How to achieve complete vehicle safety in the context of rising automation and system complexity
As the complexity of vehicles and their systems continue to rise, the challenges involved in designing and manufacturing safe vehicles also increase. With the transition from level 2 to level 3 of vehicle automation, the focus is on countering safety engineering challenges on the component and system level as well as their interrelation. Join this technical conference, exploring best practice implementation and benefit from collective knowledge exchange between OEMs, suppliers and academia on how to secure and safeguard computer-controlled, inter-connected systems.

Participants are welcome to:
► Define comprehensive safety strategies for safety-critical system engineering
► Gain insights into safe model based design and auto code generation techniques
► Exchange on the latest validation & verification as well as testing & simulation tools for ADAS and self-driving cars
► Find out how to master ISO 26262 functional safety for complex systems
► Learn about engineering security and privacy in the age of the connected car

Interactive networking sessions

Who is Who
Discover who else is participating in the conference. The matchmaking picture wall will help you identify who you want to meet at the conference. In cooperation with FUJIFILM

Speed Networking
Maximise your time at this event by participating in these fast paced 1-to-1 meetings. Get to know the other attendees and exchange your business cards. Have your business cards ready!

Evening get-together
Join us at an evening get-together. Take this opportunity to network and make new business contacts. Or just to relax and round off your first conference day.

Berlin special Sightseeing Running
Get to know Berlin on the move! Explore the attractions of Germany’s capital city from a new perspective with our exclusive running tour. It is specifically designed for business travellers with running experience.

Benefits of the co-location
Have a colleague, specialised in Steering Systems, Sensor and Imaging Systems or 48V Power Supplies, interested in joining the co-location?

For group bookings and single tickets, please contact our inbound team under +49 (0)30 20 91 32 74 or eq@iqpc.de and
• Join the largest, longest-established international steering conference
• Explore the pressing issues in sensor and imaging systems innovation and integration
• Hear about will the latest developments of 48V onboard power supply and mild hybridization
Pre-Conference Interactive Workshop Day  |  Monday, 28 November

09:30 Registration and morning coffee

10:00-12:30

**Workshop A |**

**Ways to generate reliable software/systems solutions despite rising software complexities**

Embedded systems take over more and more safety-critical tasks. What does safety really mean to automotive embedded software development? The workshop will describe challenges of software developments and present solutions and future directions.

- Traditional vs. current trends and evolving safety standards
- Adoptability of standards at different software development stages
- Role of virtual validation platforms
- Aligning compliance and innovation possibilities

Deodatta Joshi, General Manager - Electrical & Electronics, JCB Design Center, India

12:30 - 13:30 Networking luncheon

13:30 - 16:00

**Workshop B**

**Encryption as the solution for preventing cyber crime in automotive industry?**

How can you increase security, data integrity and minimize safety risks in the electronic systems, once you have connected them to the outside world? This workshop looks at that challenge identifies potential solution approaches and presents lessons learned from other industries.

Aspects to be considered:

- Encryption / Decryption and the secret service
- Big Data – who has interest? Who owns them?
- Delete the data before they leave the vehicle

Dr. Ralf Leiter, Engineering Director ESC, Mando Corporation, Germany

16:15 – 18:45

**Workshop C**

**Model-based design approach for automotive applications**

Model-based development is becoming more relevant and more popular day by day, especially when the use of software in vehicles is now the standard on the streets. Could there be a correlation between decreasing electronics costs and therefore vehicle pricing by applying a different design approach? This workshop will look into model-based design as the hopeful solution of managing the increase of safety requirements vs. the decrease of development time for embedded systems.

- Improve product quality
- Reduce development time
- Available tools and methods
- Speaker to be confirmed soon

Workshop leader to be announced soon.

