PROJECT

**TrustVehicle**

**Improved trustworthiness and weather-independence of conditional automated vehicles in mixed traffic scenarios**

**Funding:** European (Horizon 2020)

**Duration:** Jun 2017 - May 2020

**Status:** Complete

**Total project cost:** €4,998,904

**EU contribution:** €4,998,904

CORDIS RCN: 210917

**Objectives:**

Automated driving can be implemented with relatively simple controllers if the current location of the ego vehicle and the current and future locations of other road users are known without uncertainty. However, this is not going to happen in the initial stages of the introduction of automated driving systems into the market. As a consequence, system and human driver uncertainty pose a significant challenge in the development of trustable and fault-tolerant automated driving controllers, especially for conditional automation (SAE level 3) in mixed traffic scenarios.

The TrustVehicle consortium brings together participants from the whole vehicle value chain to enhance safety and user-friendliness of level 3 automated driving systems. The main objectives are:

1. the systematic identification of critical road scenarios based on in-depth analysis of possible traffic situations and human behaviour
2. the setup of new tools for the cost- and time-effective assessment of driver-in/off-the-loop situations
3. design of controllers and sensor fusion systems capable of dealing with complex, uncertain and variable road scenarios to enhance road safety
4. the implementation of intuitive human-machine interfaces for the safe management of the transition phases taking into account user acceptance and gender-specific aspects
5. the establishment of an adaptive and agile vehicle validation based on self-diagnostics and data logging to steadily extend the list of relevant scenarios and test cases.

The outputs of the TrustVehicle project will be extensively assessed in real-world operating conditions on four demonstrators representing four vehicle classes. End users of the technology will systematically and thoroughly express their requirements, expectations, and concerns during the consortium activity. Special focus will be put on the demonstration of the fault-tolerant and fail-operational system behaviour at any time and for different kinds of weather conditions.

**Parent Programmes:**

H2020-EU.3.4. - Horizon 2020: Smart, Green and Integrated Transport

**Institute type:** Public institution

**Institute name:** European Commission

**Funding type:** Public (EU)

**Lead Organisation:**

Kompetenzzentrum - Das Virtuelle Fahrzeug Forschungsgesellschaft M.b.h.

**Address:**

Inffeldgasse 21a / 1. Stock
8010 GRAZ
Austria
Organisation Website:
http://www.v2c2.at

EU Contribution: €390,000

Partner Organisations:

Linkker Oy
Address:
KORITIE 2
15540 VILLAHDE
Finland
EU Contribution: €380,000

Cisc Semiconductor Gmbh
Address:
Lakeside B07
9020 Klagenfurt
Austria
EU Contribution: €315,000

Infineon Technologies Austria Ag
Address:
SIEMENSSTRASSE 2
9500 VILLACH
Austria
Organisation Website:
http://www.infineon.com/austria
EU Contribution: €440,041

Ideas & Motion Srl
Address:
Via Santa Margherita 8
12051 Alba
Italy
EU Contribution: €300,625

Volvo Personvagnar Ab
Address:
Avd 50090 Hb3S
405 31 Goteborg
Sweden
EU Contribution: €487,250

Teknologian Tutkimuskeskus Vtt
Address:
TEKNIIKANTIE 21
02150 ESPOO
Finland
Organisation Website:
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<td>Valeo Vision Sas</td>
</tr>
<tr>
<td><strong>Address:</strong> RUE SAINT ANDRE 34 93012 Bobigny France</td>
</tr>
<tr>
<td><strong>Organisation Website:</strong> <a href="http://www.valeo.com">http://www.valeo.com</a></td>
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<tr>
<td><strong>EU Contribution:</strong> €450,000</td>
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<tr>
<td>Avl List GmbH</td>
</tr>
<tr>
<td><strong>Address:</strong> Hans-List-Platz 8020 Graz Austria</td>
</tr>
<tr>
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<tr>
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<tr>
<td>Tofas Turk Otomobil Fabrikasi Anonim Sirketi</td>
</tr>
<tr>
<td><strong>Address:</strong> Buyukdere Cad Tofas Han 145 Kat 4-5 Zincirlikuyu 34394 Sisli Istanbul Turkey</td>
</tr>
<tr>
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</tr>
<tr>
<td>Ford Otomotiv Sanayi Anonim Sirketi</td>
</tr>
<tr>
<td><strong>Address:</strong> AKPINAR MAH HASAN BASRI CAD NO 2 SANCAKTEPE 34885 ISTANBUL Turkey</td>
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<tr>
<td>University Of Surrey</td>
</tr>
<tr>
<td><strong>Address:</strong> Stag Hill Guildford GU2 7XH United Kingdom</td>
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**Technologies:**
- Connected and automated vehicles
- Controllers and sensor fusion systems for automated vehicles

**Development phase:** Research/Invention
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**STRIA Roadmaps**: Cooperative, connected and automated transport  
**Transport mode**: Road transport  
**Transport sectors**: Passenger transport, Freight transport  
**Geo-spatial type**: Other