6th International VDI Conference

Automated Driving

July 09-10, 2019, Dusseldorf, Germany

• Perspectives on Automated & Autonomous Driving
• AI and self-driving Cars: Hype vs. Reality
• Simulation, Validation and Verification of AV's
• New Mobility, Business Models & Smart last Mile Concepts
• OTA, Sensor and Perception Technology
• Legal Aspects, Policy and shifting Skill Needs

+ Interactive World Café Session
+ Parallel Conference: Cyber Security for Vehicles
+ Workshops

Meet international Experts from:

An event organized by VDI Wissensforum GmbH
www.vdi-international.com/ 01KO903019
The Association of German Engineers (VDI) is one of the largest technical-scientific associations in Europe. Throughout the years, the VDI has successfully expanded its activities nationally and internationally to foster and impart knowledge about technology related issues. As a financially independent, politically unaffiliated and non-profit organization the VDI is recognized as the key representative of engineers both within the profession and in public.

Supporting Experts

Dr. Andree Hohm  Head of Lighthouse Program Automated Driving, Corporate Systems & Technology, Continental, Germany
Dr.-Ing. Frank Niewels  Hochschule Esslingen, Germany
Prof. Dr.-Ing. Pim van der Jagt  Technical Director, AB Dynamics Europe GmbH, Germany

Expected Participants according to Functions

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Expected Participants according to Industries

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Media Partner

VISION mobility
<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>08:00</td>
<td>Registration &amp; Welcome Coffee</td>
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<tr>
<td>10:00</td>
<td>Chair’s Welcome &amp; Opening Address</td>
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<tr>
<td>10:15</td>
<td>OEM Opening Keynote</td>
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<tr>
<td></td>
<td>Marc Crawford, Chief Engineer Autonomous Driving Systems, American</td>
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<td>HAVAL Motor Technology, USA</td>
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<tr>
<td>II.</td>
<td>Perspectives on Autonomous Driving</td>
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<tr>
<td>10:00</td>
<td>AI Planning for intelligent Vehicles</td>
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<td>Dimitar P. Filev, Henry Ford Technical Fellow – Control &amp; AI, Research &amp; Advanced Engineering, Ford Motor Company, USA</td>
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<tr>
<td>11:00</td>
<td>Lunch</td>
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<tr>
<td>11:15</td>
<td>Challenges of AI in the Automotive Industry</td>
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<td></td>
<td>• Creating a ML classifier for automotive product development</td>
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<td>• Awareness for AI challenges and how to avoid them</td>
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<td>• Test and validation of ML algorithms for AD</td>
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<td>• Test miles, annotated images and effort investment in test and validation</td>
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<td></td>
<td>Dr. Florian Baumann, CTO Automotive &amp; AI, Dell EMC, Germany</td>
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<tr>
<td>13:45</td>
<td>Lunch</td>
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<tr>
<td>13:15</td>
<td>AI and Big Data Management for Autonomous Driving</td>
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<td>• Integration of real-time sensors, big data computing, data storage and data archiving in ADAS/AD systems</td>
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<td>• Implementation and operation of an efficient storage, workflow and management system for AD</td>
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<td>• Best practice case study</td>
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<td>Dipl. Ing. (FH) Frank Kraemer, IT Systems Architect, IBM Deutschland GmbH, Germany</td>
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<td>14:15</td>
<td>Interactive World Café Session</td>
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<td>Actively engage with other experts im small discussion groups. Discuss and identify challenges, problems, needs and solutions within your sector and introduce your own experiences!</td>
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<tr>
<td>15:30</td>
<td>Networking &amp; Coffee Break</td>
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<td>16:00</td>
<td>How to validate Automated Driving – A structured Analysis and Survey of Approaches</td>
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<td>• Validation of open context systems</td>
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<td>• Safety of the intended function (SOTIF)</td>
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<td>• Data-driven methods and simulation methods</td>
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<td>• Design for validation</td>
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<td></td>
<td>Dr.-Ing. Jan Stellet, Research Engineer Automated Driving, co-authors: Dr.-Ing. Tino Brade, Dr. Alexander Poddey, Dr. Wolfgang Branz, all: Robert Bosch GmbH, Germany</td>
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<td>16:30</td>
<td>Driver in the Loop Simulation to move from Level 2 to Level 3 Autonomy</td>
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<td>• Overview of track test equipment to perform ADAS testing</td>
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<td>• Testing more complex scenarios than current EuroNCAP ADAS tests</td>
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<td>• Need for driver in the loop testing</td>
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<td>• Performing similar tests on the track or in the simulator</td>
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<td>Pim van der Jagt, Technical Director, AB Dynamics Europe GmbH, Germany</td>
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<td>17:00</td>
<td>Unmanned Aerial Vehicles as a Tool for the Safety Validation of Highly Automated Driving Functions</td>
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<td>• Safety validation of HAD through scenario-based testing</td>
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<td>• Requirements on data sets for scenario-based testing</td>
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<td>• Creating data sets from UAV images using computer vision algorithms</td>
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<td>• Presentation of current and upcoming public datasets</td>
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<td>Julian Bock, Research Scientist &amp; PhD Student, co-authors: Robert Krajewski and Dr. Adrian Zlocki, all: Forschungsgesellschaft Kraftfahrwesen mbH Aachen – fka, Germany</td>
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<td>17:30</td>
<td>End of Conference Day One</td>
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<td>Get-Together</td>
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<td>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.</td>
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</table>
### IV. New Mobility, Business Models & Smart last Mile Concepts