18:45 End of pre-conference workshop day
08:00 Registration and welcome coffee

Who is Who
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09:00 Opening remarks by Prof. Lars Grunske, Software Engineering Group, Humboldt-Universität Berlin, Germany

Safety Engineering in the New Automotive World

09:10 Current automotive trends & safety engineering – new challenges to face
- Developing highly automated driving and connected vehicles
- Point out and explain incompatibilities and paradoxes
- Presentation of current research results to overcome obstacles
Rolf Johansson, Researcher, SP Technical Research Institute of Sweden, Sweden

09:45 The integration of ADAS and vehicle dynamics control for the autonomous car
- Challenges in reusing ADAS developed sensors and systems in AD
- The role of ADAS in automated driving
- Future plans and projections for ADAS technologies
Hakan Sivencrona, Safety Program Manager, Qamcom Research & Technology AB, Sweden

10:20 Speed Networking
Get in touch with the other conference guests in quick paced 1-1 meetings make sure you bring a stack of business cards.

10:50 Refreshment break and networking opportunity

ISO 26262 and Beyond: Ensure Functional Safety of Highly Complex Systems

11:20 Darwin, Penguins, and ISO 26262
- New approach to automatic allocation and decomposition of system safety requirements applicable to ISO26262
- Uses advanced nature-inspired search and optimisation metaheuristics
- Supported by HIP-HOPS, a state-of-the-art model-based safety analysis software tool
- Can address collaborative automotive design distributed over a complex value chain
Yiannis Papadopoulos, Professor of Computer Science – Leader of the Dependable Systems Research Group, University of Hull, United Kingdom

11:55 Achieving freedom from interference in complex systems
- Freedom from interference an overview
- How to deal with mixed ASIL architectures?
- Freedom from interference and legacy systems?
- Best practices and lessons learned
Dr. Florian Leitner-Fischer, Team Lead Software, ZF TRW, Germany

12:30 Architecture optimization vs. cargo cult – Why it is hard to thoroughly optimize industrial size architecture specifications
- Overview over existing approaches for software architecture optimization
- Identification of deficiencies in state-of-the-art methods and the necessity for future innovations to leverage the result at an industrial scale
- Efforts to automate the search for an optimal architecture design with respect to a (set of) quality attribute(s) for complex software-intensive systems
- Consolidating the existing research efforts and deriving a research agenda for future developments
Prof. Lars Grunske, Software Engineering Group, Humboldt-Universität Berlin, Germany

13:05 Networking luncheon

14:35 Driving platform standardization & cost efficient E/E architecture
- How to best master the growing complexity of automotive electric/electronic (E/E) architecture through a standardised software architecture for automotive ECUs
- Overcome the fragmentation of industry and research in the automotive embedded systems sector
- Reusability and reliability of embedded software, and its verification and certification
- Sharing of learnings and best practices
Deodatta Joshi, General Manager - Electrical & Electronics, JCB Design Center, India

15:10 Component Fault Tree Analysis – Managing complexity with a component-centered analysis approach
- Model driven development as a key approach to increasing development complexity
- Applying a component-based modeling approach to RAMS analysis activities
- Reduction of development costs, higher product quality and shorter time-to-market by extending the advantages of model driven development to safety engineering activities
Dr.-Ing. Kai Höfig, Senior Key Expert for Model-based Safety and Reliability, Siemens Corporate Technology, Germany
15:45  Safety analyses in automotive systems illustrated at an Electric Power Steering System
• FMEA (System-FMEA, Design-FMEAs)
• FMEDA
• FTA
Mark Beck, Safety Architect Steering Systems, Continental Automotive GmbH, Germany

16:20  Refreshment break and networking opportunity

16:50  Lessons learnt from safety analysis in chassis applications
• Safety argument for legacy product based on analysing the system architecture (using HAZOP analysis)
• Freedom from interference analysis and SW partitioning concept
Dr. Amir Kazeminia, Team Leader Functional Safety Braking Software, ZF TRW, Germany

17:25  Closing remarks by Prof. Lars Grunske, Software Engineering Group, Humboldt-Universität Berlin, Germany

18:15  Evening get-together
Join us at an evening get-together. Take this opportunity to network and make new business contacts and meet the participants of the co-located conferences. Or just to relax and round off your first conference day.
07:00 Berlin special Sightseeing Running
Get to know Berlin on the move! Explore the attractions of Germany’s capital city from a new perspective with our exclusive running tour.

