Austria as Test Region for Automated Driving

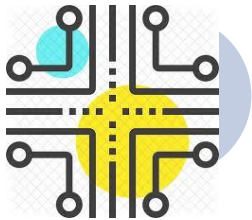
From Test Sites to Learning Environments

Wolfram Klar, AustriaTech

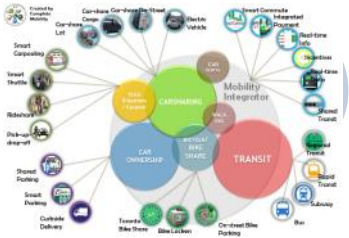
Why?

a technological tipping point

a vehicle manufacturer makeover



an infrastucture rollout

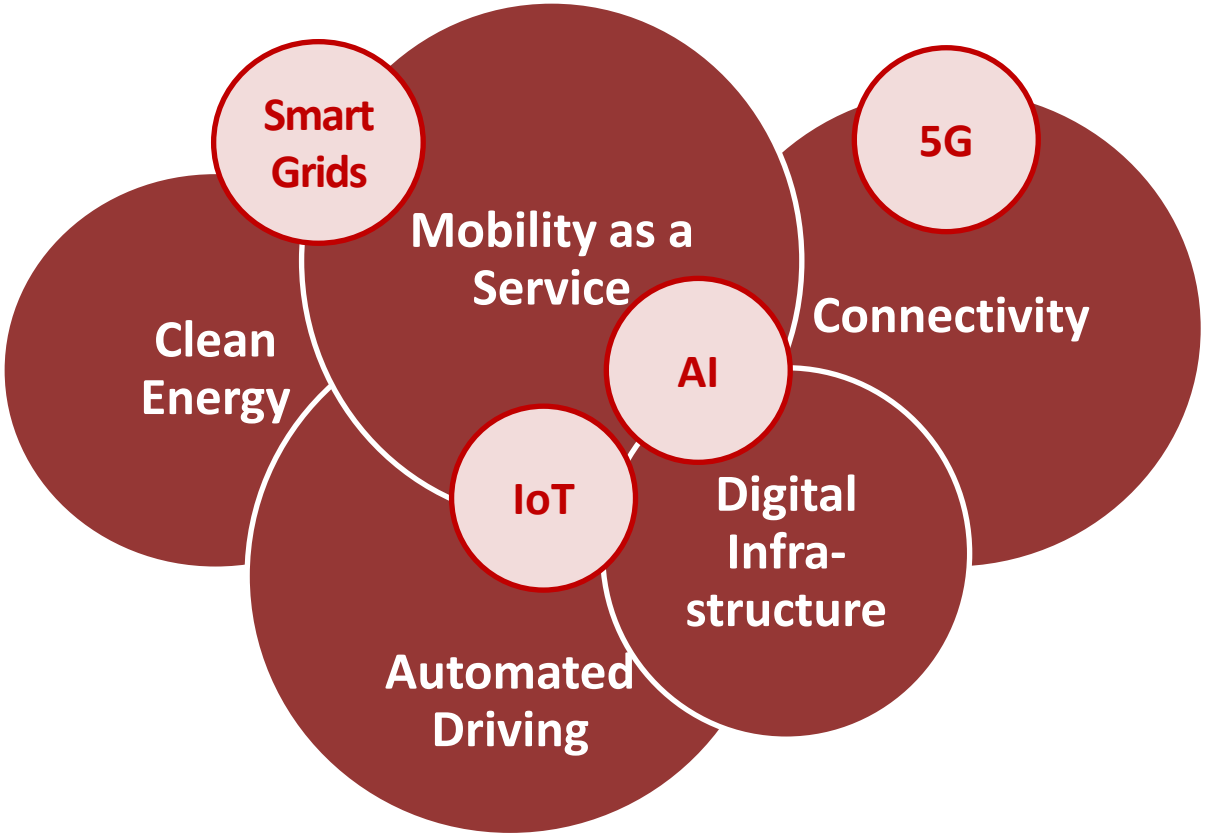


a public sector coming of age

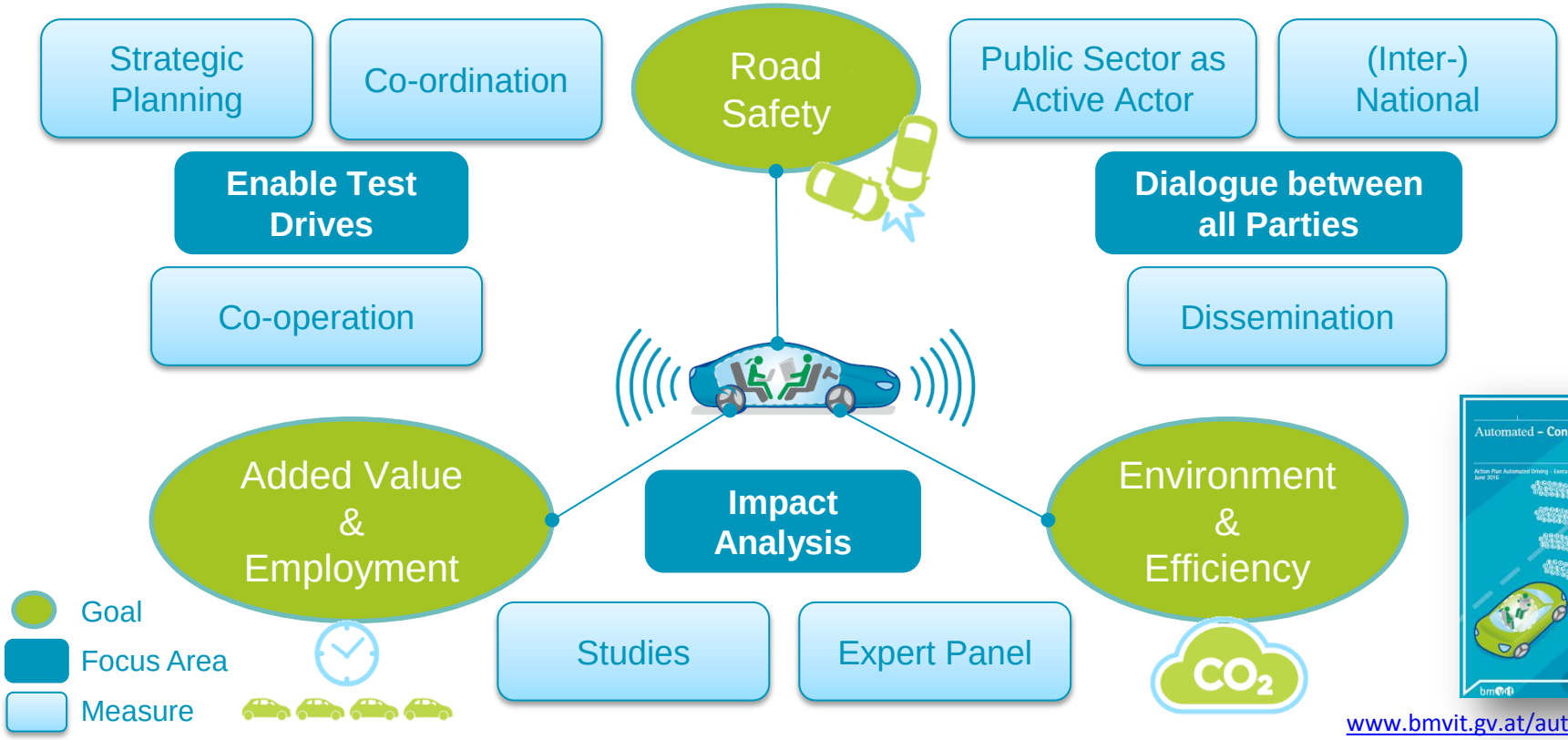

High Hopes!
Environment: +20% Fuel Efficiency
Traffic Flow: -70% Congestion +500% Capacity
Individual Mobility Costs: -50% compared to Ownership
Waiting Times: "0" „seamless"
Costs for Public Transport: -20%
Land Use: -60% Parking Space
Road Safety: -70% to -90% Accidents

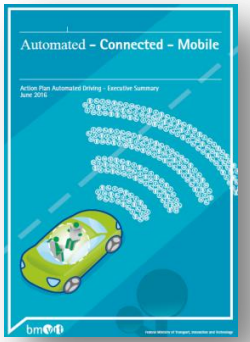

New Challenges
More Complexity due to Mixed Traffic
Increasing commuting distances
Data Privacy Issues
New physical Infrastructure
Spam Cars / Movement of Empty Cars
Changes to Job Market / Job Structure
Data Security Issues
Investment in Digital Infrastructure

