20th International Congress and Exhibition
October 20 - 21, 2021 in Bonn, Germany
or via live stream

Top Speakers:
Dr. Karl Thomas Neumann, former Continental AG, Volkswagen China & Adam Opel AG
Dr. Rolf Zöller, Porsche AG & Porsche Digital
Helmut Matschi, Continental AG
Cammal Thierry, Group Renault
Dr. Dirk Walliser, ZF Friedrichshafen AG
Werner Koeslter, Continental Automotive
Igal Raichelgauz, AutoBrains

Main Topics:
- Software Technologies
- End-2-End Architecture
- Automated Driving
- AI -Self-Learning Vehicles
- E-Mobility & E-Vehicles
- Electronics Innovation
- Data Analytics
- Security

Panel discussion:
Operating Systems for Cars – Can OEMs regain Independence from IT-Giants?
Stephan Durach, BMW Group
Christoph Hartung, ETAS GmbH
Joachim Langenwalter, Stellantis NV
Anup Sable, KPIT Technologies
Dr. Riclef Schmidt-Clausen, CARIAD SE
William Wei, Foxconn Technology Group

Including up-to-date contributions from:

www.eliv-congress.com

#eliv
The must-attend event for all decision-makers and experts in the **automotive electronics** and **software industry**!

### 1st Congress Day
**Wednesday, October 20, 2021**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>07:45</td>
<td>Registration</td>
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<tr>
<td>08:45</td>
<td>Opening of the Congress</td>
</tr>
<tr>
<td>08:45</td>
<td>Opening Speech: Automotive defined Digitalization – Perspectives towards tomorrow</td>
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<td>09:15</td>
<td>The long Path of the Automotive Industry: From Hardware to Software, Cloud and Services</td>
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<tr>
<td>10:45</td>
<td>Coffee break, Exhibition and Start-up Area visit</td>
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<tr>
<td>11:30</td>
<td>Parallel Session</td>
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<tr>
<td>13:00</td>
<td>Lunch break, Exhibition and Start-up Area visit</td>
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<tr>
<td>14:30</td>
<td>Parallel Session</td>
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<tr>
<td>16:00</td>
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<td>16:45</td>
<td>Parallel Session</td>
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<td>18:45</td>
<td>End of the first Congress Day</td>
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**Plenary Speeches – New York (Ground Floor)**

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

- Opening Speech: Automotive defined Digitalization – Perspectives towards tomorrow
  - Dr. Rolf Zöller, Director Smart Connected Vehicle Porsche AG and Managing Director Porsche Digital, Chairman of the Program Committee
- The long Path of the Automotive Industry: From Hardware to Software, Cloud and Services
  - Dr. Karl-Thomas Neumann, former CEO of Continental AG, Volkswagen China and Adam Opel GmbH, Founder & Owner
- Panel Discussion: Operating Systems for Cars – Can OEMs regain Independence from IT-Giants?
  - Moderator: Ken Fouhy, Editor-in-Chief, VDI Nachrichten, VDI Verlag GmbH, Dusseldorf

**Session 1: New York (Ground Floor) – Automated Driving**
- **Moderation:** Kai-Uwe Balszuweit, BMW, Munich

**Session 2: Nairobi (Ground Floor) – Software Technologies**
- **Moderation:** Dr. Rickef Schmidt-Clausen, CARIAD SE, Ingolstadt

**Session 3: Wien (Ground Floor) – End-2-End Architecture**
- **Moderation:** Dipl.-Ing. Rüdiger Roppel, Porsche, Weissach

**Session 4: Bangkok (Basement) – E-Mobility**
- **Moderation:** Dipl.-Ing. Christof Kellerwessel, Ford, Cologne

**Session 5: Start-Up Stage (Basement)**

**Start-up Session**
- **Hosted by:** The Mathworks

E-Vehicle
- **Moderation:** Dipl.-Ing. Harald Oeiss, ZF Friedrichshafen, Auerbach

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

All congress participants are invited to the ELIV evening event with delicious food, great networking opportunities and a special evening keynote by John W. Kelly, Founder and CEO of Graphika on *Mapping Social Networks – A Blueprint for Automotive Innovation*. 
2nd Congress Day
Thursday, October 21, 2021

08:30 Parallel Session
- Session 1: New York (Ground Floor)
  - Data Analytics
    - Moderation: Dipl.-Ing. Gilles Mabire, Continental Automotive, Villingen-Schwenningen
- Session 2: Nairobi (Ground Floor)
  - Electronics Innovation
    - Moderation: Dr. Peter Redlich, Ford, Cologne
- Session 3: Wien (Ground Floor)
  - End-to-End Architecture
    - Moderation: Dr. Thomas Hollmann, Volkswagen AG, Wolfsburg
- Session 4: Bangkok (Basement)
  - E-Vehicle
    - Moderation: Rémi Bastien, Groupe Renault, Guyancourt, France

10:00 Plenary Speech
  - Helmut Matschi, Member of the Board, Division Interior, Continental AG, Regensburg
  - Werner Koestler, Senior Vice President Mobility Services – Head of Strategy & Business Development, Continental Automotive, Regensburg

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

11:15 Parallel Session
- AI – Self learning vehicles
  - Moderation: Dipl.-Inf. Elmar Frickenstein, Elstein Consulting & former BMW AG, Munich
- Software Technologies
  - Moderation: Michael Jaeger, HELLA, Lippstadt
- Electronics Innovation
  - Moderation: Dipl.-Ing. Stefan Teuchert, MAN Truck & Bus, Munich
- Security
  - Moderation: Stephan Esch, Volkswagen AG, Wolfsburg