08:30 Welcome coffee and networking opportunity

09:10 Opening remarks by Prof. Lars Grunske, Software Engineering Group, Humboldt-Universität Berlin, Germany

Safe Design of Complex Embedded Software

09:15 Domain-specific modelling languages for complex embedded system development
- Language engineering to represent different facets of complex systems in a coherent and consistent manner
- Perspective of choice to manage the complexity
- Progress from higher abstractions to implementation
- Benefits of significantly improved productivity and quality

Sundaresan Arumugasam, Director - MBSE Solutions, Siemens Industry Software Private Limited, India

09:50 Systems engineering and design space exploration based on the correctness by construction methodology
- Automating complex engineering tasks
- Challenge: Spatial and temporal deployment generation for safety and real-time
- Tool: Architecture synthesis for safety-critical systems

Dr. Robert Hilbrich, Group Manager Simulation and Modeling, Deutsches Zentrum für Luft- und Raumfahrt – German Aerospace Center, Germany

10:25 Mixed criticality for multicore/manycore systems
- Introduction to Artemis EMC2 project
- Solutions for dynamic adaptability in open systems
- Handling of mixed criticality applications under real-time conditions and effective life cycle management

Werner Weber, Senior Principal, Infineon Technologies, Germany

10:55 Speaker to be confirmed soon

11:00 Refreshment break and networking opportunity

Validation & Verification Strategies: Testing & Simulation of Highly Complex Safety-Critical Systems

11:30 Benefits of model-based design in development and test of complex and safety critical automotive applications
- Model-based design for automotive applications: An efficient approach to V-model
- Best practices for verification, validation and test with model-based design
- Generating standards compliant and high quality code from model: Reducing implementation time and error rate
- Test automation: Reducing efforts in model-based test management, design and execution

Jose Thomas Vembadanthara, Research Engineer, Hyundai MOBIS India Limited (MTCI), India

12:05 Multi-scale multi-domain simulation for ADAS development
- Model-based design of Advanced Driver Assistance Systems
- Virtual & physical driving simulator integration and virtual Hardware-In-the-Loop simulations via the functional Mock-Up interface
- Benefits of a static multi-scale ADAS export mechanism
- Employing dynamic multi-scale HW/SW simulation: The Hysim approach

Róbert Lajos Bücs, Research Assistant, RWTH Aachen University, Germany

12:40 Validation of SAE automation level 2 systems
- From advanced driver assistance systems to highly automated driving: What’s the need for an “ASIL-E”?
- More automation, more confusion?
- Driver controllability: From assumption to confirmation
- Sensor fusion: More data, less certainty?

Dr.-Ing. Manfred Schölzke, Engineering Group Manager, General Motors / Adam Opel AG, Germany

13:15 Networking luncheon

System Maintenance: Protection of Vehicle System

14:45 Delivering safer cars faster with continuous delivery
- From continuous integration to continuous delivery
- Dealing with conflicts
- Continuous testing as part of continuous delivery

Sebastian Zurek, Head of SW integration, Siemens Industry Software Private Limited, India

15:20 Cyber security and resiliency in vehicle roadway automation
- Risk management for highly automated vehicle functions
- Successful orchestration of system safety and cybersecurity
- Building blocks of automation-connectivity and situational awareness

Dr. Ralf Leiter, Engineering Director ESC, Mando Corporation GmbH, Germany

15:55 Connected embedded systems and their safety & security risks
- Lessons learned from IT-Industry
- Revisit recent car hacks
- Weak points of connected systems – what to do?
- Protection through Memos Box and Antivirus for vehicles

Dr. Ralf Leiter, Engineering Director ESC, Mando Corporation, Germany

16:30 The driver's role within system safety – from driver distraction today to driver availability tomorrow
- Incorporate the driver into the vehicle safety design
- HMI challenges when advancing from assisted to automated driving
- The role of driver monitoring
- Safe interaction concepts for highly automated driving

Dietrich Manstetten, Chief Expert Human-Machine Interaction, Robert Bosch GmbH, Germany

17:05 Closing remarks by Prof. Lars Grunske, Software Engineering Group, Humboldt-Universität Berlin, Germany
Post-Conference Interactive Workshop Day  
Friday, 01 December 2016

09:00 – 12:00

Workshop D
48V standardization
In 2016, the first 48V vehicles went into series production and to their customers. In parallel, efforts by French carmakers are on their way in order to establish an ISO standard for 48V systems. The workshop will:
• Give you an overview over the current status of the ISO workshop working on the upcoming standard and
• Deal with the possible implications on the new voltage level discussed in ISO 6469-3
Andreas Klinkig, Energy Management, Volkswagen AG, Germany

