A methodological framework from data collection to impact assessment of autonomous vehicles

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Introduction

• Autonomous vehicles will change future transportation systems and mobility patterns

• Automation in road sector will influence
  • private passenger vehicles
  • public transportation
  • the interaction between automated, conventional vehicles and VRUs.

• Penetration rate depends on:
  • Impact on traffic, user oriented and environmental aspects
  • Levels of public acceptance
Scope of Work

• Formulation of a methodological framework aiming to:
  • facilitate the evaluation of the acceptance of new AV driving systems
  • assess their impacts to various aspects related to traffic, safety and environment.

The framework will address the following points:
• stakeholders requirements
• users’ needs
• issues of technology and system appropriateness and attractiveness
• behavioral modeling
• the quantification of the impacts of automation to traffic, safety and environment.
The methodological framework
Conclusions

• There are various dependencies between service goals and specifications, including, critical parameters monitoring, data collection and processing requirements and service impact assessment.

• The complexity of the autonomous service will determine the variety and volume of data collected, the data processing and mining techniques and modelling needs.

• The overall study of acceptance of AV driving service and its impacts to the system requires a holistic approach which ranges from macro to micro simulation.

• Concerning microsimulation different AV behavioural models should be developed mimicking accepted human driving behaviours and increasing service acceptance.
Thank you for your kind attention.

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