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Challenges and current results in the design of cooperative human-automated vehicle interaction

Technological progress in recent decades has led to the development of human-vehicle systems in which the vehicle automation is increasingly able to make decisions independently and also carry out the corresponding actions autonomously. The vehicle automation thus becomes an at least partially autonomous agent in this human-machine system but also in the traffic system.

While such systems are supposed to provide enormous potential to increase safety, efficiency and comfort of various traffic participants, this potential can only be fully exploited if the human road users sufficiently understand these systems, are able to predict their future behaviour and develop an appropriate level of trust in them.

However, this can only be achieved if these systems not only act reliably but also possess the ability to act as a supportive and cooperative partner to the humans. An essential prerequisite for the success of such cooperation is the systems' ability to support the creation of a shared understanding of the situation between the humans and the involved systems. In this presentation, some results of recent research projects on different aspects of human-machine interaction in the traffic context are shown and their possible implications for the design of cooperative driving automation are discussed. The presented results will both address the inner perspective of the driver-automated vehicle interaction as well as the outer perspective of the interaction of human road users with automated vehicles.



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Hybrid Event

M001 / <https://us02web.zoom.us/j/89643956089>