![VDI logo]

10th International VDI Conference

Connected Off-Highway Machines

Securing the Path to Autonomy

June 4 and 5, 2025, Dusseldorf, Germany

- Digital Innovation & Connectivity in Off-Highway
- Off-Highway Autonomous Systems
- Artificial Intelligence & Cyber Security
- Data Management & Regulations
- Software Defined Off-Highway Machines

+ International Best Practices
+ Panel Discussion

Meet international Experts from:

Baumer Passion for Sensors — BOMAG FAYAT GROUP — Continental — driveblocks — dSPACE — FEV.io — IBM — itk

KPIT — LIEBHERR — L&T Technology Services — NTT DATA — spogen.ai — TÜV SÜD — VicOne

An event organized by VDI Wissensforum GmbH
www.vdi-international.com/ 01KO902025

9:00   Registration & welcome coffee

10:00   Chair's Welcome and Opening Address
Dr. Ing. Patrick Wolf, Senior Safety Engineer, IESE Fraunhofer, Germany

10:15   Speed Networking | Make the most of this networking opportunity by participating in these quick and effective 1-to-1 interactions. Get to know the other attendees and exchange your business cards.

10:30   Autonomous Earthmoving - Concepts & learnings from real applications

Keynote

- Concepts and systemic approaches to autonomy in mining and earth-moving
- Challenges bringing autonomy from the lab to the rough, real world
- Longer-term experiences from practical applications

Dr.-Ing. Manuel Bös, R&D Wheel Loader - Head of Emerging Technologies, Liebherr Group, Austria

I. Software Defined Off-Highway Machines

11:00   Software-Defined Machines: Flexibility & Scalability for Off-Highway Machines

- Off-highway machines require continuous, secure updates
- Bosch middleware with cloud connectivity optimizes software management
- Software-defined machines: opportunities, challenges, and solutions for the off-highway industry

Dr. Roland Barth, Head of Business Unit Off-Highway Vehicles, ITK Engineering GmbH, Germany

11:30   ☕ Networking & coffee break

12:15   Effective Tech Strategy Definition for Software Defined Vehicles in the Off-Highway Industry

- Define SDV Use Cases: Boost software re-use, on-demand services and integration of on/off-board services
- Design Cost-Optimized Platforms: Define effective SW & EE platforms
- Informed Design: Predefined architecture schemes for early, smart decisions
- Key Benefits: Speed up decisions, cut costs and enhance collaboration

Kevin Heinen, M. Sc., Lead Solution Manager, Systems Engineering, FEV.io, Germany

12:45   Enhancing Efficiency and Safety: Advanced HMI & UX for Off-Highway Machine

- Simplify UIs: Standardize, reduce complexity and allow customization
- Prevent Overload: Improve ergonomics, data display and sustainability
- Fix Usability Issues: Enhance visibility, touchscreens and battery info
- Improve Training: Use AR, real-world scenarios and better manuals

Nikhil P. Jadhav, Lead UX Designer, KPIT, India

13:15   🍴 Lunch

II. Cyber Security & Regulations

14:45   Adaptation of Proven Industrial Safety Concepts for Non-Road Mobile Machinery Circulating on Public Roads

- Safe person and object detection in outdoor environments with existing technology
- Consideration of cyber security requirements and AI
- Applicability of existing standards
- The new Machinery Regulation

Manuel Steinhart, Project handler, co-authors: Benedikt Pulver, M. Sc., Dipl.-Ing. Emanuel Deisler, Jan Nalivaika, all TÜV SÜD Product Service GmbH, Germany

15:15   Enhancing Vehicle Security: A Comprehensive Approach to Protecting Off-Highway-Machinery from Cyber Threats

- Increasing number of cyber attacks and regulations targeting off-highway machines
- The goal is to quickly detect, prioritize and respond to security events
- Connected, automated & driverless machines are prime targets for attackers
- Customer examples of our End-2-End approach to protect this ecosystem

Georg Graupner, Managing Consultant and Teamlead Embedded Cybersecurity, NTT DATA, Germany

