Duration: 13:50 - 17:50
Room: Oslo

WW-01
Technologies and Circuits for Advanced Automotive Radar and Related Applications

Organisers:
Rudolf Lachner, Infineon, Germany
André Bourdoux, IMEC, Belgium

Abstract
In automotive radar we saw a rapid transition from GAAs based mm-Wave frontends to SiGe bipolar or BiCMOS solutions in the past 5 years which made radar affordable for almost everyone and opened the way for broad application of radar based ADAS even in the low- and mid-end car segments.

Autonomous driving will further push market penetration and number of radar sensors per car, which will in turn increase the cost pressure on the whole supply chain. One way to cope with that challenge will on the semiconductor side certainly lead to increased usage of pure CMOS “mmW-systems-on-chip” (MMSoCs instead of MMICs) for certain high-volume radar applications.

The workshop will give a comprehensive overview of most recent developments in Silicon-based semiconductor technologies, MMIC design and mm-Wave packaging technologies.

Programme

13:50 - 14:30 Radar Sensor Networks and Technologies
Ralf Reuter, NXP, Germany

14:30 - 15:00 A Fully Integrated 79-GHz CMOS Radar Chipset Using Coded Pulse Compression and Adaptive Array
Noriaki Saito, Panasonic, Yokohama, Japan

15:00 - 15:30 A Package Co-Design Methodology for mm-Wave System-on-Chip Transitions
Vito Gianini, Uhnder, USA

15:30 - 16:10 Break

16:10 - 17:00 CMOS mm-Wave Integrated Circuit Design Techniques for Automotive Radar
Chi Baoyong, Tsinghua University, China

17:00 - 17:50 Comparison of mm-Wave Properties of Different CMOS and SiGe Technology Nodes Used in Radar Systems
Vadim Issakov, Infineon Technologies, Germany