Evaluation of a Contact Analog Head-Up Display for Highly Automated Driving

The automotive industry is working on assistance systems to increase safety and comfort of today's vehicles. In the course of this development combined with increasingly capable sensors, assistance systems become more and more powerful. This whole development leads to a change in the role of the human, from the actual driver of the car to a supervisor of the automation state. The following article describes a display concept to inform the driver about the current status and future actions of the automation system. The concept is based on a contact analog Head-Up Display. By giving visual feedback the driver's comprehension of the automation actions is increased, and therefore the driver-automation-cooperation is improved. Correspondingly the presented experiment reveals significantly decreased reaction-times by visual feedback regarding automation failure.