

VDI

7th International VDI Conference

Autonomous Driving

From Concept to Product

May 27-28, 2020, Dusseldorf, Germany

- Strategy & Productization
- Planning & Control
- Functional & System Safety
- AI & Deep Learning
- Perception & Prediction
- Validation & Certification

+ Interactive World Cafés

+ Hands-on Workshops

+ Parallel Conference: Cyber Security for Vehicles

Meet international Experts from:



An event organized by VDI Wissensforum GmbH
www.vdi-international.com/01K0903020





About us



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.

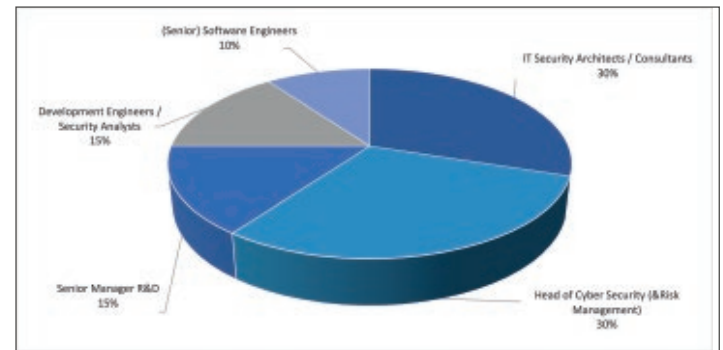
Supporting Experts

Dr. Andree Hohm, Head of Lighthouse Program Automated Driving, Continental Teves AG & Co. oHG, Germany

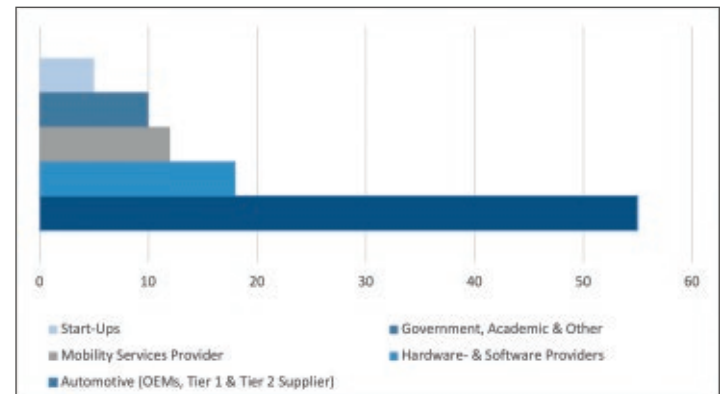
Dr.-Ing. Frank Niewels, University of Applied Sciences Esslingen, Germany

Prof. Dr.-Ing. Pim van der Jagt, Technical Director, AB Dynamics Europe GmbH, Germany

Expected Participants according to Functions



Expected Participants according to Industries



Reasons to attend

Meet the whole autonomous vehicle ecosystem.

Network with technical experts & key decision-makers from leading OEMs & suppliers.

Learn where the industry is headed & how to stay ahead of the curve.

Discuss technical challenges & newest solutions on the way to full autonomy.

Benefit from interactive round-table discussions, hands-on workshops, and in-depth presentations.

Prepare for two days full of insights, contacts & new ideas!

08:45 Registration & Welcome Coffee

09:45 Chair's Welcome & Opening Address

I. Strategy

10:00 Level 4 Automated Driving – From Concept to Product

Alexander Schaab, Vice President Autonomous Driving, Mercedes-Benz Research & Development North America, USA

II. Perception, Prediction & Planning

10:30 Autonomous Planning & Control for Intelligent Vehicles in Traffic

- Addressing the trajectory planning problem for AVs in traffic
- „Dynamic cell“ to dynamically modify the state of traffic according to different variables
- Achieving desired driving styles of AVs via reinforcement learning

Dr. Jianbo Lu, Technical Expert & Group Leader, Ford Motor Company, USA

11:00 ☕ Networking & Coffee Break

11:30 Safe but not Cautious Path Planning for AD

- The importance of assume/guarantees
- Understanding what risks the vehicle gets exposed to
- Driving safely without perfect perception

Dr. Mattias Brännström, Technical Expert in Safe Decision & Control for AD, Zenuity AB, Sweden

12:00 Building Intelligent Autonomous Driving Systems out of Silicon Blocks

- Where does the intelligence reside in an autonomous system?
- Requirements & constraints on the hardware
- Expectations for the software enablement
- How does safety and security get factored in?

