4th International VDI Conference 2017

Automated Driving

July 5–6, 2017, Berlin, Germany

- New Mobility Concepts and the Future of Urban Mobility
- Artificial Intelligence and Self-Driving Cars
- OEM Perspectives on Automated and Autonomous Driving
- Mapping Technologies and Traffic Data
- Sensors, Automotive 3D Reconstruction and Information Technology
- Security, Safety and Standards

+ International VDI Workshops
+ Panel Discussion: Revolution or Evolution from Automated to Autonomous Driving?

Meet experts from the following companies:

An event organized by VDI Wissensforum GmbH
www.vdi-international.com/automateddriving

Includes free entrance to the ConCarExpo 2017!
**Who shall attend the International Conference Automated Driving?**

This international conference is directed at engineers and automotive experts from all over the world. Engineers, designers and specialists from car makers and suppliers of the automotive industry should attend this technical event, in particular those working in:

- ADAS/Driver Assistance and Active Safety
- Prospective Autonomous Driving
- Electric/Electronics, Software and Car-IT
- Connectivity/Connected Vehicles

**Explore the connected automotive Ecosystem**

The “Automated Driving” is part of the ConCarExpo – The leading International Trade Fair for Connected Car & Mobility Solutions in Europe. The ConCarExpo unites four technical conferences, a huge range of international exhibitors, innovative start-up pitches and excellent networking opportunities in the connected automotive ecosystem.

**Visit four parallel running conferences with one ticket**

Your benefits:

- 4 for 1 Four high class technical international conferences with one ticket
- 4th International VDI Conference Automated Driving
- 4th International VDI Conference HMI & Connectivity
- 3rd International VDI Conference IT Security for Vehicles
- 1st International VDI Conference Digital Infrastructure & Automotive Mobility
- + 100 International exhibitors at ConCarExpo
- + 100 Speeches at the four conferences and on the exhibition floor
- Over 500 Attendees at the conferences and 1500 Trade Fair Visitors
- Networking Hotspots Huge evening reception, roundtables, workshops, world cafés
- Car Pavillon and User Experiences
- 16 Start up-Pitches
- + 20% International OEM Delegates
I. Future Mobility and Driverless Cars

10:15 The Future of Urban Mobility
- The concept of mobility faces enormous changes
- Car ownership and usage patterns will soon look different
- Ride sharing at the core of mobility, enabling potentials of autonomous driving
Roland Werner, Head of Government Affairs & Policy DACH, Uber Germany

10:45 Towards permanent Deployments with shared Autonomous Vehicles
- Shared autonomous vehicles
- Sensing, navigation and control
- Permanent deployments and semi controlled environments
Sjoerd van der Zwaan, M.Sc., Chief Technology Officer, 2getthere, The Netherlands

11:15 AI – The Solution to Self-Driving Vehicles and Transportation
- AI and DeepLearning software development
- AI computing and software platform for automated to self-driving vehicles
- Testing and validation in virtual and simulated environment for autonomous systems
Serkan Arslan, Director Business Development, NVIDIA GmbH, Germany

II. OEM Perspectives on Automated and Autonomous Driving

12:15 Environment Model for Autonomous Driving – The upcoming Challenges
- Central sensor fusion for autonomous driving
- Challenges on meeting safety goals
- Test and validation of the environmental model
- Computing platform for sensor fusion and scene interpretation
Dr. Hariolf Gentner, Senior Manager, Environmental Model, Driver Model, Sensor Related Software, co-author: Dr. Michael Manz, both BMW AG, Germany

12:45 Cooperative Automated Driving
- Challenges in automated driving
- The role and design of V2X in addressing current challenges
- Case study: Cooperative mapping, perception
- Importance of V2X standardization for automated driving applications
Dr. Gaurav Bansal, Senior Researcher, Network Division, Toyota InfoTechnology Center, USA

