

interactIVe: ACCIDENT AVOIDANCE BY ACTIVE INTERVENTION FOR INTELLIGENT VEHICLES



The objective of the European research project interactIVe (accident avoidance by active intervention for Intelligent Vehicles) is to get a step closer to the vision of an accident-free traffic by developing a new generation of active safety systems.

In the year 2009 39.000 people have been killed on the European roads. The EC programme „Halving the number of road accidents victims on the European Union by 2010: A shared responsibility“, which has the aim to reduce the number of the annual traffic deaths to 27.000 up to the year 2010, shows clearly, that it still requires great efforts in relation to road safety. A decisive contribution to increasing road safety can be provided by Advanced Driver Assistance Systems (ADAS), which intervene before an accident occurs by warning the driver or by inducing counteraction that avoids the accident or mitigate its consequences.

The potential of active safety systems to increase road safety has been already shown in European research projects, as e.g. PREVENT. In interactIVe these approaches are taken up and developed further. For this reason the application range of active safety systems should be extended, the decision strategies of these systems should be improved and ADAS for collision mitigation for lower vehicle segments should also be developed.

The development of the different ADAS in order to reach these objectives is conducted in three sub-projects, in which every sub-project follows a different approach. Finally the developed ADAS are installed in seven demonstration vehicles and are evaluated.

- The objective of the subproject SECONDS (“safety enhancement through continuous driver support“) is to develop ADAS, which supports the driver continuously during the driving respectively warns the driver in dangerous situations in time. One exploratory focus is the interaction between driver and vehicle. Besides the increasing of the traffic safety the ADAS of this subproject will improve the fuel economy and the driving comfort.
- The subproject INCA (“integrated collision avoidance and vehicle path control“) focuses on the development of ADAS functions combining lateral longitudinal active interventions in order to avoid accidents. Thus accidents, which result in many different situations like

for example lateral accidents and head on collisions, can be avoided. Basis for the accident avoidance is a "Vehicle Path Control" module that computes a trajectory depending on the situation to avoid an accident.

- The subproject EMIC ("cost-efficient emergency intervention for collision mitigation") deals with the development of collision mitigation systems for reasonable cost, which focus on the pre-crash phase. It is expected that such systems can reach a high market penetration in medium-time period and thus will make a big contribution to road safety.

The ika leads in interactive the subproject SP7 „Evaluation“. First an evaluation framework is developed based on the results of previous European research project (for example PReVENT) in order to test the ADAS within the subproject "Evaluation". Based on the framework the evaluation of the ADAS is conducted. The evaluation is subdivided into the technical assessment, the user-related assessment und the impact assessment. Besides the evaluation of the technical aspects of the ADAS also the legal aspects of the systems are investigated in this subproject.

The project has been start on January 1st 2010 and the duration of the project is 42 month. The total costs of the project are adding up to EUR 29 million, from which EUR 17 million are funded by the European Community.

In the project 28 partners from 10 countries are involved besides ika:

Ford Research & Advanced Engineering, BMW Research and Technology, Centre Ricerche Fiat, Daimler AG, Volvo Technology Corporation, Volkswagen AG, Volvo Car Corporation, Autoliv, Continental, Delphi Delco Electronics Europe, Navteq, TRW, Bundesanstalt für Straßenwesen, The Galician Automotive Technological Centre (CTAG), Deutsches Luft- und Raumfahrtzentrum (DLR), Institute of Communication and Computer Systems (ICCS), Netherlands Organisation for Applied Scientific reserach (TNO), VTT Technical Research Centre of Finland, Lund University, Université Joseph Fourier Grenoble, Chalmers University of Technology, University of Passau, Czech Technical University in Prague, University of Trento, Allround Team, Alcor und European Center for Information and Communication Technologies (EICT)

Interactive is an ika-project founded by the EU