the Mobility Transition Landscape



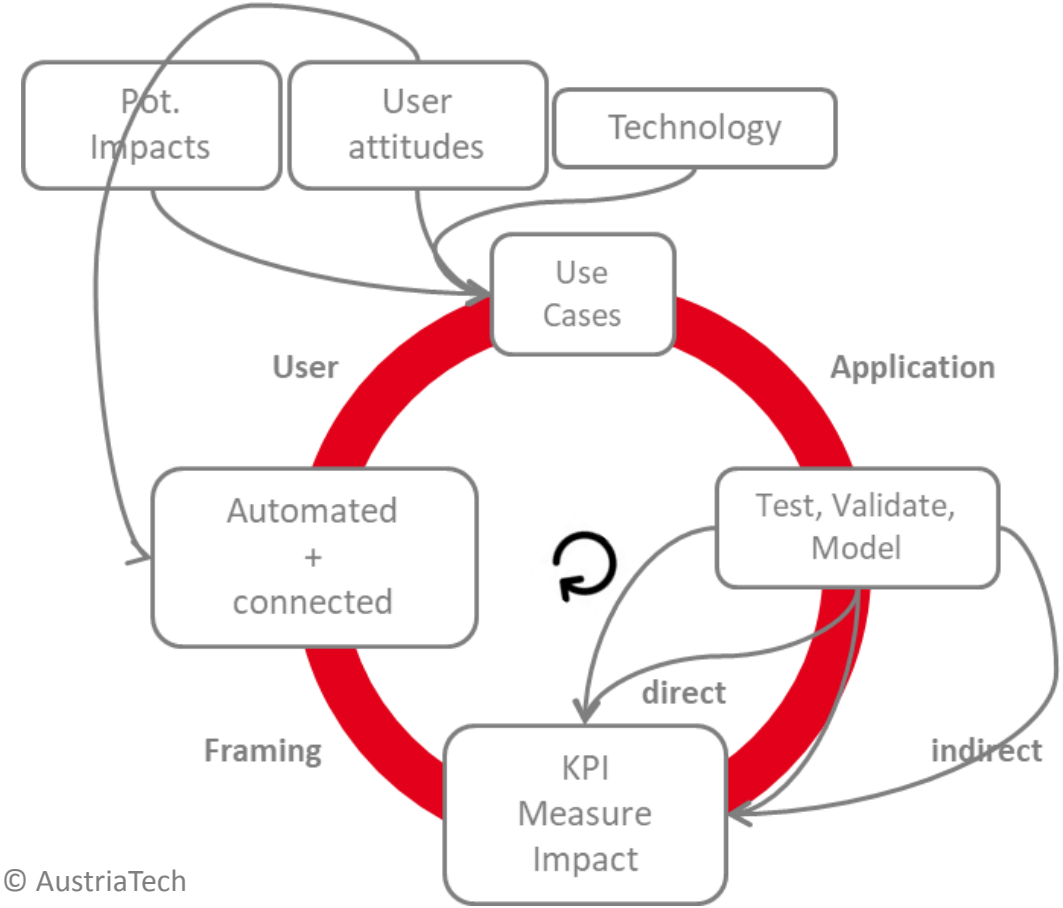
Action Plan: Automated – Connected – Mobile





www.bmvit.gv.at/automatisiert

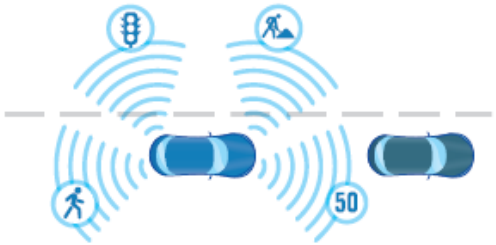
From expectations towards experiences!



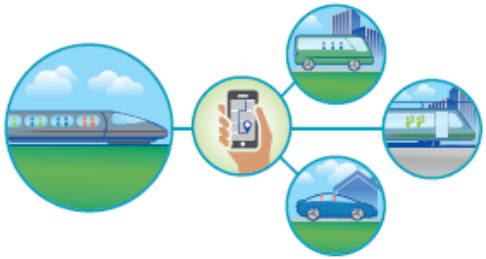
Challenges:

- Scenarios
- Data Handling
- Comparability
- KPIs
- …

Use Cases & Application Scenarios



- **#Flex'n Easy (Automated Last Mile)**
- **#Safety+ (Connected ADAS)**
- **#Transport Works (Connected Freight & City Logistics**)



- #Create Time (Highway Chauffeur +)
- #Stay mobile (Aging and inclusion)
- #Create Space (urban mobility concepts)

- #Special Helpers (Off-Road, Airport, Terminals, …)

Action Plan: Measures 1/2

1. Enable & regulate Test Drives

   -> Amendment to the Motor Vehicle Act (KFG)

