Defining strategies, technologies and architectures to optimise functionality and performance of “next-generation” braking systems

26 – 27 November 2013 | Frankfurt Marriott Hotel, Frankfurt, Germany

Don’t miss the high level speaker faculty:

- Renault SA
- Volvo Group
- Continental AG
- Fraunhofer Institute for Intelligent Analysis and Information Systems (IAIS)
- TNO Technical Sciences/Automotive
- Vienna University of Technology
- Frost & Sullivan Ltd.
- Cranfield University
- University of Stuttgart
- Vienna Engineering
- Graz University of Technology
- ADAC e.V.
- Robert Bosch GmbH
- TRW Automotive Lucas Varity GmbH

- Understand the tools & procedures of the Euro NCAP safety assessment and learn from Continental and Bosch how it will influence future brake systems
- Hear from TRW how system functionality can be guaranteed and ECU-architecture be designed to ensure maximum safety
- Gain insight into the latest research on EV and HEV braking & be prepared for mastering the challenges in future brake systems
- Discuss with Renault and leading experts how to manage the transition from standard braking to intelligent braking
- Evaluate with industry peers the future of new-generation braking systems to optimise your strategic business planning

Highlight speakers include:

Nicolas Godlewski, Brake System Technical Leader, Renault SA, France

Lionel Farres, System Functionalities & Electronic System, Volvo Group Trucks Technology / Chassis and Vehicle Dynamics, Volvo Group, France

Dr.-Ing Ralf Leiter, Chief Engineer Hardware, TRW Automotive Lucas Varity GmbH, France

Dr. Hans-Jörg Feigel, Head of Development, Future Brake Systems Development, Continental AG, Germany

Interactive Evening Workshops

A | Exploring model based ECU-architecture
B | The role of braking along the road to autonomous driving

"Intelligent Braking conference is developing into one of the key forums for cross-industry/ research Discussion"
Paul Roberts, Chief Engineer, Arvin Meritor
Conference Day 1 | Tuesday, 26 November 2013

09:15  Registration and welcome coffee

09:45  Opening remarks by conference chairman
Dr. Ralf Leiter,
Chief Engineer Hardware, Electronic HW APP,
TRW Automotive Lucas Varity GmbH, Germany

10:00  AEB Testing for Euro NCAP: Procedures & Tools
Andreas Rigling,
Project Manager Safety, Vehicle Safety,
ADAC e.V., Germany

10:30  Speed networking session
Brodan your network and identify potential business partners by taking the chance to connect in an interactive 30-minute-session with fellow delegates. Don’t forget your business cards!

11:00  Morning coffee and networking opportunity

11:30  Analysis and evaluation: Potential influence of the Euro NCAP safety assessment on future brake systems
- Dr. Hans-Jörg Feigel,
Head of Development, Future Brake Systems Development,
Continental AG, Germany
- Andreas Rigling,
Project Manager Safety, Vehicle Safety,
ADAC e.V., Germany

12:15  All-embracing validation of driving assistance systems
- Dr. Ralf Leiter,
Chief Engineer Hardware, Electronic HW APP,
TRW Automotive Lucas Varity GmbH, Germany

13:00  Networking luncheon and networking opportunity

14:30  Electronic Parking Brake (EPB) for trucks application
- Lionel Farres,
System Functionalities & Electronic System, Volvo Group
- VOLVO Trucks Technology / Chassis and Vehicle Dynamics,
Volvo Group, France

15:15  The potential of electromechanical brake systems: Simplifying the VE EMB and integrating it into a safety concept
- Michael Putz,
Head of R&D, Research and Development,
Vienna Engineering, Austria

16:00  Afternoon coffee and networking opportunity

16:30  ECU-architecture as a collaboration platform for safety, electronics and software engineering
- Dr. Ralf Leiter,
Chief Engineer Hardware, Electronic HW APP,
TRW Automotive Lucas Varity GmbH, Germany

17:15  Panel Discussion: The future of “new-generation” braking-systems
- Karl Chick,
Technical Specialist, Global Software Strategy,
TRW Automotive, United Kingdom

18:00  Closing remarks by chairman
Dr. Ralf Leiter,
Chief Engineer Hardware, Electronic HW APP,
TRW Automotive Lucas Varity GmbH, Germany

18:30 – 20:30 Evening-Workshop
“Exploring model based ECU-architecture”
This interactive evening session will provide a comprehensive overview of ECU-architecture with a specific focus on functional and safety aspects of architecture design.

Led by TRW Automotive, the first half of the session creates a deep understanding of the current state of the ECU-architecture, its pitfalls and opportunities. TRW’s experts Karl Chick and Manuel Schneider-Scheyer will provide background information and solutions to existing shortcomings of ECU-architecture.

The second half of the session is designed for a vivid expert exchange on experiences and ideas. This will explore the opportunity to brainstorm with other leading brakes experts, built new business foundations and experience alternative approaches to fostering new business ideas.

