18th International Congress and Exhibition
October 18 – 19, 2017, Bonn

Top Topics:

Highly Automated Driving
- Intelligence: data-based and artificial
- Enablers: sensor systems to environment model
- Validation: both virtual and real

Smart & Connected Vehicles
- From vehicle to back-end
- The framework: software

E-Mobility 2025
- Voltage: 48 – 800 V
- Charging: high-power and infrastructure

Offboard Ecosystems
- Big data in the automotive sector

Vehicle Wiring Systems 2025
- Orientation: by zones
- Mastery of complexity: development systems

End-to-End E/E Architecture
- Architecture: service oriented
- Key success factor: open and reusable

Security
- Duty regarding points of weakness
- Updating: over-the-air

Lighting Technology
- Matrix: intelligence in illumination

Methods + Testing
- Function integration virtual
- Test coverage with self-learning systems

UX
- From cognitive transfer to augmented reality
- Human-machine interface: user-centered

Including up-to-date contributions from

Dipl.-Ing. Uwe Michael, Director Electrics/Electronics, Dr. Ing. h.c. F. Porsche AG, Weissach

Günter H. Oettinger, European Commissioner for Budget & Human Resources, European Commission, Brussels, Belgium

Sanjay Brahmanavar, General Manager, IBM Watson Internet of Things, Munich

Dipl.-Ing. Elmar Frickenstein, Senior Vice-President Fully Automated Driving, Driver Assistance, BMW AG, Munich

Dr.-Ing. Dirk Didascalou, Vice-President, IoT, Amazon Web Service, Seattle, USA

Dipl.-Ing. (FH) Helmut Matschi, Member of the Board, Interiors Division, Continental AG, Regensburg

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Günther H. Oettinger, European Commissioner for Budget & Human Resources, European Commission, Brussels, Belgium
The most important branch meeting for experts in electronics

ELIV – Program Overview

1st congress day
Wednesday, 18 October 2017

07:45 Registration
08:45 Opening of the Conference
Dipl.-Ing. Uwe Michael, Vice-President Electrics/Electronics, Dr. Ing. h.c. F. Porsche AG, Weissach, Chairman of the Program Committee

Plenary Lectures – New York (1st level)
Moderation: Dipl.-Ing. Uwe Michael, Porsche, Weissach

08:55 Major trends in electronics in the vehicle: Seamless electronics for automotive services
Dipl.-Ing. Uwe Michael, Dr. Ing. h.c. F. Porsche AG, Weissach

09:25 The transformation of the automotive industry – Autonomous Driving, new business models and scrum masters
Dipl.-Inf. Elmar Frickenstein, Senior Vice-President Fully Automated Driving, Driver Assistance, BMW AG, Munich

09:55 Winning in the Cognitive Era
Sanjay Brahmanwar, General Manager, IBM Watson Internet of Things, Munich

10:25 Coffee break, exhibition and Start-Up Area visit (Genf room, 1st level)

11:00 Parallel Sessions
Session 1: New York (EG)
Highly Automated Driving
Moderation: Dipl.-Inf. Elmar Frickenstein, BMW, Munich

Smart & Connected Vehicles
Moderation: Dr.-Ing. Hans Welfers, former MAN, Munich

Session 2: Nairobi (EG)

Session 3: Wien (EG)
Offboard Ecosystems
Moderation: Dipl.-Ing. Harald Deiss, ZF Friedrichshafen, Auerbach

Session 4: Bangkok (UG)
Vehicle Wiring Systems 2025
Moderation: Dipl.-Ing. Kai Barbehön, BMW, Munich

12:30 Lunch, visit to the exhibition and Start-ups Area (Genf room, 1st level)

14:00 Parallel Sessions
Highly Automated Driving
Moderation: Dr. Dieter Rödder, Robert Bosch, Stuttgart

Smart & Connected Vehicles
Moderation: Dipl.-Ing. Christof Kellerwessel, Ford-Werke, Cologne

Off-board Ecosystems
Moderation: Dipl.-Ing. (BA) Frank Cornelius, Daimler, Stuttgart

End-to-End E/E Architecture
Moderation: Dr. Thomas M. Müller, AUDI, Ingolstadt

15:30 Coffee break, visit exhibition and Start-up Area visit (Genf room, 1st level)

16:15 Parallel Sessions
Testing Highly Automated Driving
Moderation: Bruno Praunsméndel, Opel, Rüsselsheim

Smart & Connected Vehicles
Moderation: Dipl.-Ing. (FH) Helmut Matschi, Continental, Regensburg

Lighting Technology
Moderation: Dr. Wolfgang Huhn, AUDI, Ingolstadt

Security
Moderation: Dipl.-Ing. Ralf Milke, Volkswagen, Wolfsburg

18:15 End of the first day of the congress

19:00 Night of Electronics at the former Bundestag
The VDI invites all participants, speakers, sponsors and exhibitors to join the “Night of Electronics” at the former Bundestag. 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 plus live music.
2nd congress day
Thursday, 19 October 2017