Ali Osman Ors, Director, Automotive AI Strategy & Partnerships Automotive, NXP Semiconductors, Canada

12:30 Start-up Session

A speed-networking session bringing together creative talents and experienced experts – meet some of the most exciting vehicle automation Start-ups!

13:00 🍴 Lunch

14:00 Object Prediction in Urban Environments

- Gathering & interpreting context information to understand the AV's current situation
- Generating reasonable predictions of each traffic participants' behavior
- Overview of how these challenges are addressed at BMW, focusing on urban environments

Dr. Michael Karg, Expert Autonomous Driving, BMW Group, Germany

14:30 Generating a HD Vehicle Horizon for Automated Driving

- Benefits of ADAS & HD maps
- ADASIS specification for vehicle-wide map distribution
- First-to-market ADASIS v3 implementation
- From R&D to series production

Dr. Michael Reichel, Director, Head of Product Management Automated Driving, Elektrobit Automotive GmbH, Germany

15:00 Interactive World Café Sessions – Exemplary topics:

- Can we use the same Radar Sensor Systems for all Levels of Vehicle Automation? Dr. Jürgen Dickmann, Head of Radar Sensors/Radar Perception, Mercedes-Benz AG, Germany
- How to Develop Robust, Safe, Secure & Cost-Efficient Architectures for AVs? David Sanchez, Assisted and Automated Driving Senior Technical Specialist, Jaguar Land Rover, UK
- Current Challenges for and Approaches to Automated Vehicle Validation. Prof. Dr. Christof Ebert, Managing Director, Vector Consulting Services, Germany

16:00 ☕ Networking & Coffee Break

III. Processes & Productization

16:30 Mass Deployment of Safe AI-based Systems for Autonomous Vehicles

Eric Zhang, Director, Functional Safety, Automotive AI Processor, Horizon Robotics, China

17:00 Autoware: An Open Source Autonomous Driving Software Ecosystem

- Motivation for open source Autonomous Driving (AD) software stacks
- Benefits and challenges of using open source software for AD
- Introduction of Autoware: An open source AD platform
- Building & maintaining a community of users
- Autoware as a platform for AD education & research

Dr. Simon Thompson, Lead Engineer, Tier IV, Japan

17:30 Continuous Development of ADAS & Autonomous Driving Functions

- A scalable hardware & software platform as key enabler
- Use of AI & Machine Learning for environment perception
- Demonstrating the potential of Visteon's cloud-based workbench for the continuous development process
- Roadmap for ADAS and autonomous driving & current status at Visteon

Matthias Schulze, VP Technology Management, Head of ADAS, Visteon Electronics, Germany

18:00 End of Conference Day one



Get-Together

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. Safety

09:00 Safety & SOTIF Processes Deployment for Autonomous Driving

- Safety & SOTIF issues of driving automation
- Need of a quantitative approach for SOTIF objectives definition
- Importance of a shared scenario database for validation
- Proposal of a global methodology based on simulation & driving

Dr. Vincent Abadie, Senior Expert ADAS & AD, Nicolas Becker, Senior Expert Safety, Dr. Stephane Géronimi, Expert Safety ADAS & AD, all: Groupe PSA, France

09:30 Responsibility Sensitive Safety: Towards an Open, Transparent Industry-Driven Approach to AV Safety

- Providing a check on AV decision-making by digitizing implicit rules of the road
- Introduction to RSS principles & the RSS Open Library
- Integration with AV software stacks
- Towards a common safety metric, safety benchmarks

Dr. Ignacio Alvarez, Senior Research Scientist, Intel Corporation, USA

10:00 Ensuring the Safety of Machine Learning-Based Autonomous Systems

- Need for safety assurance of learning-based autonomous systems
- Bridging the gap between machine learning & formal verification
- Synthesising runtime monitors for ML units

