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18th International Conference

Commercial Vehicles 2025

– Truck, Bus, Van, Trailer –

Key Topics:

- **Hydrogen as an Energy Source**
- **Operating Strategies & Requirements**
- **Automated Driving**
- **Vehicle Concepts**
- **Verification/Validation E-Systems**
- **Trailer**
- **Architecture/Safety**

+ Test drive on the ZF Erich Reinecke Test Track

+ Plant tour at VW Nutzfahrzeuge

+ Exhibition

+ Simultaneous interpretation

With Experts from:

Applus IDIADA | AVL List | Brudeli Green Mobility | CAN in Automation | CLEPA/Schaeffler | Daimler Buses | Ebertconsulting | EDAG Engineering | Fraunhofer IVI | H2 Green Power & Logistics | IAV | IPG Automotive | ITK Engineering | Iveco Group | Magna Powertrain Engineering Center Steyr | MAN Truck & Bus | P3 automotive | VW Nutzfahrzeuge | wisdommotor | ZF Group

An event organized by VDI Wissensforum GmbH
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June, 04 and 05, 2025, Celle, Germany

First conference day
Wednesday, June 04, 2025

07:45 **Registration**

08:50 **Welcome and Opening of the conference**
Dr. Thomas Dieckmann, ZF Group, ZF CV Systems, Hanover

Plenary Speeches

09:00 **Mission Possible? Unleashing Innovation to Enhance Efficiency in the Heavy-Duty Vehicles**

- CLEPA's important contribution to the development of modern and sustainable mobility
- Summary of recent regulatory developments and forthcoming challenges
- Innovative technologies of Schaeffler in the field of Heavy-Duty

Matthias Zink, CEO Powertrain & Chassis and Member of the Executive Board, Schaeffler AG, and President, CLEPA – European Association of Automotive Suppliers, Belgium

09:30 **VW Commercial Vehicles: Strategic Product Portfolio**

- Model offensive
- Clear product strategy VW Commercial Vehicles
- Broad range of synergistic light commercial vehicles

Marcus Wilke, CSO Volkswagen Commercial Vehicles, Corporate Strategy, Cooperations and Product Management, Volkswagen Commercial Vehicles, Hanover

Hydrogen as an Energy Source I
Moderation: Prof. Dr.-Ing. Karl Viktor Schaller, TU Munich, School of Engineering and Design, Munich

10:00 **Bavarian Fleet – FuelCell Trucks for Long Distance Transportation**

- Truck concept
- Key components
- Challenges in the packaging
- Outlook tank technology

Dipl.-Ing. Markus Radix, Project Leader, Predevelopment Steering & Projects, Co-Author: Dipl.-Ing. Christian Gruber, both of MAN Truck & Bus SE, Munich

10:30 **Roadmap to Sustainable Transport – Status of the Implementation of Hydrogen for Heavy Duty Iveco Vehicles in Europe**

- Propulsion selection
- Vehicle lay-out for hydrogen
- Engineering and validation status

Ing. Hans Breevoort, Head of Advanced Engineering Medium & Heavy Trucks, Technology & Digital, Iveco Group, Turin, Italy

11:00 **Coffee break and exhibition visit**

Hydrogen as an Energy Source II
Moderation: Dipl.-Ing. Thomas Nickels, TRATON SE, Munich

11:30 **HDV Hydrogen Storage Technology Suitable for H2 Powertrains Market Introduction**

- 700-bar Hydrogen Storage Technology – Cost, performance, and component availability
- Hydrogen Refueling Infrastructure – Enabling supply chain technologies for stations
- Hydrogen Storage Evolution – Future outlook towards the end of the decade
- Technology Scaling – Infrastructure scale-up to support hydrogen adoption

Ing. Andrés Fernández Durán, Head of Hydrogen Technology and Fuel Cell Application, Technology & Digital, Electrification Technologies, Iveco Group, Ulm

Operating Strategies I
Moderation: Dipl.-Ing. Christian Müller, Daimler Buses, Neu-Ulm

Predictive Energy Management Strategies to Improve Energy Consumption

- Current challenges for energy management improvements
- Detailed energy management strategy
- Use of simulation models for validation