08:30 Parallel Sessions

Highly Automated Driving
Moderation: Andreas Hackl, MAN, Munich

E-Mobility 2025
Moderation: Dr. Christian Kunstmann, Opel, Rüsselsheim

Methods + Testing
Moderation: Dr. Andreas Titze, Volkswagen, Wolfsburg

End-to-End E/E Architectures
Moderation: Karl Barker, Jaguar Land Rover, Gaydon, UK

10:00 Coffee break, exhibition and Start-up Area visit (Genf room, 1st level)

10:45 Plenary Lecture – New York
Günther H. Oettinger, European Commissioner for Budget & Human Resources, European Commission, Brussels, Belgium

11:20 Parallel Sessions

Highly Automated Driving
Moderation: Dipl.-Ing. Stefan Teuchert, MAN, Munich

E-Mobility 2025
Moderation: Dr. Peter Redlich, Ford-Werke, Cologne

Methods + Testing
Moderation: Dr.-Ing. Klaus Büttner, BMW, Munich

UX
Moderation: Dr. Burkhard Milke, Opel, Rüsselsheim

13:20 Lunch, Coffee break, exhibition and Start-up Area visit (Genf room, 1st level)

14:30 The internet of things (IoT): a true disruption or yet another buzzword?
Dr.-Ing. Dirk Didascalou, Vice-President, IoT, Amazon Web Service, Seattle, USA

15:00 Megatrends in the electronics used in vehicles: conclusion and discussion
Dipl.-Ing. (FH) Helmut Matschi, Member of the Board, Division Interior, Continental AG, Regensburg

15:40 Award ceremony “Auto Electronic Excellence Award 2017”, best start-up and closing of the congress

15:45 End of the second congress day

The new encounters the well-established – ELIV Bonn reaches a new level

What stays:
- Largest network gathering of automotive electronics engineers with more than 1600 international participants
- Meet with more than 120 specialist exhibitors
- Technical topics covered in depth in over 70 plenary lectures and expert presentations
- The most important event for electrics, electronics and system integration in vehicles
- ELIV sets trends and creates the base for important decisions

What's new:
- More space for attendees AND exhibitors
- Extended topic range, such as off-board ecosystems, security, highly automated driving, 5G and more
- Start-Ups Area
- Vehicle exhibition
- Evening event held at the former Bundestag (German parliament)
1st congress day

Wednesday, 18 October 2017

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Moderation: Dipl.-Ing. Uwe Michael, Porsche, Weissach

08:55 Major trends in electronics in the vehicle: Seamless electronics for automotive services
Dipl.-Ing. Uwe Michael, Dr. Ing. h.c. F. Porsche AG, Weissach

09:25 The transformation of the automotive industry – Autonomous Driving, new business models and scrum masters
• International collaboration as key success factor on the way to Autonomous Driving
• Disruptive changes in working methods and structure for a new way of co-operation and new business models
Dipl.-Inf. Elmar Frickenstein, Senior Vice-President Fully Automated Driving, Driver Assistance, BMW AG, Munich

09:55 Winning in the Cognitive Era
• Watson
• Cognitive
• IoT
Sanjay Brahmawar, General Manager, IBM Watson Internet of Things, München

10:25 Coffee break, exhibition and Start-Up Area visit (Genf room, 1st level)

Register at: www.eliv-congress.com
11:00 BMW 2021: the road towards Autonomous Driving
- Strategy and challenges in automated driving
- Planning automated driving BMW 2021
- Technology of highly (L3) and fully (L4) Automated Driving BMW
- Collaboration of the BMW, Intel and Mobileye incl. Autonomous Driving platform

Dr.-Ing. Klaus Böttner, Vice-President Projects Autonomous Driving, BMW Group AG, Garching

11:30 Making driving intuitive again: The most common use cases for Autonomous Driving
- Intel’s research findings on the most common use cases of autonomous driving
- Discuss Intel’s HMI research and how it can enhance the industry’s product plans
- Industry contribution on making car-human interface intuitive
- Too much? Too little? How will humans and autonomous cars learn to trust one another

Kathy Winter, BS, MBA, Manager, Automated Driving Solutions Division, Intel Corporation, Santa Clara, USA

12:00 Steps towards Highly Automated Driving
- “Building blocks” necessary for realizing HAD features
- Test results for platooning and auto-docking
- Lateral and longitudinal control concept
- Sensor fusion

Dr. ir. Rudolf Huisman, Senior Control Engineer, Vehicle Control, Co-Authors: Ir. PD Eng. Thierry Kabos, Ir. Menno Beenakkers, all of DAF Trucks NV, Eindhoven, Netherlands

12:30 Lunch, visit to the exhibition and Start-up Area (Genf room, 1st level)

IT back-ends for Automated Driving and collaborative Driver Assistance
- IT backend for Automated Driving
- Safety-relevant IT back-end and IT service
- Secure car-to-infrastructure communication
- Qualification of safety-relevant IT service

Dr.-Ing. Uwe Beher, Senior Consultant, Innovation Center Automotive, Co-Author: Thomas Weyrath, both of ESG Elektro-Niksystem- und Logistik-GmbH, Fürstenfeldbruck

Accelerating 5G for the Autonomous Future
- Creation and evolution of technologies to meet future mobility needs, including C-V2X, 5G and V2V
- 5G will redefine a wide range of industries and will create more than $2.4 trillion across the automotive sector by 2035
- V2X is a critical component for safety-conscious Autonomous Driving
- C-V2X offers new business models and economic benefits by leveraging ubiquitous cellular networks and mobile ecosystem support

