15th International Conference
Commercial Vehicles 2019
– Truck, Bus, Van, Trailer –

Top Issues:

- Cab and chassis concepts for commercial vehicle and bus
- Electrification: hidden potentials in modular drive systems and integrated trailers
- Smart logistics solutions to optimize transport efficiency
- Development and process optimization approaches by means of simulation methods
- Concepts to reduce CO₂ emission and improve fuel efficiency
- Active safety systems as part of automated driving

With Experts from:

AVL | Bosch | Bartkowiak | BPW Bergische Achsen | Continental | Daimler Trucks | Ebertconsulting | Evobus | Flixbus | Fraunhofer-Institut für Verkehrs- und Infrastruktursysteme | Hörmann Automotive | IDIADA | Institut für Energie- und Umwelttechnik | IVECO | Kölner Verkehrs-Betriebe | Krone | Laird | Magna | MAN | Ricardo | Schaeffler | Wabco | ZF Friedrichshafen | Zhucheng Yihe Axles

Europe’s largest engineering conference for the commercial vehicles industry

An event organized by VDI Wissensforum GmbH
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June 4 – 5, 2019, Baden-Baden, Germany
First conference day  
Tuesday, June 4, 2019

Factory Tours, Vehicle Exhibition and Test Drive

Important note:
Please book your participation in one of the events early since the number of participants at both events is limited. The factory tour at Daimler and the test drive at Schaeffler will run at the same time and cannot be booked both. Sturdy shoes are necessary to attend the events in the morning.

Tour A: Factory Tour at Daimler in Wörth, Germany
08:00 Bus shuttle from the Conference Center Baden-Baden to Wörth
09:00 Factory Tour in Wörth: Experience lively driver’s cab shell and interior construction as well as final assembly
11:30 Bus shuttle back to Baden-Baden

Tour B: Factory Tour, Vehicle Exhibition and Test Drive at Schaeffler in Bühl, Germany
08:30 Bus shuttle from the Conference Center Baden-Baden, individual arrival is also possible
09:00 Factory Tour HD Clutches at the headquarter Bühl, visit of the vehicle exhibition and test drive at the trial track in Bußmatten, Germany

Planned exhibited and test vehicles (Subject to modifications):
- Continental Innovation Truck
- Daimler E-Actros
- Evobus Safety Coach
- Daimler eCitaro
- MAN Lion’s City 12 EfficientHybrid
- IVECO Heuliez GX 337 Elec
- MAN TGX
- MAN CitE
- DAF Imperium tractor trailer combination

12:00 Bus shuttle back to Baden-Baden

12:30 Registration, Lunch and visit to the exhibition

Plenary Speeches (Room: Kongresssaal 2)

13:45 Welcome and opening of the conference
Prof. Dr.-Ing. Jörg Ebert, Ebertconsulting GmbH, Cologne

14:00 Commercial vehicles in transition – Challenges and opportunities
- What is moving us: trends and drivers in the commercial vehicle industry
- Powertrain 2030: all-in for the combustion engine or shift to eMobility?
- Opportunities and challenges to tackle
Matthias Zink, Member of the Executive Board, Schaeffler AG, Bühl

14:30 Electric buses – it’s already happened
- Electric buses in daily operations by the thousands
- Capabilities of E-buses in research labs already acceptable for long range
- Municipalities increasingly ban market for Diesel as well in tenders as well as in access
- Result: The E-Bus is coming onto the long distance – faster then expected
Stefan Tontsch, Vice President Operations – MD FlixMobility Experience, FlixBus, Berlin

Vehicle Concepts
Room: Kongresssaal 2
Chairman: Ing. Wolfgang Prokopp, EvoBus GmbH, Mannheim

15:05 eCitaro – the electric citybus of Mercedes-Benz
- A modular concept to cover the broad requirements of a city bus
- Two technologies of the high voltage battery
- Thermal management to optimize the critical range in summer and winter
Dipl.-Ing. (BA) Daniel Vorgerd, Project Manager Electric Drive Bus, Daimler Buses, EvoBus GmbH, Mannheim

Electrification
Room: Kongresssaal 1
Chairman: Herbert Mozer, ZF Friedrichshafen AG, Friedrichshafen

ZF kit for e-mobility products in commercial vehicles
- System approach for different commercial vehicle segments
- Electric machines from ZF in-house-developments
- Inverter- and software-platforms
- One- or multispeed transmissions, synergies from ZF-series products
Dr.-Ing. Martin Lamke, Head of Design Engineering, Co-authors: Dipl.-Ing. (FH) Markus Eisele, Dr.-Ing. Frank-Detlef Speck, all ZF Friedrichshafen AG, Friedrichshafen
The new MAN Lion's City – A pioneering vehicle design concept as a social contribution to tomorrow's more attractive public transport

