

Photo: Purmerends Dagblad



Traffic flow impacts of allowing automated vehicles to use bus lanes

Problem description

One of the main challenges of automated driving is the safe interaction with other road users. These challenges may be avoided by separating automated vehicles from most other traffic. But dedicated infrastructure is costly, especially while the volume of automated vehicles is still low. One potential solution may be to allow automated vehicles to operate on existing bus lanes, which are then shared with manually driven buses. This may improve the capacity utilisation of bus lanes, but how viable is the concept in practice?

Objectives & Assignment

The main objective is to analyse how shared use of the bus lanes will affect their operation. Will existing bus services be delayed by the additional automated traffic? To what extent will the travel time of automated vehicles be affected by traditional buses stopping at bus stops? Will the increased use of bus lanes lead to increased delays for other traffic at (signalised) intersections? How many buses and automated vehicles can bus lanes process without becoming congested? Should there be adaptations to the bus lane infrastructure to improve their shared operation with automated vehicles? The student will use traffic microsimulation software to answer these and other relevant questions. Automated vehicles for various purposes may be considered: do the automated vehicles transport passengers or freight, and between which locations?

Research group

Transport & Planning Department

External support

Your research will be part of the STAD research project. An internship position at one of the STAD partners may be available.

Information

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