Frank McCabe, VP Engineering, Product Management, Qualcomm Technologies, Inc., San Diego, USA

Car eWallet: no Autonomous Vehicle without autonomous transactions
- Driver convenience increased via automated payments for all money streams around the vehicle
- Safe and anonymous data transfer based on blockchain technology
- Various use cases and service based on platform approach: parking, charging and tolls among others
- Varying levels of vehicle integration possible: retrofitting as an additional option


Zone-oriented E/E Architectures?
- Driver and challenges for (r)evolution of tomorrows E/E architecture
- Impact on the communication and energy supply system by new architecture approaches
- Evaluation method and optimisation of multi goals of future E/E architectures

Andreas Hörlting, M.Sc., Productmanagement E/E Architecture, Co-Authors: Christian Bohne, Konrad Hofmann, Dr. Thorsten Huck, Dr. Andreas Lock, all of Robert Bosch GmbH, Abstatt, Dr. Oliver Köller, Robert Bosch GmbH, Weilimdorf

Connectivity: THE enabler for efficiency improvements in commercial vehicles
- Optimization of the key financial levers of fleets
- Reduction of fuel consumption by tracking and ranking vehicle and driver performance
- Sensor information for predictive tire maintenance
- The potential of OTA updates

Dr. Michael Ruf, Executive Vice President Commercial Vehicles & Aftermarket, Continental Automotive GmbH, Villingen

Deep end-to-end learning in automobiles
- End-to-end deep learning for artificial intelligence in automobiles
- Automotive semantic segmentation using an end-to-end set-up
- Functional analysis of deep visual models
- Limits of deep architectures in automobiles

Dr., Dipl.-Inf. (FH) Patrick Ott, Head of Data Engineering, Co-Author: Dipl.-Ing. (BA) Gregor Matenaer, both of CMORE Automotive GmbH, Lindau

48V in series production
- Drivers for 48V energy networks in the vehicle
- Current variants of 48V energy networks and implemented customer functions
- Strategic outlook: requirements and challenges for second-generation 48V energy networks

Markus Gigler, M.Sc., Property Developer, Energy Management Development,, AUDI AG, Ingolstadt
14:00 Highly Automated Driving (HAD) and Parking (HAP): trends and challenges
- Level 3 functions likely to be on the road within this decade
- System performance wins over component performance
- New approach to validation of HAD and HAP systems
Dr.-Ing. Stefan Waschul, Senior Vice-President, Chassis Systems Control, Co-Author: Dr. Burkhard Iske, Dr. Christian Raksch, Thomas Führer, all of Robert Bosch GmbH, Leonberg

14:30 Artificial intelligence for cars: applications, technologies and challenges
- Novel vehicle features enabled by AI
- Requirements of machine learning with respect to embedded platforms
- Software architectures for collective intelligence

15:00 Teaching a car to drive
- Teaching a car to drive by observation of human drivers
- Learned lane-keeping, lane changes and turns
- Tools for visualizing internal information processing
Dr. Urs Müller, Chief Architect – Autonomous Driving, Computer Vision, Co-Author: Lawrence D. Jackel, Joachim Langenwalter, all of NVIDIA Corporation, Holmdel, USA

14:00 5G Automotive Association helping to pioneer digital transformation in the automotive industry
- 5G – network of the future – communications for the automotive industry
- Automotive requirements for 5G
- The 5G Automotive Association links telematics and the automotive industry
- Car-to-car communication: cellular V2X as a first step towards 5G
Dipl.-Inf. (FH) Christoph Voigt, Head of R&D Connectivity, Smart Antennas & Car2Car Technologies, Chairman of the Board SGA, Co-Author: Dipl.-Ing. Jörg Piechinger, both of Audi AG, Ingolstadt

14:30 Component-based software framework for data preprocessing within Connected Car architectures
- Classification of algorithms
- Components and interfaces
- Reusability in conceptual confirmation and productive systems
- Basic research for self-adaptive systems
Dipl.-Ing. Falk Salzmann, Ph. D. Student, Connected Car, Co-Author: Cand. Ing. Benjamin Zerche, both of Dr. Ing. h. C. F. Porsche AG, Weissach, Prof. Dr.-Ing. Bernard Bäker, Technical University, Dresden

15:00 Sense of touch for vehicles: smart sensors for vibration analysis
- “Feeling” car body/components make new vehicle applications possible
- Sensor platform for monitoring structure-borne sound
- Intelligent signal processing by sensors
Hauke Baumgärtel, M.Sc., Project Manager, Co-Author: Dipl.-Ing. Sergei Gontscharow, Dipl.-Ing. Julien Bungalski, all of HELLA Fahrzeugkomponenten GmbH, Bremen

14:00 Creating the digital image for future Location-Based Services
- Crucial information from virtual foresighting beyond vehicle sensors
- Extensive context through a virtual cloud-based instance
- Control-point map and the importance of an open data ecosystem
Dipl.-Phys. Iochen Kirschbaum, Head of Collaborations, Roadmaps and Projects, BMW AG, Munich