Jayesh Jain, M. Sc., Vehicle System Simulation Engineer, Performance and Energy Management, Co-Author: Lutfullah Emre Top, M. Sc., both of Iveco Group, Ulm

Rolling Resistance under Real Operating Conditions of City Buses

- Driving resistance of commercial vehicles
- Variation of rolling resistance in various typical city bus applications
- Simulation of energy consumption
- Energy efficiency of city buses

Dr. Stefan Knauf, Simulation Engineer, Product Engineering/Testing and Validation, Co-Authors: Dr. Dominik Herkommer, Isabel Hampe, B. Eng., all of Daimler Buses GmbH, Leinfelden-Echterdingen

Operating Strategies II
Moderation: Dipl.-Ing. Marc Horsten, DAF Trucks N.V., Eindhoven, NL

Model Predictive Powertrain Management – A Key to Enhanced Efficiency in Commercial Vehicles

- Setup of virtual technology demonstrator: e-truck
- Development of model-predictive controller
- Target: Energy-efficient control of drive components and thermal system
- Outlook on planned further developments

Dr.-Ing. Kerstin Palm, Development Engineer, Commercial Vehicle Powertrain, Co-Authors: Dr.-Ing. Jelto Frerichs, Tim Zieger, all of IAV GmbH, Gifhorn

12:00 **Bridging the Gap to the Competitive Use of Hydrogen Vehicles for Climate-Neutral Logistics**

- H2 fueling network
- Service experience FCEV, truck, bus, midibus
- Chinese quality level FCEV supply
- Development status China versus Europe for FCEV

Prof. Dr. Jörg Ebert, Managing Director, Ebertconsulting GmbH, Cologne, **Dr. Otto Uhlhorn,** COO, Management, H2 GREEN POWER & LOGISTICS GmbH, Münster, **Jingde Tang,** Sales director, Sales and Marketing Europe, Canada, wisdommotor Co., Ltd., Fujian, China

Optimizing Electric Powertrains for Commercial Vehicles: A Holistic Approach for Efficiency and Performance

- Holistic optimization of commercial vehicles
- Focus on achieving high system efficiency
- Informed decisions early in the development process

Dr., Dipl.-Ing. Stephan Stadlbauer, Manager Advanced Mobility Functions, Propulsion Systems, Co-Authors: Dipl.-Ing. Lukas Oberguggenberger, Dipl.-Ing. Julian Bodory, Dipl.-Ing. Josef Schaeffler, all of Engineering Center Steyr GmbH & Co KG/Magna Powertrain, St. Valentin, Austria

12:30 **Lunch break and exhibition visit**

14:00 **Departure to the test drive and plant tour**

Plant Tour and Test Drive

15:00 **Test drive on the ZF Erich Reinecke Test Track**

Registration required

- Especially for developing and testing braking, stability and driver assistance systems for commercial vehicles
- 2 km oval with different road surfaces and friction coefficients
- 4km oval for testing driver assistance systems
- Driving dynamics surface, circular track, hills, rough road elements and other special test areas
- Comprehensive network with WLAN and a campus 5G network
- Total area 103 ha

Plant tour at VW Nutzfahrzeuge

- Guided tour through the production of the VW Commercial Vehicles brand, from body construction to final assembly with the wedding using ID Buzz
- Note: Maximum number of participants 25 persons, guided tour only in German
- Requirements: Sturdy shoes, no photography allowed

Note: The test drive and the company tour take place in parallel, i.e. only one event can be attended.
Duration: Approx. 1.5 hours

16:45 **Transfer to the Get-Together from test track and plant tour**

From 18:00 **Get-together**

To conclude the first conference day, the VDI Wissensforum invites you to a get-together. Take advantage of the relaxed atmosphere to expand your network and have in-depth discussions with other participants and speakers.

