


Driver Assistance Systems

From Assistance to Automated Driving

4th International ATZ Conference on Automated Driving

18 and 19 April 2018 | Wiesbaden | Germany

A top-down view of a red car on a road, surrounded by blue, green, and orange concentric arcs representing sensor waves. Other cars are visible in the background.

Simultaneous Interpreting
German and English

SENSOR SYSTEMS

Environment recognition,
interfaces, vehicle
dynamics models,
vehicle platooning,
driverless systems

MACHINE LEARNING

Deep learning,
neural networks,
integration of human
driving data

NEW METHODS AND PROCESSES

Intelligent testing,
cloud-based validation,
connected development

/// KEYNOTE LECTURES **Dr. Michael E. Hafner**, Daimler AG | **Ralph Lauxmann** and
Christian Schumacher, Continental | **Prof. Dr. Gernot Spiegelberg**, Siemens AG

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Driver Assistance Systems

WELCOME

Advanced driver assistance systems enable vehicles to see, think, and act. The basic precondition for the introduction of highly automated driving is interoperability. Equally important are “over-the-air” updates that allow the necessary swarm intelligence to be used. Numerous discussions are currently concentrating on the demarcation between Level 3 and 4 and above all on the question of which non-driving-related activities may be performed by drivers when automated mode is activated and how they perform them. If these take place on the screen of the instrument cluster, it is easier to gain the driver's attention by changing or switching off the display, thus instructing him or her to reassume control of the vehicle. Mobile smart devices require a different strategy. Other aspects are the driver (human) in interaction with the vehicle (machine) and the interdependencies related to these. There are two papers on this subject, which focus not only on HMI.

The 4th International ATZ Conference “Driver Assistance Systems – From Assistance to Automated Driving” has strands of lectures on both technology and insurance issues, thus providing an up-to-date contextualization of the latest developments. Redundancies that are necessary for safety reasons and a reduction in driver handover times require new E/E architectures and onboard power networks. Environment recognition systems must be improved even further. What is more, new methods such as “Deep Machine Learning” present important challenges. In a panel discussion, high-ranking industry representatives will discuss the topic of “Automated Driving – Technical Developments in the Challenging Context of Politics, Law, and Ethics”.

We cordially invite you to Wiesbaden to meet influential experts.

On behalf of the Scientific Advisory Board

Dr. Alexander Heintzel

Editor-in-Chief ATZ | MTZ | ATZelektronik



PARTICIPANTS

The International ATZ Conference “Driver Assistance Systems – From Assistance to Automated Driving” is aimed at engineers and managers as well as experts involved in developing driver assistance systems and those who cooperate with these developers in the interdisciplinary field of vehicle-to-x technology. The target group includes automotive engineers, function developers, software and IT engineers from industry, application-related research and teaching as well as experts working in fields relating to the social, economic and legal background conditions.

PROGRAM

WEDNESDAY 18 APRIL 2018

>> PLENUM

Room "Plenum and Session I"

- 9:15 **Welcome and opening of the conference**
Dr. Alexander Heintzel,
Editor-in-Chief ATZ | MTZ | ATZelektronik;
Prof. Dr. Prof. h.c. Dr. h.c. Torsten Bertram, Head of the
Institute of Control Theory and Systems Engineering (RST),
TU Dortmund

KEYNOTE LECTURES

Moderator: Prof. Dr. Prof. h.c. Dr. h.c. Torsten Bertram, Head of the
Institute of Control Theory and Systems Engineering (RST),
TU Dortmund

- 9:30 **The reinvention of the automobile –
autonomous and accident-free**
Dr. Michael E. Hafner, Director Automated Driving & Active
Safety, Daimler AG

- 10:00 **Industrialization of automated driving systems**
Ralph Lauxmann, Senior Vice President Systems & Technology,
Christian Schumacher, Vice President Program Management
Systems, Continental, Division Chassis & Safety

- 10:30 Refreshment break with coffee and tea in the exhibition area

>> PARALLEL SESSIONS

You will find more detailed information about the
parallel sessions on the following pages of the program.

