i-GAME
Interoperable GCDC AutoMation Experience

Funding: European (7th RTD Framework Programme)
Duration: Oct 2013 - Sep 2016
Status: Complete
Total project cost: €3,764,220
EU contribution: €2,599,870

CORDIS RCN: 110506

Objectives:
The objective of i-GAME is to develop technologies that speed-up the real-life implementation of automated driving, which is supported by communication between the vehicles and between vehicles and road-side equipment. These automated systems must be safe and able to cope (to a certain extent) with different circumstances. The technology must not be too specific to be able to be used in a wide range of vehicles and traffic scenarios.

For i-GAME the solution is found in so-called supervisory control, that provides both event-driven control to initiate vehicle manoeuvres (e.g. a car wants to merge on a highway) and real-time control to execute the manoeuvres (i.e. vehicles make a space for the merging vehicle and the merging vehicle steers into the empty space). These kinds of scenario's require that the participating vehicles and road-side equipment are able to communicate and cooperate with each other, which is called interoperability.

The interoperability in i-GAME is ensured on the one hand by a reference group of OEM's and suppliers, and, on the other hand, through the participating (university) teams in a second edition of the Grand Cooperative Driving Challenge.

For the design and setup of the automated systems i-GAME uses a parallel approach.

- Firstly, a functional architecture will be developed. The components of the system (like the communication and the overall supervisory control system) will be developed on simulation level first and then tested in practice using benchmark vehicles.
- Secondly, to focus on interoperability and thus speed up real-life implementation, a series of verification and validation workshops is held, having its climax in the final challenge on cooperative automated driving, together with leading RTDs, and supported by OEMs and suppliers.

Typical examples of multi-vehicle platoon manoeuvres that will be part of the challenge are platoon forming, priority and speed adaptation (including stop) at a traffic light, and automatic or supported vehicle merging based on fusion of in-vehicle and on-roadside information.

This open approach creates a multi-vendor playground and should catalyse the scale-up and commercial roll out of vehicles equipped with the automated solutions. Finally, the results will be presented to stakeholders such as standardization bodies, road authorities, OEMs and suppliers to create a new reference for practical implementation of automated driving solutions.

Parent Programmes:
FP7-ICT - Information and Communication Technologies

Institute type: Public institution
Institute name: European Commission
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Partners:
- IDIADA AUTOMOTIVE TECHNOLOGY SA, Spain;
- TECHNISCHE UNIVERSITEIT EINDHOVEN, Netherlands;
RISE VIKTORIA AB, Sweden;

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### Technologies:

- Advanced driver assistance systems  
- Sensor and Communication Platform for ADAS system  
**Development phase:** Research/Invention

### STRIA Roadmaps:

- Cooperative, connected and automated transport

### Transport mode:

- Road transport

### Transport sectors:

- Passenger transport, Freight transport

### Geo-spatial type:

- Other