- Example led walk through of ECU-architecture in 5 easy steps:
  - System level analysis with use cases
  - ECU context definition
  - Problem domain framing
  - Functional architecture design
  - Safety architecture design
- Two way discussions at each step comparing own approaches and experiences
  - Karl Chick,
  Technical Specialist, Global Software Strategy,
  TRW Automotive, United Kingdom
  - Manuel Schneider-Scheyer,
  Head ECU Architecture & Integration,
  ECU Architectures & Integration,
  TRW Automotive, Germany
Conference Day 2 | Wednesday, 27 November 2013

08:30 Welcome coffee

09:00 Opening remarks by conference chairman
Dr. Ralf Leiter, Chief Engineer Hardware, Electronic HW APP, TRW Automotive Lucas Varity GmbH, Germany

09:15 Autonomous driving: An exploration of some key issues
- Legislation driven adoption of AEB-systems to new vehicle models: The enabler of automated driving across all vehicle models
- Autonomy versus Cooperation: Will ACC & AEBS be led by standalone systems (ADAS) or cooperative systems (V2V communication)
- ESC: How much intelligence can it harbour as the central controller of chassis systems and the vehicle as a whole?
- Role of braking and ADAS for automated driving

Nick Ford, Senior Consultant, Automotive and Transport, Frost&Sullivan Ltd., United Kingdom

10:00 Intelligent modular brake architecture: Aiming towards automated driving
- Automated driving: The rollout already started by assisted driving
- Reduced driver supervision: Influence on the brake architecture
- Market penetration of automated driving: Requirements for modularity
Karl-Heinz Willmann, Director Chassis Systems Control, Robert Bosch GmbH, Germany

10:45 Morning coffee and networking opportunity

11:15 Improving Automated Emergency Braking Systems (AEB) by considering actual road conditions
- Accuracy of road condition estimation based on sensor information
- Adaptation of AEB’s warning and activation strategies
- Minimal sensor configurations to fulfill the requirements of an AEB
Cornelia Lex, Scientific Project Assistant, Institute of Automotive Engineering, Graz University of Technology, Austria

12:00 Interactive round tables: Innovation vs. standardisation
Broaden your industry expertise and enter into a high-profile exchange with other experts during chosen roundtable discussions.

Interactive Round table A
Intelligent braking vs. standard braking: How to manage the transition
- Intelligent braking: Opportunities beyond regenerative capacity
- Vacuum booster, hydraulic actuators: Dumb but not done
- Standardisation vs. innovation: Will intelligent braking reach critical mass?
Nicolas Godlewski, Braking System Technical Leader, Division Engineering – System Control Chassis, Renault SA, France

Interactive Round table B
LV-124: Implications on testing praxis of braking systems
- Identify leeway
- Discuss the real transferability to other OEMs
- Evaluation of the testing length of 12 months
- Exploration of the handling practise of discontinuations and natural disasters
- Development of confidence tests
Dr. Ralf Leiter, Chief Engineer Hardware, Electronic HW APP, TRW Automotive Lucas Varity GmbH, Germany

13:00 Networking luncheon and networking opportunity

Future challenges: EV and HEV braking

14:00 Active brake pedal: A new layer of communication
- Haptic driver information: Fast and precisely placed
- Active brake pedal: Freedom in shape and configuration
- Accident prevention by increasing the driver’s situation awareness
- Application for EV and HEV vehicles
Christoph Liedecke, Engineer, Institute for Internal Combustion Engines and Automotive Engineering (IBLE), Automotive Mechatronics, University of Stuttgart, Germany

14:45 Heat dissipation from stationary disc brakes
- Assessing the risk of “hot parking” of intelligent brake systems
- Understanding the complexity of heat transfer paths for stationary car and CV brakes
- Identifying prolonged critical cooling times using CFD modelling and testing
Dr. Marko Tirovic, Reader in Automotive Engineering, Cranefield University, United Kingdom

15:30 Model based brake application: Developments and validation
- Comparison of Regenerative braking concepts
- Integrated vehicle dynamics control demonstrator
- Robustness analyses of wheel drive failure modes
Sven Jansen, Senior Research Engineer, Integrated Vehicle Safety, TNO Technical Sciences/Automotive, The Netherlands

16:15 Closing remarks by conference chairman
Dr. Ralf Leiter, Chief Engineer Hardware, Electronic HW APP, TRW Automotive Lucas Varity GmbH, Germany

16:30 Farewell coffee and networking opportunity

16:45 – 18:45 Evening-Workshop:
The role of braking along the road to autonomous driving
Probably sooner than once expected, human drivers will be a phenomenon of the past.
Advertisers of autonomous vehicles claim a plethora of economic, environmental, and societal benefits. Fewer crashes, increased roadway capacities and reduced traffic congestion, expected reduced oil consumption and air pollution are just a couple of benefits driving innovations regarding autonomously driving vehicles. It seems that autonomous vehicles are unstoppable.

Yet, the road to reach this vision still needs to be mastered. The role of brakes is naturally of enormous importance due to the safety-critical nature of braking systems. The interactive session led by two automotive experts from Frost&Sullivan offer an update and exchange on the role of braking in the context of autonomous driving, to prepare braking experts to meet future challenges.

• What portion of the controls can be automated? Which functions should the driver retain? Where does braking fall?
• What sort of driving scenarios can be automated: Highway driving? City traffic commuting? Rural driving?
• Autonomy versus cooperative driving: How does it impact braking?
• Fully autonomous emergency braking: Vienna Convention, zero fatality, human input and brake pre-fill
• Parking: The business case for autonomous park assist and engaging the electric park brake

Nick Ford, Senior Consultant, Automotive and Transport, Frost&Sullivan, United Kingdom
Prana Tharthiharan Natarajan, Team Leader, Chassis and Safety Systems, Frost&Sullivan, India
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**Online:** www.braking-congress.com/MM  
**Email:** eq@iqpc.de

**For further information**  
**Phone:** +49 (0)30 20 91 33 88

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**Intelligent Braeking 2013**

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