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

14:30 Flashlight Speeches and Award Ceremony – New York (Ground Floor)
- Flashlight on E/E Architecture
  - Cammal Thierry, Alliance Global Vice President Software Factory & Director General Renault Software Labs, Groupe Renault, Tournefeuille, France
- Flashlight on Software
  - Dr. Dirk Walliser, Senior Vice President Corporate Research & Development, ZF Friedrichshafen AG, Friedrichshafen
- Flashlight on 5G
  - Qualcomm
- Flashlight on AI
  - Igal Raichelgauz, CEO, AutoBrains, Tel Aviv, Israel

15:30 Conclusion und Discussion
  - By Members of the Program Committee

16:00 Award Ceremony “Auto Electronic Excellence Award 2021”, best Start-up and Closing of the Congress

16:15 End of the Congress
1st Congress Day

**Wednesday, October 20, 2021**

07:45 Registration

08:45 Opening of the Congress

**Opening Speech: Automotive defined Digitalization – Perspectives towards tomorrow**

Dr. Rolf Zöller, Director Smart Connected Vehicle Porsche AG and Managing Director Porsche Digital, Chairman of the Program Committee

09:15 The Long Path of the Automotive Industry: From Hardware to Software, Cloud and Services

Dr. Karl-Thomas Neumann, former CEO of Continental AG, Volkswagen China and Adam Opel GmbH, Founder & Owner

09:45 Panel Discussion: Operating Systems for Cars – Can OEMs regain Independence from IT-Giants?

- How to get on top of the software issue in automotive?
- Connecting the automotive ecosystem to established IT-Ecosystems vs. OEMs regaining independence
- Could a standardized, scalable middleware platform pave the way?

**Stephan Durach**, Senior Vice President Connected Company Development, Technical Operations, BMW Group, Munich

**Christoph Hartung**, CEO, ETAS GmbH, Stuttgart

**Joachim Langenwalter**, Senior Vice President Software & Hardware, Stellantis NV, Paris, France

**Moderator: Ken Fouhy**, Editor-in-Chief, VDI nachrichten, VDI Verlag GmbH, Düsseldorf

10:45 Coffee break, Exhibition and Start-up Area visit

Automated Driving

**Moderation: Kai-Uwe Balszuweit**, BMW, Munich

Software Technologies

**Moderation: Dr. Riclef Schmidt-Clausen**, CARIAD SE, Ingolstadt

End-2-End Architecture

**Moderation: Dipl.-Ing. Rüdiger Roppel**, Porsche, Weissach

11:30 Collaborative development of a test environment for Automated Driving

- Highly complex simulation environments required by test platforms
- Know-how from various expert parties/companies must be brought together
- Joint feature backlogs and overarching project organizations as success factors
- Facilitating technical set-ups and interface standards

**Dr.-Ing. Tim Fricke**, Modeling and Simulation Specialist, Test Infrastructure, Conduct Hardware, BMW Group, Munich and **Dr.-Ing. Dipl.-Math. Klaus Lamberg**, Strategic Product Manager Real-Time Test and Development Systems, dSPACE GmbH, Paderborn, Co-Author: Dr.-Ing. Falko Schuck, BMW Group, Munich

Automotive Software Development – Is it different?

- Usage of practically proven software development processes
- Combination of safety and security
- Handling the complexity of ADAS verification
- CI/CT tool chains for the collaboration between OEM and suppliers

**Dr. Stefan Krauß**, Managing Director, Vector Informatik GmbH, Stuttgart

Architecting for secure, safe and agile software defined vehicles

- How can we enable a future of continuously evolving capabilities and use experience?
- What are the analogies to modern OS design?
- What are the characteristics of a flexible and extensible in-vehicle software architecture?
- What changes are required in the development process to increase agility without compromising safety and cyber security?

**Sean Selitrennikoff, M. Sc.**, Principal Software Engineer, Azure IoT Mobility, Microsoft Corporation, Redmond, WA, USA

Wireless charging for electric vehicles with its boundary conditions – A contribution for market breakthrough

- Boundary condition in the automotive environment
- Wireless power transfer for electric vehicles under boundary conditions
- Interoperable wireless power transfer systems

**Dr.-Ing. Mike Böttigheimer**, Project Manager, Corporate Advanced Engineering Thermal Management, Co-Author: Timo Lämmle, M. Sc., Co-Author: Dr. Christoph Lämmle, all of MAHLE International GmbH, Stuttgart

Register at: www.eliv-congress.com
12:00 Reliable validation of Highly Automated Driving functions by increasing the virtualization level of high computing platforms and smart sensors
  • Virtualization of Multi-Chip ADAS High Computing Platforms using Multi-Container Environments
  • Transfer of Communication- and Middleware-Layer in the SiL Environment as Key Factor
  • End-2-End-Communication and Vehicle Network in SiL Environments (e.g. CAN & Ethernet)
  • Analysis of Technical State-of-the-Art in Virtualization with respect to Standardization Approaches
  Dipl.-Inf. Stefan Wonneberger, Product Manager Simulation & SiL Testing for ADAS & AD, ADAS & AD Data & Development Factory, Co-Author: Sinan Balci, M. Sc., both of CARIAD SE, Wolfsburg

