



What happens when an automated vehicle is not in control?

Problem description

Currently, only a small portion of vehicles are automated and are just about all of the type that still require driver attention. In the future, with higher levels of automation, drivers will have the opportunity to do other things while the vehicle does all the driving. In such a case, if the vehicle gets into trouble, has a malfunction, goes outside of its ODD (Operational Design Domain), etc then the vehicle will no longer be under any meaningful control and will need to stop. In many cases, this entails stopping in its lane. But this obviously has significant consequences for traffic flow and safety

Therefore, data and simulation lab DiTTlab and Rijkswaterstaat are interested in investigating what these potential consequences might be and if pre-emptive action is required.

Objectives & Assignment

The objective of this project is to investigate what the traffic flow and safety impacts may be of an automated vehicle that is required to stop operation, while unable to call upon the assistance of a driver. To do this, a student will first need to investigate the circumstances under which automated vehicles in the future may encounter difficulty and require an emergency cessation of automation. Then following this, come up with a methodology that allows the traffic flow and safety impacts to be determined as well as defining edge cases to assist the analysis. The outcome of the quantitative and qualitative analyses may lead to the necessity of making policy or regulatory recommendations.

This Master thesis can include an internship at Rijkswaterstaat or another organisation

Research group

DiTTlab, Transport & Planning Department
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External support

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