



# The World's Largest Congress for Automotive Electronics, Software and Applications!

22nd International Congress and Exhibition  
October 16-17, 2024, Bonn, Germany

## Top Speakers:

- Dr. Fathi EL-Dwaik, BMW
- Jahmy Hindman, Ph.D., John Deere
- Gilles Mabire, Continental Automotive Technologies
- Dr. Mirko Nentwig, AUDI
- Dr. Holger R. Scholl, Cerence
- Matthias Schneider, Mercedes-Benz
- Jim Tung, MathWorks
- Dr. Rolf Zöller, Porsche



## Main Topics:

- AI Automotive
- Digital Homologation
- Software for the SDV
- Open Source Software
- Cockpit & Customer Experience
- E-Vehicle Mobility
- Automated Driving
- Mobility System Architecture
- Electronics Technologies
- Processes
- Cloud & Connect
- Security

[www.eliv-congress.com](http://www.eliv-congress.com)

## Congress Highlights:

-  Automotive Trend Sessions including Panel Discussions on: AI Automotive & Digital Homologation
-  Lightning Talks
-  Parallel Conference E/E for Mobile Machines
-  Start-up Area and Special Start-up Program
-  Extensive Exhibition
-  Interactive Communication Points
-  Meet with the Speakers
-  Night of Electronics

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## ELIV – Program Overview

### 1st Congress Day Wednesday, October 16, 2024

07:45 Registration



#### Plenary Speeches – New York (Ground Floor)

Moderation: **Dr. Rolf Zöller**, Porsche AG and Porsche Digital, Weissach

08:40 Opening of the Congress, Current Market Situation & Highlights of the Congress  
**Dr. Rolf Zöller**, Chief Architect Car-IT Porsche AG and Managing Director Porsche Digital, Chairman of the Program Committee  
**Dr.-Ing. Carsten Hoff**, CEO, dSPACE GmbH, Chairman of the Program Committee "Mobile Machines"

With opening statements of:

**Dipl.-Ing. (FH) Frank Kraemer**, IBM Deutschland GmbH, Frankfurt/Main, **Dr. Stefan Poledna**, TTTEch Auto, Vienna, Austria, **Dr. Angela Wang**, Neusoft, Shenyang, China

09:00 Insights into BMW's Future E/E Architecture and its Semiconductor Requirements  
**Dr. Fathi El-Dwaik**, Vice President BMW Group E/E Systems, BMW AG, Munich

09:30 Generative AI & Conversational AI – The Future of In-Car Assistants  
**Dr. Holger R. Scholl**, Vice President, Cerence, Aachen

10:00 Coffee Break, Exhibition and Start-up Area visit

10:45 Parallel Sessions

#### Session 1: New York (Ground Floor)



##### AI Automotive ASIL & GenAI

Moderation: Dr. Dirk Walliser, ZF, Friedrichshafen

#### Session 2: Nairobi (Ground Floor)



##### Software SDV

Moderation: Kai-Uwe Balszuweit, BMW, Munich

#### Session 3: Wien (Ground Floor)



##### Cockpit & Customer Experience In-Cabin

Moderation: Dr. Riclef Schmidt-Clausen, AUDI, Ingolstadt

#### Session 4: Bangkok (Basement)



##### E-Vehicle Mobility Vehicle Range

Moderation: Dipl.-Ing. Christof Kellerwessel, adck-consult, Cologne

#### Session 5: Addis Abeba (Basement)



##### Automation and Autonomy

Moderation: Dr.-Ing. Georg Kormann, John Deere, Kaiserslautern

12:15 Lunch, Exhibition and Start-up Area visit

13:45 Parallel Sessions



##### Automotive Trend Session AI Automotive

Moderation: Joachim Langenwalter, TMT CoPilots, Munich



##### Automated Driving

Moderation: Jürgen Bortolazzi, Porsche, Weissach



##### Mobility System Architecture

Moderation: Dr.-Ing. Michael Winkler, HELLA, Bremen



##### Electronics Technologies

Moderation: Dr. Jutta Schneider, Mercedes-Benz, Sindelfingen



##### Software Defined Mobile Machines

Moderation: Dipl.-Ing. Ralf Leinenbach, Hydac Electronic, Saarbrücken

15:45 Coffee Break, Exhibition and Start-up Area visit

16:30 Lightning Talks: Innovative two-minute rapid-fire pitches on automotive topics, New York (Ground Floor)

17:15 Parallel Sessions



##### AI Automotive New Dimensions

Moderation: Dipl.-Ing. Stefan Teuchert, TRATON, Munich



##### Software Open Source

Moderation: Dipl.-Ing. Martin Schleicher, Continental, Erlangen



##### Cockpit & Customer Experience Ecosystems

Moderation: Rinat Asmus, Tata Technologies Inc., Berkeley, USA



##### E-Vehicle Mobility Charging

Moderation: Dr.-Ing. Dieter Rödter, Robert Bosch, Stuttgart



##### Cloud Computing Enhancing Offroad Applications

Moderation: Dr.-Ing. Georg Kormann, John Deere, Kaiserslautern

18:45 End of the first Congress Day

19:00 Night of Electronics on the MS RheinMagie – All participants are cordially invited. Discuss the results of the day with fellow experts and use your chance to network.

Parallel Conference:  
Electrics/Electronics for  
Mobile Machines 2024

## 2nd Congress Day Thursday, October 17, 2024

08:30 Parallel Session

### Session 1: New York (Ground Floor)



#### Automotive Trend Session Digital Homologation

Moderation: Elmar Frickenstein,  
Elstein Consulting, Munich

### Session 2: Nairobi (Ground Floor)



#### Software Cloud, Connect & Rust

Moderation: Dipl.-Ing. Martin  
Schleicher, Continental, Erlangen

### Session 3: Wien (Ground Floor)



#### Processes SDV

Moderation: Dr. Olaf Lüdtkke, Hella,  
Lippstadt

### Session 4: Bangkok (Basement)



#### Security TARA & More

Moderation: Dr. Holger Niemann,  
Robert Bosch, Stuttgart

### Session 5: Addis Abeba (Basement)



#### Electrification

Moderation: Dr.-Ing. Steffen  
Mutschler, Bosch Rexroth, Ulm

10:30 Coffee Break, Exhibition and Start-up Area visit

11:15 Bridging the World of R&D and IT – from Tool Provider to Solution Architect  
Matthias Schneider, Vice President IT RD, Security & Data, Mercedes-Benz AG, Böblingen

11:45 Parallel Session



#### Software SDV

Moderation: Stefan Singer, Renesas  
Electronics, Munich



#### Transformation of Working

Moderation: Dr. Rolf Zöller, Porsche  
and Porsche Digital, Weissach



#### Processes Virtual, Simulation, Requirements

Moderation: Dr. Torsten Wey, Ford,  
Cologne



#### Security AI

Moderation: Dipl.-Ing. Henning  
Harbs, Volkswagen, Wolfsburg



#### (Smart) Sensors and Algorithms

Moderation: Dr.-Ing. Carsten Hoff,  
dSPACE, Paderborn

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 Why Autonomy, Why Now?

Jahmy Hindman, Ph.D., Senior Vice President & Chief Technology Officer, Engineering & Technology, John Deere, Moline, USA

15:00 How to Increase Efficiency and Reduce Time to Market Leveraging SDV

Gilles Mabire, CTO – Continental Automotive, Software and Central Technologies, Continental Automotive Technologies GmbH, Frankfurt/Main

15:30 Conclusion of the Congress

16:00 Award Ceremonies: "Best Start-up", "Best Keynote", "Best Speaker" and "Auto Electronic Excellence Award 2024"

16:15 End of the Congress

Parallel Conference:  
Electrics/Electronics for  
Mobile Machines 2024

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Wednesday, October 16, 2024

07:45 Registration



## Plenary Speeches – New York (Ground Floor)

Moderation: **Dr. Rolf Zöller**, Porsche AG and Porsche Digital, Weissach

08:40 Opening of the Congress, Current Market Situation & Highlights of the Congress

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With opening statements of:

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**Dr. Stefan Poledna**, TTTEch Auto, Vienna, Austria

**Dr. Angela Wang**, Neusoft, Shenyang, China

09:00 Insights into BMW's Future E/E Architecture and its Semiconductor Requirements

- Challenges in the automotive industry as a driver for continuous innovations
- E/E Architecture in the past, today and in the future, focusing on BMW's approach of 3 level architecture (HPC, Zones, etc.)
- Semiconductor requirements for the future E/E Architecture
- Semiconductor technology and standardization enabling higher system integration

**Dr. Fathi El-Dwaik**, Vice President BMW Group E/E Systems, BMW AG, Munich

09:30 Generative AI & Conversational AI – The Future of In-Car Assistants

- Market Dynamics
- Inflection point: GenAI – creating an immersive, conversational experience
- Generative, LLM-powered conversational experiences

**Dr. Holger R. Scholl**, Vice President, Cerence, Aachen

10:00 Coffee Break, Exhibition and Start-up Area visit

## ELIV – The App

### Simply download the Event-App and register!

The App will be available for download in the Apple App Store and the Google Play Store for all participants as of October.

