

# International Workshop on Automotive Radar for Fully Automated Driving

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

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

**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*

## 09:30 Questions and discussions in virtual marketplace (online live in four rooms, video files of the presentations will be provided on 14<sup>th</sup> September)

### Session 2: New radar architectures and signal processing

*Rudolf Lachner, Infineon Technologies AG*  
**Automotive radar building blocks**

*Benjamin Nuß, Karlsruhe Institute of Technology*

**OFDM radar for automotive applications**

*Simon Stephany, 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

*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

*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

*Florian Baumgärtner, Daimler*  
**OTA test scenarios for automated driving**

*Thomas Walter, 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 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** *Sebastian Graf, dSPACE*

**Automotive radar OTA test setup with target simulator and mechanical positioner** *Bastian Hellweg, 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 Session 7: Panel discussion and closing remarks (online live)

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

**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](http://www.ihe.kit.edu/workshop.php)

Contact: [thomas.zwick@kit.edu](mailto:thomas.zwick@kit.edu)