

SETTING THE URBAN AGENDA TO IMPLEMENT AUTOMATED ROAD TRANSPORT WITH REGARD TO SUSTAINABLE URBAN MOBILITY

Findings of a Delphi Survey and stakeholder workshops in European cities

Interreg
North Sea Region
ART-Forum
European Regional Development Fund



Autonomous driving may have different effects and offers ...

Chances



Sustainable urban transport system



Risks



- We see a high potential and need to design a sustainable transport system.
- Need to develop not only technical solutions, but solutions that correspond to societal goals and a sustainable urban development.

A vibrant, futuristic city street scene. In the foreground, several small, white, rounded autonomous vehicles with blue accents are parked or moving. People are walking on the sidewalks, and some are interacting with the vehicles. In the background, there are tall, modern buildings with glass facades and older, ornate European-style buildings. A large, white, spherical structure with two circular openings is visible in the distance, and a blue, lattice-like structure spans across the street. The sky is bright and clear.

WHAT DO URBAN FUTURE SCENARIOS OF AUTONOMOUS MOBILITY FOR A SUSTAINABLE TRANSPORT SYSTEM LOOK LIKE AND WHAT ARE THE DESIGN POTENTIALS FROM THE PERSPECTIVE OF SOCIETAL ACTORS?

Key steps of our study



(1) Definition of a sustainable transport system



(2) Identification of relevant societal actors



(3) Identification of design potentials

Efficiency & Effectiveness

Accessibility, Inclusion and Integration

Quality of Life & Sustainability

administrations, mobility providers, logistics, local initiatives, research



User behaviour

Mobility & travel behaviour

Network efficiency

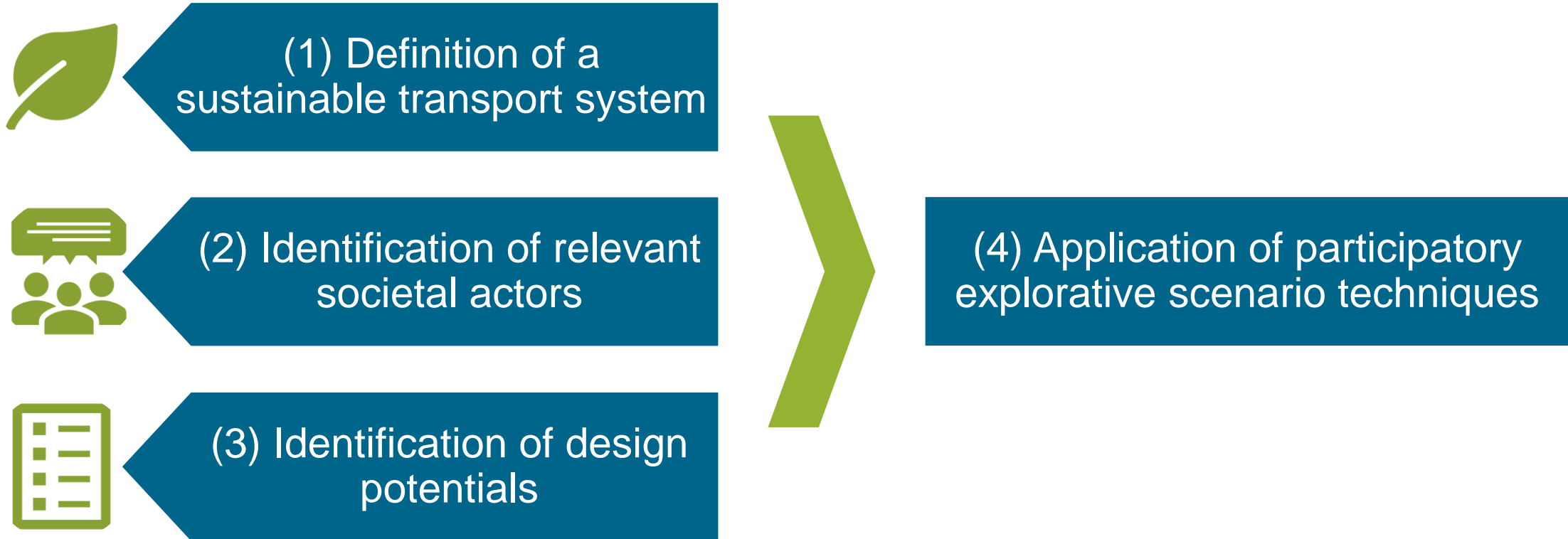
Public health & safety

Land use & parking

Regulation & costs

literature study & stakeholder workshop

Key steps of our study



Key steps of our study



Evaluation of the **likelihood** of implementing regulatory measures

Expected Scenario

Desired Scenario

Evaluation of the **desirability** of implementing regulatory measures with regard to SUMP principles



Efficiency & Effectiveness

Accessibility, Inclusion and Integration

Quality of Life & Sustainability

administrations, mobility providers, logistics, local initiatives, research



literature study & stakeholder workshop

Participatory explorative scenario technique: key steps of our study



Evaluation of the **likelihood** of implementing regulatory measures

Expected Scenario

Desired Scenario

Evaluation of the **desirability** of implementing regulatory measures with regard to SUMP principles



User behaviour

Mobility & travel behaviour

Network efficiency

Public health & safety

Land use & parking

Regulation & costs

- Parking in city centres is only available against a fee.

Participatory explorative scenario technique: key steps of our study