App areas:

- Digital congress program: create your own agenda at once
- General event information
- Evaluation and question function
- Exhibition information
- Service information
- Networking:
- Digital Business Card: create your Digital Business Card  
Share your data quickly and easily with other participants and save new contacts directly
- Use the "Offer" and "Search" function to find and contact other participants
- Meeting Arrangement: request appointments with other participants

## Sponsor



## New York (Ground Floor)



### AI Automotive ASIL & GenAI

Moderation: Dr. Dirk Walliser, ZF, Friedrichshafen

#### 10:45 How to Integrate GenAI in Automotive: Enhance GenAI or Change Development Philosophy?

- GenAI can generate code
- In Automotive, code is developed based on software requirements and architecture
- Enhance GenAI for code generation to include software requirements and architecture?
- Change the automotive development philosophy to integrate GenAI code generation?

**Dr. Ulrich Bodenhausen**, Manager Consulting, Product Group Consulting, Vector Consulting Services GmbH, Stuttgart

## Nairobi (Ground Floor)



### Software SDV

Moderation: Kai-Uwe Balszuweit, BMW, Munich

#### State of the Art of Foundation Software for Software Defined Vehicle

- Automotive E/E architecture transformation enabling Software Defined Vehicle (SDV)
- SDV challenges
- Foundation Software as SDV enabler
- Consideration of selecting Foundation Software for SDV

**Leo Hendrawan**, Field Application Engineer, Co-Authors: Randy Martin, Louay Abdelkader, all of Blackberry QNX, Munich

## Wien (Ground Floor)



### Cockpit & Customer Experience In-Cabin

Moderation: Dr. Riclef Schmidt-Clausen, AUDI, Ingolstadt

#### Immersive In-Car AR Live Gaming Enabled by SDV Architecture, ADAS Cameras and AI Software

- Leverage SDV & ADAS to create an immersive in-car AR real time gaming experience
  - Involve your passengers into your driving experience thanks to real time AR gaming
  - Need to create standardized "cross-OEMs" APIs to attract the AR gaming developers' community
- Ing. Patrice Reilhac, M. Sc.**, Director, Research & Innovation, Valeo Brain Division, Bietigheim-Bissingen, Co-Authors: Christopher Nowakowski, M. S., Anusha Manila, M. S., both of Valeo Brain Division, San Mateo, USA

## Bangkok (Basement)



### E-Vehicle Mobility Vehicle Range

Moderation: Dipl.-Ing. Christof Kellwessel, adck-consult, Cologne

#### Battery-Integrated Multilevel Inverter Technology – A Highly Integrated Electric Drivetrain Approach and its Technical Implementation in a Distributed Real-Time System

- Basic principle of the battery integrated MMSPC topology
  - Potentials of the technology
  - Realization of the distributed real-time system
  - Flexible control unit concept with HW/SW co-design for high integration of control unit functions
- Daniel Simon, M. Eng.**, Lead Engineer, Energy System, Porsche Engineering Services GmbH, Bietigheim-Bissingen

## Addis Abeba (Basement)



### Automation and Autonomy

Moderation: Dr.-Ing. Georg Kormann, John Deere, Kaiserslautern

#### Future Perspectives and Technical Challenges in Mobile Machines

- Mega-Trends
- What do they mean for NRMM and supplies?
- Automation, digitalization and electrification
- How to navigate through transformation

**Dipl.-Ing. Matthias Dieter**, Managing Director/CEO, Hydac International GmbH, Sulzbach

#### 11:15 Speeding Up GenerativeAI in Software-Defined Vehicles

- Challenge: how to make GenAI a mass mobility technology in future SW Defined Vehicles (SDV)
- Approach: integrate Engineering framework, corporate setup and IT handshake
- Industry practice projects
- Lessons Learned and Outlook

**Dr.-Ing., Dipl.-Wirt.-Ing. Johannes Richenhagen**, Managing Director, FEV.io GmbH, Aachen, Co-Author: Mirko Engelhard, FEV Consulting, Cologne

#### Faster More Robust Software Integration – Raising the Abstraction Level

- The need for the SDV concept and its challenges
- Limitations of Autosar
- Moving to a higher abstraction level for integration of best-in-class functions
- The 4SDV approach

**Dr. Stefan Poledna**, CTO and Co-Founder, Executive Board, TTTEch Auto, Vienna, Austria

#### Biometrics and Sensor Fusion for Enhanced In-Cabin Safety and Comfort

- Future change in In-cabin sensor structure towards a limited number of sensors providing multiple function
- Sensor setup of camera and radar with AI based algorithms
- Inside and outside application of facial recognition to identify driver and passenger, for access control, personalization and payment authorization

**Dr. Wilhelm Steinmann**, Program Manager, and **Dr. Björn Sondermann**, Chief Engineer, Co-Author: Dr. Karsten Sonnenschein, all of Rheinmetall Dermalog SensorTec GmbH, Hamburg

#### Boosting Vehicle Range by Mating Semiconductor Technologies

- Si<sup>2</sup>C fusion switch concepts for 400V BEVs focusing on ease of use
- Multi-level topologies for 800V BEVs and the advantage of SiC & GaN combination
- Influence of semiconductor technology mating on vehicle range and system cost benefits

**Dipl.-Ing. Mark Muenzer**, Fellow Motor Control Solutions, System Application Engineering, Automotive, Co-Authors: Christoph Bauer, Sijia Zhang, all of Infineon Technologies AG, Neubiberg

#### Automation Levels for Mobile Working Machines

- Introducing a New Framework for Automation Levels
  - Distinguishing Automation and Autonomy
  - Focus on Driving vs. Work Process Automation
  - Importance of Connectivity and Sensors for High Automation
- Dr.-Ing. Simon Schätzle**, Group Leader, Innovation Center, Co-Authors: Dr. Pablo Aguirre, Stefan Lang, all of Innovation Center, Sensor-Technik Wiedemann GmbH, Kaufbeuren



## 11:45 Getting ASIL for AI

- AI based Perception
- Sensor-Fusion
- Embedded Deployment

**Dr. Georg Puhlürst**, VP Products & Safety, both of Spleenlab GmbH, Saalburg-Ebersdorf

## Managing the Complexity of Joint Steering, Braking and Powertrain Coordination in Emerging Vehicle E/E Architectures

- Master complexity & increase efficiency with Vehicle Motion Management
- Increase vehicle dynamics performance with modular stand-alone SW products, realize multi-actuator control & x-by-wire potential
- SW function allocation & integration in centralized architectures
- Standardization approach for interfaces to ensure exchangeability and support scalability

**Dipl.-Ing. Niccolo Hägele**, Senior Vice President – Product Area Owner Vehicle Motion Software & Services, Co-Author: Stefan Hoefle, both of Robert Bosch GmbH, Abstatt

## Leveraging AI/ML Techniques in Software Defined Architecture: Towards Emotional Quotient Prediction in Smart Automotive Cabins by Integrating Physiological and Vehicle Data

- AI/ML based Driver emotion prediction using vehicle and physiological data
- High computational chips enable real-time AI/ML algorithm processing in SDVs
- Physiological and vehicle sensors on distributed Zonal ECU

**Gowrishankar Shivashankara Chari, M. Tech.**, Technical Architect, Body Practice, R&D, Co-Authors: Muralidhara Krishnapur Vittal Rao, B. E., Mahesh Ghivari, M. Tech., MBA, all of KPIT Technologies GmbH, Munich

## Designing Predictive Battery Heating Systems for an Electric Vehicle by Utilizing Cloud Data

- Predictive battery heating
- Utilizing "Cloud Data" to predict the driving profile
- Decrease charging time by preheating the traction battery
- Electric vehicle systems at low temperatures

**René Schilling Johnson, M. Sc.**, Industrial PhD Candidate and Simulation Engineer, R&D High Voltage Drives and Energy Systems, Volkswagen AG/TU Braunschweig, Wolfsburg, Co-Author: Prof. Dr.-Ing. Markus Henke, TU Braunschweig

## From Co-Pilot to Auto-Pilot – Autonomy in Agriculture

- Why Automation & Autonomy are Highly Relevant for Farming
- Agricultural Robots vs. Autonomized Tractors
- Needed Evolution on Common Industry Standards

