Electric/Electronics for Commercial Vehicles 2023

Main Topics:

- **Future of Transportation**
- **Autonomous Driving**
- **Architecture & Software**
- **Propulsion Systems**
- **Components, Subsystems & Integration**

+ **Free Entrance to the Parallel Event ELIV 2023**

+ **Networking at the joint Coffee Breaks & Evening Event**

+ **Extensive Exhibition**

+ **Start-up Area**

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An event organized by VDI Wissensforum GmbH
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October 18 - 19, 2023,
World Conference Center Bonn, Germany

1st Congress Day
Wednesday, October 18, 2023

07:45 Registration

Plenary Lectures – New York (Ground Floor)
Moderation: Dr. Rolf Zöller, Porsche AG and Porsche Digital, Weissach

08:45 **Opening of the Congress, Current Market Situation & Hour of Topical Interest**
Dr. Rolf Zöller, Director Smart Connected Vehicle Porsche AG and Managing Director Porsche Digital, Chairman of the Program Committee and **Dr. Karl-Thomas Neumann,** former CEO of Continental AG, Volkswagen China and Adam Opel GmbH, Founder & Owner

09:10 **Transforming the Future of Mobility with the Power of AI and the Cloud**
Dominik Wee, Corporate Vice President – Manufacturing & Mobility, Sales, Business Strategy & Development, Microsoft Corporation, Munich

09:40 **MB.OS – Our Chip-to-Cloud Architecture for a Luxury Experience**
Magnus Östberg, Chief Software Officer – Executive Vice President, Research & Development, Mercedes-Benz AG, Sindelfingen

10:10 **Re-Thinking E/E Architecture Design – A More Comprehensive Approach to Solve Future Challenges**
Dipl.-Ing. Kai Lars Barbehön, Vice President Central Control Units, Wire Harness, Power Supply, BMW Group, Munich

10:40 Coffee break, Exhibition and Start-up Area visit

Commercial Vehicles – Future of Transportation
Moderation: Jörg Lützner, Continental Automotive GmbH, Schwalbach

11:25 **Welcome to the Era of Logistics – Insights into Trends That Will Shape the Future**
- Megatrends shaping the needs of societies and industries and the supply chains that serve them
- Navigating the future: The DHL Logistics Trends Radar – what it is, why it matters and how it supports innovation
- The DHL customer-centric innovation approach and ecosystem
- Use case examples, ideas for innovation and implementation leveraging technology as well as business & social trends

Dr. Klaus Dohrmann, Vice President, Head of Innovation & Trend Research, DHL

11:55 **UNICARagil – Rethinking Architectures for Fully Automated and Driverless Vehicles**
- Automated Driving
- E/E Architecture
- Service Oriented Software Architecture
- Technical Supervision and Cloud Connectivity

Timo Woopen, M. Sc., Manager, Research Area Vehicle Intelligence & Automated Driving, **Alexandru Kampmann, M. Sc.,** Chair for Embedded Software, Co-authors: Raphael van Kempen, M. Sc., Univ.-Prof. Dr.-Ing. Lutz Eckstein, all of RWTH Aachen University

12:25 **Bulli, Pick Me Up: Continuous Testing as a Key for Developing a Robot-Taxi-System**
- Autonomous vehicles, MaaS, TaaS, robot cab
- Continuous Integration/Continuous Deployment
- Software Integration
- Testing & simulation of automated vehicles

Dr.-Ing. Christian Rösener, Head of Integration & Verification, Autonomous Driving, MaaS, TaaS, Volkswagen AG

12:55 Lunch, Exhibition and Start-up Area visit

Commercial Vehicles – Architecture & Software
Moderation: Rainer Holve, Elektrobit Automotive GmbH, Erlangen

14:25 **SAE J1939 in AUTOSAR – CAN FD and CAN XL**
- Realizing J1939-22 in AUTOSAR
- Higher transmission rates with CAN FD (J1939-22)
- Usage of the Multi-PG concept
- Outlook on J1939 with CAN XL

Timo Schwendner, Solution Manager J1939, Productline Embedded Software and Systems, Co-author: Martin Schlodder, all of Vector Informatik GmbH, Stuttgart

14:55 **Event-Chain-Focused Development of System Architectures Makes Complex Systems Manageable**
- End-to-end validation of real-time requirements in vehicle systems
- Event chain analysis for higher-level timing requirements
- Early error detection improves project planning security
- Development productivity can be significantly increased

Dipl.-Ing. Florian Mayer, Project Manager, Professional Services, INCHRON AG, Erlangen, **Dipl.-Ing. Ferry Kraft,** Function Architect, R&D Electric/Electronic, MAN Truck & Bus SE, Munich, Co-authors: Jan Apelt, Dr.-Ing. Ralf Münzenberger, both of INCHRON AG, Erlangen, Christian Winkler, MAN Truck & Bus SE, Munich

