

7th International VDI Conference

# Autonomous Trucks

The Future of Transportation

April 24 and 25, 2023, Dusseldorf, Germany

- Data handling and data regulations
- LIDAR and sensor fusion
- Connectivity, vehicles control and on-board software
- Digital services for commercial vehicles
- Drivetrain Solutions for Autonomous Trucks

**+ Interactive World Café**

**+ Parallel Conferences: Connected Off-Highway Machines + Smart Farming**

Meet international Experts from:



09:00 Registration & Welcome Coffee

### 10:00 Conference Chair's Opening

Dr. Gerhard Nowak, Managing Partner, Institut für Produktion und Logistik GmbH & Co. KG, Germany

## I. OEM Strategies

### 10:15 Unlocking the Power of Automated Driving Technology Today

- 2-Step approach to commercialization deployment: highly automated driving (HAD) to full autonomy
- Data-driven system for continuous learning with minimal human intervention
- Lessons learned from the deployment of machine learning-based perception models for heavy-duty trucking

Dr. Georg Kuschik, Director of Perception, Plus, United States

### 10:45 Driving Logistics Automation - a journey along the supply chain

- Benefits of gradual autonomy with the teleoperation-first approach
- Insights into prioritized use case for deployment already today
- Outlook to future potentials and rollout strategies

Benedikt Fried, Senior Business Developer, Fernride, Germany

### 11:15 Commercializing a safe and scalable autonomous trucking Solution for the real World

- Overview of Kodiak's differentiated technology that will take autonomous technology from the lab to the roads
- How Kodiak is working with its partners to build a turnkey solution that creates value for the entire trucking ecosystem
- The Partner Deployment Program: How trucking fleets collaborate with Kodiak to prepare for driverless operations

Michael Wiesinger, Vice President of Commercialization, Kodiak, United States

### 11:45 The tough Bet on the first-to-scale autonomous trucking Ecosystem

- Overview of emerging ecosystem roles and structures
- Ecosystem maturity assessment
- Evaluation of ecosystem strategies with the focus on value creation and commercialization

Viet Duyen Le, PhD Student and Dr. Jana Thiel, Senior Researcher, Chair of Entrepreneurship, ETH Zurich, Switzerland

12:15  Networking Lunch

## II. Sensor Perception and Sensor Fusion

### 13:45 Precise Positioning and Environment Detection for Autonomous Driving

- Precise Positioning is achieved with RTK and PPP corrections
- High reliability with a powerful sensor fusion of GNSS, INS, odometry and visual positioning
- Object detection and classification is performed with newest AI architectures

Dr. Patrick Henkel, CEO and Founder, Anavs, Germany

### 14:15 How can AI reduce software development costs by 30%?

- Enabling root cause analysis for integration validation and identification of high probability testing focus
- Evidence of effects to regulated systems from software updates in accordance with R156

Roger Ordman, Executive Vice President, Marketing & Business Development, Aurora Labs, Isreal

### 14:45 Long-range stereo vision as an essential component for L4 trucking

- Autonomous trucks require long range 3D sensing to be able to avoid hazardous objects and fatal crashes
- Advanced stereo vision offers 1,000 meter range, and the precision to detect smallest objects

Brad Rosen, COO & Co-Founder, NODAR, United States

15:15  Networking & Coffee Break

## Interactive Session: World Café

15:45 We invite you to directly engage with other experts in small round table discussions. Identify challenges within your sector as well as problems, needs and solutions. Decide what exactly you would like to discuss and introduce your own experiences and cases.