13:15 Lunch & visit of the accompanying trade fair ConCarExpo

III. The Future of Self-Driving Cars

15:00 Driverless Cars – Revolution or Evolution from Automated to Autonomous Driving?
Panelists:
Serkan Arslan (NVIDIA), Roland Werner (Uber), Gaurav Bansal (Toyota ITC), Chan Lieu (Venable), Sjoerd van der Zwaan (2getthere)

16:00 Networking & coffee break

16:30 The Future of Self-Driving Cars – A US Perspective
- Overview of industry development efforts of self-driving vehicles
- US Department of Transportation’s Federal Automated Vehicle Policy Guidance
- Timeline and expectations for developing regulations, standards, and effects on deployment
Chan Lieu, Senior Legal Advisor, Venable LLP and former Director of Government Affairs, Policy and Strategic Planning at NHTSA, USA

17:00 Thinking Outside the Box – Autonomous Tractors
- Autonomous vehicles in agriculture and concept vehicles
- Driverless vehicle challenges in agriculture
- Autonomous vehicle’s place in agriculture
Frank Rabusic, B.Sc., Product Manager – AutoGuidance, Product Development, CNH Industrial, USA

17:30 Chair’s remarks

17:45 Evening Keynote on the ConCar Forum Stage:
Volvo Cars development of Autonomous Vehicles, in cooperation with Uber and Zenuity
Kent Melin, M.Sc., Senior Technical Leader, Electrical System Design, Volvo Car Group, Sweden

18:30 End of conference day one

Get-together with Participants of all parallel Conferences
At the end of the first conference day we kindly invite you to use the relaxed and informal atmosphere for in-depth conversations with other participants and speakers.
IV. Mapping Technologies and Traffic Data

09:15 The Autonomous Driving Big Data Loop
- HD maps as “superhuman memory” in autonomous driving
- Precise localization with the help of map attributes
- The data cycle connecting car and cloud
Willem Strijbosch, M.Sc., Head of Autonomous Driving, TomTom, The Netherlands

09:45 Towards HAD-map-change Detection on Backend Server
- Publicly funded project Ko-HAF (Cooperative Highly Automated Driving): Summary and detailed information on backend server activities
- Fleet sensor data based aggregation for HAD maps
- Backend server based map representation
- Fleet sensor data format and requirements on processing
Dr.-Ing. Lukas Klejnowski, Research Engineer, co-authors: Dr. Markus Rausch, Dr. Artur Quiring, Dr. Holger Mielenz, all: Robert Bosch GmbH, Germany

10:15 Traffic Data in the Service of Delegated Driving
- Prospects for using the autonomous vehicle in real traffic conditions
- Exploring historical traffic data
- Adding a new experience level with data science to the car manufacturers in order to maximize promises to the drivers
Philippe Goudal, Director Quality & Innovation, Mediamobile, France

10:45 Networking & coffee break

V. Sensors and Information Technology

11:30 LiDAR Augmentation Techniques for Autonomous Driving
- Overview of LiDAR real-time data and what’s LiDAR Augmentation?
- Calibration-less, Synchronisation-less Sensor Fusion
- Augmented Perception through live 3D Mapping
- Map-less Segmentation
Raul Bravo, CEO co-founder, DIBOTICS, France

12:00 Automotive 3D Reconstruction based on Multi Pixel Headlight Systems
- Structured light outline
- Characterization of autonomous structured light
- Simulation environment structure and preliminary depth measurement
Christian Schneider, M.Sc., Development Engineer, Driver Assistance – Platform/Systems, Porsche AG, Germany

12:30 Humanlike AI for self-driving Cars
- Artificial intelligence and driverless cars
- Computer vision for automated driving
- Understanding state of mind of road users
Sid Misra, CEO, Perceptive Automata, Sam Anthony, Harvard University, both USA

VI. Security, Safety and Standards

15:15 Secured & Failsafe Over The Air Upgrade of ECUs
- Secured data transfer over the air of the ECU firmware
- Delta upgrade of firmware image files
- Efficient OTA upgrade methods – Enabling normal ECU function execution during firmware programming
- Failsafe OTA upgrade methods – Effective handling of disruption during upgrade/download of firmware files or download of corrupted firmware files
Annie Smitha Paul, B.E., Manager, Transportation Business Unit, Tata Elxsi, India