- 11:00 **SESSION I – SENSORS I**
ROOM "PLENUM AND SESSION I"
-

- 11:00 **SESSION II – VERSICHERUNGSKONZEPTE**
ROOM "SESSION II"
-

- from
12:30 Lunch in the exhibition area

- 14:00 **SESSION I – SENSORS II**
ROOM "PLENUM AND SESSION I"
-

- 14:00 **SESSION II – SAFETY AND SECURITY**
ROOM "SESSION II"
-

- 15:30 Refreshment break with coffee and tea in the exhibition area

>> PLENUM

Room "Plenum and Session I"

INTRODUCTORY LECTURES AND PANEL DISCUSSION

Moderator: Dr. Alexander Heintzel,
Chief-in-Editor ATZ | MTZ | ATZelektronik

16:00 **Technological progress as against adaptation
of legal regulation**

Frank Leimbach, Managing Director,
KTI Kraftfahrzeugtechnisches Institut und
Karosseriewerkstätte GmbH & Co. KG

16:20 **Automated driving – misunderstandings about
level 3 and: what is Euro NCAP doing?**

Prof. Andre Seeck, Head of Department "Automotive
Engineering", Federal Highway Research Institute (BAST)

16:50 **Panel discussion:
Automated driving – technical developments
in the challenging context of politics, law, and ethics**

Participants:

Dr. Stephan Hönle,
Senior Vice President Automated Driving Systems,
Robert Bosch GmbH

Frank Leimbach,
Managing Director, KTI GmbH & Co. KG

Dr. Thorsten Leonhardt,
Architecture, Pre- and Concept Development
Automated Driving, AUDI AG

Prof. Andre Seeck,
Head of Department "Automotive Engineering",
Federal Highway Research Institute (BAST)

19:30 **Evening of encounters
at the Garden Restaurant Grande Basilico (Dorint Hotel)**

Enjoy a delightful evening and interesting conversations
over dinner with colleagues and speakers.

PROGRAM – PARALLEL SESSIONS

WEDNESDAY 18 APRIL 2018

>> SESSION I

Room “Plenum and Session I”

SENSORS I

Moderator: Dr. Karl-Heinz Glander, Chief Engineer for Automated Driving and Integral Cognitive Safety, ZF Group – TRW Automotive GmbH

11:00 **Radar for driverless driving – paradigm shift in performance requirements from ranging and detection to perception**

Dr. Juergen Dickmann, Head of Radar/Radarperception,
Dr. J. Klappstein, Dr. M. Hahn, J. Lombacher, O. Schumann,
K. Werber, Daimler AG

11:30 **Improving the environment model for highly automated driving by extending the sensor range**

Dr. Nicole Beringer, Program Manager Highly Automated Driving, Innovation Management, Elektrobit Automotive GmbH

12:00 **Efficient sensor development using raw signal interfaces**

Martin Herrmann, Business Development Manager ADAS and Autonomous Driving, IPG Automotive GmbH;
Dr. H. Schön, Robert Bosch GmbH

12:30 Lunch in the exhibition area

SENSORS II

Moderator: Hans-Günter Gromeier, Vice President Product Group Automotive, ETAS GmbH

14:00 **360° surround view radar for driver assistance and automated driving**

Dr. Dietmar Stapel, Director Program Management Driver Assistance Systems, Dr. H. Dyckmanns, M. Mühlenberg,
C. Roch, HELLA GmbH & Co. KGaA

14:30 **Standardization of sensor interfaces for automated driving**

Dr. Thomas Schaller, Sensor Concepts and Sensor Standardization, C. van Driesten, BMW Group

15:00 **Adaptive models of driving dynamics for model-based control of lateral dynamics at the limits of handling**

Jakob Bechtloff, Research Assistant, Prof. Dr. R. Isermann, Institute of Automatic Control and Mechatronics (iat), TU Darmstadt

15:30 Refreshment break with coffee and tea in the exhibition area

>> SESSION II

Room "Session II"

VERSICHERUNGSKONZEPTE

Moderation: Meris Neininger, Chefin vom Dienst Versicherungsmagazin

- 11:00 **Abschied vom Lenkrad? – Automatisiertes und autonomes Fahren im Faktencheck**
Jan-Hendrik Wolf, Jurist und Berater Produktentwicklung
Kfz, R+V Allgemeine Versicherung AG
- 11:30 **Alles wird anders und bleibt doch gleich – die integrierte Versicherung als Antwort auf die Herausforderungen der Mobilität von morgen**
Dr. Christoph Samwer, CEO, FRI:DAY, Deutsche Niederlassung der Basler Versicherungen Luxemburg A.G.
- 12:00 **Telematik in der Kraftfahrtversicherung**
Dr. Martin Ballerstein, Leiter Tarifierung und Marktbeobachtung
Komposit, Dr. D. John, HUK-COBURG
- 12:30 **Podiumsdiskussion:**
Die Antworten der Versicherer auf die neue Mobilität?
- 13:00 Lunch in the exhibition area

SAFETY AND SECURITY

Moderation: Prof. Dr. Dr. Rolf Isermann, Leitung Forschungsgruppe Regelungstechnik und Prozessautomatisierung, Institut für Automatisierungstechnik und Mechatronik (iat), TU Darmstadt