14:30 The digital vehicle key: opportunities and challenges
- Digital vehicle keys enabling new business models
- Management of opposing requirements in development
- Use of a smartphone as vehicle key
- Establishment of a totally new use case in the complex ecosystem with the secure element issuer
- Standardization for use in different industries over different vehicle manufacturers
Dipl.-Inf. Johannes Wissbauer, Vehicle Function Owner, Function Development Body Electronics, AUDI AG, Ingolstadt

15:00 Modern approach to in-vehicle infotainment architecture
- RESTful micro service architecture for a clean “separation of concerns”
- Multi-client capability for a flexible distributed system
- Statelessness for a seamless user experience
- The navigation function as a flexibly usable service
Dipl.-Inform. Benjamin Groß, Development Engineer, Development Navigation, Volkswagen AG, Wolfsburg, Co-Author: Dr.-Ing. Patrick Bartsch, Manager in Software Architecture, Architecture MMI Systems, AUDI AG, Ingolstadt

Register at: www.eliv-congress.com
16:15 The Functional Engineering Platform (FEP): the development platform of AUDI AG for Autonomous Driving
- Software framework of AUDI AG for realizing a seamless development and testing platform
- Enabling simulation and testing in an early phase of the development of distributed functions
- Integration into the development of the virtual environment
- Bringing different domains together
Dipl.-Ing. Ralf Belke, Portfolio Manager, Development Software Development Tools and Methods, Audi Electronics Venture GmbH, Gaimersheim and Dipl.-Inf. (FH) Gerhard Kifke, Head of Functional Engineering Platform Project, Development Processes/Methods R&O, AUDI AG, Ingolstadt

16:45 Data-driven deployment of Autonomous Vehicles
- Leverage of mobility data to identify top cities for autonomous vehicles
- Targeting high-value corridors for autonomous vehicle deployment within cities
Avery Ash, Autonomous Vehicle Market Strategist, Co-Authors: Bob Pishue, Benjamin Weiser, all of INRIX, Kirkland, USA

17:15 Real-time capable sensor models for virtual test driving: classification and application in the development and validation of Autonomous Driving functions
- Multi-level system for sensor models
- Advantages and possible applications of ideal, phenomenological and physical virtual sensors
- Efficient testing with sensor models of all three sensor classes
Martin Herrmann, M.Sc., Specialist ADAS and Autonomous Driving, Business Development, Co-Author: Dipl.-Inf. Dominik Dörr, both of IPG Automotive GmbH, Karlsruhe

15:30 Coffee break, visit exhibition and Start-up Area visit (Genf room, 1st level)

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Environment sensor for everybody: serial development of the driving measurement station
- Data extraction and data uploading of environment sensor data from cars
- Data used and the process of data uploading
- Practical example: the front camera
Dr.-Ing. Stephan Max, Development Driver Assistance Systems Online, Co-Authors: Roman Koch, Torsten Büschenfeld, all of Volkswagen AG, Wolfsburg

High definition headlamps: challenges for electronic system architectures
- Digital light
- Real-time calculation of light distributions for pixel light
- 3D light distribution and using artificial contrast for the driver
Dr.-Ing. Jacke Rosak, Head of Predevelopment Lighting Electronics, Co-Author: Dr. Carsten Wilks, both of HELLA KGaA Hueck & Co., Lippstadt

Intelligent lighting: the growing impact of electronics and software in the field of automotive lighting
- Automotive lighting in the age of digitalization and connectivity

Lighting Technology
Moderation: Dr. Wolfgang Huhn, AUDI, Ingolstadt

Smart Parking – IoT-based parking function
- Distributed smart functions
- System solution for automated parking
- Integration of vehicle systems into Internet of Things
- Determination of occupied status of on-street and off-street parking lots
Jan Obermüller, Technical Consultant, Business Area Vehicle Integrated Functions, IAV GmbH, Stollberg

Framework conditions for the implementation of back-end-based functions in the context of Connected Vehicles
- M2M protocol tests based on a test framework
- Derivation of limiting conditions for back-end-based vehicle functions
- Data rate vs. latency
- Applicability of cloud systems to the future implementation of back-end-based vehicle functions
Dipl.-Ing. Tim Häberlein, Scientific Assistant, Institute of Automobile Engineering, Chair of Vehicle Mechatronics, Co-Authors: Dipl.-Ing. Andreas Unger, both of TU Dresden, Dr.-Ing. Oliver Manicke, Dr. Ing. h.c. F. Porsche AG, Weissach

Opel’s Matrix Light: checkmate for the darkness
- Democratization of premium lighting technologies
- Problem-solving in a complex vehicle architecture
- Dynamic adaption of a static lighting system (in the example of the new Insignia)
- Future lighting technologies at Opel
Dipl.-Ing. Torsten Kanning, BOM Family Owner AFL ECU, Active Safety Components, and Dipl.-Ing. Frank Langkabel, Project Engineer, Body & Exterior – PE Exterior Lighting, both of Opel Automobile GmbH, Rüsselsheim

17:30 Testing Highly Automated Driving
Moderation: Bruno Praunsmändel, Opel, Rüsselsheim

17:45 Smart & Connected Vehicles
Moderation: Dipl.-Ing. (FH) Helmut Matschi, Continental, Regensburg