15:25 **How Data-Driven Approaches Enhance Agile and Quality-Assured Software Development for Automated Driving**
- Data collection and management
- Data virtualization for digital twin creation
- Different Use-Cases for Data-Driven Software Development (scenario generation, perception performance, NN training, optimization)
- Processes/Methods/Tools Enabling Agile and Quality-Assured Software Development

Dipl.-Ing. Klaus Fuchs, Senior Product Manager, ADAS/AD, AVL Software and Functions GmbH, Regensburg, **Dipl.-Ing. Gernot Hasenbichler,** Senior Product Manager, ADAS/AD, AVL List GmbH, Graz, Austria

15:55 **Usage of UDS Service 0x29**
- UDS service 0x29 (Authentication Service)
- Library
- scalable solutions
- secure gateway

Lothar Zizala, Vehicle Security & Safety, MAN Truck & Bus SE, Munich, **Ralf Ramrath,** iQmine GmbH, Munich

16:25 Coffee break, Exhibition and Start-up Area visit

Commercial Vehicles – Autonomous Driving
Moderation: Dr. Gerhard Nowak, ifp consulting, Munich

17:10 **Unlocking the Power of Automated Driving Technology Today**
- How autonomy will transform the trucking industry
- Market opportunity for highly automated driving (HAD) products
- Plus's unique approach to empowering driver-in and fully autonomous solutions via Open Autonomy Platform
- Plus's case study of building and commercializing high-performance modular autonomous driving software solutions that are affordable and scalable across vehicle types and applications

Sun-Mi Choi, MBA, VP of Business Development, Sales, Plus, Santa Clara, United States

17:40 **Automated Trucking: Vision, Current State, and Challenges**
- Safe Autonomous driving
- Daimler Truck dual partnership strategy
- Development Strategy Torc Robotics for Autonomous Trucks
- Challenge of releasing an autonomous truck

PhD Axel Gern, Managing Director, Development, Torc Europe GmbH, Stuttgart

18:10 **Key Factors of a Robust and Safe Automated Driving Function –
Transferable Insights of City-Bus Platooning in Munich**
- System performance - Required upgrade of the electronic architecture
- Redundancy for operational reliability and safety
- Methods for a well-structured development and test phase
- Application example: Analysing the platooning of EBUSCO 3.0 12m city-buses

Nicole Kechler, M. Sc., Member of Scientific Staff, R&D, Karlsruhe Institute of Technology (KIT), Co-authors: Niranjana Venkatesh, M. Sc., Ebusco, Deurne, The Netherlands, Prof. Dr.-Ing. Eric Sax, Institut fuer Technik der Informationsverarbeitung (ITIV) – Karlsruhe Institute of Technology (KIT)

18:40 **End of the 1st Congress Day**

19:00 **Night of Electronics on the MS RheinEnergie**

90.30 m long and 19.30 m wide – these are the measurements of your event location in 2023. Unwind and enjoy a relaxing evening aboard Europe's largest event liner on inland waters, the MS RheinEnergie. We'll meet at the landing stage "Bundeshaus".

2nd Congress Day
Thursday, October 19, 2023

Commercial Vehicles – Propulsion
Moderation: Dipl.-Ing. (FH) Stefan Riegl, MAN Truck & Bus SE, Munich

08:30 **Hydrogen – A Game Changer in the Automotive Industry … and Beyond**
- H2 market and potentials
- The road to net zero: H2 as preferred solution?
- Bosch's Contribution in mobile applications
- …and beyond (stationary applications)

Dr. Silke Spitzer, Senior Vice President, SW Engineering Powertrain Solutions – Electronic Controls, Robert Bosch GmbH, Schieberdingen

09:00 **Electrified Commercial Vehicle Trailers – How to Turn a Conventional Trailer into a Hybrid Vehicle**
- electrification/hybridisation of heavy-duty trailers
- decarbonisation of the freight industry
- Challenges in the legal framework

Dr. rer. nat. Nils Pfullmann, Team leader System Solutions Trailer, ZF Friedrichshafen AG, Hannover

09:30 **AWARD Project**
- Project presentation
- Hub to hub use case
- Forklift use case
- Port use case

Julien Collier, M. Sc., Project Manager, System, Easy Mile, Toulouse, France

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10:00 **NIO – Smart Electric Vehicles and Battery Swapping**
Dr. Frank Kindermann, Head of Battery System Europe, NIO GmbH, Munich

10:30 **Building a Car while Driving it: Incremental Approach to Cockpit Software**
Maria Uvarova, PhD, Senior Vice President, Software Product Management, **Stellantis,** Munich

11:00 **Coffee break, Exhibition and Start-up Area visit**

Commercial Vehicles – Components, Subsystems & Integration
Moderation: Dr. Falk Hecker, Knorr-Bremse Systeme fuer Nutzfahrzeuge GmbH, Schwieberdingen

