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| **Keynote 4** | Autonomous driving: ready to market? Which are the remaining top challenges? |
| **Speaker** | **Thomas Form**<br>*Director of Software Engineering for Merck Serono, US* |

**Abstract**

During the last years a lot of prototypes for automated/autonomous driving vehicles have been presented to the public. Depending on the use case car manufacturers or tech companies have used an evolutionary or a revolutionary approach. While the evolutionary way should be more reasonable applied for owned cars due to cost restraints and the need for the functionality to work more or less by "something everywhere", the revolutionary approach following the strategy "everything somewhere" seems to be the better solution for fleets of autonomous cabs or shuttles.

Although we have seen a lot of functional concepts for both approaches to automation, there are still some big challenges to be solved. On one hand the whole automation function has to be designed redundantly to ensure a sufficient functional safety level. In this context the use of Artificial Intelligence based networks could be a solution in particular neuronal networks based on deep learning.

On the other hand there is still the question "how good is good enough" having in mind that perfectly working systems cannot be realized and how can the necessary verification/validation process be implemented. The public funded project PEGASUS is working to provide first answers.

However: do we have considered all impacts of automated mobility?

**Biography**

Born 1959, Thomas Form studied Electrical Engineering at the University of Braunschweig, Germany, joined the Institute for Communication Engineering as research fellow in 1987 and received his Ph.D. in 1992.

Up to 2002 he worked as a senior engineer in the Centre for Electromagnetic Compatibility of Volkswagen AG. In 2002 Dr. Form was appointed as the head of Telephone-/Telematics and Antenna systems development.

He became a professor for "Electronic Vehicle Systems" in the Institute of Control Engineering at the Technical University Braunschweig in 2005 and participated with the CAROLO-Team in the finals of the DARPA URBAN Challenge 2007.

From 2007 to 2009 he was responsible for concept development, module- and project management in the VW Electric/Electronic development.

In 2009 he was appointed as head of the "Electronics and Vehicle Research" within Volkswagen Group research. Major achievements were the presentation of AUDI "Jack" vehicle driving in L3 automatic mode with Journalists from San Francisco to CES 2015 in Las Vegas and the presentation of the autonomous driving pod “SEDRIC” in 2017.

Since 2016 he is the coordinator of the German national funded project PEGASUS which wants to answer the question "L3 Highway Chauffeur - how safe is safe enough and how to prove it".

He got the Uni-DAS e.V. ADAS Award for significant influence on the development and introduction of driver assistance systems in 2017.

Memberships: IEEE Member, VDI FVT and VDE GMM (both in advisory board)