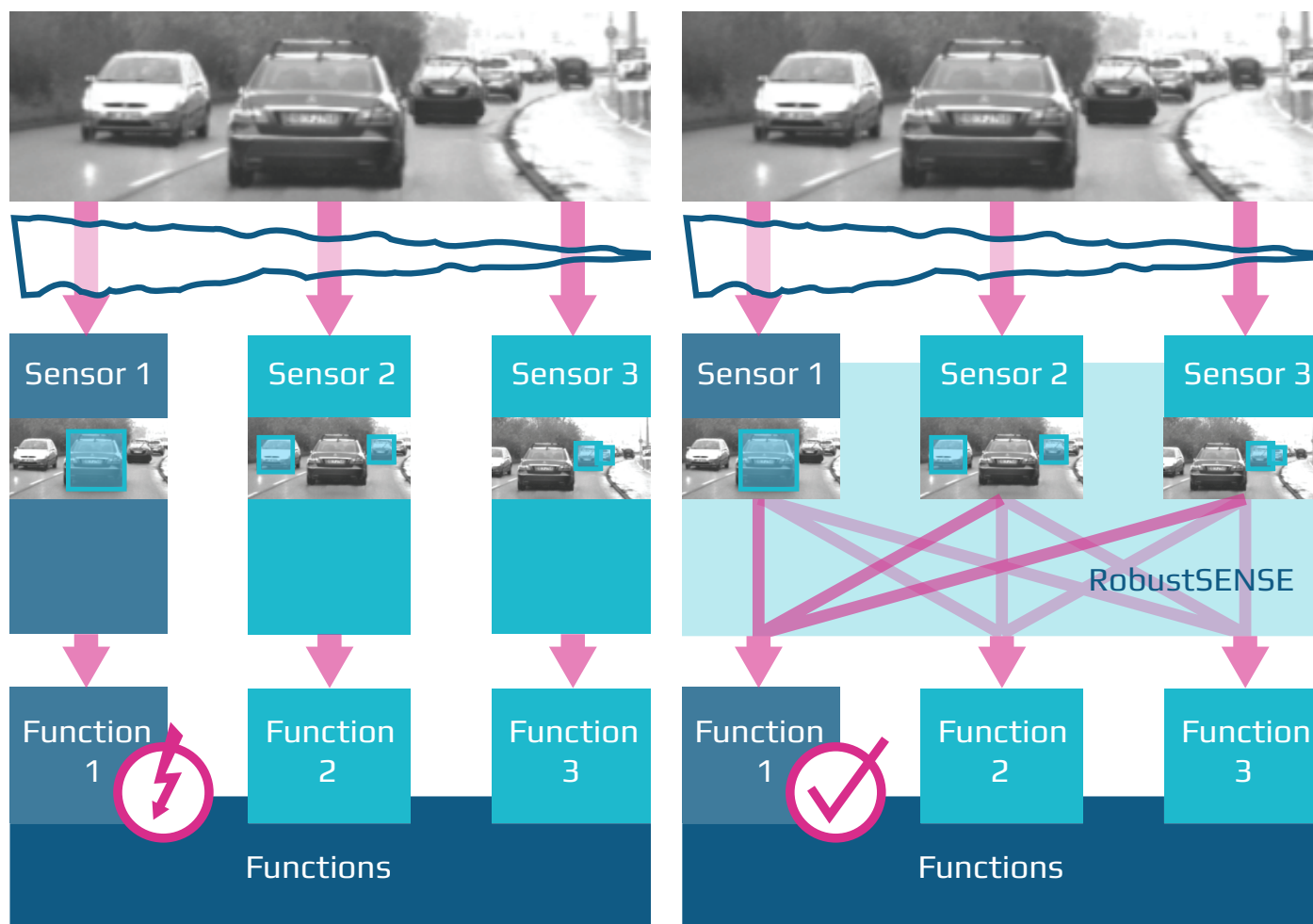


## Technical Innovation

RobustSENSE develops improved sensor technologies, advanced methods for sensor signal processing and innovative algorithms for sensor data fusion, scene understanding, behavioural planning and trajectory planning. This leads to two main innovations:

(i) Each component of the sensor platform is able to continuously monitor its own performance and deliver this information to the other modules. This leads to a continuous, overall system performance assessment facility, which is used to adapt current assistance or automated driving capabilities to the system quality that is presently available.

(ii) Building on system redundancy and improved sensing performance (e.g. with respect to the sensor set-up and performance, and available external data), embedded redundancy will be used to calculate the best environmental representation under given circumstances and present sensor reliability.



## Partners

### AT

AVL LIST GMBH

### DE

DAIMLER AG  
EUROPEAN CENTER FOR INFORMATION AND COMMUNICATION TECHNOLOGIES GMBH  
AVL DEUTSCHLAND GMBH  
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STIFTUNG FZI FORSCHUNGSZENTRUM INFORMATIK AM KARLSRUHER INSTITUT FÜR TECHNOLOGIE  
SICK AG  
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### ES

FUNDACION PARA LA PROMOCION DE LA INNOVACION, INVESTIGACION Y DESARROLLO TECNOLÓGICO EN LA INDUSTRIA DE AUTOMOCION DE GALICIA  
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