11:45 **Modular High-Power-DCDC-Platform for FC-Applications –
The sixth Generation Bidirectional DCDC –**
- A challenge accepted: steady state and highly dynamic operation at the same time
- Modular approach for scalability and cost-efficiency
- Flexible design for a wide range of application and markets

Dr.-Ing. Bernhard Budaker, Vice President, Product Division PE, BRUSA HyPower AG, Buchs, Switzerland

12:15 **The Challenges to Move to Fail Safe Operation in E/E Architecture**
- Specific challenges regarding fault-tolerant power-net architectures in commercial vehicles
- Comparison with redundancies in already existing systems in commercial vehicles (in particular brake systems) and in aviation
- Concept of a fail tolerant, ASIL capable and modular power-net architecture for commercial vehicles

David Kiss, Product Owner, R&D, Knorr-Bremse SfN GmbH, Budapest, Hungary

12:45 **Enabling a Software Platform for Faster-feature Deployment in Next-generation Commercial Vehicles**
- How to migrate existing functions to HPC environments
- How to increase significant reuse of existing legacy software and systems
- How to create hybrid functions that include service and signal driven designs
- How to speed-up integration activities for such functions

Dr. Nico Hartmann, CTO, Qorix, Munich

13:15 **Lunch, Exhibition and Start-up Area visit**

Plenary Speeches and Award Ceremony – New York (Ground Floor)
Moderation: Dr. Rolf Zöller, Porsche AG and Porsche Digital, Weissach

14:30 **Liquid AI – Closing the Gaps toward Autonomous Driving**
Igal Raichelgauz, B. Sc., Founder & CEO, Autobrains Technologies Ltd., Tel Aviv-Yafo, Israel

15:00 **Semiconductors are Driving Sensing and Thinking**
Dr.-Ing. Yankin Tanurhan, Senior Vice President of Engineering, Solutions Group, Synopsys, Inc., Sunnyvale, CA, USA

15:30 **Conclusion and Discussion**
By Members of the Program Committee

16:00 **Award Ceremony "Auto Electronic Excellence Award 2023", best Start-up and Closing of the Congress**

16:15 **End of the Congress**

Program Committee

Putting together this world-class agenda requires decisions to be taken long before the call for papers is published. This job is the responsibility of Electric/Electronics for Commercial Vehicles 2023 program committee.

High-level representatives of OEMs and leading suppliers accurately identify the latest megatrends without ignoring the enablers or the classic topics.

Dr. Hans Welfers, Consulting for Technology

Dipl.-Ing. (FH) Stefan Riegl, VP Function & Software Development, MAN Truck & Bus SE, Munich

Dipl.-Ing. Jörg Lützner, Head of Innovation Management, Continental Automotie GmbH, Schwalbach

Dr. Falk Hecker, Vice President Technology, Knorr-Bremsen Systeme fuer Nutzfahrzeuge GmbH, Schwieberdingen

Herr Georg Fässler, Vice President, Continental Automotive GmbH, Villingen-Schwenningen

Dr. Stefan Sailer, Manager E-Mobility Applications Powertrain CV, ZF Friedrichshafen AG, Friedrichshafen

Mustafa Üstertuna, Chief Engineer Software & Electronics, Daimler Truck AG, Wörth am Rhein

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Martina Slominski
Team Leader Exhibition & Sponsorship
Phone: +49 211 6214-385
Email: slominski@vdi.de

Start-up Area

We offer young companies the opportunity of presenting their latest developments and products in the start-up area. Get the chance to meet the exclusive, international group of participants consisting of decision-makers and specialists from vehicle manufacturers, suppliers, and service providers as well as representatives from universities! In addition to a full-service package with a 4 sqm booth space in the start-up area, a presentation slot on the start-up stage is also included.

Interested in taking part? To apply, request the registration documents for the start-up area.

We are happy to provide assistance and further information:

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Parallel conference

International VDI Congress
ELIV 2023
October 18th – 19th, 2023, Bonn, Germany

Main Topics:
- **Open Source Software**
- **Software Technologies**
- **E/E-Architecture**
- **Automotive AI**
- **Automated Driving**
- **Security**
- **Electronics Technology**
- **E-Vehicle Mobility**
- **System Engineering and Processes**

Top Speakers:
Kai Lars Barbehön, BMW Group
Magnus Östberg, Mercedes-Benz
Igal Raichelgauz, Autobrains
Maria Uvarova, Stellantis
Dr.-Ing. Yankin Tanurhan, Synopsys
Dominik Wee, Microsoft
Dr. Frank Kindermann, NIO
Dr. Rolf Zöller, Porsche AG & Porsche Digital

Further details: www.eliv-congress.com

Event-App

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Electric/Electronics for Commercial Vehicles 2023

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E/E Commercial Vehicles – Now part of ELIV!

You need help?
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Electric/Electronics for Commercial Vehicles 2023
October 18 – 19, 2023, **Bonn, Germany** (01TA110023)
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