



Testing differences in ACC system through on-road Field Operational Testing

Problem description

Adaptive Cruise Control (ACC) is a form of low-level vehicle automation that is already universally present in the majority of new road vehicles. The technology aids both comfort and safety. While ACC is a universal technology, not every manufacturer and ACC system is setup in the same way. Moreover, vehicle type and capabilities also play a role in different ACC performance. Multiple ACC vehicle in platoon formation have already been shown to lead to potential unsafe and traffic destabilising situations due to string instability. The impact of different type and configurations of ACC may have an even greater impact. Moreover, traffic simulation models currently assume all ACC vehicles to display identical behaviour, however this is not the case, but up to now there is a lack of evidence how and how much ACC vehicles differ.

Objectives & Assignment

The objective of this project is to design, setup and perform an on-road experiment with multiple ACC vehicles to investigate their performance on roads and document the differences in driving style and performance. The resulting outcomes of the experiment should give data that can be used to analyse the broader impacts of heterogeneous ACC systems and as input distributions for traffic simulation models. The project will require a highly motivated and pro-active student to take on this exciting and unique thesis topic. The project may be supported by a number of relevant external organisations and is possible to be performed at an external organisation.

This Master thesis can also include an internship at a relevant organisation

Research group

DiTTlab, Transport & Planning Department

External support

TBC

Information

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