Agile development of safety-related automotive software
  • Common misconceptions regarding the combination of agile methods and functional safety
  • Recommendations from the ZVEI best-practice guideline „Introduction to the combined application of agile & safety in automotive software development“
  • Examples from the combination of Scrum and ISO 26262
  Dipl.-Ing. Steffen Kuhn, Head of Consulting, Elektrobit Automotive GmbH, Erlangen

Electric development of safety-related automotive software
  • Success of future vehicle generations is closely linked to systematic focus on innovations, robust technologies and cost-optimized processes
  • Basic principles of development using the example of electrical systems
  • Scalability: Development of a modular system with cross-segment usability
  • Automation: Implementation of robust data and energy distribution systems for cost-effective, automated production
  Ralf Milke, Head of Electric Systems Development, Volkswagen AG, Wolfsburg

12:30 Functional Safety is Critical to Commercially Viable Self-Driving Trucks
  • Plus’s safety strategy and approach in developing autonomous trucks
  • Development process and functional safety: processes and tools
  • Safety standards and best practices
  Robert Dingli, Director of Vehicle Engineering, Plus.AI, Cupertino, CA, USA

Model-based Systems Engineering accelerated
  • Bridge the gap between high-level systems architecture models and the detailed executable analytical models
  • Support agile system architecture development & design, including real-time cross-function collaboration requires immediate feedback based on decentralized scalable models
  • Provision of modeling capabilities, allowing for multi-disciplinary modelling for analyses and simulation of performance, safety, and cyber security against semi-formal requirements
  • Transformation between common architectural system models and the domain-specific downstream development, analysis and verification analytical capabilities
  Dr. Olaf Kath, Senior Director, Systems & Platform Business Unit, Ansys Germany GmbH, Berlin

Electric Systems – Simplified and standardized engineering for sophisticated automotive electric/electronics
  • Applying the SOVD Standard for future vehicle diagnostic and vehicle lifecycle management
  • Diagnostics of HPC and complete vehicle using SOVD
  • Unified remote diagnostics for different vehicle
  • Proposed extensions for fully supporting development, production, and after sales
  Dr. rer. nat. Oliver Meyer, Head of Department – Development Lifecycle Management & After Sales, Co-Author: Dr. rer. nat. Boris Böhlen, both of DSA Daten- und Systemtechnik GmbH, Aachen

Applying the SOVD Standard for future vehicle diagnostic and vehicle lifecycle management
  • Range anxiety, longer charging time, lack of charging infrastructure, and relatively high acquisition costs as a barrier to transition to BEV or PHEV
  • Driving behavior and mobility patterns to evaluate suitability
  • Trip augmentation and profiling models to optimize fleet compositions and reduce CO₂ emissions
  Dr.-Ing. German Castignani, CEO & Co-Founder, Board of Directors, Co-Authors: Sasan Jafarnejad, Ph. D., François Chandelle, all of Motion-S S.A., Mondorf-les-Bains, Luxembourg

Electric Charge Lid – System components for future charge lid systems
  • Generation of a charging experience through innovative components
  • Simplification of the onboard charger through autonomous control unit
  • Innovative lighting components for charging status display and other information
  Dipl.-Ing. (FH) Benjamin Bermann, Director global Program Management Body Actuators, HELLA GmbH & Co. KGaA, Lippstadt

Evaluation of a driver’s compatibility with electric, plug-in hybrid, and hybrid vehicles based on mobility patterns analytics
  • Trip augmentation and profiling models to optimize fleet compositions and reduce CO₂ emissions
14:30 Removing blind spots: Infrastructure-assisted collective perception
- Collective perception – seeing through the eyes of others
- Pedestrian detection by infrastructure sensors
- Perception beyond the vehicle sensor range
- Evaluating the reliability in challenging V2X use cases
Florian Schiegg, Research engineer, Corporate Research - Digital Communication and V2X Systems, Co-Authors: Dr. Frank Hofmann, Dr. Hugues Thoquankem, Dr. Ignacio Latser, all of Robert Bosch GmbH, Hildesheim

15:00 HERE HD Live Map – More than a sensor for Automated Driving
- HD Maps act as the memory of Automated Vehicles
- HERE HD Live Map is more than a sensor providing information beyond the line of sight and even in places a car hasn’t driven before
- HERE HD Live Map provides needed data assets to automated cars for SAE levels 2+ and beyond
Dipl.-Kfm. Carsten Hurasky, Vice President Industry Solutions, HERE Technologies, Schwalbach

15:30 Hybrid collaborative positioning/navigation scheme for performance enhancements and local perception improvement for automated driving
- Navigation using tightly coupled GNSS and terrestrial ranging measurements
- High accuracy positioning in dense urban areas with limited GNSS availability
- Improved detection of Vulnerable Road Users
David Bartlett, M. Sc., C. Eng., MIET, MRIN, Senior Principal Engineer Positioning, Product Centre Positioning – Technology, Co-Author: Stefania Sesia, M. Sc., Ph. D., both of u-blox, Cambridge, United Kingdom and Thalwil, Switzerland

16:00 Coffee break, Exhibition and Start-up Area visit

Automotive digital twin: An approach for isolating and virtual validating of software updates in end-to-end architectures based on customer vehicles
- Reference model of digital twins
- Graph based approach for simulating functions in end-to-end architectures
- Reduction in complexity due to isolating of vehicle functions by their end-to-end linkage and interfaces
Dipl.-Ing. Till Fuchs, Doctoral student, Co-Authors: Dr.-Ing. Oliver Maniche, Dipl.-Wirt.-Ing. (FH) Matthias Zinser, all of Dr.-Ing. h. c. F. Porsche AG, Weissach, Prof. Dr.-Ing. Bernard Bäker, Technical University Dresden