Second conference day
Thursday, June 05, 2025

Plenary Speech

08:45 Modular Truck Chassis Kit for Various Zero-Emission Technologies

- Impact of alternative drives on the chassis architecture
- One modular kit for zero-emission technologies as a response to the complex portfolio
- Further development and trends of driveline technologies towards electrification

Dr.-Ing. Jürgen Wagner, Senior Vice President/Head of Engineering Vehicle & External Engines, MAN Truck & Bus SE, Munich

Automated Driving
Moderation: **Enrico Wohlfarth,** Daimler Truck AG, Stuttgart

09:15 Project Results ATLAS-L4: From the Law to the Street

- Safety-concept for autonomous driving at level 4
- Test and validation methods
- Control center with technical supervision and operating area management

Sebastian Völl, Project Leader Autonomous driving, Predevelopment Steering & Projects, MAN Truck & Bus SE, Munich

09:45 Adaptive Motion Control of Autonomous Commercial Vehicles Using Reinforcement Learning

- Application of reinforcement learning for lateral control of autonomous commercial vehicles
- Investigation of three reinforcement learning methods with different kinematic knowledge
- Differences in the interpretability of the learned behavior

Dr.-Ing. Jonas Böttcher, Function Developer, Innovation – Automation & ADAS – ADAS, Perception & Intelligence, ZF Friedrichshafen AG Commercial Vehicle Control Systems, Co-Author: Simon Pauka, M. Sc., Leibniz Universität, both Hanover

10:15 cubiX CV – Vehicle Motion Control as Enabler for Automated Trucks

- Increase of efficiency and optimize logistical processes
- Complexity of vehicle configurations to be mastered under series production conditions
- Concept of safe and precise trajectory control in the sense of Vehicle Motion Control
- Use of overarching synergies from a wide variety of application areas and bundle up its competencies from passenger cars and commercial vehicles

Dr. Claus Granzow, Head of R&D Digital Vehicle Solutions – CV, Co-Authors: Lukas Hildebrand, Frank Schmidt, all of ZF Friedrichshafen AG, Friedrichshafen

Vehicle Concepts
Moderation: **Lukas Schröder, MBA,** Iveco Group, Ulm

REFLECTIVE and URBANIZED: Advancing Safe and Sustainable Urban Mobility Solutions

- Urban Vehicle Demand
- L7e heavy quadricycles and N1 light commercial vehicle
- REFLECTIVE and URBANIZED Projects
- Safety Disparities
- Sustainable Urban Mobility

Emilia Romero, R+D Project Leader Body Design & Mobility, Co-Author: Dipl.-Ing. Simona Roka, both of Applus IDIADA, Santa Oliva (Tarragona), Spain

Evaluation Criteria for the Sustainability of Vehicle Components Based on the End-of-Life Vehicle Directive

- Individual circular economy aspects: R-strategies, VDI 4800, and End-of-Life Vehicle Directive
- Development of evaluation criteria and methodological approach: Derivation and formulation of evaluation criteria & methodological application
- Practical application of the evaluation criteria: Implementation and assessment of recyclability based on a current seat concept

Dr. Dirk Clasen, Head of Equipment & Motorhome Systems, Co-Authors: Jana Wendt, both of Volkswagen Nutzfahrzeuge, Wolfsburg, Umut Volkan Kizgin, Niedersächsisches Forschungszentrum Fahrzeugtechnik, Braunschweig

Optimized E-axle Control Solutions for Distributed Drivetrain Architectures

- Challenges and potentials in the control of distributed drive train architectures
- Scalable e-axle function architecture for different requirements
- Energy management strategy in distributed drive train architectures
- Self-learning and self-adapting vehicle traction control
- Optimization of power versus control efficiency in real vehicle applications

Dipl.-Ing. Bernhard Knauder, Skill Team Leader Software & Control Systems, CV Software & Control Systems, Co-Authors: Petr Micek, M. Sc., both of AVL List GmbH, Steyr and Graz, Austria, Peter Biro, M. Sc., AVL Hungary Kft., Budapest, Hungary

10:45 Coffee break and exhibition visit

Verification/Validation E-Systems
Moderation: **Dr. Linn Hackenberg,** Volkswagen AG, Wolfsburg

11:30 DevOps meets HiL – Why DevOps is Essential for Agile Development and Testing of Autonomous Vehicles

