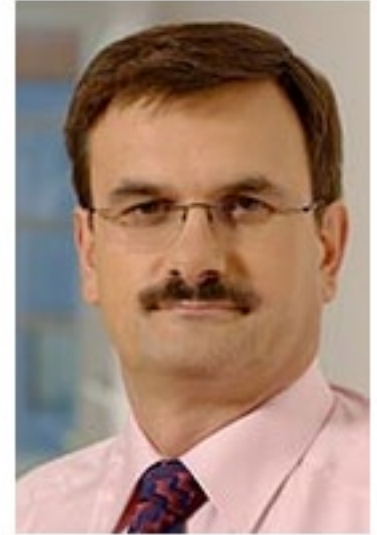


Keynote Speaker: Dipl.-Ing. Hans Adlkofer

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On the Road to Self-driving Cars

Forty years ago there were nearly NO semiconductors in the cars, with the most sophisticated electronics consisting of generators, relays and light bulbs. Today, the car is dominated by electronics, and 80% of the innovation is based on semiconductors. We stand on the border of e-mobility, advanced driver assist systems, and inter-connected cars, and yet, despite 80 million new cars on the road every year, we have the lowest casualty level ever. The number of cars, especially in the fast growing megacities, will require modernized mobility concepts that will have a significant impact on the automotive industry.

Looking 40 years down the road we will see more and larger megacities developing around the world. People will be online 24 hours a day and this will drive a home and office global workplace. These changes will have a major impact on the use of cars. Megacities cannot handle the traffic levels created by private cars and, therefore, the integration of mobility concepts will be a key city planning issue to avoid constant traffic jams, air pollution, and parking problems, in the name of convenient and efficient transport. Flexible and integrated mobility concepts will drive changes, such as car sharing, autonomous driving, and connected car innovations. New car concepts, from 3 wheelers to automated convoys, will emerge.

The semiconductor industry will be challenged to support evolving and emerging requirements that enable self-driving vehicles, by providing semiconductors with high compute power, fast network performance, and redundant features for functionally safe operation. This will require multiple steps of learning by experience, system optimization, and new, innovative technologies in semiconductors. This means consumer and other technologies reapplied to, and new innovations fulfilling, automotive requirements.

Functional safety, cyber security and energy on-demand requirements will drive a reorganization of electronic vehicle architectures and partitioning. Domain control will become standard, with major backbone communication operating between those domains. Vehicles will be connected to other vehicles, as well as the community infrastructure.

This keynote will provide a glimpse into the future, taking you "on the road to self-driving cars."

Biography

Hans Adlkofer studied electronics with a focus on semiconductor technologies. He started his career at National Semiconductor in the marketing department working on ASICs for the automotive industry, before moving to Giesecke & Devrient to develop secure operating systems for smart cards. He was then asked to take charge of the application center for Security and Smart Card ICs at Siemens Semiconductor (today Infineon Technologies), later moving to Singapore to head up the company's business operation for the Asian market. In 2003 he took over responsibility for the Sensors Business Unit at Infineon, and since 2009 he has been leading the system group activities in the Automotive Division of Infineon.