Rethinking Testing And Validation In An Environment Of Increased Connectivity
- How do OTA updates change the landscape for software functionality testing and validation?
- What validation requirements are mandated by WP29 and Type Approval regulations?
- Testing software functionality in an agile development environment
- Utilizing Machine Learning to detect changes in software behaviour patterns
Zohar Fox, CEO & Co-founder, Co-Author: Roger Ordmann, both of Aurora Labs, Tel Aviv, Israel

Software-Defined Vehicle Motion deployable on future E/E-Architectures
- Central motion integration platform
- Cross-domain vehicle motion functions
- Modular system architecture
- Model based systems engineering

End-2-End Architecture
- Dr. Jutta Schneider, Daimler, Sindelfingen

MAN’s new fully centralized EE architecture – a driving fully connected server Platform
- Centralized functionality (only one ECU as Brain in the middle)
- Open for third party software
- Modular
- Scalable
- Ready for automation & e-mobility
- Fully connected
Dipl.-Ing. Stefan Teuchert, Senior Vice President, Head of Electric/Electronic Systems (EE), MAN Truck & Bus SE, Munich

New architecture approaches and their impact on automotive wiring harnesses
- Development of a consistent E2E architecture
- The wiring harness as the backbone of electronic vehicle architecture
- Direct impact of architectural decisions on the wiring harness impact on electrical range and the CO2-footprint
Dipl.-Ing. Oliver Bettgens, Head of Physical Layer and Wiring and Dr.-Ing Matthias Görber, Head of Networking Technologies and System Functions, both of CARAD SE, Wolfsburg

E-Mobility
- Register at: www.eliv-congress.com

Empowering the next level of e-mobility
- Strengthen key assets of CCS, the Combined Charging System, and ISO15118 as the charging communication protocol
- Key factors for the further establishment of EVs
- The Megawatt Charging System (MCS), addressing trucks as well as the marine and aero industry
N.N., Co-Authors: Claas Bracklo, Michael Keller, alle Charging Interface Initiative (CharIN) e. V., Berlin

Wireless Charging Systems for EVs – The answer to the consumers demand!
- Range anxiety? Is either a large battery or an automated charging system the solution?
- Cityscape? How do cities look like with lots of charging pillars, cables or even cages for charging robotics? Aren’t invisible systems more suitable?
- Cost of charging? How much can a consumer afford to charge a vehicle?
- Handling? Automated parking requires automated charging without cables/wires!
Dipl.-Ing. Thomas Nindl, COO, Managing Director, BRUSA Elektronik (München) GmbH, Munich

Real-time Contextual Intelligence Services for Connected Electric Vehicles
- Constantly learning mobility platform for improved range estimation accuracy
- Behavior prediction based on physics principles and artificial intelligence
- Contextual intelligence distributed to vehicle ECUs via ADASIS and NDS Live
Prof. Francesco Borelli, Professor, Department of Mechanical Engineering, University of California, Berkeley, CA, USA and Dr. Martin Pfeifle, Chief Technology Officer, NING KFT, Budapest, Hungary, Co-Author: Santhosh Alexander, WideSense, Berkeley, CA, USA

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<table>
<thead>
<tr>
<th>Time</th>
<th>Session Title</th>
<th>Speaker(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>16:45</td>
<td>The Evolution of Automation in Parking: Assisted, Automated, Autonomous</td>
<td>Harihar, Marco Cassol, both of Infineon Technologies AG, Neubiberg, Co-Authors: Manoj Engineer, Automotive Microcontroller, Infineon Technologies AG, Munich</td>
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<td>Dr. Andree Hohm, Head of Autonomous Driving Program, Continental, Frankfurt am Main</td>
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<td>17:15</td>
<td>Trajectory tracking using Neural Network for autonomous driving systems</td>
<td>Dr. Lee Gonzales Fuentes, ADAS Application Engineer, Automotive Microcontroller, Infineon Technologies AG, Neubiberg, Co-Authors: Manoj Harinar, Marco Cassol, both of Infineon Technologies AG, Munich</td>
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<td>17:45</td>
<td>Real Time Physics Based Radar Simulation – An Enabler for Machine Learning in the Context of Autonomous Driving</td>
<td>Dr. Kmeid Saad, Senior Principal Application Engineer, Pre-Sales Support, Ansys Germany GmbH, Otterfing, Germany, Co-Authors: Arien Siglar, Ansys Inc, Beaverton, OR, USA, Jeffrey Decker, Ansys Inc, Champaign, IL, USA</td>
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<td>Next paradigm change in the car: Abandon proprietary solutions – embrace open standards</td>
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<td>VIRTIO is an open standard for device virtualization, that</td>
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<td>• Moves guest OSs among different hypervisors</td>
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<td>Isaac Trefz, Product manager of COQOS Hypervisor SDK, OpenSynergy GmbH, Berlin</td>
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<td>AUTOSAR Vehicle Operating System (AVOS): The Safe and Secure framework for Automotive SoC Architectures</td>
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<td>Dr.-Ing. Günter Reichart, AUTOSAR Spokesperson, Aschheim, Co-Author: Rinat Asmus, AUTOSAR, BMW Group, Munich</td>
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<td>• New car architecture supporting highly functional digital light</td>
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<td>Dr. rer. Nat. Michael Kruppa, Head of Light Innovations and Functions Development, AUDI AG, Ingolstadt</td>
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<td>Power Electronics: High stake for the competitiveness of BEV</td>
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<td>Jean-Philippe Mercier, Expert Leader, Groupe Renault, Paris, France</td>
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<td>• High Power Charging (HPC) for short break times</td>
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<td>• Battery Systems with high cell load (= high c-rates)</td>
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<td>• Battery Thermal Management – Immersion Cooling</td>
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18:15 The beauty of synthetical data for image processing AI tasks in automotive
- Advantages due to flexibility of used camera (lens, imager) which can be adapted to any specific needs
- Datasets are well balanced and can be enhanced with additional corner cases on demand without losing it
- Automatically generated labels which are 100% precise and correct