- Vehicle design as an important link to complex vehicle requirements of driver, user, operator and service
- Attractive and highly functional vehicle design as basis for modular construction kit of the new MAN citybus

Dipl.-Ing. Stephan Schönherr, Vice President Engineering Vehicle Styling Bus, MAN Truck & Bus AG, Munich

The eTrailer – CO2 reduction for heavy duty commercial vehicles by integration of an electrified trailer into the brake systems of the overall vehicle

- CO2 reduction due to hybridization of the overall vehicle
- Optimized energy recuperation by integration in the overall vehicle brake control system
- Reuse harvested energy for traction assistance of powering auxiliaries

Dipl.-Ing. Gerd Schünemann, Innovation Leader Electrification, Co-author: M. Sc. Johannes Heseding, both at WABCO GmbH, Hanover

Coffee break and visit to the exhibition

New platform concept for commercial vehicle cabins – Optimized approaches in respect of modularity, assembly, light-weight and aerodynamics, flexible applicable for commercial vehicles of tomorrow

- New light-weight cabin platform concept for commercial vehicle
- Modular system for easy assembly and realization of different cabin versions
- Light weight design through function integration and specific material selection
- Cabins for future CV with conventional or alternative propulsion systems

Ing. Andreas Ebner, Manager Cabin Design, Magna Powertrain Engineering Center Steyr GmbH & CO KG, St. Valentin, Austria

Energy-recuperation as business-case for trailers

- Energy-recuperation as business model
- Possible use-cases in trailers
- Bosch-components for business-case

Dipl.-Ing. Niki Berger, Director, Sales Powertrain Solutions, Robert Bosch GmbH, Stuttgart

Development of a disruptive semitrailer tractor in lightweight design

- Short development cycles based on simplified geometry
- Only goal-oriented concepts are pursued further
- Building a versatile solution database for implementation in series processes

Dipl.-Ing. (FH) Jürgen Hintereder, Constructor, Co-authors: Steve Sattler, Urs Gunzert, all MAN Truck & Bus AG, Munich

Modular platform approach for electric drive system in commercial vehicles

- Electric drive systems with high power density and high degree of integration
- Power electronics platform for package-optimizes solutions
- Optimizing efficiency for electric drive systems

Dr. Martin Fritz, Vice President R&D Electronics & Software, Schaeffler Technologies, Bühl

A new chassis-concept for electrified, light commercial vehicles based on innovative forming technologies

- New chassis-solution for electrified, light commercial vehicles
- New structural lightweight design-approach
- New forming technology for the manufacturing of branched sheet-metal-structures

Dr.-Ing. Wolfram Schmitt, Head of Central Research & Development, Co-authors: B. Eng, Philipp Huse, both at Hörmann Automotive GmbH, Ginsheim-Gustavsburg, Dipl.-Ing. (FH) Richard Koehnsen, Röchling Automotive SE & Co. KG, Worms

Citaro hybrid – The first commercial vehicle with profitable 48V mild hybrid system

- Presentation Citaro hybrid
- Dimensioning of components according to technical an economic criteria
- Investigation of total cost of ownership

Dipl.-Ing. (BA) Claudio Rivas Zöller, Manager Product Engineering Energy Management, Co-authors: Jörn Häring, Dr.-Ing. Tim Nagel, all Daimler Buses, EvoBus GmbH, Mannheim

End of the first conference day

Get-together at the Unimog-Museum Gaggenau

At the end of the first conference day VDI Wissensforum kindly invites you to attend the get-together at the Unimog-Museum with the possibility to ride along at the outside test parcours. Enjoy the relaxed and informal atmosphere for in-depth conversations with other participants and speakers.
Second conference day  
Wednesday, June 5, 2019

**Automated Driving**  
Room: Kongresssaal 2  
Chairman: Dipl.-Ing. Jörg Lützner, Continental Automotive GmbH, Schwalmbach

- **08:15** Platooning – Automated driving for customer use at logistics operation  
  - Automated driving in the commercial vehicle  
  - Platooning for customer use

  Torsten Klein, Senior Vice President Research, Co-author: Andreas Zimmermann, both at MAN Truck & Bus AG, Munich

- **08:45** Autonomous Trucks – What happened since last year  
  - The autonomous scene: understanding the marketplace  
  - How autonomous trucks will change logistics?  
  - What does it take for autonomous trucks to become reality?  
  - How can it be done?