17:15 End of Conference Day One



### 17:30 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.

08:45 Registration & Welcome Coffee

09:25 Chair's Opening

Stephan Keese, Partner, Roland Berger, United States

### III. Data & Machine Learning

09:30 Accelerate and Scale Autonomous Vehicles Development in the Cloud

- Key Autonomous Vehicle trends and market outlook
- Technological challenges faced by autonomous truck companies
- Patterns for data ingestion, data lake, machine learning, simulation, and fleet management
- Cloud solutions that accelerate and scale autonomous development and operations
- Customer case studies

Aniruddha Deodhar, Principal Specialist, Autonomous Vehicles, Amazon Web Services, United States

10:00 Detecting the unsafe unknowns: How a complementary perception Channel enables safe automated driving

- AI-based perception alone cannot ensure the safety of automated vehicles
  - A safety channel with dynamic grid technology ensures collision-free driving
- Dr. Eric Richter, Director Technology Innovation, baselabs, Germany

10:30 Recap World Café Session

Presenting the results of the interactive world café session

11:00  Networking & Coffee Break

### IV. Validation of Autonomous Vehicles

11:30 Mastering the demanding Validation Tasks of Autonomous Trucks

- Virtualization as the key enabler to managing the increasing validation tasks of autonomous driving functions
- Highly flexible simulation environment to cover the high number of truck variants
- Combination of full vehicle physics and imaging sensors for closed-loop testing of integrated systems
- Cloud-native V&V framework for SOTIF-compliant testing

Michael Peperhowe, Lead Product Manager Simulation & Validation, dSPACE GmbH, Germany

12:00 Advanced Validation Methodologies for highly automated Trucks

- Methodologies for test program generation with highest coverage
- Test execution in various testing environments
- Enhancing validation by application of Data-driven Development

DI (FH) Gernot Hasenbichler, Senior Product Manager ADAS Truck & Bus, and Dr. Florian Klück, Lead Engineer ADAS/AD XiL Simulation, AVL List, Austria

12:30  Networking Lunch

### V. Use Cases

14:00 Trajectory Planning and Disturbance handling for deadlock-free yard automation

- Precise path planning and velocity coordination for typical commercial vehicles
- How to deal with delays in a perfectly coordinated schedule? Cutting-edge research on disturbance handling
- Assigning and controlling missions: Enabling multi-brand compatibility with VDA5050 in an open source control tower framework

Felix Keppler, Research Fellow, Fraunhofer Institute for Transportation and Infrastructure Systems IVI, Germany

14:30 Transporting Goods with autonomous Vehicle Technology: An Exploration Trip through today's Use-Cases and EasyMile's Solutions in Reply

- Progress on autonomous vehicle technology development in Europe: ODD, key learnings of the past years
- Discussion of elementary needed use cases
- Progress report on individual projects around autonomous goods transportation and trucking

Nathalie Teer, Strategic Affairs Lead, EasyMile, France

15:00 Fireside Chat: Economic Benefits of Autonomous Trucking

Stephan Keese, Roland Berger and Dr. Gerhard Nowak, Institut für Produktion und Logistik GmbH & Co. KG

15:30 Conference Chair's Closing Remarks

15:45 End of Conference



8th International VDI Conference

## Connected Off-Highway Machines

From Smart Sensors to Smart Systems

**Date and venue:**

April 24-25, 2023

Dusseldorf, Germany

**Renowned speakers will present their results on the following topics:**

- Autonomous Mobile Machinery
- Cyber Security for Connected Off-Highway Machines
- Data-Driven Technologies & Business
- Wireless Connectivity for Vehicles
- Digital Solutions for Fleet Management

[www.vdiconference.com/01K0902023](http://www.vdiconference.com/01K0902023)



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7th International VDI Conference

## Smart Farming

**Date and venue:**

April 24-25, 2023

Dusseldorf, Germany

**Renowned speakers will present their results on the following topics:**

- Smart Implements – The Role of Advanced Technologies for Future Farming
- Crop Automation – Technology, Growers and Start-up Perspectives
- Challenges on the Way to Autonomy
- Addressing Ag Data Interoperability
- Decoupling Safety and Ag-Robotics Development

[www.vdiconference.com/12K0100023](http://www.vdiconference.com/12K0100023)



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Autonomous Trucks

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**Vanessa Ulbrich**  
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**VDI Wissensforum service package:** The conference package includes the conference documents (online), beverages during breaks, lunch and the get-together on April 24, 2023.

**Conference attendance conditions and terms** can be found on our website:  
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# Registration

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## Register online!

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VDI Conference 24.-25.04.2023  
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