**09:00** Reinventing Urban Mobility for new Business Strategies  
- A systemic approach of the mobility challenges  
- Necessary dialogue between vehicles and infrastructure  
- Testing automated vehicles to face complex urban challenges  
*Stéphane Barbier*, Chief Development Officer, Transpolis SAS, France

**09:30** Smart Mobility Solutions – Autonomous Technologies powering driverless Vehicles  
- From prototype to turnkey business: Electrified and automated people mover  
- Fleet management of electric and automated vehicles  
- Automation solutions for various vehicle platforms and environments  
*Benedikt Sperling-Zikesch*, Head of Business Development, co-author: Dr.-Ing. Arwed Schmidt, both: EasyMile GmbH, Germany

**10:00** Digitization and Automation in Last Mile Delivery  
- The new oil: Real-time data in last-mile logistics  
- Opportunities and challenges in last-mile autonomous delivery scenarios  
- Last-mile delivery developments in Southeast Asia  
*Michael Loehr*, Founder, tiramizoo GmbH, Germany

**10:30** Networking & Coffee Break

**11:00** Deployment of an integrated autonomous urban Transport System  
- Autonomous transport services at the core of smart mobility ecosystems  
- Integration of autonomous transport systems into public transport networks  
- Combination of scheduled mass transit with dynamic on-demand services  
- Scalable multimodal systems built on a common platform  

**11:30** Future of Transportation – A modular self-driving Ecosystem  
- AV challenge: Increased traffic congestion due to lower ride hailing fares  
- Ubiquity, seamless journeys and flexibility with dynamic modularity  
- Optimizing occupancy rate, energy consumption and traffic footprint  
- Last mile delivery: Customizable, scalable and integrated, logistics, warehouse and delivery optimization  
*Dr. Tommaso Gecchelin*, Founder and CTO, NEXT Future Transportation, Italy

### V. OTA, Sensor and Perception Technology

**12:00** Deep Learning in Sensors: The new Big Data  
- Why data science and DL are so hot?!  
- Sensor data is a gold mine  
- IoT and sensors making a better life  
- Time series data: A novel method to make predictions  
*Mohammad Shokoohi-Yekta*, PhD, Senior Data Scientist and Adjunct Faculty, Stanford University, USA

**12:30** Lunch

**13:30** Secured and Efficient Over-the-Air Software Updates  
- Current use cases and value of OTA updates in the vehicle lifecycle  
- Potential vulnerabilities in the OTA update process  
- How to achieve a reliable, efficient and secure OTA update of the entire car  
*Hadas Topor Cohen*, Sr. Director, OTA Product Management, HARMAN, Israel