  Dr. Peter Vaughan Schmidt, Head of Strategy Daimler Trucks, Daimler AG, Stuttgart

- **09:15** ZF swap body assist – Autonomous loading and unloading of swap bodies on depots  
  - Driverless driving to target position on depot via a routing system  
  - Autonomous loading and unloading of a swap bodies  
  - Advantages: Damage reduction, driver relief, improvement of process reliability  
  - Realization with the help of ZF-ReAx, ZF-TraXon Hybrid, ZF ProAI, ZF RemoteCars, Lasers

  Dipl.-Ing. Alexander Banerjee, Project Manager, Co-authors: Dipl.-Ing. Patrick Kniess, Dipl.-Ing. Friedrich Tenbrock, all ZF Friedrichshafen AG, Friedrichshafen

- **09:45** Coffee break and visit to the exhibition

**Methods/Processes/Tools**  
Room: Kongresssaal 2  
Chairman: Dipl.-Ing. Matthias Bengl, IVECO Magirus AG, Ulm

- **10:30** Born digital – BPW revolutionize configuration, ordering and production of running gears  
  - Digitalization through 3D visualization and real-time delivery of 3D CAD data  
  - Configuration of complex modular products in a web-based shop system  
  - Commercial vehicle running gears as an example  
  - Improvement of customer benefit through workflow and role concept – process support from the design engineer to purchasing and assembly

  Dr.-Ing. Dirk Nötzke, Manager of Product Data Management, BPW Bergische Achsen KG, Wiehl

**Connectivity**  
Room: Kongresssaal 1  
Chairman: Dr. Thomas Dieckmann, WABCO GmbH, Hanover

- **10:30** Over the air software update for commercial vehicle trailers  
  - Specific challenges  
  - Advantages and disadvantages of different approaches to the update  
  - A consolidated approach that allows quick realization  
  - Visions for the future, necessity for standardization

  Dipl.-Inform. Konrad Feyerabend, Global Innovation Domain Manager Connectivity, WABCO GmbH, Hanover

- **11:00** Predictive maintenance for TraXon: Business model and technical solution  
  - Megatrend digital solutions  
  - Design of the business model predictive maintenance  
  - Technical methods to monitor transmissions in the context of predictive maintenance

  Dr. Matthias Holzer, Product Planner, Co-author: Robert Karkoschka, both at ZF Friedrichshafen AG, Friedrichshafen

**Green Environment/Subsustainability**  
Room: Kongresssaal 1  
Chairman: Dipl.-Ing. Thomas Nickels, MAN Truck & Bus AG, Nuremberg

- **10:30** Emissions during braking  
  - Fine dust is generated by different processes during braking  
  - Mechanical formation of fine dust PM10  
  - Thermal generation of ultrafine particles <0,1 µm  
  - Specific sampling and measurement techniques needed for quantification

  Dr.-Ing. Christof Asbach, Unit Head, Air Quality & Filtration, Co-authors: Dr. rer. nat. Ana Maria Todea, Dipl.-Ing. Heinz Kaminski, all Institut für Energie- und Umwelttechnik e. V., Duisburg, Dipl.-Ing. Marco Zeissinger, Link Engineering, Limburg

- **11:00** Scope and limitations of the new vehicle energy consumption calculation tool (VECTO) for heavy-duty vehicles  
  - VECTO tool as an official calculation method for CO2 emissions and fuel consumption for commercial vehicles  
  - Commercial vehicles CO2 emissions within the regulatory framework  
  - Technologies and vehicle typologies not covered by VECTO


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**www.vdi-international.com/0ITA704019**
11:30 Lean product creation process for Chinese commercial vehicle supplier
• Agile organization and lean production
• Product creation process with target costing approach
• Hubunit for unlimited service
• Intercultural collaboration
Kay Hömberg, Senior Consultant, Ebertconsulting GmbH, Cologne and Gongbo Chen, Co-authors: Wentao Li, Wanjie Yang, all Zhucheng Yihe Axles Co., Ltd., Zhucheng, China

12:00 Application of a universal simulation environment for deriving specification premises of commercial vehicles with alternative and conventional drive trains
• Expected CO₂ directive requires new vehicle concepts in the commercial vehicle sector
• Presentation of a simulation environment for deriving specification premises
• Application examples in the context of the product development process
Dr.-Ing. Mario Greule, Calculation Engineer, Calculation Entire Vehicle and Energy Balance, Co-author: Dipl.-Ing. Yorg Stuermer, both at Daimler Buses, EvoBus GmbH, Mannheim

12:30 Lunch break and visit to the exhibition

13:00 The key role of the tertiary safety in the vehicle concept design to preserve the occupants and road users life
• Strategic role of the OEM’s to preserve life in the minutes after the crash event
• Relevance of “Rescue sheets” & “Emergency Response Guide” ISO Std. to support the rescue services
• How to approach the vehicle concept design taking into account the tertiary safety needs
Marco Aimo Boot, Alternative Traction & Electrification Technical Manager, Co-author: Alessandro Bernardini, both at Iveco S.p.A., Turin, Italy

