

International Workshop on Automotive Radar for Fully Automated Driving

Wednesday, 16th September 2020, 08.00 – 12.00 CEST (UTC+2), online (links will be provided by e-mail)

08:00 – 09:30 Session 1: General aspects on automated and connected driving (online live)

Chair: Thomas Zwick

Welcome address Stefan Mengel, Division "Electronics and Autonomous Driving", German Federal Ministry for Education and Research (BMBF)

Push & pull in digitalization Felix Govaers, Fraunhofer FKIE

Future urban mobility Klaus Bogenberger, Technical University of Munich

09:40 – 10:30 Questions and discussions in virtual marketplace (online live in four rooms, video files of the presentations will be provided on 14th September)

Session 2: New radar architectures and signal processing

Chair: Christian Waldschmidt

Rudolf Lachner, Infineon Technologies AG
Automotive radar building blocks

Benjamin Nuß, Karlsruhe Institute of Technology

OFDM radar for automotive applications

Benedikt Schweizer, University of Ulm
Digitally modulated radar and 4x8 MIMO demonstrator

Martin Kunert, Robert Bosch GmbH
High resolution fast chirp imaging radar for automotive applications

Maria Gonzalez, Fraunhofer FHR
Sparse MIMO arrays and high-resolution estimation using compressed sensing

Session 3: New MMICs, antenna and packaging concepts

Chair: Nils Pohl

Jan Schöpfel, Ruhr University Bochum
SiGe transceiver chipsets for arbitrarily modulated radar at 77 GHz

Ahmad Mushtaq, Silicon Radar
Cascadable radar MMIC for massive MIMO-applications

Thanh Duy Nguyen, IZM, Jue Chen, Schweizer, and Jonathan Mayer, Karlsruhe Institute of Technology
Panel level packaging and system in board technologies for conformal radar frontend

Christian Tschoban, IZM
MIMO-based module with integrated antennas for autonomous driving

Session 4: Radar sensor networks and sensor fusion

Chair: Thomas Zwick

Thomas Binzer, Robert Bosch GmbH
Cooperative sensor networks: chances and challenges

Benedikt Meinecke, Johannes Schlichenmaier, University of Ulm
Coherent and incoherent sensor networks

Markus Gardill, University of Würzburg
Radar architectures and signal processing for autonomous driving

Cristian Grozea, Fraunhofer Fokus
Camera-radar-fusion for safe driving in urban environment

Session 5: Radar testing and verification

Chair: Frank Gruson

Florian Baumgärtner, Daimler
OTA test scenarios for automated driving

Johannes Iberle, University of Applied Sciences Ulm

Radar target simulator

Sebastian Graf, dSPACE, Andreas Löffler, Continental

Raytracing simulations in automotive radar tests

Sevda Abadpour, Karlsruhe Institute of Technology

Radar channel simulation

Matthias Hein, TU Ilmenau

Virtual verification and validation of automotive radar in the installed state

10:30 – 11:20 Session 6: Virtual lab with demonstrators (online live in different rooms)

An all-digital 4x4 MIMO automotive radar prototype based on an RFSoc
Simon Stephany, University of Ulm

Fast chirp sequence 4x16 TDM MIMO imaging radar demonstrator for automated driving applications Martin Kunert, Robert Bosch GmbH

Printed circuit board technology enables direct embedding of MMIC and conformal antenna configuration for automotive radar application Jue Chen, Schweizer Electronic AG

Automotive radar sensor testing using real-time raytracing Christoph Brodehl, dSPACE

Automotive radar OTA test setup with target simulator and mechanical positioner Chris Hoffmann, dSPACE, Ralf Stephan, TU Ilmenau

A 77 GHz radar demonstrator for arbitrary digital modulation schemes
Benjamin Nuß, Karlsruhe Institute of Technology, Jan Schöpfel, Ruhr University Bochum

11:30 – 12:00 Session 7: Panel discussion and closing remarks (online live)

Chairs: Christian Waldschmidt, Thomas Zwick

Panel discussion Frank Gruson, Continental, Martin Kunert, Robert Bosch GmbH, Rudolf Lachner, Infineon Technologies AG, Holger Meinel, Independent ADAS Consultant, Stefan Mengel, Division "Electronics and Autonomous Driving", German Federal Ministry for Education and Research (BMBF), Werner Ritter, Mercedes-Benz AG

Closing address Stefan Mengel, Division "Electronics and Autonomous Driving", German Federal Ministry for Education and Research (BMBF)

Details and Registration: www.ihe.kit.edu/workshop.php

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