



## Technological pathways for climate-neutral mobility

Dr. Stefan Seer AIT Austrian Institute of Technology



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High pressure on decision-makers (climate and urban goals, SDGs, etc.)





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Urban densification and transformation





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Mobility shift & modal split

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Urban densification and transformation

Mobility shift & modal split

Availability & quality of data

#### A data rich world







What we do now

'Predict and provide': Investment based on projected transport

Focus on providing physical

Complexity and uncertainty are not well recognised or managed





- Deployment of shared, connected and electrified automation in urban transport
- Investigating automated vehicles in public transport, demand-responsive transport (DRT), Mobility a Service (MaaS) through simulations
- Demonstration in Austrian Mega Site





https://show-project.eu/ European Union Horizon 2020







Traffic Management 2.0: From current practices to a unified system with connected vehicles and travellers.

**Traffic Management Transformation**: Enabled by smart infrastructure, next-gen vehicles with 5G, and new traffic management technologies.

• **Traffic Management 2.0 (TM2.0)**: Collaborative management and control with public-private partnerships, integrating vehicles and infrastructure into the data ecosystem.

- **Evolution Over Traditional Methods**: Shifts from loop detectors and static data to a unified system with connected vehicles and travelers.
- **TM2.0 Benefits**: Improves service value, enhances safety, optimizes network, and opens new business opportunities.







- Assessment of potential changes and description of user requirement profiles for Mobility-as-a-service
- User matching for ride sharing platform
- Monitoring and impact assessment of the project results in the three pilot regions



DOMINO

https://www.domino-maas.at/



Bundesministerium
 Klimaschutz, Umwelt,
 Energie, Mobilität,
 Innovation und Technologie

MATSim Model Vienna: Open Access https://github.com/ait-energy/matsim-model-vienna







- Facilitate **multimodal mobility** through more reliable, efficient, and sustainable transportation systems.
- Provide comprehensive **integrated urban mobility services** for interconnected cities.
- Promote active mobility (superblock, awareness raising, planning measures, ...).















Quartientrafie Umgebung 50ege Umgebung H Haltestelle

Fussgängerapne neu





OVERALL CATCHMENT



Walking time to closest Metro



METRO STATION ANALYSIS



Walking time to closest Metro





FLOW

LOW

visitor distribution (%)

5M 10M

RFACH

	46.1
18.2	

HIGH \*more people







Q

#### MANAGEMENT OF TOURISM FLOWS, SALZBURG (AUSTRIA)





## **ONE DAY AT GARE DE LYON**



















# Enternation

- Integrated KPI-based decision-making across sectors
- Co-creation models and real-time scenario evaluation
- Mixed reality (AR) interfaces for stakeholder and citizen engagement
- Continuous performance assessment for quality assurance
- Definition and evaluation of possible measures

C C C I L CITY INTELLIGENCE LAB

https://cities.ait.ac.at/



## THANK YOU!

## 

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