### VI. Legal Aspects, Policy and shifting Skill Needs

**14:00** Prospects for US AV Policy in the current political Climate  
- AV START Act: Industry setback creating a potential regulatory vacuum  
- How the political makeup of Congress affects legislation and AV policy  
- The role of states and municipalities in shaping AV policy  
- Reassertion of NHTSA: What’s beyond issuing guidance?  
*Chan D. Lieu*, Senior Policy Advisor, Venable LLP, USA

**14:30** Progress on the AUTOSAR Adaptive Platform for Intelligent Vehicles  
- Challenges and use-cases  
- The adaptive Platform release 19-03  
- AUTOSAR in the context of safety, security and AI  
- Processes and quality assurance  
*Michael Niklas*, Chairman, AUTOSAR, Germany

**15:00** Autonomous Vehicles and Shifting Labour and Skill Needs in Canada  
- New occupations and shifting skill needs of (non-)technical jobs  
- Regulation needs and role of AV’s on the pathway to smart city development  
- Ownership vs. sharing as a new model for passenger vehicles  
*Alexandra Cutean*, Research & Policy Senior Director, Information & Communications Technology Council (ICTC), Canada

**15:30** Conference Chair’s closing Remarks

**15:45** End of Conference
International VDI Workshop 1

Secure Software Development for Mobility Solutions

Workshop Chair:
Prof. Dr. Sachar Paulus, Mannheim University of Applied Sciences, Germany,
Sebastian Rohr, CTO and Co-Founder, accessec GmbH, Germany

Date and Venue:
July 11, 2019, Dusseldorf

Time:
10:00-17:00

Content:
This workshop provides an overview on industry best practices that enhance a software development lifecycle with the aim to produce software that is secure against hackers. The form of the workshop allows participants to learn new concepts and techniques, but also to interactively exchange their experience in this field with peers and experts. The workshop contents follow a risk-based approach that helps developers and engineers to concentrate their activity on most relevant elements to protect the software in question. This approach allows to balance security, time and cost of a software solution. All major practices will be addressed by an introductory presentation of the chairs, followed by a breakout exercise, where participants will be able to bring in their views and examples. The results of the breakout exercises will be jointly discussed in the plenary; the chairs will enrich the discussion with their expertise and experience from academia and the field.

Introduction:
• Motivation of hackers
• Different approaches for producing secure software

Main Content:
• Making security requirements explicit with acceptance criteria
• Performing threat modeling
• Secure design principles and coding
• Security testing
• Secure deployment
• Security response

Discussion and Conclusion:
• Main findings of the workshop day
• Necessary training concepts for software teams
• Next steps for participants

International VDI Workshop 2

Cyber Defense for Automotive Navigation

Workshop Chair:
Dror Katalan, Chief Engineer, Regulus Cyber Ltd, Israel

Date and Venue:
July 11, 2019, Dusseldorf

Time:
10:00-16:00

Content:
This workshop provides an overview of the technologies behind automotive navigation systems and discusses where the industry is heading with GNSS technology embedded in AV’s. The next levels of autonomy (3-5) will require a smart fusion between different sensors in the car with the onboard GNSS system with high accuracy and up to date information. The workshop explores new developments in sensor fusion, SLAM techniques and GNSS cyber defense for jamming and spoofing as the next step for Navigation 2.0 for driverless cars. Core components of smart navigation systems will be introduced and challenges and opportunities of vehicle location, safety-reliability standards and requirements for OEMs, Tier 1, sensor manufacturers and regulators are discussed. Participants are invited to actively engage with their questions.

Introduction:
• History of navigation systems & overview of GNSS navigation technology
• Major constellations used in GNSS: GPS, BeiDou, Galileo, Glonass
• Key players and stakeholders in automotive GNSS
• GNSS systems strength and vulnerabilities analysis
• Introduction to most common automotive sensors & sensor and map fusion
• Maps self-healing method

Discussion Groups – Topics include:
• Hacking the future vehicle’s location - Presenting and discussing various threat scenarios on the low signal strength of GNSS reception and the resulting vulnerabilities
• Security requirements and best practices for safe satellite based navigation for driverless technology
• Reliability standards for trusted and effective GNSS signal and fusion with other sensors

Future Outlook, Discussion and Conclusion
Connecting the car with its environment or with other road users share the goals of enhancing the safety of mobility, improving traffic efficiency and satisfying the need for convenience. However, a prerequisite for this mobility change is a maximum of cyber security. We have to find ways to secure the driver in his personalized car and make sure that he won’t be exposed to risks such as the car being hacked.

