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Titel des Beitrags: Towards an H-Mode for highly automated vehicles

Abstract: The increasing traffic volume confronts the road user with a challenging task. The high number of traffic deaths might not be reducible with passive safety alone. However systems that actively influence the guidance of vehicles, like assistance and automation systems, can make a difference towards higher safety, comfort and efficiency. Some of these systems completely take over single subtasks like speed or distance control. This, in turn can lead to effects like dropout of the loop, where the driver withdraws from the actual task and even stops monitoring. In order to realize a safe automation system, the project H-Mode follows an approach where both, driver and assistance system are simultaneously affecting the vehicle, whereby the operator is kept in the loop and active. Moreover a haptic-multimodal communication between driver and automation is established by using active interfaces. Regarding this communication alternative control elements, especially two dimensional ones have to be considered. The study presented in this paper compares conventional interfaces (steering wheel and pedals) with different configurations of an active side stick. It is shown, that two dimensional elements have the potential to combine the driver-automation communication with acceptable drivability.

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