15:45 AUTOSAR for Connected and Autonomous Vehicles – The AUTOSAR Adaptive Platform
- Overview and achievements
- New challenges and use cases
- AUTOSAR adaptive platform
- New cooperation model
Dr.-Ing. Thomas Scharnhorst, AUTOSAR Spokesperson, AUTOSAR Development Partnership, co-authors: Simon Fürst and Rinat Asmus, all: BMW AG, Germany

16:15 Safety for Automated Driving – From Practical Application Experiences to a New, Hazard-driven Acceptance Framework
- Application experiences with functional safety for automated vehicle prototypes
- Extension of classical safety approaches for automated vehicles functions (SOTIF)
- New hazard-based analysis methods (STPA, STAMP)
Hagen Böhmert, System Safety Engineer, Division Chassis and Safety Systems & Technology, Continental Teves AG & Co. oHG, Harald Günther, Product Manager Automotive, Global Competence Center Functional Safety and Cyber Security, SGS-TÜV Saar GmbH, both Germany

16:45 Farewell coffee in the accompanying trade fair ConCarExpo

17:00 End of conference
International VDI Workshop

**Impact of highly Automated Driving on Mobility Demand and Energy Consumption**

**Workshop Chair:**
Patrick Will, Manager and Lead for Connected and Automated Vehicles and Tjark Eissfeldt, Consultant, both FEV Consulting GmbH

**Date and venue:**
July 4, 2017
Berlin, Germany

**Content**
Besides changing the mobility demand and pattern of whole societies, self-driving vehicles have a strong potential to enhance safety and comfort as well as energy efficiency and drivability. Combining these objectives with the requirement of maintaining a human-like driving style poses many challenges. One, for example, is finding the right composition of powertrain type, configuration and self-driving software kit. An effective synthesis is expected to require contribution from both deep-learning as well as rule or model-based systems. The capabilities of these systems are constantly enhanced by experts in this field.

In this workshop, the major goal is to understand the impact of automated driving on the energy demand of the vehicle. This includes the right powertrain type / composition and software capabilities. The impact of artificial intelligence will be emphasized by addressing both the potential and the challenges.

**Workshop outline:**

**Introduction**

New mobility patterns, changed mobility demand
- Efficient and automated mobility solutions
- Shift in transportation types

Optimization of energy demand of automated vehicles
- Energy demand beyond 2030 and specific CO₂ emissions
- Right powertrain type / composition and software capabilities

Use-case based powertrain selection and configuration

Composition and methods of a self-driving software kit
- Deep-learning
- Rule or model-based systems

Summary and feedback

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Please note that the number of participants for our workshops is limited.

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International VDI Workshop

**Creating the Ultimate Parking Experience – A Design Thinking Approach**

**Workshop Chair:**
Christian Adelsberger, CEO & Founder and Ivan Kasanicky, PhD, Head of Data Science, both Parkbob GmbH

**Date and venue:**
July 4, 2017
Berlin, Germany

**Content**
Parking in cities is a hassle. It takes a lot of time, money and nerves and is a disaster for the environment. This workshop is intended for an audience interested in the last mile experience in a connected/automated car environment. While a fully automated experience is the ultimate goal, this workshop focuses on the various levels of autonomy where user decisions are still part of the game. The audience will co-create the ultimate parking experience based on design thinking methods. Our goal is to create a holistic understanding for an essential component shaping the last mile.

