

Merge assistant for trucks takes over from the driver

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PhD candidate Jan Loof in the electric Lupo in which he tested his merge assistant. Credit: Bart van Overbeeke

Merging on the motorway or changing lanes: this may quite literally become an automatism for truck drivers in the long term. Jan Loof, mechanical engineer at Eindhoven University of Technology, has developed a system that can take over the steering and enable a vehicle to automatically merge in traffic. However, the driver will always exercise control of the steering wheel. First tests on the road show that it feels very natural and that drivers are at ease with it. Loof will be awarded a Ph.D. on Monday 19 February for his research.

Trucks and trailers are often involved in [road accidents](#). Moreover, 90 percent of all accidents result from [human error](#). During his doctoral research at Eindhoven University of Technology Jan Loof developed a merge assistant that helps the truck driver to merge—a difficult maneuver – so that the risk of accidents can be reduced.

The merge assistant moves the [steering wheel](#) by itself and enables the vehicle to change lane automatically. The driver can always intervene, if necessary. "That is a very important condition in

the driver's acceptance of such an automatic assistant," says Loof. "The system must never overrule the driver."

The unique thing about this system is that steering is done very naturally, as you would do it yourself as a driver. "There are no constant, small steering corrections that you sometimes see with other systems," says Loof. According to Loof, the first road tests with passenger cars showed that drivers feel comfortable. "They are actively supported, but keep the feeling of control."

Loof still has to let the system know manually the moment of merging. "Ultimately, the intention is for a steering system to determine by itself when best to merge the vehicle, but the required technology for this is not ready yet," says Loof. "However, this system can already be used to automatically steer the vehicle straight ahead. That already reduces the burden on drivers."

Jan Loof will receive his doctorate on 19 February for his thesis Modeling and control of a truck-steering system for active driver support.

Provided by Eindhoven University of Technology

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