# 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)**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session 1: General aspects on automated and connected driving (online live)</th>
<th>Chair: Thomas Zwick</th>
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</thead>
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| 08:00  | 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 |                      |

<table>
<thead>
<tr>
<th>Time</th>
<th>Questions and discussions in virtual marketplace (online live in four rooms, video files of the presentations will be provided on 14th September)</th>
<th>Chair: Frank Gruson</th>
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| 09:30  | **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  
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**  
Jan Schöpfel, Ruhr University Bochum  
SiGe transceiver chipsets for arbitrarily modulated radar at 77 GHz  
Ahmad Mushtag, 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 Galli, 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  
Johannes Iberle, University of Applied Sciences Ulm  
Radar target simulator  
Sebastian Graf, dSPACE, Andreas Löfler, Continental  
Raytracing simulations in automotive radar tests  
Sevda Abadpour, Karlsruhe Institute of Technology  
Radar channel simulation  
Matthias Heim, TU Ilmenau  
Virtual verification and validation of automotive radar in the installed state |                      |

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<tr>
<th>Time</th>
<th>Session 6: Virtual lab with demonstrators (online live in different rooms)</th>
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| 10:30  | 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 |                      |

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<thead>
<tr>
<th>Time</th>
<th>Session 7: Panel discussion and closing remarks (online live)</th>
<th>Chairs: Christian Waldschmidt, Thomas Zwick</th>
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| 11:30  | 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](http://www.ihe.kit.edu/workshop.php)  
Contact: [thomas.zwick@kit.edu](mailto:thomas.zwick@kit.edu)