**Workshop outline:**

**Introduction**

Understand the day-to-day pain of parking in cities
- Deep dive into the existing user experience to carve out the problem
- Interviews with other attendees for first-hand feedback
- Identify the main areas of improvement from a user perspective

Ideation process for solutions to overcome the problem
- Brainstorming without limits based on identified improvement areas
- Synthesis of ideas and creation of roadmap

Let’s prototype! What will it look like?
- Paper prototyping the future of parking
- Direct user interaction as part of the creation process

Wrap up session and feedback

Please note that the number of participants for our workshops is limited.
Automated Driving
is part of the ConCarExpo 2017

Sections of Trade Fair:
- Automated Driving and Driver Assistance Systems
- Electronic Components, Monitoring and Control Technology, Sensor Technology
- Software and Networked Systems, Infotainment
- Telematics and Navigation
- HMI, Operation and Display
- Diagnosis, Test, Integration, After-sales-service
- Traffic Engineering, Infrastructure, Automotive Mobility

91% of visitors rate ConCarExpo 2016 as good to excellent
78% rate the quality of visitors as excellent
93% of conferences delegates rate the conference as good to excellent
82% of exhibitors rate the marketing platform ConCarExpo as very good

If you want to meet with and reach out to the first-rate experts attending the 4 International VDI Conferences and the International trade fair ConCarExpo and to powerfully present your products, become an exhibitor at ConCarExpo! For further information please contact our ConCarExpo-Team:

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Become a Speaker

Become a speaker at our international VDI Automotive Conferences. Make yourself known in the industry and discuss best practice examples with other international experts. We are looking for speakers on: Autonomous Vehicles (cars, trucks, busses, off-highway), Unmanned Aerial Vehicles, IoT, AI and Vehicle Tyres.

Please submit your topic to:
Katharina Neumann
Product Manager International Business Development
Phone: +49 211 6214-621
Email: neumann_ka@vdi.de

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Conference venue
ESTREL Hotel
Sonnenallee 225
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Email: reservierung@estrel.com
Website: www.estrel.com

Hotel room reservation: A limited number of rooms has been reserved for the benefit of the conference participants at the ESTREL Berlin. Please refer to “VDI ConCarExpo” For more hotels: www.vdi-wissensforum.de/hrs

VDI Wissensforum service package: The conference package includes the conference documents (online), beverages during breaks, lunch and the get together on July, 5, 2017, free admission to the parallel running conferences – HMI & Connectivity, IT Security for Vehicles and Digital Infrastructure & Automotive Mobility.

Conference attendance conditions and terms: By way of your registration you accept the conference attendance conditions and terms of VDI Wissensforum GmbH as binding. Any cancellation of your registration must be made in writing. We will charge you only an administrative fee of € 50.00 plus German VAT if you cancel your registration earlier than 14 days ahead of the conference date. Any cancellation that reaches us after this deadline will entail the conference attendance fee as stated in our invoice to be charged in full. The date of the post office stamp of your written cancellation will be the decisive criterion. In that case, we will gladly mail you the conference documents on request. Subject to agreement, you may name a substitute participant. Individual parts and sections of conferences and seminars cannot be booked. You will be informed without delay if an event has to be cancelled for unforeseeable reasons. In that instance, you will be entitled only to a refund of your conference attendance fee if already paid. We reserve the right to exchange speakers and/or change the program sequence in exceptional cases. In any case, the liability of VDI Wissensforum GmbH is restricted exclusively to the conference attendance fee.

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- **VDI Conference 05.–06.07.2017**
  - (01KO903017) € 1,690
- **Impact of highly Automated Driving on Mobility Demand and Energy Consumption**
  - (01ST171001) € 850

**Personal VDI members + VAT**
- **VDI Conference 05.–06.07.2017**
  - (01KO903017) € 1,590
- **Impact of highly Automated Driving on Mobility Demand and Energy Consumption**
  - (01ST171001) € 800

**Workshop 04.07.2017**
- **Impact of highly Automated Driving on Mobility Demand and Energy Consumption**
  - (01ST171001) € 850
- **Creating the Ultimate Parking Experience**
  - (01ST143001) € 800

**Package Price**
- Please tick the boxes
  - (Conference and 1 workshop) € 2,280

**Package Price**
- Please tick the boxes
  - (Conference and 1 workshop) € 2,130

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