**Dr.-Ing. Arne Bohl**, Vice President – Group Product Strategy, CLAAS KGaA mbH, Harsewinkel

## 12:15 Lunch, Exhibition and Start-up Area visit



### Automotive Trend Session AI Automotive

Moderation: Joachim Langenwalter, TMT CoPilots, Munich



### Automated Driving

Moderation: Jürgen Bortolazzi, Porsche, Weissach



### Mobility System Architecture

Moderation: Dr.-Ing. Michael Winkler, HELLA, Bremen



### Electronics Technologies

Moderation: Dr. Jutta Schneider, Mercedes-Benz, Sindelfingen



### Software Defined Mobile Machines

Moderation: Dipl.-Ing. Ralf Leinenbach, Hydac Electronic, Saarbrücken

## 13:45 Building and Scaling a Machine Learning Platform to Unlock AI in Connected Car Services

- Machine learning platform based on Open Source and cloud technologies
- Enabling MLOps best practices covering the e2e data science workflow
- Architectural blueprint for enterprise-wide machine learning platforms in the automotive industry
- Supports classical machine learning, deep learning and GenAI use cases

**Dr.-Ing. Sebastian Zimmermann and Dipl.-Inf. Wolfgang Lenders**, both Head of Connected Vehicle Software, Connected Company, BMW Group, Munich, Co-Authors: Magdalena Kuhn, Dr. Tin Lian Abt, both of BMW AG, Munich

## Using Large Lange Models to Generate Critical Driving Situations for Virtual and Hybrid ADAS/AD Testing

- Validation and verification (V&V) of ADAS/AD systems
- Generation of critical driving situations – scene + scenario as ASAM OpenDRIVE/SCENARIO
- Large Language Models
- Highly automated toolchain for virtual and hybrid ADAS/AD testing

**Tille Karoline Rupp**, Head of Simulation, and **Dr. Joachim Schaper**, Head of AI&Big Data, Co-Author: Leon Eisemann, all of Porsche Engineering Services GmbH, Bietigheim-Bissingen

## Trends in Zonal Architecture for Future Software Defined Vehicles

- Reinventing the base layer for energy and data distribution for SDV
- Defining zonal architectures, including zonal controllers and centralized car computer
- Allocation of software functionality, bandwidth – requirements, latency and redundancy in the data network, power supply requirements with voltage level and integrity

**Dr. Karlheinz Morgenroth**, Chief Architect Electronics, Electronics Development, LEONI Bordnetz-Systeme GmbH, Kitzingen, and **Ahmad Hammam**, R&D Director, Comfort and Driving assistant, VALEO Schalter und Sensoren GmbH, Bietigheim-Bissingen

## Innovating High-End Microcontroller Multicore Software Architecture

- Optimizing the use of hardware resources and maximizing parallelism
- Enhance Multicore/Partitioning capacity of the Basic Software
- Expand automated multicore configuration capabilities

**Till Schnell, M. Sc.**, Lead Software-architect, Research & Development, Mercedes-Benz AG, Stuttgart, and **Eduard Krolacsek, M. Sc.**, Senior Solution Manager, Product Line Embedded Software and Systems, Vector Informatik GmbH, Stuttgart

## New Electronic Architectures Enabling Software Defined Mobile Machinery Electronic Architecture

- High Performance Computing
- Cloud and Connectivity
- Algorithms and AI

**Dipl.-Ing. Andreas Locatelli**, Senior Product Manager ADAS, Product Development, Co-Author: Janosh Fauster, both of TTControl GmbH, Vienna, Austria

14:15 **Quo Vadis Vision Zero? – Can AI Help Us Make Our Vision a Reality?**

- Vision Zero – the vision of achieving zero fatalities caused by road traffic is not progressing
- Status quo and deeper insight: Root causes and how AI can help to achieve this goal
- AI as the facilitator to address the individual reasons for dangerous accidents

**Dr.-Ing. Pia Dreiseitel**, Growth Field Manager AI Technologies, Research and Advanced Engineering, Continental Automotive Technologies, Frankfurt/Main, Co-Author: Dr. Ralph Grewe, Continental Autonomous Mobility GmbH, Frankfurt/Main

**Ensuring ADAS Functionality During Periodic Technical Inspection**

- How to ensure SAE L3 "hands-off-eye-off" functionality over vehicle lifetime
- ADAS sensor validation during PTI (periodical technical inspection)
- Ensure AEB, ACC, BSD functionality with static and effectiveness sensor and system tests

**Dipl.-Ing. Matthias Beer, MBA**, Director Imaging Sensor Products, Test & Measurement division, R&D, Rohde&Schwarz GmbH & Co KG, Munich, Co-Authors: Thomas Ost, DEKRA SE, Stuttgart, David Petanjek, AVL DiTest GmbH, Graz, Austria

**When Innovation Demand Meets E/E Architecture: Further Endeavors into Next-Gen Architectural Designs**

- Emerging E/E architectures facing heavy headwinds
- Technology trends, e.g., 48V and highest-safety powernets
- Cost innovations for Software Defined Vehicle architectures

**Dr. Thorsten Huck**, Vice President E/E Architectures, Research and Development, Competence Center E/E Architectures, Co-Author: Dr. Andreas Achtzehn, both of Robert Bosch GmbH, Abstatt

**Virtual Design of Electronic Power Distributors**

- Design of Power Distributors and Dependencies
- Modeling of Electronic Power Distributors
- Electronic Fuses and the Sensitivity of Protection Mechanisms
- Virtual Test and Validation of Protection Mechanisms

**Martin Baumann**, Development Engineer, Development Low-Voltage Power System, BMW AG, Munich

**GenAI – Refining Off-Highway Industry**

- Embracing the Potential of GenAI
  - How to employ GenAI tool, methodology, and philosophy to optimize Off-Highway Product development and Validation
  - GenAI Use Cases and Applications in the Off-Highway Industry
  - Virtualization Next frontier for product testing & validation
- Swapnil Tandel**, Delivery Head, Trucks and Off-Highway, Co-Author: Prabhakar Pandit, both of L&T Technology services, Edison, USA

14:45 **Auditing Guidelines for AI-based AD/ADAS Components Focusing on AI Security**

- Lack of AI-specific standards can harm trust level of user
- Adversarial attacks form new security threat
- Mitigation strategies need to be incorporated into development
- Exemplary audit of a traffic sign recognition and pedestrian detection system

**Dr. Georg Schneider**, Head of AI Lab Saarbrücken, R&D, Co-Author: Fabian Woitschek, both of ZF Friedrichshafen AG, Saarbrücken

**Ensuring High Reliability Inside Fail-Operational Systems – Key Prerequisite for SAE L3->L5 Compliant Automated Driving**

- The fail-operational systems are required for the automated driving vehicles compliant to SAE Level 3->5 and x-by-wire systems
- Way to fulfil the fail-operational system requirements
- AUTOSAR Classic is the right development framework and will be a pivotal role in building fail-operational systems

**Lucian Badescu**, Product Manager Automotive Networks, Elektrobit Austria GmbH, Vienna, Austria

**Managing Reuse and Dependencies of Hardware and Software Components in SDV Architectures**

- Holistically structure the SDV stack to improve development speed and efficiency
- Architecture layers and APIs to consider overlooked dependencies between software and hardware
- Decouple teams for software, hardware and integration while improving cooperation
- Enable separate value streams for managing reusable software and hardware assets

**Dr.-Ing. Frank Schreiner**, Chief Engineer, Business Center Systems Engineering, Continental Engineering Services, Frankfurt/Main

**Automotive eFuses: Challenges of Today and Solutions for the Future**

- Ensuring Fail-Operational Behavior
- Establishing and retaining Safe Power Supply
- Design Space for eFuses
- Towards AI-supported Predictive Maintenance

**Dr.-Ing. Christopher Lankeit**, Lead Systems Engineer eFuse/iPDM, and **Dr.-Ing. Rafal Dorociak**, Head of Product Development Global, both R&D, Design & Development Body Control, Co-Authors: Dr. Olaf Luedtke, Joachim Ziethen, Dr. Moritz Teuber, all of HELLA GmbH & Co. KGaA, Lippstadt

**DevSecOps and AI-Based Cyber Security Solutions for Mobility**

- The rise of software defined vehicles demands stronger cybersecurity, driven by regulations
- AI-driven platforms boost development efficiency leading to faster time-to-market and enhanced cybersecurity
- Automated TARA uses AI to streamline risk assessments, reducing reliance on manual analysis
- SBOM integration and automated vulnerability detection improve compliance and speed up risk mitigation

**Jonathan Legkov**, Product Manager, PlaxidityX, Ramat Gan, Israel

## 15:15 Panel Discussion on "AI Automotive" Trends, Challenges and Solution for AI in Automotive

**Moderation:** Joachim Langenwalter, TMT CoPilots

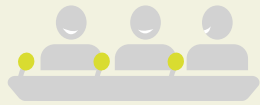
### Panelist:

**Dr. Patrick Bartsch**, AWS

**Thomas Dannemann**, Qualcomm

**Dipl.-Inf. Wolfgang Lenders**, BMW

**Prof. Dr.-Ing. Katja A. Rösler**, University of Applied Science Ruhrwest



## Importance of CATR Technology in Testing 4D Imaging Radars

- Understand the challenges of testing 4D imaging radars
- How can Compact Antenna Test Range technology solve these challenges and improve next generation radar design
- Gain insights about CATR technology with real measurement results and its comparison with traditional approach
- Innovation in CATR chamber design and millimeter wave OTA calibration approach

**Hock-Yew Yeap**, Product Manager for Automotive Mfg. Test Solutions, Co-Authors: Asish Jain, both of Keysight Technologies Deutschland GmbH, Böblingen, Chin Chuan Yap, Keysight Technologies, Penang, Malaysia

## Transition from Domain to Zonal Network Architecture for SDV

- Reasons and advantages of Zonal Architecture
- Shift of computing architecture to central high-performance ECU and zonal ECUs
- Enabling Technology Automotive Ethernet, IEEE protocols, Open Alliance, Autosar
- Integration of legacy networks, TC10 for wake/sleep power management

**Felix Ottofuelling**, Business Development Manager EU, Intrepid Control Systems GmbH, Karlsruhe

## Enabling an Open Eco-System for Chiplet based Automotive SoCs

- Why are Chiplets the future for automotive SoCs?
- The current automotive Chiplets market place and it this future development
- SW environment as prerequisite for OEMs/Tier1s acceptance
- Road towards first Generations

**Dipl.-Ing. Michael Schaffert**, Senior Vice President Engineering E/E Architecture, Mobility Electronics, Co-Author: Dipl.-Ing. Ole Godbersen, both of Robert Bosch GmbH, Stuttgart

## From the Freeway to the Field – How Hardware-in-the-Loop (HiL) Testing Can Accelerate the Development of Autonomous Machinery

- Comprehensive validation and verification of complex systems in realistic environments
  - Time and cost efficiency of HiL testing
  - Continuous development for automated work processes
  - Data strategy to manage increasing number of sensor technology
- Dr. Karsten Krügel**, Head of Business Development, Strategic Product Management, Co-Author: Marco Buller, M. Sc., both of dSPACE GmbH, Paderborn

15:45 Coffee Break, Exhibition and Start-up Area visit

16:30 Lightning Talks – 22 Rapid-Fire Two-Minute Pitches, **New York (Ground Floor)**



### AI Automotive New Dimensions

**Moderation:** Dipl.-Ing. Stefan Teuchert, TRATON, Munich



### Software Open Source

**Moderation:** Dipl.-Ing. Martin Schleicher, Continental, Erlangen



### Cockpit & Customer Experience Ecosystems

**Moderation:** Rinat Asmus, Tata Technologies Inc., Berkeley, USA



### E-Vehicle Mobility Charging

**Moderation:** Dr.-Ing. Dieter Rödler, Robert Bosch, Stuttgart



### Cloud Computing Enhancing Offroad Applications

**Moderation:** Dr.-Ing. Georg Kormann, John Deere, Kaiserslautern

## 17:15 From Niche to Mainstream: Harnessing Generative AI for Automotive Excellence

- GenAI is much than large language models – persistent value lies beyond the hype
- Where to apply GenAI – exploiting the past, optimizing the present, defining the future
- Navigating both short-term urgency and long-term strategy
- Adoption and scale – cross-industry lessons

**Dr. Andrew Vickers, M. Eng.**, CTO Generative AI, Technology and Innovation, Capgemini, Bath, UK, Co-Author: Dr. David Hughes, M. Sc., MBA, Capgemini, Abingdon, UK

## AUTOSAR and SOAFEE as Part of the SDV Alliance: Unifying the Software Defined Vehicle Ecosystem

- SDV Alliance as collaborative force to define SDV
- Cloud-native approach to SDVs by SOAFEE
- AUTOSAR's in-vehicle SW experience, facilitating a smooth transition to the SDV future

**Bernhard Rill**, Director Automotive GTM EMEA Automotive, Arm Germany, Aschheim/Dornach, and **Michael Niklas-Höret, M. Sc.**, AUTOSAR Chairperson, AUTOSAR GbR, Hörgertshausen

## Unlocking the Future: Exploring the Ecosystem of Digital Vehicle Keys and the Challenges Ahead

- Introduction to Digital Vehicle Keys
- The key role of Standardization in the Ecosystem
- Challenges and Future Developments
- Responsibilities and Synergies across different stakeholders

**Thorsten Knott**, Head of Development Digital Vehicle Access, Development, BMW AG, Munich

## How to Improve the Charging Experience of Your Customers by Better Integration with the Electricity Grid

- Smart and bidirectional charging tests
  - Power quality immunity
  - Cyber security
- Thijs van Wijk, M. Sc.**, Testlab manager, Elaad Testlab, ElaadNL, Arnhem, Netherlands

## Novel Connectivity Solutions for Edge-Cloud Continuum Applications in Rural Agricultural Machinery Operations

- Integration of Edge and Cloud Computing in Agricultural Machinery
- Utilization of Virtualization for Dynamic Resource Allocation
- Challenges of Networking in Rural Environments
- Impact of Network Connection Technologies and Topologies on System Operation

**Alexander Wagner, M. Sc.**, Product Engineer PhD Cand., External Relations, Co-Authors: Prof. Dr. Peter Pickel, both of John Deere GmbH & Co. KG, Kaiserslautern, Dipl.-Ing. Andreas Locatelli, TTControl GmbH, Vienna, Austria





17:45 **AI in Traffic: New Dimensions of Vehicle Intelligence**

- Limitations of Traditional Methods
  - AI Revolution
  - Research at Ruhrwest University
  - Improved Safety and Efficiency
- Kevin Szelechowicz, M. Sc.**, Scientific Assistant, **and Prof. Dr.-Ing. Katja A. Rösler**, Professor for Automotive Engineering, both of University of Applied Science Ruhrwest, Mülheim/Ruhr

**How Functional Safety and Open Source Come Together in the Navigation Data Standard**

- Open Source Software accelerates automotive innovation by reducing costs and speeding up development
  - Understanding the complexity of adopting OSS in safety critical systems
  - NDS leverages zserio for high-performance serialization tailored to safety-critical environments
  - Best practices and strategies for adopting OSS in safety-critical automotive applications
- Dipl.-Inf. Fabian Klebert**, Technical Lead, Development, Navigation Data Standard e.V., Gröbenzell

**Generative AI Based GUI Reconfiguration Using Natural Language Processing**

- Parsing natural language expressions into a formal description using formal grammars
  - Tracking formalized past interactions for reference in future expressions
  - Improving results by combining generative models
  - Cost savings by utilizing smaller and local models
- Dipl.-Ing. Tobias Schäfer**, Development Engineer, Co-Authors: Dr. Dirk Macke, Jörg Kottig, all of FEV.io GmbH, Aachen

**Mapping the Future Role of Electric Vehicles as Energy Storage Systems: A Comprehensive Study on Current Market Trends and Future Projections for AC and DC Bidirectional Charging**

- AC/DC bidirectional charging technologies
  - Market analysis of the adoption of bidirectional charging by main global OEMs
  - Future market rollout
- Dr. Francesco Cigarini**, Senior Consultant, Electric Mobility, Co-Author: Bonjad Satvat, M. Sc., both of P3 automotive GmbH, Stuttgart

**AI Based Battery Health Monitoring from Concept to In-Use for Better BEV Performance**

- Battery Health prediction in from Concept to SOP
  - Predictive Maintenance for reduced warranty costs
  - Anomaly detection for shorter test times
  - BMS Model parametrization
- Dr. Christian Mayr**, Program Manager AI & ML, Co-Author: Dipl.-Ing. Gerhard Schagerl, both of AVL List GmbH, Graz, Austria

18:15 **Enabling Automotive MLOps with Open Source Based Software**

- Proof-of-concept and demonstration of MLOps using Open Source based software
  - Utilization of hybrid cloud platform to enable MLOps
  - Using GenAI for simulation and detection of weak spots for AI-based driving functions
- Dr.-Ing. Xinxing Wang**, Senior Project Manager, Electronics & Virtual Testing Solutions, Bertrandt Group, Gaimersheim, **and Michael Kuehl**, Principal Solutions Architect, Red Hat GmbH, Grasbrunn

**Accelerating Software Defined Vehicles through Open Source**

- The industry and technology trends driving SDV and their enabling technologies needed for development
  - Open Source software enables industry collaboration, rapid innovation, and more efficient software development
  - Update on the work being done by the AGL SDV Expert Group, including key milestones, future roadmap and how to get involved
- Dan Cauchy**, Executive Director of Automotive Grade Linux, The Linux Foundation, San Francisco, CA, USA

