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Classification of On-Road Routes for the Reliability Assessment of Drive-Assist Systems in Heavy-Duty Trucks based on Electronic Map Data

Tuesday, 14 September 2021 15:00 (30 minutes)

The development of drive assist systems, such as traffic sign recognition and distance regulation, is one of the most important tasks on the way to autonomous driving. With focus on the definition of reliability as the ability to perform a required function under specific conditions over a given period of time, the most challenging aspect appears to be the description of the usage conditions. In particular, the variety of these conditions, caused by country-specific road conditions and infrastructure as well as volatile weather and traffic, needs to be described sufficiently to recognize which requirements have to be met by the assist systems during their operational life.
Especially for the development of heavy duty trucks, where the execution of physical vehicle measurements is expensive, electronic map data provide a powerful alternative to analyse routes regarding their road characteristics, infrastructure, traffic and environmental conditions. Data generation is fast and cheap via online route planning and analysis can take place directly without using any vehicle resources. This presentation shows a systematic approach to classify heavy-duty truck routes regarding their usage conditions based on electronic map data and how this can be used to provide a reference stress profile for the reliability assessment of drive assist systems.

Keywords

reliability, usage conditions, electronic map data

Special/invited session

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