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Autonomous Drive of Commercial Vehicles as Contributor to GHG Emission Reduction - Platform Systems and their Control

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After the successful implementation of the EURO6 requirements, the European Union turns its attention to reduce the greenhouse gas (GHG) emission. In the field of transportation, the most important component is the reduction of the CO2, which means, at the final end, reduction of fossil fuel consumption, especially for road vehicles. There are different means of doing so, definitely the electrification of the vehicles 'driveline is one the chief opportunity. Besides, there are other opportunities, depending on the driving condition and environment of the vehicle, where major contribution to CO2 reduction can be achieved and, at the same time, other characteristic of the transport will be improved, such as utilization of road infrastructure, reduction of traffic incidents and fatalities on the road. The paper reports about recent developments in this field for heavy commercial vehicles, which systems enable – with appropriate modifications – the driverless operation, which is basic condition for operation modes such as platooning, lane keeping or automatic maneuvering in closed areas. Several aspects of the safety criticality level of the related vehicle dynamic systems (steering and braking) together with some aspects of the sensor fusion will be discussed. Also the interplay between these systems will be discussed.

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