Dr. Ing. Vahid Hashemi, Technical Project Manager, AI Safety Engineering, Audi AG, Germany

10:30 Real-word Driving Scenario Identification for AV Functional Safety

- Determination of safety critical scenarios to validate control laws with driving simulators
- Statistical analysis of parameters for each scenario
- Generating validated, annotated & analyzed data for AV commercialization

Gilles Le Calvez, Vehicle Program Director, Vedecom, France

11:00 ☕ Networking & Coffee Break

V. Validation & Testing

11:30 VVM – Pegasus Project Family: Release Methods for Highly Automated Vehicles – First Advances

- Overview main targets VVM - Verification & Validation Methods for L4 & 5 Automated Vehicles
- Condensation of test space by causal analysis of critical phenomena
- Integral approaches of safety argumentation

Roland Galbas, Technical Expert & Project Lead, co-authors: VVM-Team, all: Robert Bosch GmbH, Germany

12:00 Generation of Simulation Data Using Police Recorded Accident Data for the Development of Active & Passive Safety Systems

- Creation of realistic scenarios from police recorded accidents
- Assumptions to simulate the trajectory of each participant

- Variation of accident parameters like initial speed in simulation
- Speed profiles from GIDAS or/and AIMATS

Martin Urban, Research Associate, co-author: Dr. Christian T. Erbsmehl, Group Leader, both: Fraunhofer Institut for Transportation and Infrastructure IVI, Germany, Jorge Lorente Mallada, Design Engineer, Toyota Motor Europe, Belgium

12:30 Real Data Based Validation of Highly Automated Driving Functions Using Simulation Methods

- Approaches to machine learning methods for scenario identification
- Scenario extraction from recorded data
- Automated transfer to simulation environments

Raphael Pfeffer, Product Manager Test Systems, IPG Automotive GmbH, Germany

13:00 🍴 Lunch

14:00 First Results from L3Pilot – Driving Automation

- Testing the viability of automated driving on public roads: Focus on large-scale piloting of SAE L3 functions, some L4 functions
- Wide range of driving situations, including parking, overtaking on highways & driving through urban intersections
- Evaluating technical aspects, user acceptance, driving & travel behavior, impact on traffic & safety

David Sanchez, Assisted & Automated Driving Senior Technical Specialist, Jaguar Land Rover, UK

VI. Homologation & Certification

14:30 Current State of Future UN Homologation & Approval Regulations for Autonomous Vehicles

- Framework for automated vehicles regulatory activities
 - Focus on work currently done on Level 3 technologies (ALKS)
 - Review of existing regulation regarding Level 2 technologies (ACSF)
 - Data Storage Systems for Automated Driving activities & Event Data Recorder
- François E. Guichard, Secretary to the Working Party on Automated/Autonomous & Connected Vehicles, UNECE, Switzerland

15:00 Applicability of Traffic Laws to Automated Driving

- Need for conformity with both (supranational) vehicle regulations and (national) traffic laws
 - Current debate at the UNECE Global Forum for Road Traffic Safety (WP1)
 - National activities for amending traffic laws to facilitate safe operation of AVs
 - Regulatory issues for L4 automated driving in conjunction with traffic laws
- Bogdan Bereczki, Product Safety and Integrity, Autonomous Intelligent Driving GmbH, Germany

15:30 Closing Remarks by the Conference Chair

15:45 End of Conference

International VDI Workshop 1

Agile Automotive Product Development

Workshop Chair:

Dr. Philipp Diebold, Managing Director, Bagilstein GmbH, Germany

Date and Venue:

May 26, 2020, Dusseldorf, Germany

Time:

10:00 - 16:00

Content:

This workshop provides an overview on agility from cultural aspects to concrete agile methods/frameworks and agile practices with focus on the automotive domain. Due to the fact that this domain is highly regulated, it is necessary to adapt agility to these specific needs. Therefore, the workshop includes an interactive part on identifying the right agility (agile methods and/or practices) for your individual goals and specific context, e.g. team, project, and organization. Thus, every participant gets her/his individual results coming up from the group-work.