**Electric Vehicles in 2024 – Current UX Challenges and Concepts for the Coming Years**

- “EV experience” in 2024: how good is it really?
  - Overview of EV technology and advancements: current and future UX challenges and possible solutions
  - UX developments in routing, ecosystem integration and personalization
  - Comparison and differentiation: EU market and CN market
- Audrey Matarage**, Independent UX consultant, Audrey Matarage Consulting, Stuttgart, **and Arne Bachmann**, Principal, User Experience, P3 automotive GmbH, Wolfsburg

**Advances in Electric Vehicle Charging: Mapping between User Needs and Technology**

- User needs for different charging scenarios
  - Overview of electric vehicle charging landscape
  - Technological solutions for improving cost and comfort for private charging
  - Innovative approaches for reducing range and charging anxiety
- Dr.-Ing. Michael Stapelbroek**, Vice President Electric Powertrain, Co-Authors: Dr.-Ing. Rene Savelsberg, both of FEV Europe GmbH, Aachen, Max Faßbender, M. Sc., RWTH Aachen University

**Data-Driven Predictive Maintenance from Sensor Networks in Customer Fleets Under Compliance with New Legislation Aspects and Open System Architectures**

- Data-driven Product Engineering as key to effective Predictive Maintenance
  - Open System Architectures reduce complexity in Automated Operations
  - Examples to meet latest legislation aspects for customer operations
- Dr.-Ing. Andreas Griesing**, Head of Product Engineering, Estino.Labs, Co-Author: Jakob Riebe, both of Estino GmbH, Dresden

18:45 End of the 1st Congress Day

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

The VDI invites all participants, speakers, sponsors and exhibitors to join the “Night of Electronics” aboard Europe’s largest event liner, the MS RheinMagie (former MS RheinEnergy). This evening reception is the perfect opportunity to network and continue the discussions of the first congress day in a relaxed atmosphere. Meet your peers and business partners and enjoy a varied entertainment program.

**Program:**

- 19.00 – Boarding of the “MS RheinMagie”
- 20.00 – Dinner
- 20.15 – 22.15 Cruise across the Rhine

22.15 – Arrival at the jetty and possibility to disembark

22.15 – Opening of the dance floor (DJ Nico Jansen)

00.00 – End of the Night of Electronics and disembarkation from the ship



Source: Köln Düsseldorf Deutsche Rheinschiffahrt GmbH



Thursday, October 17, 2024

## New York (Ground Floor)



### Automotive Trend Session Digital Homologation

Moderation: Elmar Frickenstein,  
Elstein Consulting, Munich

#### 08:30 Statistical Methods and Monte Carlo Simulation Ensure the Safety Case of the Environmental Sensor Performance of Level 3 Systems

- Verification of Positive Risk Balance using Monte Carlo simulation
- Factor screening to derive dominant influence factors towards sensor perception performance
- Creating Sensor Performance Models using statistical methods

**Dipl.-Ing. (FH) Andreas Schleich**, Development Engineer, Sensor Network, Co-Authors: Felix Modes, Moritz Werling, all of BMW Group, Unterschleißheim

#### 09:00 The Path to Virtual Homologation

- Simulation credibility as foundation for reliable residual risk assessments
- Streamlined verification & validation strategy
- Holistic view on development processes & regulatory reporting obligations

**Jann-Eve Stavesand**, Head of Consulting, Co-Authors: Dr.-Ing. Christopher Wiegand, both of dSPACE GmbH, Paderborn, Dr. Andreas Amoroso, Continental Corporation, Frankfurt/Main, Dr. Simon Rößner, Siemens AG, Munich

## Nairobi (Ground Floor)



### Software Cloud, Connect & Rust

Moderation: Dipl.-Ing. Martin Schleicher, Continental, Erlangen

#### Automotive Vehicle Connectivity 2030

- Mobile communication technology
- Vehicle-to-everything technology
- Non-terrestrial-networks
- Vehicle integration

**Dr.-Ing. Frerk Fitzek**, Head of Connected Vehicle Onboard, Connected Company – Connected Vehicle Onboard, Co-Authors: Dr. Georg Schmitt, Dr. Michael Gruffke, all of BMW Group, Munich

#### LightOpen – A Cloud-Based Lighting Personalization Service

- Current & future automotive lighting trends
- UWB as an enhancer for lighting features
- Backend Cloud Services
- Personalization applications

**Marc Peter, B. Sc.**, Project Manager, Lighting Electronics, Co-Author: Dr. Martin Pachen, both of HELLA GmbH & Co. KGaA, Lippstadt

## Wien (Ground Floor)



### Processes SDV

Moderation: Dr. Olaf Lüdtkke,  
HELLA, Lippstadt

#### SpecBook Copilot – Efficient Formalization of Requirements Using Artificial Intelligence in the Development of MB.OS

- Requirements for a versatile electric/electronics platform for MB.OS
- Formalization of requirements using Artificial Intelligence
- Automated generation of artifacts in the development process (test cases) & AI-Copilot for requirements engineering

**Dr. Martin Obstbaum**, Business Leader, Autonomous Driving, Automotive. OS, MBSE, TWT GmbH Science & Innovation, Stuttgart, and **Dipl.-Ing. Matthias Staib**, Team Lead, Powernet Systems and Functions, Mercedes-Benz AG, Sindelfingen, Co-Authors: Dr. Michael Keckeisen, TWT GmbH, Stuttgart, Dr. Jutta Schneider, Mercedes-Benz AG, Sindelfingen

#### Using Simulation in the Development of V2X Applications

- Closed-loop vehicle simulation tests
- Standardized V2X communication protocols
- Relevant applications for local hazard warnings

**Viktor Lizenberg**, Engineer Test Systems & Engineering, IPG Automotive GmbH, Karlsruhe, Co-Authors: Jürgen Hauenstein, Matthias Mayer, both of CARIAD SE, Wolfsburg

## Bangkok (Basement)



### Security TARA & More

Moderation: Dr. Holger Niemann,  
Robert Bosch, Stuttgart

#### TARAs Performed on Different Levels of the Supply Chain – Experiences Based on Real Example ESLF

- Real based example to show interaction of risk assessments (TARAs)
- Cybersecurity principles to be used for system architecture level analysis
- Cybersecurity design and requirements at the software level
- Deriving cybersecurity requirements across several levels and their consistency

**Dr. Thomas Liedtke**, Senior Cyber Security Expert, Magility Cyber Security, Wendlingen, Co-Author: Dr. Richard Messnarz, I.S.C.N., Graz, Austria

#### Intrusion Tolerance and Mitigation Strategies for Future Secure Mobility

- Current AUTOSAR proposal on IDS
- Best practice on implementing IDS on a gateway ECU
- Usage of SOVD for security event evaluation
- Impact of AI-based approaches and concepts on the development of Cyber Security Controls

**Dipl.-Inform. Michael Eisenbarth**, Director Engineering Consulting and Services, Head of Cyber Security Center of Competence, ZF Friedrichshafen AG, Saarbrücken

## Addis Abeba (Basement)



### Electrification

Moderation: Dr.-Ing. Steffen Mutschler, Bosch Rexroth, Ulm

#### Electrification of Mobile Construction Machines – an OEM Perspective

- Battery driven mobile machines
- System architecture of mobile machines
- Possible applications for battery driven machines
- Alternative drivetrains

**Dipl.-Ing. Timo Löw**, Head of Engineering Systems, Engineering Systems, BOMAG GmbH, Boppard

#### Charging Technology for Off-Highway Applications

- Specific challenges and requirements for charging of high voltage batteries in off highway applications
- Integration of OBCs into the vehicle architecture, considering communication protocols (UDS, CAN J1939)
- Functional safety in accordance with ISO 13849
- Future trends and market drivers (Standards, V2X)

**Sylvain Roure**, Senior Sales Strategy, Project & Product Manager Electrics/Electronics for Mobile Machines, Co-Author: Markus Helfrich, both of Bosch Rexroth AG, Ulm

09:30 **Advancing ADS Safety Argumentation: The AAI Framework Integrating ISO Standards and OMG Principles – SafeGuardian Analytic Framework (SGAF)**

- ADS safety validation, integrating ISO requirements with OMG standards
  - Systematic Safety Compliance: SGAF ensures ADS compliance with ISO 26262 and ISO/PAS 21448 (SOTIF) through hazard identification, risk quantification and scenario validation
  - Workflow Enhancement: Incorporating OMG standards, SGAF improves ADS design and operations
- Intakhab Khan, M. Sc.**, Founder/CEO, Automotive Artificial Intelligence (AAI) GmbH, Berlin

**Bring TSN Cloud Native Support to SDV Software Architectures**

- Hardware independent TSN
  - Multi-tenancy in SDV
  - TSN and hypervisors
  - TSN and containers
  - SOAFEE collaborative organization update and TSN plans highlights
- Dr. Andrew Coombes**, Principal Automotive Software Product Manager, ARM Ltd., Cambridge, UK, and **François-Frédéric Ozog**, Master, SOAFEE Hypervisor group chair, Adainville, France

