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Automated Driving – Fear Is Not An Option

Ambiguous statements and the mixing up of technical basics in automotive engineering in interviews and media reports as published in the wake of the Conference of the German Council on Jurisdiction in Traffic in 2018 do more to sow confusion than to provide a basis for responsible decision making. It is high time to focus on an objective discourse on automated driving. What degree of automation are we talking about? What issues have already been regulated and what remains to be regulated? Are we dealing with matters of regulatory law or technical specifications? Can we expect driving to become safer or more dangerous? To sort through these matters, lawmakers are dependent on extensive, objective input from the research community.

Using a research project carried out by the German Federal Highway Research Institute (BAST) as a basis, levels of automation are described in terms of the division of labor between human and machine. The crux of the classification is the transition from level 2 to level 3 whereupon the driver is no longer required to continuously monitor system operation. The level is thereby initially defined by the behavior the human driver is allowed to engage in and any associated obligations. No provision had been made for such behavior in the context of highly automated driving until the German Road Traffic Act was amended in 2017. How safe is highly automated driving? This depends on the nature of the technology involved, as well as the nature of the human-machine interaction. Lawmakers (at the level of the UN) have already seen fit to prevent the introduction

of vehicle technology that has not met a catalogue of requirements. As it stands, “hands on” applies in the case of level-2 systems, while a draft of requirements has been submitted for “hands-off” circumstances – including a proposal for a resulting transition time of 4 s. Technical regulations for level-3 systems are waiting to be addressed, being able to avail of the prior work done on level-2 systems. However, given the out-of-the-loop premise of Level-3 systems, they will need to meet much more stringent technological requirements, for instance, relating to degrees of failure safety and procedures for returning to the loop.

Although they know better, some experts have contributed to a climate of fear by conflating the requirements that are currently being discussed for level-2 systems with as yet undefined requirements for highly automated driving (level 3). In contrast, what is needed is a serious discussion to ensure the introduction safe driverless technology. Ultimately, the safety of automated driving – no matter what the level – will largely depend on the integrity of the framework that lawmakers are called upon to establish. Indeed, this is an essential condition for successfully minimizing automation risks and exploiting the potential for greater safety that is offered by automation in a full range of traffic settings. Functions such as emergency braking and emergency crash avoidance will also make a contribution – not only in automated vehicles, but also, on account of large-scale production and cost-saving potential, in conventional vehicles whose systems “merely” assist the driver.