Agenda:

- Introduction into Agility: Start with Why
- Cultural Agility
- Technical Agility: Agile Methods like Scrum, Kanban, SAFe, etc.
- Agile Leadership Agile in regulated Domains, specifically in the Automotive Development
- How to find my individual Agility (context and goal-specific)
- Wrap-Up, Question & Answer and Conclusion

International VDI Workshop 2

Automotive Security Testing

Workshop Chair:

Prof. Dr. Christof Ebert, Managing Director, Vector Consulting Services GmbH, Germany

Date and Venue:

May 26, 2020, Dusseldorf, Germany

Time:

10:00 - 16:00

Content:

If you don't actively attack risks, they will actively attack you. Security is never comprehensive but can be vastly improved with risk-oriented testing using an optimized mix of test strategies and suitable tools, starting with static code analysis, proceeding with unit test, and further advancing with dedicated methods such as fuzzing and robustness tests up to the level of penetration testing. Cyber security testing needs experience and competence to select the best methods, determine test end criteria, and a lean yet effective regression strategy suitable for continuous integration and deliveries. This workshop will briefly look at risk-oriented security engineering, and then deep-dive into appropriate test methods and tools; it is based on our hands-on experiences from numerous security consulting projects. Participants are invited to actively engage with their questions.

Agenda:

- Motivation: Connectivity and convergence
- Risk-oriented cyber security engineering
- Optimizing security testing methods: From static analysis to PenTesting
- Hands-on case study: Grey-Box security testing
- Test tools overview

Discussion Groups – Topics include:

- Cost versus benefit: How to optimize security testing along the life-cycle
- Making penetration test effective: From black box to grey box
- Which tools and methods for which purpose
- Future Outlook, Discussion and Conclusion

6th International VDI Conference

Cyber Security for Vehicles

Date and venue:

May 27-28, 2020
Dusseldorf, Germany

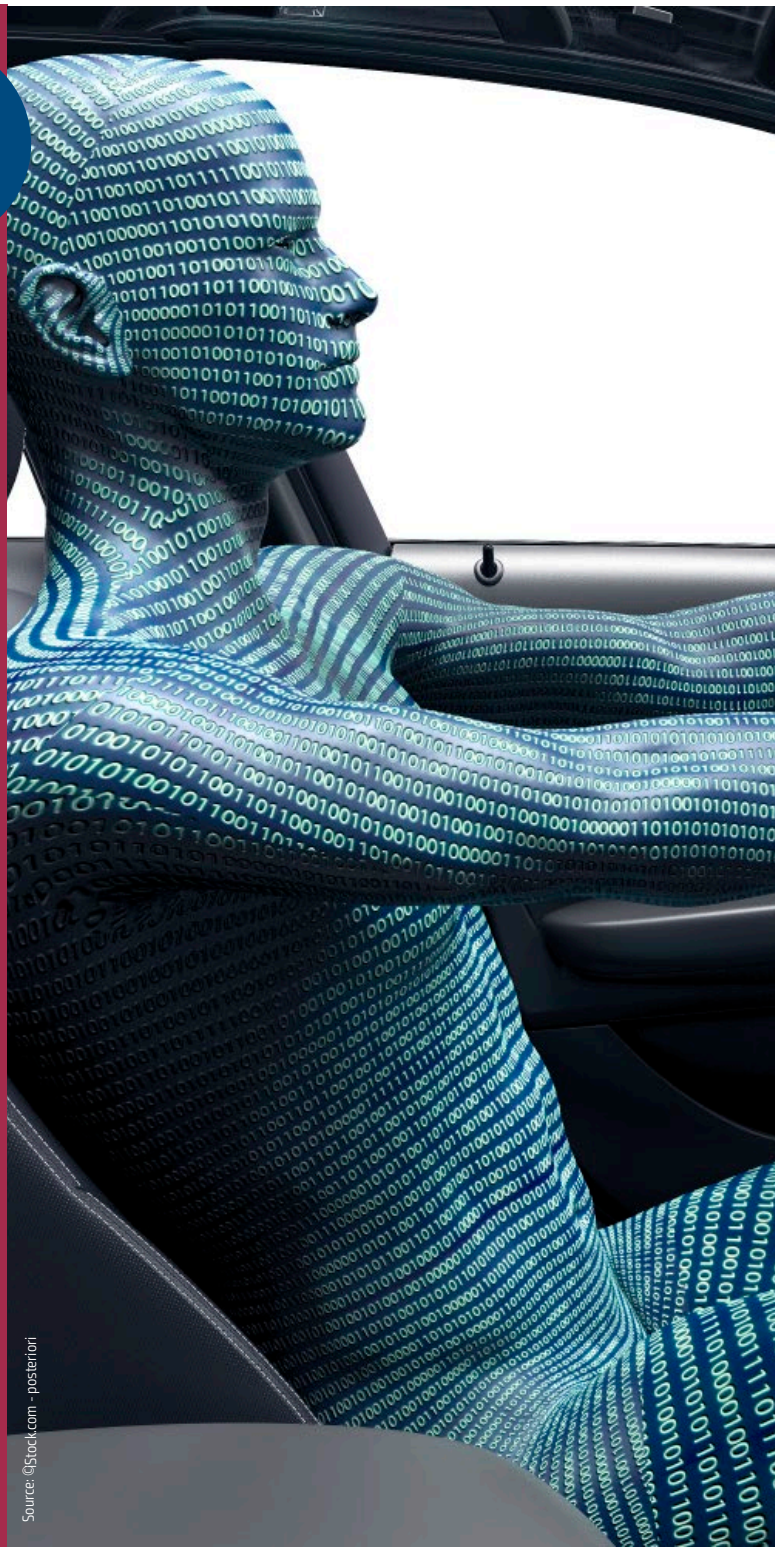
Vehicles are increasingly becoming connected mobile computers, and cyber security needs to be a major concern for the automotive industry. Join us at the 6th International VDI Conference „Cyber Security for Vehicles“ to broaden your knowledge, discuss best practices, and connect with the right people from the whole automotive security ecosystem.

Renowned Speakers will discuss the following topics:

- Standards & Regulations
- Security for Automated Vehicles
- Secure E/E Architectures
- Intrusion & Anomaly Detection
- V2X Security
- Security Testing & Validation

www.vdi-international.com/01K0907020

Parallel running
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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

Email: slominski@vdi.de



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 i.a. looking for speakers on: ADAS & Autonomous Driving, AI & Deep Learning in Automotive, Functional & System Safety, Automotive Cyber Security, Testing & Validation, Automotive Sensor Systems.

Please submit your topic to:

Dr. Johannes Lejeune

Product Manager International Business

Phone: +49 211 6214-273

Email: lejeune@vdi.de

Registration

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

Crowne Plaza Düsseldorf - Neuss
Rheinallee 1

41460 Neuss, Germany

Phone: +49 2131/77-00

Email: emailus@cphotelduesseldorfneuss.com



You will find more hotels

close to the venue at

www.vdi-wissensforum.de/hrs

Hotel room reservation: A limited number of rooms has been reserved for the benefit of the conference participants at the Crowne Plaza Düsseldorf - Neuss. Please refer to "VDI Conference". For more hotels: www.vdi-wissensforum.de/hrs

VDI Wissensforum service package: The conference package includes the conferencedocuments (online), beverages during breaks, lunch and the get-together on May 27, 2020.

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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Autonomous Driving



Register online!

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Participants
are eligible to
attend the parallel
conferences free of
extra charge

Yes, I will participate as follows:

Participation Fee + VAT

VDI Conference 27.-28.05.2020
(01K0903020) € 1840

and

Workshop 1 26.05.2020
(01ST954001) € 950

or

Workshop 2 26.05.2020
(01ST945001) € 950

or

Package Price (Please tick the boxes)

(Conference + 1 Workshop) € 2500

I am interested in sponsoring and/or exhibition

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