**Testing Variant-Rich Software-Defined Mobility Systems – Methods, Future Challenges and Innovative Concepts**

- State-of-the-Art in testing variant-rich software-defined systems and future challenges
  - Innovative testing concept motivated by the shift towards DevOps
  - Application of AI-assisted methods for feedback-based variant selection
  - Test automation through X-in-the-loop simulation
- Lennard Hettich, M. Sc.**, Research Assistant, Institute of Industrial Automation and Software Engineering, Co-Authors: Johannes Stümpfle, M. Sc., Prof. Dr.-Ing. Dr. h.c. Michael Weyrich, all of University of Stuttgart

**Efficiency in UNECE R155 type approvals for small OEMS – Lessons Learned**

- Dealing with vehicle variants efficiently
  - Optimizing methodology and tooling
  - Implications for OEM partners and their support and documentation
  - Risk minimizing of missing the type-approval
- Dr. Tobias Nilges**, Senior Manager, Cyber Security, ITK Engineering GmbH, Rülzheim, and **Dipl.-Ing. Frank Langner**, Manager Functional Safety and Cyber Security, EE Architecture and Software Integration, Aston Martin Lagonda of Europe GmbH, Bietigheim-Bissingen

**How to Survive in a Pure-Electric World?**

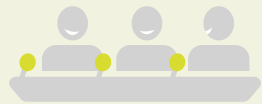
- Electrification of mobile machinery
  - Analysis of use-cases for electrification
  - Definition of robust portfolio strategies
  - Achieving profitability
- Kai Krüger**, Principal, Co-Authors: Dr. Michael Wittler, Daniel Becker, all of FEV Consulting GmbH, Aachen

10:00 **Panel Discussion on “Digital Homologation”**

**Moderation:** Elmar Frickenstein, Elstein Consulting

**Panelists:**

**Dr. Fathi El-Dwaik**, BMW AG  
**Intakhab Khan, M. Sc.**, Automotive-Artificial Intelligence  
**Jann-Eve Stavesand**, dSPACE  
**Rodolphe Tchalekian**, Ansys



**Rust Integration Based on Interoperability in Existing Software**

- Embedded software complexity rises and safety and security requirements increase the cost of continuing current C/C++ embedded software development
  - Rust as a programming language for more efficient software development under these requirements
  - A migration path to Rust needs interoperability with existing software
  - Integrating Rust with existing embedded SW via interoperability
- Dr. Peter Faymonville**, Senior Manager, Functional Safety, ITK Engineering GmbH, Cologne, Co-Author: Christopher Schwager, ITK Engineering GmbH, Rülzheim

**Optimizing Electronics Architecture for the Deployment of Convolution Neural Networks Using System-Level Modeling**

- Trade-off latency, power and cost using early simulation
  - Merge Shift-Left and Shift-Right into one System-Level model
  - Map applications to HPC, CPU, GPU, TPU or AI engines
  - Collaboration platform between OEM, Tier 1 and Semiconductor
- Deepak Shankar, BS, MS, MBA**, Founder and Vice President Technology, Product Engineering, Mirabilis Design Inc., Santa Clara, USA  
Co-Author: Tom Jose, BE, Mirabilis Design Inc., Chennai, India

**Assess, Test, Repeat - An Iterative Approach to Automotive Cybersecurity Engineering**

- Automotive Cybersecurity
  - Threat Analysis and Risk Assessment
  - Test Case Generation
  - Model-based Testing
  - Simulation Technologies
- Dipl.-Ing. Jürgen Wurzinger, MA**, Product Manager Automotive Cyber Security, Advanced Software Solutions, Co-Authors: Dipl.-Ing. Stefan Marksteiner, Harald Petschnik, all of AVL List GmbH, Graz, Austria

**Flexible and Feature Driven eDrive Development**

- eDrive scaling possibilities and challenges
  - Feature driven Inverter development
  - Solution for a flexible inverter architecture
- Dipl.-Ing. Sascha Kümmel**, Head of Technology, Electric drive systems, eMoveUs GmbH, Kitzingen

10:30 **Coffee Break, Exhibition and Start-up Area visit**

11:15 **Bridging the World of R&D and IT – from Tool Provider to Solution Architect**

- How R&D and IT change Hardware and SW development in automotive together
- Software lifecycle management in automotive End-2-end
- Learnings from modern software development concepts for hardware development



**Matthias Schneider**, Vice President IT RD, Security & Data, Mercedes-Benz AG, Böblingen



## Software/SDV

Moderation: Stefan Singer, Renesas Electronics, Munich

### 11:45 Future Challenges in Virtual Integration & Testing

- External influences and challenges on virtual integration and testing
- Central worldwide virtual integration and testing network
- Continuous integration, testing and delivery at whole vehicle level
- Transformation as a chance – our future in virtual integration and testing



**Dr.-Ing. Mirko Nentwig**, Head of Virtualization, Maturity Level Architecture Electrics/Electronics, Co-Author: Matthias Obermeier, B. Eng., AUDI AG, Ingolstadt



### 12:15 Has the Holy Grail Been Found? Using Linux for Safety-Related Applications

- Open Source software promises faster development and easier collaboration for Software Defined Vehicles
- Open Source software: Hard to use in safety-related functions

**Dr. Moritz Neukirchner**, Senior Director, Strategic Product Management SDV, Elektrobot Automotive GmbH, Erlangen



## Transformation of Working

Moderation: Dr. Rolf Zöllner, Porsche and Porsche Digital, Weissach

### Transformation to create and monetize a data driven SDV solution

- Successful strategies to create and monetize data driven SDV platform/ solution
  - Transformation of culture, technology, customer engagement and business models
  - SDV platform consisting of HW, SW, AI Factory, Connectivity, Data, IoT and Cloud
  - Market timelines, successful strategies and failures
  - Prioritization and strategies for make vs. buy and partnering
  - Cultural transformation to find, motivate and grow global capabilities and talent
  - Actual P&L of a SDV Platform
- Joachim Langenwalter**, Senior Advisor, TMT CoPilots, Munich



## Processes/Virtual, Simulation, Requirements

Moderation: Dr. Torsten Wey, Ford-Werke, Cologne

### Dead at 100ms: Responsive Functions Require Well-Designed Event Chains and Excellent Timing Requirements

- Event Chains & E2E data flows to focus on the end customers
  - Timing requirements on multiple architecture levels for clear responsibilities
  - Method, process integration, tools to boost development efficiency
  - Improvements to team collaboration introduces the fun factor
- Dipl.-Inf. Olaf Schmidt**, Solution Manager, Co-Authors: Dr. Ralf Münzenberger, both of INCHRON AG, Erlangen, Matthias Glück, Volkswagen AG, Wolfsburg



## Security/AI

Moderation: Dipl.-Ing. Henning Harbs, Volkswagen, Wolfsburg

### Navigating the Future: AI's Drive for Smarter & Safer Fleets

- How AI can be used to identify irregularities in fleet security
  - Large Language Models (LLMs) and how they can enhance the interaction between fleet management systems and users
  - How to choose the best method for anomaly detection (e.g., recall, precision, F1)
- Jonathan Legkov**, Product Manager, PlaxidityX, Ramat Gan, Israel



## (Smart) Sensors and Algorithms

Moderation: Dr.-Ing. Carsten Hoff, dSPACE, Paderborn

### Breakthrough in the Development of Automation Functions

- 4D point cloud – how radar technology is advancing machine automation
  - Comparison to LiDAR sensor technologies
  - Use case specific interpretation of the radar based point cloud
  - Radar SLAM example application
- Camille Marbach, B. Eng**, Product Manager Perception, Bosch Engineering GmbH, Abstatt

### Collaborate with Chinese Partners to Navigate the SDV Transformation

- Today's competition is about innovation, speed and cost
  - The evolving global collaborations to win
  - Rethink innovation culture and operational paradigms
  - The win-win future with Chinese technology partners
- Dr. Angela Wang**, Senior Vice President & Chief Investment Officer of Neusoft Corporation, Chairman & President of Neusoft Europe, Chairman of Neusoft America, Shenyang, China

### A New Era for Software Verification: Heterogeneous Multicore Compute with Model Based Design & Virtual ECUs

- Shifting left software development for Software Defined Vehicles
  - Managing the complexity of leading edge heterogeneous compute based ECUs
  - Efficiencies in Model Based Design and Code Generation
  - Freeing the development flow from hardware dependencies
- Kevin Brand**, Senior Architect, Systems Design Group, Synopsys, Sydney, Australia, **and Dr. Tito Tang**, Senior Application Engineer, Application Engineering, MATHWORKS, Munich, Co-Author: Dineshkumar Selvaraj, Infineon, Bangalore, India