Evaluation of the **likelihood** of implementing regulatory measures

Expected Scenario

Desired Scenario

Evaluation of the **desirability** of implementing regulatory measures with regard to SUMP principles



User behaviour

Mobility & travel behaviour

Network efficiency

- The road space is reallocated in favour of public transport, cycling & walking.
- A municipal traffic management system is implemented to coordinate & optimize the route choice of all autonomous vehicles with regard to the overall system.

Key steps to our study



Evaluation of the **likelihood** of implementing regulatory measures

Expected Scenario

Desired Scenario

Evaluation of the **desirability** of implementing regulatory measures with regard to SUMP principles



User behaviour

Mobility & travel behaviour

Network efficiency

Public health & safety

Land use & parking

Regulation & costs

- **6 impact areas** relevant for AV in urban areas & transport systems, **22 regulatory measures**
- ART-Forum partner cities: Aalborg, Bergen, Bremen, Groningen, Mechelen, West Yorkshire
- Participants: 69 (delphi1), 61 (delphi2)
- Professions: provider/logistics, research, NGO, municipalities

Outcomes of our study



Evaluation of the **likelihood** of implementing regulatory measures

Expected Scenario

Desired Scenario

Evaluation of the **desirability** of implementing regulatory measures with regard to SUMP principles

Differences between **expected & desired scenarios**

- In general, more regulatory measures are described as **desired** regarding a sustainable transport system than are **expected** to be implemented.

Differences between **participants' profession**

- Provider/company participants expect more regulatory measures than administrative participants
- Full automation of urban mobility and transport system is expected less likely and less desirable by administrative participants

Differences in **focus of measures**

- Expected scenario: focus on infrastructure
- Desired scenario : focus on behaviour and infrastructure

Recommendations I Designing urban autonomous mobility



- From the beginning: Need to **define societal goals** and **develop a local future vision** of a transportation system with autonomous and connected driving.
- Need for **early and continuous societal dialogue** including diverse stakeholders on the future vision of autonomous driving.
- Need to **link individual requirements** of users and stakeholders **with** the requirements of **a transport system** that is compatible with cities.

Thank you for your attention – and get in touch!



DLR Institute of Transport Research
Kay Gade
Research Associate

DLR Institute of Transport Research
Dr. Julia Schuppan
Research Associate

Kay.Gade@DLR.de
www.DLR.de/vf

Julia.Schuppan@DLR.de
www.DLR.de/vf



Further information on DLR
projects
www.verkehrsforschung.dlr.de