- Challenges in the development process of virtual test benches for testing autonomous vehicles
- Application of the DevOps methodology and its key technologies to HiL simulation
- Integration into the agile development of software for autonomous vehicles

David Schlatzer, M. Sc., PhD candidate, Vehicle Development, E/E-Integration & Verification, Volkswagen Nutzfahrzeuge, Wolfsburg

Trailer
Moderation: **Prof. Dr.-Ing. Jörg Ebert,** Ebertconsulting GmbH, Cologne

Bodies and Trailers Aerodynamics – Europe's Regulatory Status Quo

- Heavy-duty vehicles energy consumption
- Aerodynamics within the VECTO Tool
- Trailer Aerodynamic Devices

Albert Gascón-Vallbona, M. Sc., CFD Group Coordinator, Vehicle Body Performance, IDIADA Automotive Technology, Santa Oliva (Tarragona), Spain, Co-Authors: Dr. Martin Rexeis, Dipl.-Ing. Stefan Present, both of Graz University of Technology, Austria

12:00 **Transformation of the Software Integration Process – From Classic Software Integration to Co-Integration**

- Conception and implementation of automotive systems in transition
- Modern software integration process for maximum flexibility and speed
- Focus on new technologies (software packaging, continuous X, cloud solutions) in combination with established approaches (e.g. HiL-testing)

Dipl.-Ing. Andreas Bossert, Senior Expert Engineer, Data Driven Software and Sensors, Co-Author: Christopher Schwager, M. Sc., both of ITK engineering GmbH, Rülzheim

Standardized CAN Networks for Commercial Vehicle Body Applications – In Towing and Towed Vehicles

- Refrigerating vehicles
- Refuse-collecting vehicles
- Fire-fighting vehicles
- Vehicle-mountedcranes

Dr. rer. nat. Martin Merkel, Technical Manager, CiA GmbH, Co-Author: Holger Zeltwanger, CAN in Automation (CiA) e. V., both Nuremberg

12:30 **Release of Autonomous Commercial Vehicles: Best Practices from the Automotive Industry for Simulation-Based Releases**

- Basis for development and release for OEMs and suppliers
- Simulation for CV in the context of validation and verification
- Review of established methods for the release of AD functions
- Continuous usage of simulation throughout the entire development process

Dr.-Ing. Sami Bilgic Istoc, Senior Consultant, Strategic Consulting & Engineering, IPG Automotive GmbH, Frankfurt am Main

Regulation (EU) 2022/1362: Performance of Heavy-Duty Trailers

- VECTO
- Simulation Tool
- Energy consumption
- Heavy-Duty Vehicles

Àlex De la Cruz Gargallo, M. Sc., Product Manager, Homologation – Commercial Vehicles, IDIADA Automotive Technology S.A., Santa Oliva, (Tarragona), Spain

13:00 **Lunch break and exhibition visit**

Architecture/Safety

Requirements

Moderation: Dipl.-Ing. Martin Moser, Magna Powertrain Engineering Center Steyr GmbH & Co. KG, St. Valentin, Austria

14:30 **Smart PDUs for BEV & FCEV Truck and Bus Applications**

- Innovative, reliable & efficient solutions to enable powertrain electrification
- Comprehensive methodologies and technologies for smart and thorough power-distribution-unit (PDU) solutions
- Predefined designs for variousapplications
- Ready for verification and validation tests at the component level

Dipl.-Ing. Karl-Heinz Putz, Chief-Engineer E/E Functions & Systems, Co-Authors: Dr. Christoph Priestner, Ralf Barna, all of AVL List GmbH, Graz, Austria

Electrification of Distribution Transport – A Holistic Method for Techno-economic Site Evaluation

- Determining the daily energy requirements of a vehicle fleet
- Estimating performance data for potential charging strategies
- Economic evaluation of electrification measures
- Results and impact for industry

Dr.-Ing. Martin Ufert, Group Leader, Monitoring and Operating Strategies, Co-Authors: Richard Kratzing, Erik Berendes, all of Fraunhofer-Institut für Verkehrs- und Infrastruktursysteme IVI, Dresden