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18:00 Security
Moderation: Dipl.-Ing. Ralf Milke, Volkswagen, Wolfsburg

18:30 “Pay or you stay”: ransomware targeting cars
- Functioning, incidence, and success model of ransomware compared to classic IT systems
- Risk analysis of possible infection paths and security threats targeting private, public and commercial vehicles
- Effective protection against automotive ransomware on the technical and organizational levels
Dr.-Ing. Marko Wolf, Head of Consulting & Engineering, ECRYPT – Embedded Security GmbH, Munich

18:45 Cybersecurity/Over-the-Air updates
- Reduction of warranty-related costs by reducing the number of software-related recalls
- Post-build functional upgrades and even new function downloads
- Trust of the end consumer in the ecosystem of Connected Vehicles
- Challenges of Over-the-Air operations and security

Co-Authors: Roman Koch, Torsten Büschenfeld, all of Volkswagen AG, Wolfsburg

Intelligence-driven offensive defense: a new approach to cyber security
- Behind every cyber attack are humans
- Humans have behaviours which can be detected – before the attacks
- Cyber attacks do not start in the reconnaissance stage as is commonly assumed
- Blocking cyber attacks before they reach the organizational network is a possible goal for the automotive industry in the era of the autonomous car
Yuval Diskin, Chairman, CyMotive Technologies Ltd, Herzlia, Israel
Continued 1st congress day

17:45 Virtual homologation of software-intensive safety systems: from ESP to Automated Driving
- Simulation-aided type approval and homologation
- Homologation of software-intensive active systems, Automated Driving, Autonomous Driving
- Reduction of test efforts and costs
- Analogies to existing regulations, i.e. UN-ECE R13

**Dr.-Ing. Houssem Abddellatif**, Global Head Autonomous Driving & ADAS, TÜV SÜD Auto Service GmbH, Garching
Co-Author: **Prof. Bernhard Schick**, University of Applied Science, Kempten

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<th>Session Time</th>
<th>Session Title</th>
<th>Moderator(s)</th>
<th>Speaker(s)</th>
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<tbody>
<tr>
<td>08:30</td>
<td>Environment representation, localization and object classification for Autonomous Driving</td>
<td>Andreas Hackl, MAN, Munich</td>
<td>Henrik Clasen, Technical Manager Safety Systems, Advanced Electronic Controls Europe, Delphi, Goteborg, Sweden; Dr. Alexander Ioffe, Dr. Christian Nunn, Delphi Deutschland GmbH, Wuppertal</td>
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<td>09:00</td>
<td>Cross-industry cooperation for camera technology standardization</td>
<td>Frerk Fitzek, Head of Modules Camera Systems Driving, Night Vision System, Component Testing, BMW Group AG, Munich</td>
<td>Ulrich Seger, Robert Bosch GmbH, Leonberg; Dave Lewis, Texas Instruments Incorporated, Munich</td>
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<tr>
<td>09:00</td>
<td>The path to a global EV charging system: how to harmonize the customer interface</td>
<td>Christian Kunstmann, Opel, Rüsselsheim</td>
<td>Dipl.-Ing. Fabian Grill, Director Charging Systems, SC, Charging Interface Initiative e.V., Berlin</td>
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<td>09:00</td>
<td>Digital readiness: virtual function integration and safeguarding in Volkswagen's R&amp;D simulation lab (SimLAB)</td>
<td>Andreas Titze, Volkswagen, Wolfsburg</td>
<td>Dr. Peter Oel, Head of System Testing, Product Quality Electrical and Electronic Development, Volkswagen AG; Dipl.-Ing. Florian Pohl, all of Volkswagen AG, Wolfsburg</td>
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<td>09:00</td>
<td>Software test methods in use at General Motors: seamless testing from C code to high-level feature requirements</td>
<td>Marc Giertzsch, Algorithm Design Engineer, Vehicle Software &amp; Controls, Opel Automobile GmbH, Rüsselsheim</td>
<td>Dipl.-Ing. (FH) Marc Giertzsch, Algorithm Design Engineer, Vehicle Software &amp; Controls, Opel Automobile GmbH, Rüsselsheim</td>
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<td>09:00</td>
<td>New integrated platform as a response to current requirements applicable to E/E architecture</td>
<td>Karsten Michels, Senior Vice-President, Interior System &amp; Technology, Continental Automotive GmbH, Babenhausen</td>
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<td>09:00</td>
<td>AUTOSAR proves to be the automotive software platform for intelligent mobility</td>
<td>Karl Barker, Jaguar Land Rover, Gaydon, UK</td>
<td>Dr.-Ing. Thomas Scharnhorst, Spokesperson, AUTOSAR Entwicklungspartnerschaft, Munich; Simon Fürst, BMW AG, Stefan Rathgeber, Continental Corporation, Lorenz Slansky, Daimler AG, Frank Kirschte-Biller, Ford Motor Company, Rick Flores, General Motors, Tony Lau, PSA Peugeot Citroën, Thomas Rüping, Robert Bosch GmbH, Kenji Nishikawa, Toyota Motor Company, Dr. Carsten Krömke, Volkswagen AG</td>
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Continued 2nd congress day

