

Contents

Session 1 – Mobilität und ADAS

Leitung: A. Zlocki, fka GmbH, Aachen

1 Comparison of Communication Strategies for Maneuver Coordination of Highly Automated Vehicles	7
J. Stellwagen ¹ , M. Deegener ² , M. Kuhn ¹	
¹ Darmstadt University of Applied Sciences; ² Frankfurt University of Applied Sciences	
2 Determining Required Simulation Model Fidelity for Developing an Advanced Driver Assistance System for Automated Lane Change Decision Making.....	13
C. Hürten, P. M. Sieberg, D. Schramm, University of Duisburg-Essen	

Session 2 – Sensoren und KI

Leitung: R. Denkelmann, Aptiv Services Deutschland GmbH, Wuppertal

3 Potential analysis of cold braking distance performance – adaptation of the ABS to the tyre temperature	19
G. Warth ¹ , L. Kroh ¹ , P. Sieberg ² , M. Unterreiner ¹ , D. Schramm ²	
¹ Dr. Ing. h.c.F. Porsche AG, Weissach; ² University of Duisburg-Essen	
4 Improved Ultrasonic Sensing Using Machine Learning.....	25
H. Gotzig ¹ , M.-E. Mohamed ¹ , Raoul Zöllner ² , Patrick Mäder ³	
¹ Valeo Schalter u. Sensoren GmbH, Bietigheim; ² Hochschule Heilbronn;	
³ Technische Universität Ilmenau	
5 AURIX™ TC4xx – Parallel Processing Unit (PPU) for Multi-Layer-Perceptron (MLP) based Direction of Arrival Estimation	27
M. Hassan, K. Walluszik, Infineon Technologies AG, Neubiberg	

Session 3 – Neue Konzepte

K. Belhoula, Continental Automotive Technologies GmbH

6 E/E Architecture Transformation – How it impacts value chain and networking technologies	33
T. Liebetrau, Infineon AG, Neubiberg	
7 Integrated AR-Support for Diagnoses and Maintenance.....	40
K. Wundram, Ostfalia Hochschule für angewandte Wissenschaften, Wolfsburg	

Session 4 – Poster

Leitung: S. Sattler, Friedrich-Alexander-universität Erlangen-Nürnberg

8 Dynamic Effects in Asynchronous Circuits	45
F. Deeg, S. M. Sattler, Friedrich-Alexander-University Erlangen-Nuremberg	
9 Speech privacy-aware acquisition of acoustic information based on deep learning algorithms.....	50
J. Rennies, D. Hollosi, C. Rollwage, Fraunhofer IDMT, Oldenburg	

10 Detection of the human skeleton on pedestrians in road traffic.....	55
K. Bartsch, T. Bertram, TU Dortmund University	
11 Trustable Electronics – TRUST-E.....	61
M. Wahl, P. Stich, R. Busch, University of Siegen	
12 Mid-term status report on KISSaF: AI-based situation interpretation for automated driving.....	66
A. Stockem Novo ^{1,2} , M. M. Stolpe ³ , C. Diehl ⁴ , T. Osterburg ⁴ , T. Bertram ⁴ , V. Parsi ⁵ , N. Murzyn ⁵ , F. Mualla ⁵ , G. Schneider ⁵ , P. Töws ⁶	
¹ ZF Automotive Germany GmbH, Gelsenkirchen; ² Institute of Computer Science, Ruhr West University of Applied Sciences, Mülheim an der Ruhr; ³ ZF Automotive Germany GmbH, Düsseldorf; ⁴ Institute of Control Theory and Systems Engineering, TU Dortmund University; ⁵ ZF Friedrichshafen AG, Saarbrücken; ⁶ INGgreen GmbH, Koblenz	

Session 5 – Fahrerbeobachtung

Leitung: C. Ress, Ford Werke GmbH

13 Position Classification and In-Vehicle Activity Detection Using Seat-Pressure-Sensor in Automated Driving.....	71
K. D. Nobari ¹ , A. Hugenroth ^{1,2} , T. Bertram ¹	
¹ TU Dortmund University; ² Hella GmbH & Co. KGaA, Lippstadt	
14 Gaze-Point Projection by Marker-based localization of Eye-Tracking Glasses for Examining Trust in Automated Vehicles.....	77
F. Albers, T. Bertram, TU Dortmund University	

Session 7 – Hardware

Leitung: K. Belhoula, Continental Automotive GmbH

15 Models of Automotive Power Supply Components for the Transient Analysis of Switching Events and Faults	79
M. Gerten, M. Rübartsch, S. Frei, TU Dortmund University	
16 Development of an Artificial Galvanically Decoupled Impedance Network of Wireless Power Transfer Systems for EMI Measurements in the Frequency Range from 9 kHz to 30 MHz.....	85
S. Jeschke, M. Olbrich, M. Kleinen, J. Bärenfänger, EMC Test NRW GmbH, Dortmund; J. Loos, D. Imhof, K. Siebert, Institut für Mess- und Sensortechnik HRW, Mülheim	
17 Virtual fault injection in mechatronic and electronic systems for reliability and safety analysis.....	90
L. Ergün, R. Müller-Hainbach, S. Butzmann, University of Wuppertal	

Session 8 – Security

Leitung: U. Ahlheim, Consultant, Riedstadt

18 Evaluating TTEthernet in the Automotive Domain Using Fault Injection.....	94
D. Onwuchekwa, S. Mittal, R. Obermaisser, University of Siegen	
19 Cooperative and distributed cybersecurity analysis for the automotive domain	100
C. Schmittner, Austrian Institute of Technology, Seibersdorf, Österreich; K. Wieland, LieberLieber Software, Wien; G. Macher, Institut für Technische Informatik, TU Graz	