**Renowned Speakers will discuss the following topics:**

- Regulations, Certifications & Standardization
- Lessons Learned – Examples of Practice
- Security Testing
- Vehicle Security – Technology Developments
- Future Trends
+ Panel Discussion: How to be compliant? Impact of regulations?
+ World Cafés & Live Hack

www.vdi-international.com/01K0907019
### Exhibition / Sponsoring

If you want to meet with and reach out to the first-rate experts attending this VDI conference and to powerfully present your products and services to the well-informed community of conference participants, please contact:

**Martina Slominski**  
Project Consultant Exhibitions & Sponsoring  
Phone: +49 211 6214 - 385  
Fax: +49 211 6214 - 97- 385

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### Terms and Conditions

**Registrations:** Registrations for conference attendance must be made in writing. Confirmation of your registration and the associated invoice will be mailed to you. Please do not pay your conference attendance fee until you have received our invoice and its invoice number to be stated for transfer. German VAT directives apply. Please state your VAT-ID with your registration.

**Conference venue**  
Hilton Dusseldorf  
Georg-Glock-Str. 20  
40474 Dusseldorf, Germany  
Phone: +49 211/4377-0  
Email: info@hiltondusseldorf.com

**Hotel room reservation:** A limited number of rooms has been reserved for the benefit of the conference participants at the Hilton Dusseldorf. Please refer to “VDI Conference”. For more hotels: [www.vdi-wissensforum.de/hrs](http://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 9, 2019.

**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.

**Data protection:** VDI Wissensforum GmbH captures and processes the address data of conference participants for their own corporate advertising purposes, enabling renowned companies and institutes to reach out to participants by way of information and offers within their own marketing activities. We have outsourced in part the technical implementation of data processing to external service providers. If you do not want to receive any information and offers in the future, you may contradict the use of your personal data by us or any third parties for advertising purposes. In that case, kindly notify us of your contradiction by using the email wissensforum@vdi.de or any other of the contact options mentioned.

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### Become a speaker

Become a speaker at our international VDI Conferences. Make yourself known in the industry and discuss best practice examples with other international experts. We are looking for speakers on: Automated and Autonomous Driving, Autonomous & Electrified Buses, Alternative Drives for Cars, Charging Infrastructure, Automotive Sensors, Automotive AI, Cyber Security for Vehicles, Future Mobility and Functional Safety.

Please submit your topic to:

**Leonie Bohnstedt**  
Product Manager  
International Business  
Phone: +49 211 6214 - 461  
Fax: +49 211 6214 - 97-461  
Email: bohnstedt@vdi.de

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### Registration

Conference by VDI Wissensforum GmbH | [www.vdi-international.com/01K0903019](http://www.vdi-international.com/01K0903019) | Phone +49 211 6214-201 | Fax +49 211 6214-154

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![Automated Driving](image-url)
Yes, I will participate as follows:

<table>
<thead>
<tr>
<th>Participation Fee + VAT</th>
<th>Workshop 1 11.07.2019</th>
<th>Workshop 2 11.07.2019</th>
<th>Package Price (Please tick the boxes)</th>
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<tr>
<td>□ VDI Conference 09.-10.07.2019 (01KO903019) € 1790</td>
<td>□ (01ST927001) € 950</td>
<td>□ (01ST925001) € 950</td>
<td>□ (Conference + 1 Workshop) € 2460</td>
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□ I am interested in sponsoring and/or exhibition
□ Participation Fee VDI-Members* Save 50 € for each Conference Day.
* For the price category 2, please state your VDI membership number

Participants with an invoice address outside of Austria, Germany and Switzerland are kindly requested to pay by credit card:

□ Visa □ Mastercard □ American Express

Card holder

Card no.

Valid until (MM/YYYY)

Security Code

Date × Your Signature

Participants are eligible to attend the parallel conference free of extra charge.