09:30  Extending sensor range for highly Automated Driving: a new approach to environment modelling
- The local environment model
- The EB robinos software framework for automated driving
- Cloud-based aggregation of environment information
- Sensor and fusion unit information
Dr. phil., Dipl.-Ing. Nicole Beringer, Program Manager
Highly Automated Driving, Innovation Management, Elektrobit Automotive GmbH, Erlangen

High-power charging with the Combined Charging Interface
- A successful market launch of long-range BEVs requires improved charging technology
- Charging up to 400 A and 1000 V is required
- Charging equipment must be easy to use and operate
- The success factor in HPC is cooling the charging connector and cable
Dipl.-Ing. Matthias Kübel, Standardization and Concepts Charging Interface, Wiring Harness Systems and Components, Volkswagen AG, Wolfsburg

Accepting uncertainty: applying proven methods for quantifying test results and test coverage to ensure the safety compliance of self-learning systems
- Solving the problem of testing/validation for self-learning/non-deterministic systems
- Solving the effort problem by calculating quantitative results
- Optimizing TCO over the development cycle by shifting efforts between development domains
Rainer Straschill, ADAS/AD, Electronics and Electrification, Co-Author: Tobias Schäfer, both of FEV Europe GmbH, Aachen

Architecture of a complex hardware-agnostic high-level function: implementing a state-of-the-art AC control system
- Characteristics of a system-independent and scalable climate-control SW architecture
- Managing function-oriented climate variants with the restriction of a single source code
- Efficient testing of variants
- Virtual verification as a necessary technology for future projects
Dipl.-Ing. (FH) Werner Braumann, CEO, Co-Author: Dipl.-Ing. (FH) Christian Maier, both of TKI Automotive GmbH, Gaimersheim, Dipl.-Ing. (FH) Erich Liepold, AUDI AG, Ingolstadt

10:00 Coffee break, exhibition and Start-up Area visit (Genf room, 1st level)

10:45 Plenary Lecture – New York
Günther H. Oettinger, European Commissioner for Budget & Human Resources, European Commission, Brussels, Belgium

11:00 Highly Automated Driving
Moderation: Dipl.-Ing. Stefan Teuchert, MAN, Munich

Proposal for the standardization of sensor interfaces with a fusion unit
- Complex sensor set-ups of AD functions need to be standardized
- Possible levels of standardization by means of an abstract sensor and fusion unit as a first step
- Standardization initiative in VDA/ISO
Dr.-Ing. Thomas Schaller, Automated Driving and Driving Assistance, BMW AG, Munich
Co-Authors: Dr. Werner Uhler, Robert Bosch GmbH, Leonberg, Jörg Schrepfer, Valeo Schalter und Sensoren GmbH, Kronach

Methods + Testing
Moderation: Dr.-Ing. Klaus Büttner,
BMW, Munich

Test automation: insights from practical application
- High agility is required in the dynamic field of e-mobility
- Agile MBD suite as an enabler for the rapid prototyping of e-drives
- Automated quality safeguarding via CI and test automation
- Result: design changes can be realized quickly and safely
Dipl.-Ing. Peter Ginal, Group Leader Drive Control Software Development, Volkswagen eAutomotive GmbH, Wolfsburg
Co-Author: Dr. Heiko Dörr, MES Model Engineering Solutions GmbH, Berlin

UX
Moderation: Dr. Burkhard Milke,
Opel, Rüsselsheim

The automotive UI in the change through digitalization
- Consumer electronics and digitalization are changing our lives: how much CE are in automotive UIs?
- The automotive UI is changing from a part of the interior to a leading element
- Premium in-between simplicity and functional growth
- Highly Automated Driving as new stakeholder for future automotive UIs
Dipl.-Ing. (FH) Michael Zeyn, Director Development UI/UX Concepts & Functions, AUDI AG, Ingolstadt

11:50 Sensor and functions interface in an Open Fusion Platform (OFP)
- Standardization of interfaces into an environmental fusion model
- Generic platform for automated driving functions
- Use case using radar, surround-view camera and V2X
Dr. rer. nat. Michael Schilling, Project Manager
Automated Driving, Advanced Engineering Projects
Automated Driving, HELLA KGaA Hueck & Co., Lippstadt

Interative specification and validation of highly automated driving functions in a mixed-reality environment
- Pedestrian perspective in relation to highly automated driving
- Microsoft HoloLens
Dipl.-Ing. Benedikt Schönau, Head of Department, Automated ITS, Co-Author: Dr. rer. nat. Klaus Krummbiegel, all of IAV GmbH, Stollberg

SoC-sw.ing-based optimization of automotive batteries using simulations
- Model-based design of high-voltage batteries for electric vehicles
- Location of SoC swing as a key design factor
- Global optimization of the battery configuration using a genetic algorithm
Felix Frank, M.Sc., PhD Student, System-Development, Co-Authors: Dr.-Ing. Jörg Wilhelm, both of Robert Bosch Battery Systems, Stuttgart-Feuerbach, Prof. Dr.-Ing. Dr.-h.c. Dieter Schramm, University Duisburg-Essen

