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Advanced Driver Assistance Systems in the driver license exam – Testing the right knowledge and assessing the necessary skills

The demands on the driver have enormously changed due to the rapid digitalisation of motor vehicles during the last decade. The range of functions and their usage has drastically expanded compared to earlier vehicles – nowadays we are sitting in driving computer with digital displays as human-machine-interfaces.

Especially the use of advanced driver assistance systems (ADAS) and automated driving functions imposes new requirements and demands on the driver when performing and completing driving tasks in daily traffic. Nevertheless, the ability to drive manually still remains important because manual driving is the dominant operation mode in many situations. Even the use of automated driving functions requires the monitoring by the driver and a manual intervention if it is needed. In addition to this, however, also abilities to use automated driving functions correctly – ideally safely – have to be considered.

The nationwide education of all driving license holders is certainly restricted in several ways. The more, the integration of the necessary knowledge and the correct use of such systems into the novice driver education processes and driver examination represents therefore an invaluable approach in order to prepare future driver adequately for the upcoming needs. In this context, however, novice drivers' education as well as their examination will become more complex. E.g., a level-two-automation (semi-automated driving) requires that drivers use the system expediently, to attentively monitor systems' performance and – in case of malfunctions – to safely intervene and override it. Therefore, it is necessary to teach and test these competencies (Rößger, Schleinitz & Friedel, 2018).

The presentation describes the implementation this approach in Germany: The requirements regarding to the responsible use of advanced driver assistance systems have been integrated into the driving license exam in the recent years.

In the theoretical exam, tasks are increasingly being used, that e.g. address the knowledge of certain systems and system limits. For the practical exam, specific systems have been defined in 2022 that the examiner can decide on their use during the driving exam. This definition includes systems that continuously and actively take over the longitudinal and/or the lateral guidance of the vehicle. The examiner receives the information about the assistance systems the vehicle driven during the exam is equipped with by specific data sheets.

The handling of the systems is assessed on the basis of generalisable assessment principles and is documented by the examiner during the driving exam in a digital exam protocol (“ePp”). In addition, guidelines for both driving teachers as well as for examiners have been developed.

Due to the increasing dissemination of vehicles with level-three-automation (highly automated driving), also new driving tasks and assessment criteria have to be defined: the correct handing over of the driving task to the system and the correct taking over of the driving task from the system will become more and more important. The presentation will provide an outlook on these challenges.

References:

Rößger, L., Schleinitz, K., Friedel, T. (2018). *The impact of vehicles' automation on the system of novice driver preparation*. Zeitschrift für Verkehrssicherheit, 64 / 5, pp. 345 – 353.