Dr. Axel Panning, Area Sales Director Central Europe, Remote Sensing Solutions, Co-Authors: Alexander Jubner, Joseph Shain, all of Neonode SB, Stockholm, Sweden

18:45 End of the 1st Congress Day

19:00 Night of Electronics
All congress participants are cordially invited to join our ELIV evening event at the end of the first congress day. Use this great networking opportunity to finally meet your peers again and make new contacts in a comfortable and stimulating atmosphere. We prepare delicious food, drinks, and entertainment for you. Do not miss out this year’s evening keynote by world’s leading expert on social network analysis John W. Kelly.

In addition, we offer live music as well as calm lounge areas for in-depth conversations with partners, customers, and friends.

Be part of this get-together, stroll through our late-night exhibition and combine new business opportunities with pleasure. Enjoy a wonderful night at the ELIV in Bonn.

We are looking forward to meeting you at the Night of Electronics!

Note: We are continuously monitoring the situation during the Corona Pandemic and will consider appropriate concepts for the evening event.

19:30 Mapping Social Networks – A Blueprint for Automotive Innovation
Evening keynote by world’s leading expert on social network analysis John W. Kelly, Founder and CEO of Graphika, USA

Register at: www.eliv-congress.com
### 2nd Congress Day

**Thursday, October 21, 2021**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session Title</th>
<th>Description</th>
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<tbody>
<tr>
<td>08:30</td>
<td>End-to-End Architecture and Methods for Chassis Health Management</td>
<td>- Value Drivers&lt;br&gt;- Digital Twin&lt;br&gt;- On-board/Off-board partitioning&lt;br&gt;&lt;br&gt;<strong>Dipl.-Ing. Joe Klesing</strong>, Product Line Executive, PL, Co-Authors: Peter Schmitt, both of Nexteer Automotive Corporation, Auburn Hills, MI, USA</td>
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<tr>
<td>09:00</td>
<td>A new perspective for manufacturers: Cloud-based utilization of operational fleet data</td>
<td>- Interaction and information flow between fleets’ stakeholders&lt;br&gt;- Integration of real-world operational fleet data into the manufacturer’s processes&lt;br&gt;- Use case of Battery Electric Vehicles fleets&lt;br&gt;&lt;br&gt;<strong>Friedrich von Bülow, M. Sc.,</strong> Ph. D. Student Data Science, Co-Authors: Felix Heinrich, M. Sc., both of Volkswagen AG, Wolfsburg, Prof. Dr.-Ing. Tobias Meisen, Bergische Universität Wuppertal</td>
</tr>
<tr>
<td>09:30</td>
<td>Graph-based Optimization of Vehicle Diagnostics using Machine Learning Methods</td>
<td>- Revealing causal relationships of fault causes and fault symptoms&lt;br&gt;- Processing of different fault information and fault propagation&lt;br&gt;- Automated fault classification via training on vehicle data&lt;br&gt;&lt;br&gt;<strong>Melissa Gresser, M. Sc.,</strong> Ph. D. Candidate, Integration on Diagnostics Drive Train, Co-Authors: Dipl.-Ing. Michael Mende, both of BMW Group, Munich, Prof. Dr.-Ing. Bernhard Bärker, Technical University Dresden</td>
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<td>10:00</td>
<td>High Performance Computing – Implementation experiences: Architecture, System Integration &amp; Project Management</td>
<td><strong>Helmut Matschi</strong>, Member of the Board, Division Interior, Continental AG, Regensburg&lt;br&gt;&lt;br&gt;<strong>Werner Koestler</strong>, Senior Vice President Mobility Services – Head of Strategy &amp; Business Development, Continental Automotive, Regensburg</td>
</tr>
<tr>
<td>10:30</td>
<td>Coffee break, Exhibition and Start-up Area visit</td>
<td>- New E/E architectures and how TC4xx enables it&lt;br&gt;- Optimizing the in-vehicle network by a zonal approach&lt;br&gt;- Improve platform flexibility with new E/E architecture&lt;br&gt;- Automotive Security&lt;br&gt;- Zonal architecture in automotive E/E architecture&lt;br&gt;&lt;br&gt;<strong>Dr. Karel Heurtefeux</strong>, Principal system architect, Technical Marketing and Concepts, Automotive Microcontroller, Co-Authors: Manoj Kumar, Marco Cassol, all of Infineon Technologies AG, Neubiberg</td>
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<tr>
<td>11:00</td>
<td>A Battery Digital Twin framework for Predictive Maintenance and State of Health Estimation of Electric Vehicles</td>
<td>- Distributed cloud storage-based framework of battery digital twins&lt;br&gt;- Intelligent Predictive Maintenance&lt;br&gt;- Learning based State of health estimation&lt;br&gt;&lt;br&gt;<strong>Krishna Priya Ganesh</strong>, Specialist-Transportation Business Unit, R&amp;D, Co-Authors: Kiran Thomas, Dr. Anjana P Das, all of Tata Elxsi Ltd., Bangalore/Trivandrum, India</td>
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<tr>
<td>11:30</td>
<td>Towards lead-acid free 12V power supply for electrified vehicles and highly automated driving functions</td>
<td>- 12V lithium-ion batteries as the new standard&lt;br&gt;- Electrification of the powertrain will influence the design of the future 12V board net supply&lt;br&gt;- Redundant 12V supply for highly automated driving&lt;br&gt;&lt;br&gt;<strong>Dipl.-Inf. André Hohenhövel</strong>, LV-BMS Product Manager, Co-Authors: Dr. Kay Klobedanz, Dr. Björn Kleinsteberg, all of HELLA GmbH &amp; Co. KGaA, Lippstadt</td>
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<tr>
<td>12:00</td>
<td>State of Health and State of Charge Estimation method – A Machine Learning based hybrid approach</td>
<td>- “Hybrid Approach” an intelligent combination of Battery physics and Artificial intelligence&lt;br&gt;- Neural Network Architecture&lt;br&gt;- An implementation example in a Mild Hybrid BMS using PowerPC controller&lt;br&gt;&lt;br&gt;<strong>Mahesh Ghivari</strong>, Senior Director, Powertrain, R&amp;D and <strong>Debango Chakraborty</strong>, Senior Designer, Battery Management System Specialist, R&amp;D, both of KPI Technologies GmbH, Munich</td>
</tr>
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</table>
AI – Self learning vehicles
Moderation: Frickenstein, Elstein Consulting & former BMW AG, Munich