AR head-up display: system requirements and solutions regarding precise augmentation of information within the road scene
- Data fusion and synchronisation
- Compensation of system latencies
- Prediction mechanisms based on vehicle sensors
- System architecture
Dr. rer. nat. Arne Jachens, Group Leader, Product Development Center Head-up Displays, Co-Author: Dr. Thorsten-Alexander Kern, Dr. Heinz Abel, all of Continental Automotive GmbH, Babenhausen

Register at: www.eliv-congress.com
12:20 Linux in safety-critical systems for future ADAS and semi-automated driving functionality
• Early functional safety decomposition
• Linux versus RTOS Microkernel: efficiency versus predictability
• Hypervisor for OS separation
• Linux and QNX in network-oriented systems

Dipl.-Inf. Thorsten Wilmer, Software Architect, ADAS System Team, Co-Author: Dr. Thomas Kopfstedt, both of Visteon Electronics Germany GmbH, Karlsruhe

12:50 AADC-AUDI Autonomous Driving cars: an open platform for predevelopment and demonstration of Automatic Driving functions based on model cars
• Students contest ‘AUDI Autonomous Driving Cup’
• Model cars
• Options for using the AADC models as a development platform
Example: ‘swarm data function on-street parking’

Dr.-Ing. Lars Moser, Project Leader, Development SW-Development Tools and Methods, Co-Author: Dr. Florian Knabl, both of Audi Electronics Venture GmbH, Gaimersheim

13:20 Lunch, Coffee break, exhibition and Start-up Area visit (Genf room, 1st level)

13:30 The internet of things (IoT): a true disruption or yet another buzzword?
• A value approach to the internet of things
• What if the speed of light is too slow? A seamless programming model for edge devices and the cloud
• How to make dumb things smart? Actions based on insights from device data
• The real driver of disruption: technology or culture?

Dr.-Ing. Dirk Didascalou, Vice President, IoT, Amazon Web Service, Seattle, USA

14:00 Megatrends in the electronics used in vehicles: conclusion and discussion

Dipl.-Ing. (FH) Helmut Matschi, Member of the Board, Division Interior, Continental AG, Regensburg

14:30 The internet of things (IoT): a true disruption or yet another buzzword?

Dr.-Ing. Dirk Didascalou, Vice President, IoT, Amazon Web Service, Seattle, USA

15:00 Megatrends in the electronics used in vehicles: conclusion and discussion

Dipl.-Ing. (FH) Helmut Matschi, Member of the Board, Division Interior, Continental AG, Regensburg

15:30 Award ceremony “Auto Electronic Excellence Award 2017”, best start-up and closing of the congress

15:55 End of the second congress day
ELIV Workshop – Your “know-how” benefit

Tuesday, 17 October 2017

International VDI Workshop
IT Security for Connected/Autonomous Cars

Workshop Chair:
Dipl.-Phys. Hartmut Kaiser and Dipl.-Inf. (FH) Harry Knechtel,
both secunet Security Networks AG, Munich, Germany

Date and venue:
October 17, 2017
Bonn, Germany

Time:
10:00 – 17:00

CONTENT
This workshop provides an overview on security for Connected/Autonomous Cars and allows participants to interactively exchange information with peers. We are going to discuss technical trends influencing automotive security, known and new security requirements and methodology to deduce them. Furthermore, automotive security best practices regarding security concepts and applied cryptography are covered.

The main part of the workshop consists of breakout sessions in which important topics will be elaborated on followed by moderated discussions. Participants are invited to actively contribute during the breakouts. All breakouts are started by a short presentation, including comparisons with similar developments as occurred in other industries if available. At the end of each session participants present their results and discuss them with their peers and the workshop chairs.

Presentation
- Overview of Automotive Security including Cyber Threat Landscape, Methodology and best practice in
  » automotive risk analysis,
  » security requirements engineering and
  » security concepts (e.g. embedded vehicle security, PKI, ...)
- Adaptation for Connected/Autonomous Car scenarios

Breakout Sessions – Planned topics include:
- Security requirements of selected Connected/Autonomous Cars use cases
- Security measures and defense-in-depth building blocks

Discussion and conclusion
- Main findings of the workshop day
- Outlook into the future of connected/autonomous cars security

The detailed programme for our start-up chats can be found on our ELIV event app, which will soon be available. Vote for the best start-up at the ELIV. “The Best Start-Up” award ceremony will take place at the end of the second conference day following the “Auto Electronic Excellence Award 2017”.

Start-ups (as of September 2017):
- autoaid GmbH
- CyMotive Technologies GmbH
- GaN Systems Inc.
- IRYStec Software inc.
- OPAL-RT EUROPE
- preemoo
- Savari GmbH
- Third Space Auto Ltd
- Toposens GmbH
- ubirch GmbH

Note:
The workshop will be held in English.
Start-up Area

2017 is the first time ELIV offers young companies the opportunity of presenting their latest developments and products in automotive electronics in 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.