### Recommendations for the Practical Use of Ethernet Security-Protocols and Beyond

- Automotive Use Cases for Different Ethernet Security-Protocols
  - Practical challenges during commissioning and using the protocols
  - Recommendations of when an adequate risk mitigation is achieved
  - Performance comparison for the different implementation options
- Dipl.-Ing. Sven Schran**, Product Manager Automotive Product Security, **and Ramona Jung, M.Sc.**, Senior Consultant Automotive Security, both of Solution Field Vehicle Operating Systems, Co-Authors: Arup Mukherji, all of ETAS GmbH, Stuttgart, Jothivel Rajendran, Bosch Global Software Technologies Ltd., Bengaluru, India

### Butterfly Mower Maps Weed with AI/Tensorflow

- AI based detection of weed plant
  - Generate application map with weed location
  - Support for further field applications
- Dipl.-Ing. Florian Ott**, System Engineer, GEE Electronic Development, CLAAS Salgau GmbH, Bad Saulgau



12:45 **The Roadmap for Software Defined Vehicles and Disruptive Technologies**

- "SDV" – Its nature, impact and collaborative potential for tool vendors
- Technical Strategies to address current inefficiencies
- Enhance software value with model-based approaches for cohesive systems and software engineering evolution
- Role of disruptive technologies



**Jim Tung**, MathWorks Fellow, MathWorks, Natick, USA



**Flexible Performance Organization in an Uncertain Environment**

- Centralized architecture, BEV & H2 vehicles, autonomous trucks, Software Defined Vehicle
- What is the right form of a large organization?
- SAFe as base – moving into a lean agile large organization
- Experience report of this new way of working after 2 years

**Dipl.-Ing. Stefan Teuchert**, Global Head EE/autonomous/software, TRATON Group R&D TREAS – Traton electric electronics autonomous and software, TRATON SE, Munich

**From Reality to Simulation: Automated Transfer and Simulation of Critical Driving Scenarios with Digital Twins**

- Automatic pipeline transferring real-world scenarios into simulations
- Application for the virtual validation of automated driving functions
- Enables one-to-one resimulation and variations
- Use of standardized formats and interfaces

**Nicole Neis, M. Sc.**, PhD Candidate, Simulation Department, and **Leon Eisemann, M. Eng.**, PhD Candidate, Artificial Intelligence & Big Data Department, Co-Authors: David Hermann, Jingxing Zhou, all of Porsche Engineering Services GmbH, Bietigheim-Bissingen

**Contribution of AI in Automotive Cyber Security Management System**

- AI-powered cyber security management system for monitoring and defending against cyber attacks
- "Malicious" Generative AI to detect unknown insecure attack vectors
- Continuous protection against ever-evolving attack vectors

**Dr.-Ing. Ugur Akcakoca**, Head of Department, ES<sup>2</sup> – Embedded Safety & Security, EDAG Engineering GmbH, Ingolstadt

**Innovative Environment Perception Solutions – Key Steps on the Path to Safe Mobile Machines Automation**

- Multi sensing technology based environment perception functions
- Sensor fusion, comprehensive environment model
- Advanced Driver Assistance system & Autonomous driving
- Non automotive mobile machines applications (Agriculture, Mining, Construction, etc.)

**Yannick Frisoni, M. Eng.**, Senior Business Development Manager, Driver Assistance & Autonomous Driving Segment, Continental Automotive France SAS, Toulouse, France, Co-Authors: Alexander Stoff, Continental Engineering Services GmbH, Frankfurt/Main, Bertrand Godreau, Continental Automotive France SAS, Toulouse, France

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 **Why Autonomy, Why Now?**

- Necessary Technologies
- Application Feasibility
- Customer Reactions & Benefit
- The future, now, or both?



**Jahmy Hindman, Ph.D.**, Senior Vice President & Chief Technology Officer, Engineering & Technology, John Deere, Moline, USA

15:00 **How to Increase Efficiency and Reduce Time to Market Leveraging SDV**

**Gilles Mabire**, CTO – Continental Automotive, Software and Central Technologies, Continental Automotive Technologies GmbH, Frankfurt/Main



15:30 Conclusion of the Congress

16:00 Award Ceremonies: "Best Start-up", "Best Keynote", "Best Speaker" and "Auto Electronic Excellence Award 2024"

16:15 End of the Congress



## Lightning Talks – Two-Minute Pitches on the Main Stage

October 16, 2024 - 16:30 - 17:15 / New York (Ground Floor)

This year we introduce you a new innovative program format at the ELIV: Lightning Talks.

Lightning Talks are rapid-fire two-minute pitches in front of the entire ELIV audience on the main stage.

Program (subject to change):

- **Veecle: A New Layer of Rust to Outpace the Competition**  
Dr.-Ing. Stefan Nürnberger, Veecle GmbH, Berlin
- **Drone based datasets for scenario based development and testing of automated driving**  
Dr.-Ing. Jens Kotte, Fka GmbH, Aachen
- **Investigation and Implementation of Automated AI-based Techniques for Cross-Language Code Conversion and Acceleration of Hardware SoC Development**  
Yevhenii Holopotyliuk, M. Eng., Hochschule Anhalt, Köthens
- **TrafficWatch | Beyond Sensor Range**  
Ivan Tannerud, M. Sc., Carmenta Automotive AB, Gothenburg, Sweden
- **Item definition - Language protecting people**  
Dipl.-Ing. (FH) Andy Gudera, MicroNova AG, Vierkirchen
- **The Importance of Information on Heavy Machinery/Large Vehicles for Road Safety and Connectivity**  
5GAA - 5G Automotive Association e.V., Ireland
- **Mastering Android Automotive Audio: cases of customization**  
Piotr Romanowski, Tietoevry Create, Wrocław, Poland
- **Optimal AI model deployment for multi-objective deployment scenarios**  
Dr.-Ing. Alexander Frickenstein, Ceyeborg GmbH, Inning
- **Hashlist: Solving the automotive industry's talent transformation**  
Calle Unnérus, Hashlist, Helsinki, Finland
- **Silo Breaker: Enabling Hyper-Connected Vehicles With Decentralized Identities**  
Markus Soppa, M. Sc., filancore, Limburgerhof
- **Interfacing the Future of Software-Defined Vehicles: Automated Communication between ADAS and IVI Systems**  
Dušan Kenjić, Ph.D., RT-RK LLC, Novi Sad, Serbia
- **Accelerate your SDV Innovations: Cloud Solutions for a Sustainable Future**  
Jannik Müller, Vector Informatik GmbH, Stuttgart
- **Electronics Meets Psychophysiology: Software-Defined Interieur Light**  
Nadine Michael, Technical University Darmstadt / mps consulting and entertainment, Roedermark
- **Generative AI for Continuous Homologation in Autonomous Engineering**  
Stephen Lernout, Deontic, Leuven, Belgium
- **Seamless Integration of Legacy Chassis Systems into SDV Architectures**  
Mahibub Shaikh, M. Sc., KPIT Technologies GmbH, Munich
- **From UNICARagil to AUTotech.agil to Open Source – Enabling Autonomous Driving for Future Mobility Systems**  
Timo Woopen, M. Sc., Thinking Cars GmbH, Ettlingen
- **Accelerating SDV Development: The Power of Virtual Workspaces**  
Mathias Ptacek, B. Sc., M. Sc., Sleeve GmbH, Wien, Austria
- **Open Innovation for Automotive Chips**  
Eva Schleicher, M. Sc., Quintauris GmbH, Munich
- **Bridging the automotive cybersecurity knowledge gap: CYEQT Knowledge Base**  
Dipl.-Ing. Philipp Veronesi, CYEQT Knowledge Base GmbH, Munich
- **Accelerating Time to Market and Enhancing Consumer Experience with SDV Innovations**  
Christophe Dajeans, Sibros, San Jose, USA
- **Is Functional Safety missing AI strategies in Germany?**  
Britta Linnemann, FSS Functional Safety Solutions, Hamburg



In the basement near the Barista Area, a poster exhibition with further information on the individual Lightning Talks can additionally be found.

## NextGen Program

The NextGen program is designed to support future decision-makers and give them the opportunity to build the network for tomorrow today.