11:15 Make AI Testing Meaningful: From Understanding to Mastering of AI Testing
- Testing of AI based systems needs an extension of existing best practices
- Testing AI includes testing what has not been learned
- We propose the Deep Regression Test scheme to make AI testing effective and meaningful
- The underlying principles are especially important for self-learning vehicles
Dr. Ulrich Bodenhausen, Manager Consulting, Vector Consulting Services GmbH, Stuttgart

Software Technologies
Moderation: Michael Jaeger, HELLA, Lippstadt

11:45 An Eco-System for the Development of Automotive Innovation Roadmaps
- A knowledge-based backend enables the aggregation of general data, facts and/or constraints
- Quantitative evaluation and analysis of possible innovations for an automotive roadmap
- Interactive frontend enabling quick exploration of possible innovations in a collaborative process
Dipl.-Ing. Berthold Helfenstein, Head of Computing Platform and Semiconductors, CARIAD SE, Ingolstadt, Co-Authors: Prof. Dr. Christoph Grimm, TU Kaiserslautern, Alexander Breckel, Ulm University

Future collaboration ecosystem for automotive microelectronic innovation processes
- Model-based collaboration along the future automotive value networks
- Knowledge-based innovation roadmapping for future E/E
- Enabling comprehensive innovation roadmapping with Roadmap-LifeCycle-Management
Dr.-Ing. Christoph Heer, Product management Asia, IoT Group, Autonomous Transportation & Infrastructure, Co-Authors: Dipl.-Ing. Damun Mollahassani, Sven Forte, M. Sc., all of Intel Deutschland GmbH, Neuburg

User Experience – The key to successfully combining electric mobility and connectivity
- The importance of user experience
- Needs of users for electric and connected mobility
- E-mobility products, connected services and HMI concepts: trends and how they impact the experience of end users
- E-Experience Drive and other methods to successfully combine electric and connected mobility
Audrey Matarage, M.Eng., Co-Lead User Experience, Co-Author: Rico Ludwig, B. Eng., both of P3 automotive GmbH, Stuttgart

Shy Tech Displays – Enabling a new era of puristic vehicle design and enhanced user experience
- UX Trend “Simplicity” – technology is hidden until needed
- Seamless GUI integration without postcard effect
- Design Freedom – realistic simulation of interior materials with natural texture and haptics
- Reducing potential sources of driver distraction
Dr. Martin Pfeifle, Executive Vice President, Head of Business Unit Human Machine Interface, Continental Automotive GmbH, Babenhausen

Autonomous Cyber-Attacks Via Over-the-Air Software Updates – a Case Study
- Introduction to the concept of over-the-air software updates in the automotive world
- A case study from a real pen-test – remotely hijacking a vehicle via software updates vulnerabilities
- Thoughts on mitigation and prevention
Magal Baz, Security Researcher, Research, Co-Author: Ohad Peled, both of Argus Cyber Security, Tel Aviv, Israel

Register at: www.eliv-congress.com
12:45 Safe-AI – A new approach to make Autonomous Driving safe
   - Mathematical provable uncertainty determination within the AI
   - Automatic edge case detection
   - Enhancement of the safety case for ISO 26262
   - Real-time monitoring of the autonomous driving stack
Dr. Ralph Meyfarth, Managing director, Co-Author: Sven Fülster, both of Deep Safety GmbH, c/o The Drivery GmbH, Berlin

Needs and challenges of the transformation towards software defined vehicle in China
   - Fast adaption to market needs in China
   - Time savings
   - Reusing existing elements
   - Software platform as a key to market
Dipl.-Ing. Francis Man, Vice President Global Operational Excellence, Elektrobit Automotive GmbH, Erlangen