13:30 Next generation active safety systems for city buses – The foundation for automated driving
• Active safety systems in city buses
• Brake assistance in dynamic urban traffic situations
• Protection of bicyclists and pedestrians
Dr.-Ing. Björn Barrois, Manager Autonomous Driving Daimler Buses, Co-authors: Hannes Koch, B. Eng./B. A., Thomas Erhart, M. Sc., all EvoBus GmbH, Neu-Ulm

14:00 Increasing transport efficiency through the digitalization of the trailer
• Status quo in transport logistics
• Potentials to increase transport efficiency by digitalizing the trailer
• Application examples for digitalizing the trailer
Dipl.-Ing. (FH) Kurt Kunz, M. Sc., MBA, Head of Research/Advanced Technology Development and Electronics, Fahrzeugwerk Bernard Krone GmbH & Co. KG, Werlte

14:30 HelyOS – Highly efficient online yard operating system
• Automated commercial vehicles on yards
• Online control platform for assigning missions to the vehicles
• Usage of the Robotic Operating System (ROS)
Dipl.-Ing. Gunter Nitzsche, Research Assistant, Vehicle and Propulsion Technologies, Co-authors: Dipl.-Ing. Julius Engasser, MAN Truck & Bus AG, Munich, Paul Mentink, M. Sc., TNO, Helmond, the Netherlands

15:00 Knowing the driver today and tomorrow
• Driving a heavy-duty truck over long distances
• First passenger car technologies for detecting the driver state of wellbeing
• Identify which technologies and functions could add value for trucks drivers

15:30 Change to room: Kongresssaal 2
Plenary Lectures (Room: Kongresssaal 2)

15:35 The next steps of e-bus mobility in Cologne
- Launch and experience of the first e-bus line in Cologne
- The next steps to implement additional e-bus lines in the network
- Bus-depots, charging infrastructure, the electric grid etc. have to follow
  Dipl.-Ing. Jörn Schwarze, Member of the Executive Board, Kölner Verkehrs-Betriebe AG, Cologne

16:05 Electrifying trucks at Daimler Trucks
- Global organization Daimler Trucks
- Paths of electrification in regions
- Concept eActros
- Customer experience with eActros
  Ralf Ostwald, Manager Mechanical Design & Cooling, Daimler AG, Stuttgart

16:35 Conclusions
16:45 End of the conference

Program Committee

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- Dipl.-Ing. Matthias Bengt, Iveco Magirus, Ulm
- Dr. Thomas Dieckmann, WABCO GmbH, Hanover
- Prof. Dr.-Ing. Jörg Ebert, Ebertconsulting GmbH, Cologne
- Dipl.-Ing. Christof Kerkhoff, VDI e.V., Düsseldorf

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- Jack Martens, DAF Trucks N.V., Eindhoven, The Netherlands
- Dr. Karl Masser, Magna Powertrain Engineering Center Steyr GmbH & Co. KG, St. Valentin, Austria
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4. row, from left to right
- Dr. Jürgen Wagner, MAN Truck & Bus AG, Munich
- Dipl.-Ing. Martin Zeilinger, Daimler AG, Stuttgart

Further VDI Events for the industry of commercial vehicles

6. International Engine Congress
February 26 – 27, 2019, Baden-Baden

Autonomous Trucks
March 27 – 28, 2019, Munich

Drivetrain Solutions for Commercial Vehicles
July 10 – 11, 2019, Bonn

International VDI Congress ELIV
October 16 – 17, 2019, Bonn

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Deep Dive
Guided plant tours at Daimler Trucks in Wörth and Schaeffler in Bühl
• Assembly plant Daimler Trucks
• Prototype construction of commercial vehicle and tractor clutches, stamping and hardening shop of Schaeffler

Hands On
Test drives on the Schaeffler test track in Bühl-Bussmatten

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Customer Service Center
Postfach 10 11 39
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☐ Tour A: Factory Tour, Daimler – limited amount available (Free of charge)
or
☐ Tour B: Factory Tour and Test Drive, Schaeffler – limited amount available (Free of charge)

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Accommodation:
A limited number of rooms have been reserved for the conference participants. Please visit http://veranstaltungen/baden-baden.de/vdinutzfahrzeuge19 for further information.

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Information:
The price includes coffee breaks and beverages during breaks, lunch and the evening reception. The conference materials will be provided digitally.

Conference office:
Tuesday, June 4, 2019 8:00 a.m. – 6:30 p.m.
Wednesday, June 5, 2019 7:30 a.m. – 5:00 p.m.

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