- 14:00 **Virtualisierung zur Absicherung der funktionalen Sicherheit von hochautomatisiertem Fahren am Beispiel eines realen Steuergeräteprojekts**
Johannes Wagner, Senior Product Manager Virtual ECU Development Tools, J. Löchner, O. Kust, ETAS GmbH
- 14:30 **Herleitung und Anwendung einer Beobachterstruktur zur Erkennung von Inkonsistenzen innerhalb einer statischen Umfeldmodellierung**
Moritz Lütke Möller, Wissenschaftlicher Mitarbeiter,
M. Oeljeklaus, Prof. Dr. Prof. h.c. Dr. h.c. T. Bertram, Lehrstuhl für Regelungssystemtechnik (RST), TU Dortmund; K. Rink,
Dr. U. Stählin, Dr. R. Grewe, Continental, Chassis & Safety
- 15:00 **IT-Sicherheit hybrider Fahrzeugkommunikation basierend auf ITS-G5, LTE-V und Mobile Edge Computing**
Jan-Felix van Dam, Security Engineer, Dr. N. Bißmeyer, ESCRYPT GmbH
- 15:30 Refreshment break with coffee and tea in the exhibition area

PROGRAM

THURSDAY 19 APRIL 2018

>> PLENUM

Room "Plenum and Session I"

KEYNOTE LECTURE

Moderator: Steffen Schmidt, Managing Director, IPG Automotive GmbH

9:00 **Mobility of the future – mobility as a service with impact on lifestyle, business, and PLM**

Prof. Dr. Gernot Spiegelberg, Chief Expert Software,
Siemens AG

HMI

Moderator: Steffen Schmidt, Managing Director, IPG Automotive GmbH

9:30 **To drive or to be driven? –
Human-centered systems for our society**

Dr. Meike Jipp, Head of Department Human Factors,
Institute of Transportation Systems,
German Aerospace Center (DLR)

10:00 **Positive user experience for automated driving**

Guido Meier-Arendt, Principal Technical Expert Human-
Machine Interface, Continental Automotive GmbH

10:30 Refreshment break with coffee and tea in the exhibition area

>> PARALLEL SESSIONS

You will find more detailed information about the
parallel sessions on the following pages of the program.

11:00 **SESSION I – NEW METHODS
ROOM "PLENUM AND SESSION I"**

11:00 **SESSION II – ANWENDUNGEN NFZ
ROOM "SESSION II"**

from

12:30 Lunch in the exhibition area

>> PLENUM

Room "Plenum and Session I"

MACHINE LEARNING I

Moderator: Dr. Peter Schöggel, Vice President Business Field Vehicle and Racing, AVL List GmbH, Austria

14:00 **An overview of deep learning and its applications**
Dr. Michael Vogt, Algorithm Developer / Project Manager,
Smiths Heimann GmbH

14:30 **Potential of virtual test environments for the development of highly automated driving functions using neural networks**
Raphael Pfeffer, Research Assistant, Prof. Dr. E. Sax,
Institute for Information Processing Technologies (ITIV),
Karlsruhe Institute of Technology (KIT)

15:00 Refreshment break with coffee and tea in the exhibition area

MACHINE LEARNING II

Moderator: Dr. Dirk Wisselmann, Senior Engineer Automated Driving,
BMW Group

15:30 **Incorporating human driving data into simulations and trajectory predictions**
Manuel Schmidt, Research Assistant,
Prof. Dr. Prof. h.c. Dr. h.c. T. Bertram, Institute of
Control Theory and Systems Engineering (RST),
TU Dortmund; Dr. T. Nattermann, Dr. K.-H. Glander,
ZF Group – TRW Automotive GmbH

16:00 **Deep learning based multi-scale multi-object detection and classification for autonomous driving**
Maximilian Fink, Development Engineer, Dr. A. Engstle,
Dr. Y. Liu, AVL Software and Functions GmbH;
Prof. Dr. S.-A. Schneider, Advanced Driving Assistant Systems,
University of Applied Sciences Kempten

16:30 **Challenges in the automotive industry through autonomous driving**
Torsten Gollewski, Senior Vice President Advanced Engineering
ZF Group / CEO Zukunft Ventures GmbH,
ZF Friedrichshafen AG

17:00 **Closing remarks**
Dr. Alexander Heintzel,
Editor-in-Chief ATZ | MTZ | ATZelektronik

PROGRAM – PARALLEL SESSIONS

THURSDAY 19 APRIL 2018

>> SESSION I

Room “Plenum and Session I”

