HMI in automated vehicles and ADS: good for body and soul?

Problem description

Automated driving systems (ADS) will take over increasingly more driving tasks from the human driver now that such systems are ready for the consumer market. This means that the driver is becoming less of an active controller of their vehicle, and more of a supervisor of a system, checking whether everything is still performing OK. Therefore, Human-Machine Interfaces (HMI) will be implemented in ADS so that the human can perform his supervisory duties appropriately. However, it is unknown what if any HMI will be effective in increasing supervisory performance.

Objectives & Assignment

The objective of this project is to assess the effect of HMI in ADS to the human drivers' performance and ability to supervise the system. Assessments will be made regarding brake reaction time and similar metrics, and also regarding scanning behaviour and psychological responses.

The project is related to the Meaningful Human Control over Automated Driving Systems project. External support by relevant partnering organisations, such as SWOV, RDW, ANWB, etc. may also be available.

This Master thesis may be able to include an internship at one of the partnering organisations.

Research group

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External support

TBD

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