Requirements for Cooperative Vehicle Guidance

Abstract:
Increasing safety and comfort are motivations for designing new assistance systems and enhance existing functionalities. As the driver is gradually replaced by new automation systems, new constellations of driver and automation in mutual vehicle guidance have to be rethought. This article presents driver response time in critical driving situations with a visual secondary task depending on the automation level. Concerning the perspective of the driver, a coherence of subjective and objective workload, represented by the blink rate and the horizontal gaze angle range of a scanning process, is detected. The results clarify the need for multimodal configuration of cooperation and driver state surveillance.