15:45   ☕ Networking & coffee break

16:30   From Telematics to Threat Intelligence: Comprehensive Cybersecurity for Off-Highway Vehicles

- Explore the evolving cybersecurity threats to off-highway vehicles
- Secure by Design & Secure by Default: Preparing for future risks
- Managing security risks throughout the entire vehicle lifecycle

Gregor Knappik, Senior Solution Architect Cybersecurity, VicOne, Germany

17:00   Panel Discussion
Join industry experts discussing key developments, emerging challenges, and future opportunities in the field. Gain valuable insights and perspectives on the technologies and strategies shaping tomorrow.
Host: Josef Heißenhuber, Associated Partner, MHP, Germany

17:30   End of 1st Conference Day

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.

9:25   Chair's Welcome

9:30   5G and 6G: The Future of Connected Off-Highway Machines

Keynote

- Introduction to 5G and 6G and their significance for off-highway machines
- Applications of 5G: Real-time data transmission, autonomous control and safety-critical communication
- Potential of 6G: Integration of AR/VR, AI-driven automation and cyber-physical systems
- Challenges & Outlook: Energy efficiency, security concerns and regulatory requirements

Dr. Raimund Varnhagen, Head of Product Management Connectivity Commercial & Off-Highway Vehicles, Continental Automotive GmbH, Germany

III. Autonomous Systems

10:00   Road to Autonomy – New Operating Concepts for Road Construction Machinery

- Applications of road construction machines
- Special features of operation
- Technical solutions for remote control
- Challenges and outlook

Stephan Hammes, Head of Advanced Engineering, BOMAG GmbH, Germany

10:30   Networking & coffee break

11:00   Take Your Off-Highway Automation & Autonomy to the Next Level with Imaging Radar

- Currently used optical perception systems are restricting autonomy due to limited resilience to environmental factors
- Radar systems, in particular imaging radar, will complement optical perception sensors
- Real life data demonstrates the improvement with imaging radar

Michael Weigel, Global Business Manager Agriculture, Baumer Electric AG, Switzerland

11:30   A Multi-Industry Autonomy Platform with Open Interfaces Accelerating the Evolution of Autonomous Machines

- The primary driving forces behind machine automation across various industries are productivity, labor shortages and safety
- The challenge of autonomous commercial operation lies in developing a robust, reliable and safe machine perception
- A universal multi-industry Autonomy Platform is the foundation for a sustained scaleup of deployments and increased machine capabilities

Dr. Stephan Matz, CEO/COO, driveblocks GmbH, Germany

12:00   Lunch

IV. Artificial Intelligence

13:30   Revolutionizing Rugged Terrain: The Rise of Off-Highway Autonomous Systems

- How to improve performance for large scale AI workloads
- Connect & optimize all your data
- Learn how organizations today are retooling their IT operations to embrace artificial intelligence (AI), machine learning (ML) and advanced analytics

Dipl. Ing., Frank Kraemer, Technology Systems Architect, IBM, Germany

14:00   Generative AI-Driven Collaboration Between Humans and Machines: Shaping the Future of Work With Off-Highway Machines

- AI-Enhanced Collaboration: How Generative AI can facilitate seamless, intuitive interaction between humans & machines to boost productivity
- Sustainability Through Optimized Operations: How AI can help us optimize for sustainability across off-highway applications
- Health & Safety: Natural machine interaction enhances operator well-being

Joonas Koivuniemi, Co-founder & CEO, spogen.ai, Finland

14:30   Networking & coffee break

V. Development & Validation

15:00   Towards Autonomy in Off-Highway Vehicles: Overcoming Sensor Fusion and AI Challenges

- Integrating multi-sensor data for real-time environmental understanding using advanced algorithms
- Strategies for overcoming challenges using advanced middleware & development platforms
- Leveraging software reusability & adhering to industry safety standards for a clear path-to-production
- Combining simulations with real-world data to create realistic test scenarios

Gautam Dobariya, Business Development Manager, Automated Driving and Software Solutions, dSPACE GmbH, Germany

15:30   Virtual platform to Simulate Actual Field-like Scenarios & Vehicle Movement in this Simulated Field Based on GNSS