Interested in taking part?
To apply request the registration documents for the start-ups area. We are happy to provide assistance and further information:

Martina Slominski
Project Consultant Exhibitions & Sponsoring
Telephone: +49 211 6214-385
Email: slominski@vdi.de

Special exhibitions: “Highly Automated Driving” + “Charging”

Everyone’s talking about highly automated driving but only a few know the detailed inside-outs. Make the most out of your attendance at ELIV and visit the technology exhibition on this hot topic. Here, with the aid of vehicles, measuring systems etc., OEMs and suppliers will clarify the major requirements for you:

- Highly accurate maps
- Sensor technology (radar, camera, lidar, etc.) and sensor fusion (IDC)
- Actuator systems (steering, brakes, ESP, and so on)
- Vehicle integration
- Human-machine interface or system understanding

On top of that there will be a special exhibition focusing on “Charging” at the forecourt.

– Subject to change –
Brose Fahrzeugteile GmbH & Co KG
Brose is the world’s fifth-largest family-owned automotive supplier. The company develops and produces mechatronic systems for vehicle doors and seats as well as electric motors and drives. Nearly 25,000 employees generate a turnover of € 6.1 billion.

Contact:
Brose Fahrzeugteile GmbH & Co. Kommanditgesellschaft, Bamberg | Berliner Ring 1 | 96052 Bamberg | Phone: +49 951 7474-0 | Fax: +49 951 7474-1767 | Email: info@brose.com | Internet: www.brose.com

Qualcomm
Qualcomm Technologies’ suite of scalable, modular automotive solutions allows car manufacturers to expand their existing accessory package offerings to include advanced on-board features, including connectivity, infotainment, navigation and driver safety.

Contact:
Qualcomm Communications GmbH | Doris Meier | Franziskanerstr. 16 | 81669 Munich | Phone: +49 89 6146940000 | Internet: www.qualcomm.de

NXP Semiconductors Germany GmbH
Transforming the car from a simple mode of transport into a mobile information hub, NXP® helps to securely connect vehicles to each other and the outside world. Our deep product catalog makes rapid technology transfer and consultation possible under one roof.

Contact:
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If you are interested, get in touch with:

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

Register at: www.eliv-congress.com

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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.

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If you are interested, please contact:
Program Committee

ELIV offers a host of networking opportunities, a large exhibition and above all a very topical program of lectures for participants to discover the very latest developments, current new trends and routes to future solutions.

Putting together this world-class agenda requires decisions to be taken long before the call for papers is published. This job is the responsibility of ELIV’s program committee.

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

Dipl.-Ing. (BA) Frank Cornelius, Daimler, Stuttgart

Dr. Burkhard Milke, Opel Automobile GmbH, Rüsselsheim

Dipl.-Ing. Harald Deiss, ZF Friedrichshafen AG, Auerbach

Dr. Thomas M. Müller, AUDI AG, Ingolstadt

Dr. Christoph Grote, BMW AG, Munich

Dipl.-Ing. Bernd Münsterweg, Hella KGaA Hueck & Co., Lippstadt

Dipl.-Ing. Christof Kellerwessel, Ford-Werke GmbH, Cologne

Dr. Dieter Rödder, Robert Bosch GmbH, Stuttgart

Dipl.-Ing. (FH) Helmut Matschi, Continental AG, Regensburg

Dr. Volkmar Tanneberger, SAIC Volkswagen Automotive Co., Ltd., Shanghai, China

Dipl.-Ing. Uwe Michael, Dr. Ing. h.c. F. Porsche AG, Weissach (Chairperson)

Dr.-Ing. Hans Welfers, MAN Truck & Bus AG, Munich

General information

Congress Content provider

The VDI Society for Automotive and Traffic Systems Technology (VDI FVT) sees itself as an association which actively networks both technical and industrial engineers representing vehicle engineering, traffic technology and mobility. It addresses and discusses topical engineering issues in its various technical committees and working groups, both on a national and international level, to perform in-depth technological knowledge-mining and to provide valuable findings and workable solutions to be adopted and adapted by decision-makers in industry, science and technology.

More information about VDI-FVT can be obtained from: www.vdi.de/fvt

Events that could interest you

International VDI Workshop – Future Radar Technology for Autonomous Driving

In the near future the number of radar sensors in cars is expected to significantly increase and finally even to double within 5 to 8 years. Autonomous driving will further boost this number and require new ideas for radar system concepts. The workshop chair discusses actual and especially future radar systems in the context of autonomous driving and invites 18.–19.09.2017 in München 28.–29.11.2017 in Nürtingen

Efficient International Negotiation Skills

Negotiation is an art, not a science. But that doesn’t mean you cannot improve your skills and make the most of working constructively with a variety of people from all over the world. The VDI Workshop “Efficient International Negotiation Skills” will help you overcome challenges in self-awareness, preparation, practice and intercultural interaction.

General Information: Hallplan

1ST LEVEL

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PLENARY ROOM & SESSION 1
START-UP AREA
CATERING AREA
SESSION 2
SESSION 3

ELIV – THE APP

Download the Event APP and register

The App will be available for download at the Appstore and the Goolge Play Store for all participants as of October.

App Features:
- Digital congress programme
- Networking
- General event information
- Reviews
- Exhibition information
- Service information

Register at: www.eliv-congress.com
Please register for (Price per Person plus VAT):

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<td>☐ 18–19 October 2017 Bonn (01TA101017)</td>
<td>☐ 17 October 2017 Bonn (01ST162001)</td>
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<td>EUR 1,590.00</td>
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