

***Transition Areas
for Infrastructure-Assisted Driving***

Newsletter nr. 2 | June 2018



Welcome to the second newsletter of the European 'TransAID' Horizon 2020 project!

We would like to take this opportunity to update you on our research activities of the past months. You may be interested to know that TransAID has now defined specific use cases related to obstacles blocking a lane, smoother merging areas, intersection handling due to incidents, ... These are important as they are currently highly likely to trigger a transition of control from the vehicle to its driver.

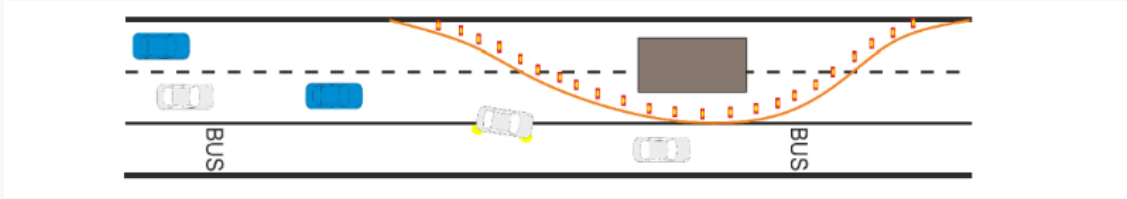
So, read on for more information, and we will be back after the summer vacation!

Julian Schindler

Update on our research and development activities

TransAID stands for *Transition Areas for Infrastructure-Assisted Driving*. It is our aim to develop and demonstrate traffic management procedures to enable smooth coexistence of automated, connected, and conventional vehicles. This is especially applicable at locations and situations where automated vehicles have to change their level of automation due to missing sensor inputs, complex

situations, ... TransAID is backed by a consortium of 7 partners from 6 European countries, and runs from September 2017 until August 2020.



Use cases, scenario definitions and modelling requirements

To identify situations relevant to the TransAID project, we looked at state-of-the-art literature, held a workshop with road authority stakeholders, consulted advisory board members, and interviewed experts. The findings have been combined to identify the relevant aspects for TransAID scenarios and Transition of Control (ToC) in general. We then grouped these aspects into three classes: (i) environment, (ii) automated driving functions, and (iii) the ToC process.

The large number of aspects affecting automated vehicle behaviour posed a challenge to determine which variables exactly compose a TransAID situation. These aspects can also possible trigger conditions in combination with the many uncertainties involved. We therefore needed a generic approach that would work more or less independent of those variables.

As a solution, we defined five services in TransAID, preventing, managing, or distributing ToC or Minimum Risk Manoeuvres. These services which can be applied to many different situations, thereby creating use cases.

We selected five of these use cases for further study by means of simulations and real world experiments. We also created timelines for these use cases, and listed the requirements regarding the vehicle modelling, communication, and traffic management measures. Currently, we are working these out into more detail.

The results so far have been published on our [website](#) as Deliverables [D2.1](#) and [D2.2](#).

Modelling vehicle automations and related driving behaviour

One of the main research topics in TransAID is to model the existing and upcoming vehicle automations and automated vehicles' driver behaviour. This involves longitudinal motion via a (cooperative) adaptive cruise control (CACC) model, lateral Motion via a parameterised sub-lane model, and Transition of Control and Minimum Risk Manoeuvres.

The control law in the ACC/CACC control algorithm is divided into three modes: (i) the speed mode (i.e. cruising mode) which is designed for maintaining the by

the driver desired speed, (ii) the gap-closing mode which enables the transition from speed control mode to gap control mode and is triggered when the space gap to the preceding vehicle gets sufficiently small, and (iii) the gap mode which is designed for maintaining a constant time gap between the controlled vehicle and its predecessor.

Stay tuned, as the results of our modelling efforts will soon be made available!

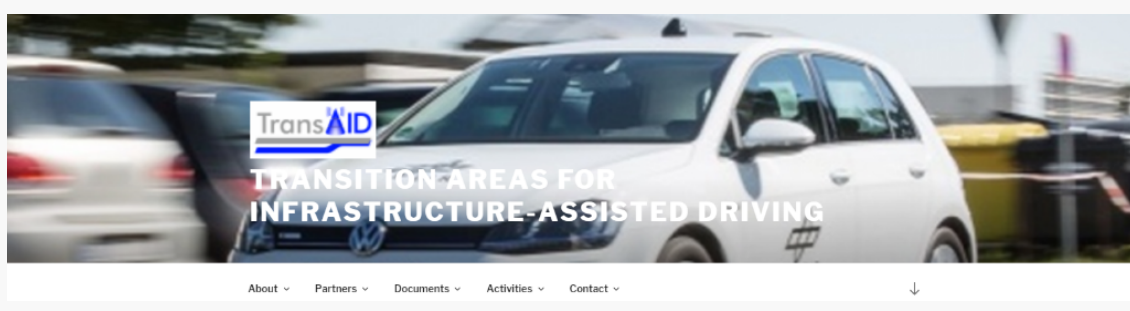
Have you seen us?

- 05/12/2017 | The Netherlands | TUDelft & Dynniq Joint Workshop
- 16-19/04/2018 | Austria | 7th Transport Research Arena (TRA2018)
- 19-20/04/2018 | Austria | CARTRE
- 25-27/04/2018 | Slovenia | TEN-T Days
- 14-16/05/2018 | Germany | SUMO User Conference
- 11-12/06/2018 | Italy | 2nd Symposium on Management of Future motorway and urban Traffic Systems (MFTS)
- 19/06/2018 | Car 2 Car Communication Consortium (C2C-CC) WG Roadmap Meeting

Join us at:

- 11-12/09/2018 | Germany | 22nd International Forum on Advanced Microsystems for Automotive Applications (AMAA)
- 17-21/09/2018 | Denmark | 25th ITS World Congress
- 15-17/10/2018 | Portugal | 16th International Conference on ITS Communications (ITST)
- 24/10/2018 | UK | MAVEN workshop on connected & automated vehicles & urban traffic management
- 04-07/11/2018 | Hawaii | IEEE Intelligent Transportation Systems Conference (ITSC)
- 03-06/06/2019 | The Netherlands | European ITS Congress
- 09-12/06/2019 | France | IEEE Intelligent Vehicles (IV)

You can access all available information via [our website!](#)



Contact information

If you want to get in touch with the TransAID project, please send us an email message at info@transaid.eu, or contact our Project Coordinator Mr. [Julian Schindler](#), or our Dissemination Leader Mrs. [Meng Lu](#).



The TransAID Consortium consists of 7 partners from 6 European countries: DLR, CERTH, Dynniq, Hyundai Motor Group, European Technical Center, MAP Traffic Management, Transport & Mobility Leuven, and Universidad Miguel Hernández de Elche (UMH).

In addition, there are also 12 associated partners: Attikes Diadromes, Car2Car-Communication Consortium, DGT, ECTRI, EURECOM, Huawei, IKUSI, ITS Niedersachsen, Region of Central Macedonia, Rijkswaterstaat, TRL, and University of Twente.



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