- Simulation of the dynamics of physics for various terrain conditions
- Development time is reduced by testing early in the development life cycle
- Dependency on field testing is reduced irrespective of weather conditions
- Adverse conditions like snowfall & rain can be simulated in the virtual field

Mohideen Farouk, Trucks & Off-Highway / Director, co-author: Manoj Deodhar, L&T Technology Services, Germany/India

16:00   Closing Remarks

16:15   End of conference

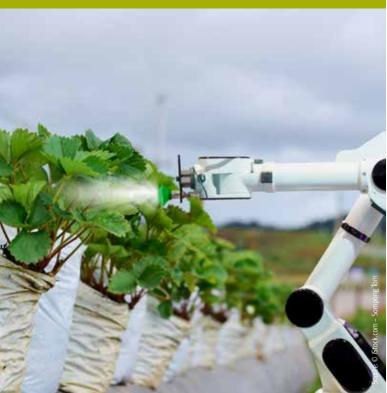5th International VDI Conference

Automation & Robotics in Agriculture

Date and venue:
June 4-5, 2025
Radisson Blu Conference Hotel Dusseldorf, Germany

Renowned speakers will present their results on the following topics:

- Automation in European Agriculture - Where are We from a Farmers Point of View?
- Sensor Perception in an Autonomy/Automation Context
- From Field to Data: Do we have the Database for Agricultural Automation?
- Managing the Regulatory Landscape: Safe and Efficient Operation of Agricultural Machinery
- Growth of the Agri-Robot Market

www.vdi-international.com/12KO901025

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About us

VDI

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. Patrick Wolf, Senior Safety Engineer, Fraunhofer-Institute für Experimentel-les Software IESE, Kaiserslautern, Germany

Dipl.-Ing. (FH) Martin Frank, Specialist Intelligent Machines, Research Engineer, Volvo Construction Equipment Germany GmbH, Konz, Germany

Dipl.-Ing. Eugen Schobesberger, Managing Director Engineering, Liebherr-EMtec GmbH, Kirchdorf, Germany

Ove Luehrs, Sr. Director Autonomy, Topcon Deutschland Positioning GmbH, Hamburg, Germany

Mattia Gabetti, Service Development Manager, CNH Industrial Italia S.p.A., Torino, Italy

Reasons to attend

Meet international experts from the off-highway industry.

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

Benefit from the parallel event and network with its participants and speakers.

Prepare for two days full of exciting insights, contacts and new ideas.

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:

Vanessa Ulbrich
Project Consultant Exhibitions & Sponsoring
Phone: +49 211 62 14-918
Email: ulbrich@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 looking for speakers on: Electric drive and Charging, Cyber Security for Vehicles, Software Defined Vehicle and Autonomous Driving.

Please submit your topic to:
Niklas Franz
Product Manager Automotive
Phone: +49 211 62 14-8690
Email: niklas.franz@vdi.de

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. Dutch VAT directives apply. Please state your VAT-ID with your registration.

Conference venue
Radisson Blu Conference Hotel Dusseldorf
Karl-Arnold-Platz 5
40474 Dusseldorf, Germany
Phone: +49 211 45 53-0
Email: info.dusseldorf@radissonblu.com

HRS
Das Hotelportal

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 conference hotel. Please refer to "VDI Conference". 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 June 4, 2025.

Conference attendance conditions and terms can be found on our website:
www.vdi-wissensforum.de/en/terms-and-conditions/

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Registration

Conference by VDI Wissensforum GmbH | www.vdi-international.com/01KO902025 | Phone +49 211 6214-201 | Fax +49 211 6214-154

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VDI

VDI Wissensforum GmbH | VDI-Platz 1 | 40468 Düsseldorf | Germany

Yes, I will participate as follows:

Participation Fee + VAT
☐ **VDI Conference 04.-05.06.2025**
(01KO902025) **€ 1990**

☐ I am interested in sponsoring and/or exhibition

☐ Participation Fee VDI-Members* Save 50 € for each Conference Day.
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Please register at www.vdi-international.com. Your credit card information will be transmitted encrypted to guarantee the security of your data.