Adaptive Driving Beam – The next mandatory Safety System?
   - LEDs as headlamp light source enable low-cost glare free main beams
   - Multi-Purpose Cameras are already standard equipment
   - The safety benefit during night driving is extremely high
Dr.-Ing. Wolfgang Huhn, Senior Advisor, Driving Vision News, Neuilly-sur-Seine, France

Implementing adequate security for UN R 155 with AUTOSAR
   - Impact of UN R 155 on E/E architectures and product roadmaps
   - View and status of the automotive industry based on a global survey
   - Systematic and traceable approach to identify and meet the UN R 155 requirements
   - AUTOSAR’s security building blocks as core of implementations in the context of UN R 155 Annex S
Dr. Moritz Minzlaff, Senior Manager Security Consulting, Professional Security Services, Co-Authors: Marcel Rücker, Dr. Michael Schneider, all of ESCRYPt GmbH, Bochum/Stuttgart/Berlin

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

Flashlight Speeches and Award Ceremony – New York (Ground Floor)

14:30 Flashlight on E/E Architecture
   Vision on Future E/E Architectures framed by Service Oriented Architecture to maximize the Potential of the Software
   Cammal Thierry, Alliance Global Vice President Software Factory & Director General Renault Software Labs, Groupe Renault, Tournefeuille, France

14:45 Flashlight on Software
   How Software Solutions and High Performance Controllers enable Vehicle Intelligence
   Dr. Dirk Walliser, Senior Vice President Corporate Research & Development, ZF Friedrichshafen AG, Friedrichshafen

15:00 Flashlight on 5G
   Qualcomm

15:15 Flashlight on AI
   Self-learning AI for Autonomous Vehicles
   Igal Raichelgauz, CEO, AutoBrains, Tel Aviv, Israel

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

16:00 Award Ceremony “Auto Electronic Excellence Award 2021” and best Start-up

16:15 End of the Congress

Simply download the Event-App and register!
The App will be available for download at the Apple App Store and the Google Play Store for all participants as of October.

Areas of the app:
   - Digital congress program: create your own agenda at once
   - Networking: Use the “Offer” and “Search” function to find and contact other participants
   - General event information
   - Service information
   - Exhibition information

ELIV – The App

The App will be available for download at the Apple App Store and the Google Play Store for all participants as of October.
Start-up Area

Again this year ELIV offers young companies the opportunity of presenting their latest developments and products in automotive electronics at the start-up area. Start-ups are invited to seize their opportunity and interact directly with an exclusive, international circle 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 at 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:

Corinna Ahlgrimm
Project Team Exhibitions & Sponsoring
Phone: +49 211 6214-8643
Email: ahlgrimm@vdi.de

Program Start-ups

Visit our start-up stage and learn about the latest innovations by young companies in the field of automotive electronics. Our start-up session takes place on both congress days.

Listen to the following presentations, among others:

“Speeding-up data-driven applications on the new Infineon AURIX™ TC4xx with ease” by Oliver Oey, Technical Product Manager; emmtrix Technologies GmbH
“Next generation vehicle positioning solution” by Dr. Nicolas Thorstensen, Founder and Managing Director; IVISO GmbH
“Training Aid - The fastest way reduce your training times by 50 % with AR” by Kerim Ispir, COO & Co-Founder; REFLEKT GmbH
“Automated MIL/SIL/HIL Testing in the Cloud”
Dr.-Ing. Florian Göbe, Head of Research & Development, Mindmotiv GmbH
“Take Control of the Battery Lifecycle – with Predictive Battery Analytics Software”
by Lucas Reinfeld, Battery Solutions Specialist; TWAICE
“Robust LiDAR sensors for robust object detection”
Karsten Bronowski, Sales & Business Development, XenomatiX

You will find the revised program on the homepage and in the EventApp from August on.

Start-up Award

Vote for the best start-up at the ELIV!
“The Best Start-Up” award ceremony will take place at the end of the second congress day following the “Auto Electronic Excellence Award 2021”.

Start-ups already registered:
emmtrix Technologies GmbH
IVISO GmbH
Mindmotiv GmbH
Molabo GmbH
RealThingks Automotive Engineering GmbH
REFLEKT GmbH
Xenomatix N. V.

Register at: www.eliv-congress.com
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Brose is the world’s fourth-largest family-owned automotive supplier. The company develops and produces mechatronic systems for vehicle doors and seats as well as electric motors, drives and electronics, among others for steering, brakes, transmissions and engine cooling. About 25,000 employees generated turnover of 5.1 billion euros in 2020.

Contact:
Brose Fahrzeugteile SE & Co. Kommanditgesellschaft, Bamberg
Berliner Ring 1 | 96052 Bamberg
Phone: +49 951 7474 4744
Email: christoph.maag@brose.com
Website: www.brose.com

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Phone: +49 89 3229966-0
Email: info@kpit.com
Website: www.kpit.com

With 30+ years of mobile technology leadership and more than 20 years of automotive industry experience, Qualcomm Technologies has developed an extensive product portfolio that uses our mobile and compute platforms. Today we’re at the center of the global automotive ecosystem, helping automakers and Tier 1s develop vehicles with one of the most advanced Telematics, Digital Cockpit, ADAS/autonomous driving, cellular vehicle-to-everything (C-V2X) and Car-to-Cloud solutions available.

Contact:
Qualcomm CDMA Technologies GmbH
Anzinger Str. 5, 81671 München, Germany
Phone: +49 89 6146940000
Website: www.qualcomm.com/products/automotive
Exhibition & Sponsorship

We'll connect you – and your business.