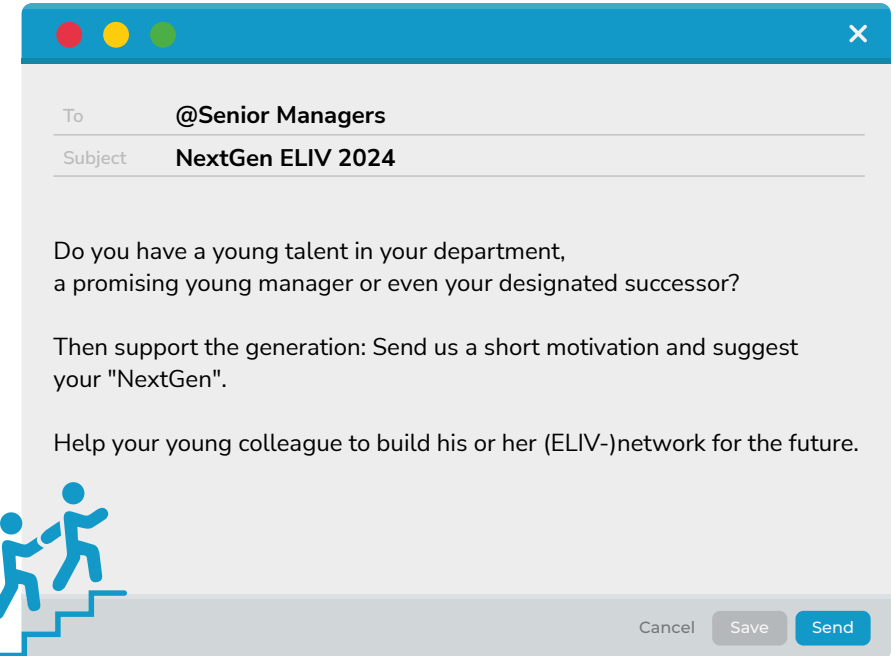
The program not only offers participation in the regular congress, but also includes a tailor-made supporting program which is specially created to meet the needs and interests of young professionals. In addition to attending the presentations, there will be numerous opportunities to exchange ideas and network with top experts and other motivated young professionals.

Young talents who are no older than 35 and already working in the field of automotive electronics and software can take part. Registration for the NextGen program is only possible via the senior manager with a corresponding recommendation.

Further information on the NextGen program can be found on our website at [www.eliv-congress.com](http://www.eliv-congress.com).

**@all young talents, who are no older than 35 years old:**

- Basement, Barista Area  
October 16, 2024 - 12.20  
**Meet&Greet** with members of the program committee: Dipl.-Inf. Elmar Frickenstein, Elstein Consulting, Munich, Germany and Dipl.-Ing. Uwe Michael, mps, Rödermark, Germany
- Directly afterwards: **Speed-Dating**
- October 16, 2024 - 19.00  
**Network with fellow young professionals** aboard the MS RheinMagie in an exclusive reserved area.



## List of Exhibitors (October 2, 2024)

Akkodis Germany Consulting GmbH  
Apex.AI GmbH  
ASAP Group  
Aurora Labs  
Autocrypt Co., Ltd.  
autotech.agil consortium  
Avelabs  
AVIN Systems GmbH  
AVL List GmbH  
Bourns Electronics GmbH  
Code Intelligence GmbH  
Cognizant Mobility GmbH  
Continental Engineering Services GmbH  
CTAG  
Deontic BV  
Digitalwerk GmbH  
dissecto GmbH  
DRIMCO GmbH  
driveblocks GmbH  
dSPACE GmbH  
EDAG Engineering GmbH  
Emproof B.V.  
ETAS GmbH  
EVorkshop Sp. z o.o.

FERCHAU Automotive GmbH  
FEV.io  
Filancore GmbH  
Futive GmbH  
GLIWA GmbH & Co. KG  
Golden Devices GmbH  
Göpel electronic GmbH  
Green Hills Software GmbH  
Hamamatsu Photonics Deutschland GmbH  
Hashlist  
ISCUE GmbH & Co. KG  
ITK Engineering GmbH  
Jama Software  
Jangoo Technologies INC  
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If you are interested, get in touch with:

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## Start-up Area

ELIV offers young companies the opportunity of presenting their latest developments and products in automotive electronics 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.

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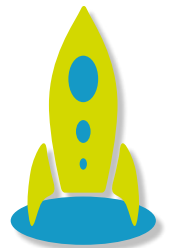
To apply, request the registration documents for the Start-up Area. We are happy to provide assistance and further information:

Elena Langenfels  
Project Consultant  
Exhibition & Sponsorship  
Phone: +49 211 6214-8662  
Mail: [langenfels@vdi.de](mailto:langenfels@vdi.de)

You will find the program and more information on our start up area on:  
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### See who is already participating in the Start-up Area:

Deontic BV | DRIMCO GmbH | driveblocks GmbH | Emproof B.V. | EVorkshop Sp. z o.o. | Filancore GmbH | Futive GmbH | Golden Devices GmbH | Hashlist | Jangoo Technologies INC | Minerva Systems SRL | MOXZ GmbH | NX Technologies | ONEKEY GmbH | RealThingks GmbH | SECURE ELEMENTS LTD | Sleeve GmbH | useblocks GmbH | Veecl | Vueron Technology Europe GmbH | VxLabs GmbH



## Program Start-ups

Moderation: Sonja Fritschi

Location: Start-Up Stage, Basement

### 1st Congress Day

Wednesday, October 16, 2024

- 10:05-10:15 **Highlighting the Evolving Threat Landscape: Automotive Cybersecurity. A new Era of Threat Detection with AI-Powered Intrusion detection and Cloud VSOC**  
Basem Elasioty, M.Sc., VxLabs GmbH
- 10:20-10:30 **Automated Product Cybersecurity and Compliance**  
Jan C. Wendenburg, ONEKEY GmbH
- 10:35-10:45 **Software Defined Vehicle (SDV) – Middleware/ Features for Safety Critical Systems**  
Sandeep Sharma, Jangoo Technologies
- 12:20-12:30 **Cybersecurity in Motion: Lifecycle Application for Safe and Secure Automotive Solutions**  
Saket Mohan, M. Sc., Secure Elements Ltd
- 12:35-12:45 **Protecting Embedded Software Against Product Piracy & Cyber Attacks**  
Andreas Thull, Emproof B.V.
- 12:50-13:00 **Multi-modal perception for safe, robust and mapless autonomy in off-highway applications**  
Dr.-Ing. Alexander Wischnewski, driveblocks GmbH
- 13:05-13:15 **Boosting Powertrain Performance with Innovative Inverter Technology**  
Mikel Peral, NX Technologies

- 13:30-13:55 **Innovative Architectures and Tools for Connected and Automated Mobility: Insights from the autotech.agil Project**  
Raphael van Kempen, RWTH Aachen University
- 15:50-16:00 **MinervaSys – Embedding software at full throttle**  
Dr. Marco Solieri, Minerva Systems SRL
- 16:05-16:15 **Robotics in the research of intelligent vehicles**  
Gjorgji Nikolovski, Futive GmbH

### 2nd Congress Day

Thursday, October 17, 2024

- 10:35-10:45 **EV cars´ battery packs – an Aftermarket technology of fixing and upgrading giving a free choice for consumers**  
Bogumił Papierniok, Evorkshop Sp. Z o.o.
- 10:50-11:00 **MOXZ – A New Wireless Technology for High-Mobility and Ultra-Low Latency Applications**  
Dr. rer. Nat. Philipp Walk, MOXZ GmbH
- 11:05-11:15 **A unified base software layer for HCP & MCU written in Rust**  
Dr.-Ing. Stefan Nürnberger, Veeclle GmbH

- 13:20-13:30 **Why Automotive Needs a Marketplace for Skilled Technical Contractors**  
Calle Unnéus, Hashlist
- 13:35-13:45 **Generative AI for Requirements Management and Continuous Homologation in Autonomous Engineering**  
Stephen Lernout, Deontic B.V.
- 13:50-14:00 **Transform Automotive Cyber Systems and Ecosystems with Decentralized Authentication and Authorization**  
Markus Soppa, M. Sc., Filancore GmbH
- 14:05-14:15 **Accelerating SDV Development: The Power of Virtual Workspaces**  
Mathias Ptacek, Sleeve GmbH



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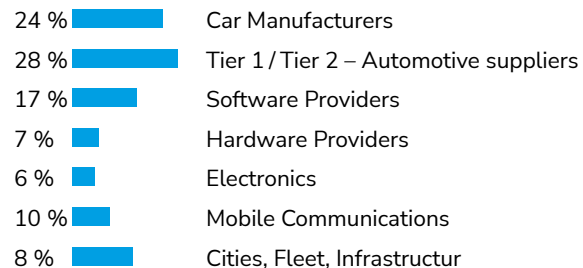


### Good Reasons to be part of this industry meeting:

- ✓ Technical content of high quality: more than 80 expert presentations with technical depth
- ✓ ELIV is the world's largest Congress for Automotive Electronics, Software and Applications – be part of the community in Bonn!
- ✓ Reach out to long-known fellow experts, find new project partners and pave the way to establish new business ties
- ✓ Free entrance to the parallel running "E/E for Mobile Machines"
- ✓ Speakers corners – debate with the presenters personally
- ✓ Great trade exhibition with about 100 international exhibitors gives an overview of new products and solutions

### Who you will meet:

**Delegate groups:** decision-makers, engineers, technicians, developers etc. from the field of industry (OEM, Tier 1+2), economy, research & development







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ELIV

October 16-17, 2024  
Bonn  
(01TA101024)

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## Venue

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## Accommodation

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