NEW METHODS

Moderator: Ralph Lauxmann, Senior Vice President
Systems & Technology, Continental, Division Chassis & Safety

- 11:00 **Intelligent testing for intelligent cars**
Dr. Karsten Krügel, Senior Product Manager Virtual Validation
and Autonomous Driving, J.-E. Stavesand, dSPACE GmbH
- 11:30 **A new approach for cloud-based validation and
optimization of autonomous vehicles**
Dr. Jürgen Holzinger, Lead Engineer ADAS Validation,
Dr. P. Schögggl, R. Vögl, P. Clement, M. Oswald, E. Ramschak,
AVL List GmbH, Austria
- 12:00 **Systematically generated and complete tests for
complex driving scenarios**
Marc Habiger, Product Development Simulation Models,
M. Feilhauer, Dr. J. Häring, ETAS GmbH
- 12:30 **Connected development in driver assistance**
Dr. Tobias Radke, Project Leader Connectivity for Driver
Assistance, Robert Bosch GmbH; Alberto Fernandez,
Director Product Management Measurement, Calibration and
Diagnostics Solutions, ETAS GmbH
- 13:00 Lunch in the exhibition area

>> SESSION II

Room "Session II"

ANWENDUNGEN NFZ

Moderation: Walter Schwertberger, Zentralbereich Forschung,
Automatisiertes Fahren – Strategie, MAN Truck & Bus AG

- 11:00 **Platooning – ein pragmatischer Ansatz**
Stephan Kallenbach, Ingenieur für Fahrerassistenzsysteme,
Vorentwicklung, WABCO GmbH
- 11:30 **Wie kann man ein prototypisches, fahrerloses Fahrzeug
auf die Straße bringen? – Das automatisch fahrerlos
fahrende Absicherungsfahrzeug von MAN**
Patrick Jiskra, Functional Developer Automated Driving,
P. Strauß, W. Schwertberger, MAN Truck & Bus AG
- 12:00 **CAN über Automotive Ethernet als Anhänger-Schnittstelle**
Andreas Goers, Advanced Development, S. Kühne,
WABCO GmbH
- 12:30 Lunch in the exhibition area



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The Chassis & Safety division develops and produces integrated active and passive driving safety technologies as well as products that support vehicle dynamics. The product portfolio ranges from electronic and hydraulic brake and chassis control systems to sensors, advanced driver assistance systems, airbag electronics and sensorics as well as electronic air suspension systems all the way to windscreen washer systems and headlight cleaning nozzles. The focus lies on a high level of system competence and the networking of individual components. Thus products and system functions are developed along the SensePlanAct chain of effects. They form the foundation for automated driving.



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We excel in providing innovative solutions that drive the development of embedded systems for the automotive industry and related sectors. As a systems provider, we offer a comprehensive portfolio of integrated tools and tool solutions as well as engineering services, consulting, training, and support. Security solutions for embedded systems are delivered by our subsidiary ESCRYPT.

An international presence

ETAS now has more than 1,100 associates working in 12 countries in Europe, Asia, and the Americas. In addition to our corporate headquarters in Germany, we have offices in Brazil, Canada, China, France, Great Britain, India, Italy, Japan, Korea, Sweden, and the USA. We are constantly working to expand our international network.

Our customers

ETAS provides solutions for the development of embedded systems. Our customers represent a cross-section of the global automotive industry and related sectors. They include automakers, automotive component suppliers, ECU suppliers, and engineering service providers.

Market challenges – ETAS solutions

The automotive industry is undergoing a radical transformation. The list of innovations is getting longer by the day, ranging from new, energy-efficient drive systems to semi and fully autonomous driving, digitalization, and connected vehicle technologies. These new developments rely on electronics and software – two areas in which ETAS excels. We offer expert knowledge and appropriate tools to develop safety-relevant software. Our solutions are found at every stage of the embedded software development process. Automotive electronics are increasingly connected – and that means they need to be protected from unauthorized access. The ETAS subsidiary ESCRYPT offers a comprehensive range of security solutions which are designed to ward off attacks on embedded software systems.

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REGISTRATION FEE

€ 1,395.– plus VAT

This includes the conference documentation, coffee breaks, soft drinks, two lunches, and the evening reception.

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65185 Wiesbaden | Germany

HOTELS

The hotels have room blocks at reduced prices for the participants.

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LANGUAGES USED IN THE PRESENTATIONS

German and English with simultaneous interpreting
(German – English / English – German)

No simultaneous interpreting for Session II.

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CONFERENCE REGISTRATION

Driver Assistance Systems

18 and 19 April 2018 | Wiesbaden | Germany

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