Would you like to meet the key players at this congress and present your products and services to a selected circle of industry professionals? Then, participate in the event as an exhibitor or sponsor.

If you are interested, get in touch with:

Contact:
Martina Slominski,
Project Consultant
Exhibition & Sponsorship
Phone: +49 211 6214-385
Email: slominski@vdi.de

Networking lounges
Participants have the opportunity of booking meeting rooms at the World Conference Center Bonn for about an hour. Additionally to gaining new insights and findings from the lectures, this is an excellent opportunity for sharing your thoughts with your business partners in a quiet room behind closed doors.

If you are interested, please contact:

List of Exhibitors (June, 2021)

A2Mac1 Automotive Benchmarking
ANSYS Germany GmbH
Apex.AI GmbH
AUTOSAR GbR
Bertrandt AG
Brose Fahrzeugteile SE & Co. KG, Bamberg
Daimler AG
EDAG Engineering GmbH
Electronic Specifier
emmtrix Technologies GmbH
Electronic Specifier
ETAS GmbH
FEV Europe GmbH
Göpel electronic GmbH
Green Hills Software GmbH
Indie Semiconductor
Inova Semiconductors GmbH
IVISO GmbH
jambit GmbH
KIT Karlsruher Institut für Technologie
Knowledge Development for POF S.L
KPIT Technologies GmbH
Kugler Maag CIE GmbH
MAGNA Steyr Fahrzeugtechnik AG & Co. KG
MAN Truck & Bus SE
Method Park Holding AG
Mindmotiv GmbH
Molabo GmbH
MURATA Electronics Europe B.V.
Prisma Sales Service GmbH
Prozesswerk GmbH
RealThingks Automotive Engineering GmbH
RE’FLEKT GmbH
SafeRide Technologies
Silicon Mobility
Silver Atena GmbH
STAR COOPERATION
STMicroelectronics N.V.
SYSTEMITE AB
TASKING Germany GmbH
TDK – Micronas GmbH
TDK Europe GmbH
The MathWorks GmbH
TraceTronic GmbH
TTTech Auto AG
Valens
ViGEM GmbH
Xenomatix N. V.

Special exhibitions

The topic of highly automated driving is on everyone’s lips. Make the most of your visit to ELIV and take a look at the technology exhibition on this hot topic. OEMs and suppliers will show you important background conditions on the basis of vehicles, measurement systems, etc:

- High-precision maps
- Sensor technology (radar, camera, lidar, ...) and sensor fusion (IDC)
- Actuator technology (steering, brake, ESP, ...)
- Vehicle integration
- Human-machine interface and system understanding

In addition, there will be a special exhibition on the forecourt.

- Subject to change -

Register at: www.eliv-congress.com
Scientific Support

The VDI Society for Vehicle and Transport Technologies, VDI-FVT in short, has around 28,000 members that are affiliated to at least one of its 8 technical sections. This makes it the second biggest of the VDI’s dedicated societies. VDI-FVT is the community for engineers working in the vehicle industry, as well as for engineers dealing with transport and traffic outside manufacturing industries. Traditionally, a majority of members work in automotive. VDI-FVT is the German affiliate of the world federation of automotive engineers’ societies, FISITA, and it is the intellectual sponsor of many big conferences on automotive technology and thus fosters exchange and knowledge transfer both nationally and internationally. It also sponsors Formula Student Germany, awarding VDI membership to all German participants, and promotes other student competitions for transport engineers. VDI-FVT has recently reconstituted technical sections for rail and marine technologies, as well as space and aircraft. It is putting a strong focus on transport and traffic in general and aims to mediate between technology and society.

More information: www.vdi.de/fvt

Information on Coronavirus Safety

The health and safety of our customers and employees is our top priority. We have therefore developed a safety concept to ensure protection against the risk of coronavirus. We will closely observe official national and regional regulations and will, of course, comply with current coronavirus protection measures. This may in some circumstances result in some restrictions for participants.
I will participate as follows for the price per person plus VAT:

<table>
<thead>
<tr>
<th>ELIV 2021</th>
<th>ELIV 2021 – Live-Stream</th>
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<tr>
<td>October 20 – 21, 2021</td>
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<tr>
<td>Bonn, Germany</td>
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- EUR 1,740.-
- EUR 590.-

- Additionally, to the onsite participation, I would like to get access to the video recorded lectures*1 until December 19, 2021 for an extra charge of EUR 150.-.
- I’m interested in Sponsoring and/or Exhibition Participation Fee VDI-Members Save 50 € for each Workshop Day.
  VDI membership no.: __________________________

*1 subject to the consent of the authors recording the lecture
*2 For the price category 2, please state your VDI membership number

First Name ___________________________ Last Name (Family Name) ___________________________
Title ___________________________ Job Title ___________________________ Department ___________________________
Company/Institute ___________________________
Street ___________________________
ZIP Code, City, Country ___________________________
Phone ___________________________ Mobile ___________________________ Mail ___________________________
Fax ___________________________
Deviating bill address ___________________________

Date ___________________________ Signature ___________________________

Participants with an invoice address outside of Austria, Germany and Switzerland are kindly requested to pay by credit card. Please don’t send your credit card details via email, fax or post. Please book your ticket at www.vdi-wissensforum.de. Transferring your credit card details via our website ensures your details are encrypted and security of your data is guaranteed.

Any more questions?
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