Mobility as a Service (MaaS) in urban and rural areas: The impact of Shared Autonomous Vehicles

Autonomous Vehicles may have disruptive effects for people's mobility behavior both in urban and rural areas. Their introduction is likely to bring up different kinds of Mobility as a Service ("MaaS") concepts, which may be offered at very competitive rates. In this talk, we will provide an overview of chances and risks of autonomous MaaS solutions in Urban areas and present several scenarios of how a future may look like based on simulation results computed with state-of-the-art agent-based transport simulation technology.

Firstly, the impact of fleets of Shared Autonomous Vehicles will be discussed. With a taxi like services, fleets of SAVs may help to reduce the number of private vehicles in cities, as their usage costs is likely to be similar to those of owning and operating a car. Simulation results suggest that one SAV may replace five to ten private cars. However, SAV services are likely to lead to an increase in traffic, as also people who previously were not driving are likely to start using them and vehicles need to travel empty to get from one customer to another. This may lead to an unwanted increase in congestion and will require wise city and transport planning.

In smaller cities and suburban areas, fleets of pooled Shared Autonomous Vehicles may replace current public transport infrastructure. Contrary to densely populated urban areas, the positive effects of improved accessibility are likely to outweigh negative effects of increased vehicle miles traveled. These two, among many other examples, demonstrate the ambitious challenge Autonomous Vehicles will bring to decision makers in transport planning.