15:00 **Advancements in Energy Management for Commercial Vehicles: Zonal Domains and Fuseless Distribution Architecture**

- Zonal domain EE Architecture
- Fuseless power distribution
- Energy Management strategy
- Hierarchical power tree

Eng. Víctor Pascual, Electric and Electronics Architecture Project Manager Department, Electronics, Co-Authors: Guillem París, Marc Homs, all of Applus IDIADA, Santa Oliva (Tarragona), Spain

Scenario-based exploration of the economic viability of autonomous trucking

- Analyzing the cost structure of autonomous trucking
- Exploring different scenarios and conditions that affect economic viability
- Understanding the implications for various stakeholders in the industry

Alexander Boll, M. A./M. Sc., Technology Lead, Technology Consulting/Autonomous Technologies, P3 automotive GmbH, Stuttgart

15:30 **Studies on Passive Pedestrian Protection in Heavy Commercial Vehicles**

- Euro NCAP: Extension of passive safety in pedestrian protection to heavy trucks sector
- Status investigations regarding dummy impact in different front locations
- First optimization concepts and their influences
- Transfer of results to different heavy trucks front parts distribution concepts

Cornelius Vonderau, Project Manager, CAE & Vehicle Safety Fulda, Co-Authors: Markus Rabich, B. Eng., Stefan Hundertmark, B. Eng., all of EDAG Engineering GmbH, Petersberg and Munich

Simulation, Testing and Road Compliance of a Novel Series-Parallel Truck Drivetrain

- Novel high power hybrid powertrain
- Heavy-Duty Hybrid Electric Truck
- Road testing and simulation
- Optimal fuel-save and battery use

Geir Brudeli, M. Sc., CTO, Technical Department, Co-Authors: Geraldo Francisco de Souza Rebouças, Ph.D., Arild Brudeli, B. Sc., all of Brudeli Green Mobility AS, Hokksund, Norway

16:00 **Closing remarks**

Markus Eisele, ZF Friedrichshafen AG, Friedrichshafen

16:10 **End of the conference**

Program Committee

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Prof. Dr.-Ing. Jörg Ebert, Ebertconsulting GmbH, Cologne

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Dipl.-Ing. Günter Seidel, Continental Automotive Technologies GmbH, Villingen-Schwenningen

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Enrico Wohlfarth, Daimler Truck AG, Stuttgart

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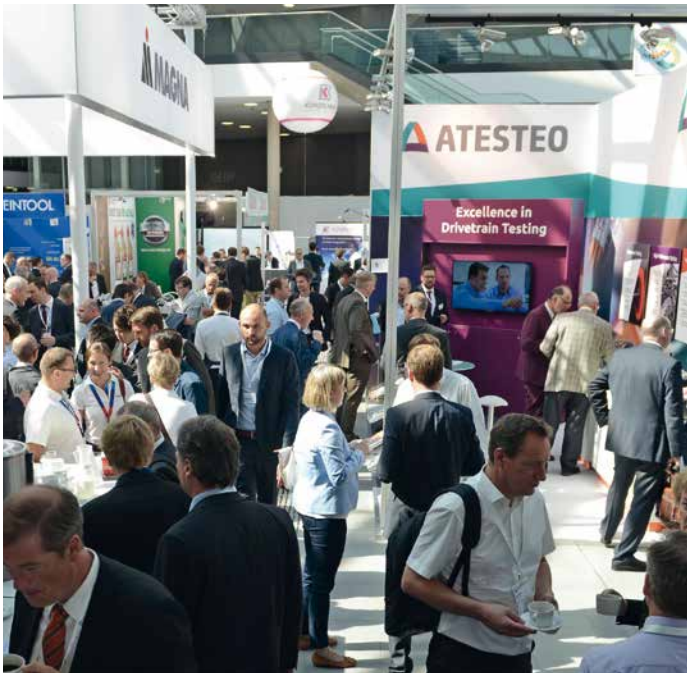

Please contact:

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- Exchange on new technologies, further developments and innovations in the commercial vehicle sector
- Factory tour and test drives provide an insight into production and current developments
- Opportunity to expand and maintain your professional network during the breaks and at the get-together

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