Workshop E
Discover the latest strategies for effective sensor fusion
With more and more data needed to take the step from ADAS to fully automated driving, examine various strategies for effective sensor fusion. What is the right balance for the pre-processing of data.
Join this interactive workshop for a deeper discussion on sensor fusion where topics to be discussed include:
• Which different sensor information best compliment each other
• What data can be classed as redundant
• E/E architectures for efficient sensors communication
Workshop leader to be announced soon

Workshop F
Steering improvements and vehicle redundancies for automated driving
What could be the ideal back-up plan when steering system fails the driver? New steering functions will also fall under new redundancy requirements. With this overwhelming complexity in our doorstep, this workshop will focus in spreading light and finding solutions that will help us come up with a secure and safe safe-critical system steering of the future. Join this highly interactive seminar style session that will discuss among other:
• Redundancy allocation and strategies for steering systems under ISO levels 2 to 4
• Functional safety on hardware and software level
• How not to interfere with other steering/vehicle systems in highly inter-connected vehicles
Kristof Polmans, Head of Technology and Innovation, ThyssenKrupp Presta AG, Hungary

12:00 - 13:00 Networking luncheon

13:00 - 16:00

Workshop G
Protection concepts for 48V automotive power supply systems
Protection of the wiring system is one of the safety-critical aspects of latest advancements within automotive 48V power supply technology. Is there an optimal protection and how does it look like? During this workshop you will:
• Discuss the latest innovation about protection concepts within automotive 48V power supply technology
• Find out about the current challenges and possible solutions
• Hear about lessons learned from recent experiences
Please be prepared to have an interactive workshop experience and possibly bring in your own automotive 48V power supply systems experiences!
Workshop leader to be announced soon

Workshop H
Fault detection of sensor technologies
Both false positives and false negatives in sensor detection are a big risk to driver and passenger safety. How two avoid both these scenarios is still a challenge that is facing automotive industry as it makes the leap to autonomous vehicles. This workshop will cover topics like:
• How do you find out that something is wrong with your sensors?
• Measures that need to be taken to best prevent false positives
• How testing and validation can maximize early fault detection
Workshop leader to be announced soon

Workshop I
Confirmation measures for reviewing safety of complex systems
Join this workshop to discuss about and exchange on confirmation measures for assessment of functional safety in the context of increasingly autonomous, connected cars.
Aspects to be considered:
• Evaluation of the development process applied for compliance with the requirements of ISO 26262
• The role of safety case development in ISO 26262 for functional safety assessment
• Use of functional safety audits and functional safety assessments to assure the safety of advanced ADAS systems
Workshop leader to be announced soon
To Register  |  T  +49 (0)30 20 91 33 88   |   F  +49 (0)30 20 91 32 40   |   E  eq@iqpc.de   |   www.autosystemsafety.eu

Please indicate your choice of workshops

on Monday, 28 November 2016

- Workshop A: Ways to generate reliable software/systems solutions despite rising software complexities
- Workshop B: Encryption as the solution for preventing cyber crime in automotive industry?
- Workshop C: Model-based design approach for automotive applications

on Friday, 01 December 2016

- Workshop D: 48V standardization
- Workshop E: Discover the latest strategies for effective sensor fusion
- Workshop F: Steering improvements and vehicle redundancies for automated driving
- Workshop G: Protection concepts for 48V automotive power supply systems
- Workshop H: Fault detection of sensor technologies
- Workshop I: Confirmation measures for reviewing safety of complex systems

Please note: Workshop D, E & F. and G, H & I are running parallel. Please make your choice.
**Venue and Accommodation**

**Hotel Estrel Berlin**
Sonnenallee 225
12057 Berlin, Germany
Phone: +49 (0)30 68310
Email: hotel@estrel.com

Accommodation: A limited number of reduced rate rooms are available at the conference hotel. Accommodation can be booked by calling the central reservation number. Please always quote the booking reference IQPC-Berlin. Hotel accommodation and travel costs are not included in the registration fee.

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