



Fraunhofer

IAO

FRAUNHOFER INSTITUTE FOR
INDUSTRIAL ENGINEERING IAO

SYMPOSIUM

INTUITIVE PARTIALLY AND HIGHLY AUTOMATED DRIVING

Concepts for Intuitive Driver-Vehicle Cooperation &
Interaction at Different Levels of Automation

Aachen, November 27, 2019



PREFACE



Automated driving should make the traffic of the future safer and more fluid, which is why science and industry are intensively researching the technical implementation of automated driving. In addition to technical feasibility, cooperation and interaction between driver and vehicle will be of particular interest at higher automation levels, as successful interaction will form the basis for broad acceptance of automated vehicles among the population. During this symposium, we will present and discuss what this cooperation might look like and which operating options are conceivable for intuitive cooperation between driver and vehicle in the future.

Besides presentations giving a clear overview of the migration from assisted to partially and highly automated driving, the results of the Vorreiter project will be presented together with our partners at RWTH Aachen (IAW), Fraunhofer IAO, Valeo (Valeo Schalter und Sensoren GmbH), the Institute of Human Factors and Technology Management, University of Stuttgart (IAT Universität Stuttgart), and the Berlin School of Economics and Law/ Berlin Institute for Safety and Security Research (HWR Berlin/ FÖPS Berlin), including live demonstrations of interaction concepts in different types of driving simulations.



The aim of the Vorreiter project was to develop and investigate steering gestures for partially and highly automated driving, based on a design for all concept that increases safety and usability for all users, while also enabling special user groups (people with disabilities, senior citizens with limited driving abilities, novice drivers) to drive automated vehicles in order to gain more individual autonomy.

In the morning and the early afternoon, the event will be accessible exclusively for members of the scientific and industrial community to allow for professional exchange. Expert lectures will be held (for further information, you may want to have a look at the schedule). In the late afternoon, the event will be open to the public free of charge as a form of so-called Citizen Science. Interested citizens will have the chance to listen to short presentations on automated driving (in German) and to experience possible concepts firsthand in state-of-the-art driving simulators.

We look forward to your active participation.

Scientific coordination

Prof. Dr. Frank Flemisch, RWTH Aachen

Dr. Frederik Diederichs, Fraunhofer IAO Stuttgart

PARTNERS



RWTHAACHEN
UNIVERSITY



Fraunhofer
IAO

Valeo



Universität Stuttgart

Institut für Arbeitswissenschaft und
Technologiemanagement IAT



Hochschule für
Wirtschaft und Recht Berlin
Berlin School of Economics and Law

GEFÖRDERT VOM



Bundesministerium
für Bildung
und Forschung

VDI | VDE | IT

SCHEDULE

WEDNESDAY, NOVEMBER 27, 2019

10.30 a.m. **Welcome Coffee & Registration**
Prof. Frank Flemisch & Dr. Frederik Diederichs
IAW RWTH Aachen & Fraunhofer IAO, Stuttgart

Welcome Address

11.00 a.m. **Human-Technology-Interaction
for Intelligent Mobility**
tbd, VDI/VDE IT (Germany)

Expert Lectures

11.15 a.m. **Towards Symbiotic Driving – Control and
Co-operation with Intelligent Vehicles**
Prof. David Abbink
Delft University of Technology (Netherlands)

11.45 a.m. **Gesture Based Partially and Highly Automated
Driving – Overview over Three Years of BMBF
Project Vorreiter**
Prof. Frank Flemisch
IAW RWTH Aachen (Germany)

**12.15 p.m. Maneuver-Based Driving – a Steering
Paradigm Change for Automated Vehicles**

*Bernhard Döntgen & Dr. Frederik Diederichs &
Anja Valeria Bopp*

*Valeo Schalter und Sensoren GmbH, Bietigheim &
Fraunhofer IAO, Stuttgart &
IAT, University of Stuttgart (Germany)*

**1.00 p.m. Canapés with Experts / Vorreiter Simulators
and Wizard-of-Oz-Vehicle**

**2.30 p.m. The TeamMate Car: Results from the
AutoMate Project**

*Dr. Mohamed-Cherif Rahal
Vedecom (France)*

3.00 p.m. An OEM's Perspective on Automated Driving

*Yannick Forster
BMW (Germany)*

3.30 p.m. The Legal Point of View: an Outline of Current Legislation and Regulations on the Subject of (Cooperative) Automated Driving

Prof. Clemens Arzt

Berlin School of Economics and Law/Berlin Institute for Safety and Security Research (HWR Berlin/FÖPS Berlin) (Germany)

4.00 p.m. End of Conference

Public Event: Citizen Science (in German)

4.30 p.m. Lectures and Vorreiter Simulators

- Open to the Public
- Free of Charge
- Panel Discussion

6.00 p.m. End of the Event

6.30 p.m. Dinner together with speakers and participants (at one's own expense)

MORE INFORMATION ABOUT THE EVENT



www.iao.fraunhofer.de/vk636.html

GOT CURIOUS?



Newsletter IAO-News and IAO-Events
informationen.iao.fraunhofer.de



Events
www.iao.fraunhofer.de/lang-de/veranstaltungen



IAO-Blog
blog.iao.fraunhofer.de



Twitter
twitter.com/iaostuttgart



YouTube
youtube.com/user/FraunhoferIAO