

Physical and Digital Infrastructure



There are many open issues related to the deployment, operation and maintenance of the physical and digital infrastructures for CAD and transport. The roles and responsibilities of the different stakeholders, the likely deployment scenarios and the time plans need to be agreed. Investments in physical infrastructure are long-term investments implying to consider also the possible future needs of road users. The open issues concern, among others, infrastructure maintenance, security, economic feasibility, business models, differences in operating environments, and the specific problems in the transition phase towards full connectivity and automation. A general open issue is whether the vehicle should be expected to cope with any road infrastructure in use via enhancement of sensors and related algorithms, and what demands can be set to adapt the existing physical and digital infrastructure.

Challenges

- Is there a need to define levels of automation for PDI?
- How to ensure the security/consistency of the PDI services?
- Guarantee safe and livable coexistence between the automated vehicles and non-motorized users
- Who should pay and how to implement/maintain/operate PDI?

Research Needs

- FOTs for physical infrastructure
- Sensors and data sharing to solve blind spots and risky spots
- Strategies and platforms for handling mixed traffic

Statements

- Metrics are needed for the level of infrastructure service
- Digital content will be created and maintained by the vehicles and the digital infrastructure of road operators
- Safety-relevant data generated by AVs need to be shared openly

Expected Impact

- Maintenance of privacy of drivers
- Security of physical infrastructure and cyber security of digital infrastructure
- Liability and LoS of data