2. Development of a Code of Practice

   = Process Instruction

3. Initial Studies for the Construction of Test Environments

4. Build Up of Test Environments

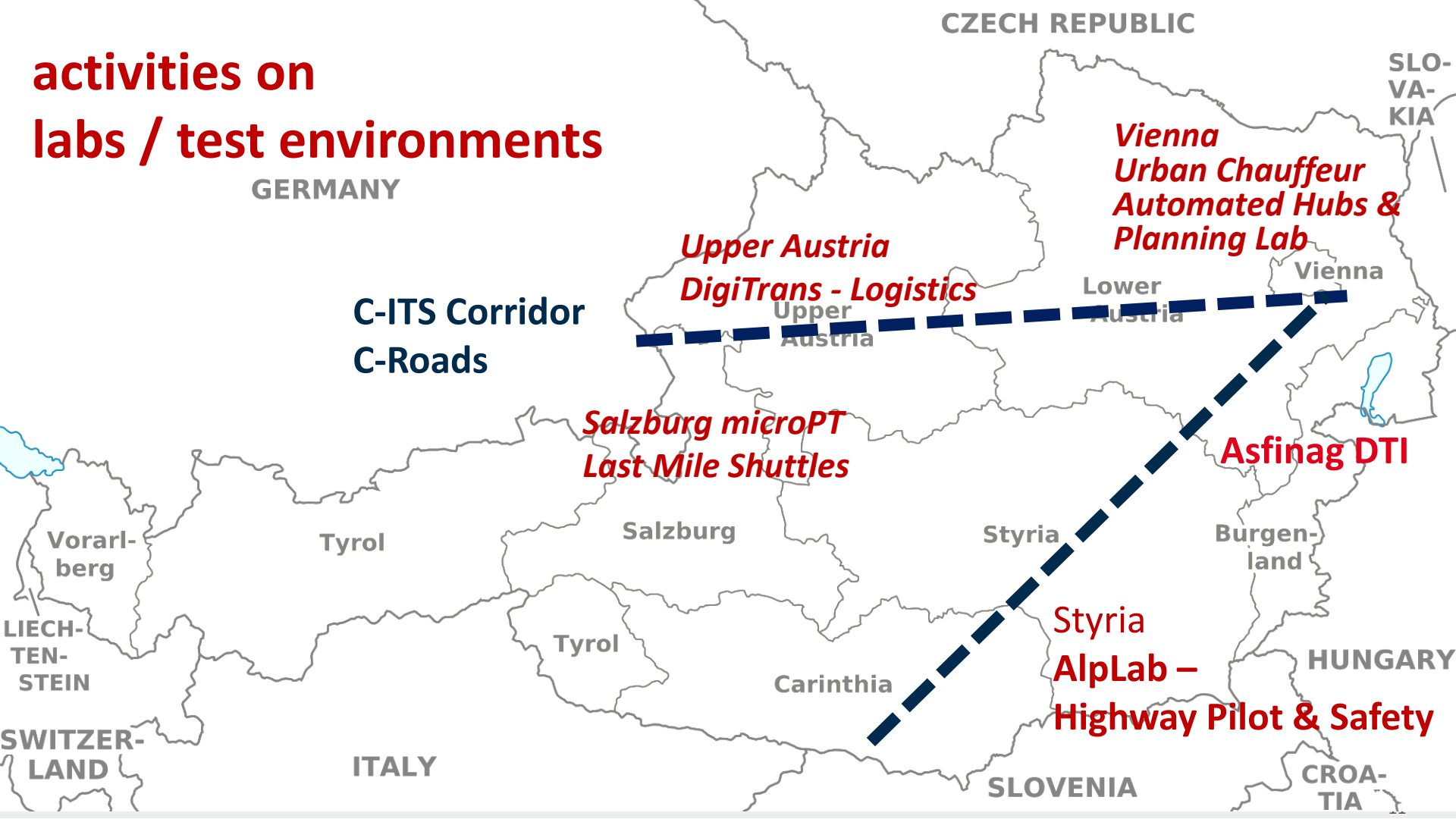
Action Plan: Measures 2/2

5. Development of a Technology Funding Portfolio
6. Ensuring the Digital Infrastructure as a Strength
7. Ensuring Scientific Competencies
8. Development of Evaluation Tools

   -> impact analysis
9. National Contact Point for Automated Driving

Legal Framework & Learning Environments

1. **Type Approval Law – Legalise Testing**
   - Specific Regulations for Automated Functions (up to SAE4+)
   - Delegated powers for Minister to issue legal regulations
   - Code of Practice, International / EU harmonisation
   - Standardised Application Form
2. **Goals / Conditions of Test Environments:**
   - Bundled competence development, joint learning for suppliers, OEMs, Infrastructure operators and the public domain
   - Systematic testing and validation of products, components, vehicles and services
   - Focus on prioritized Use Cases
   - Integration of testing and validation aspects → Real life - test bench - simulation

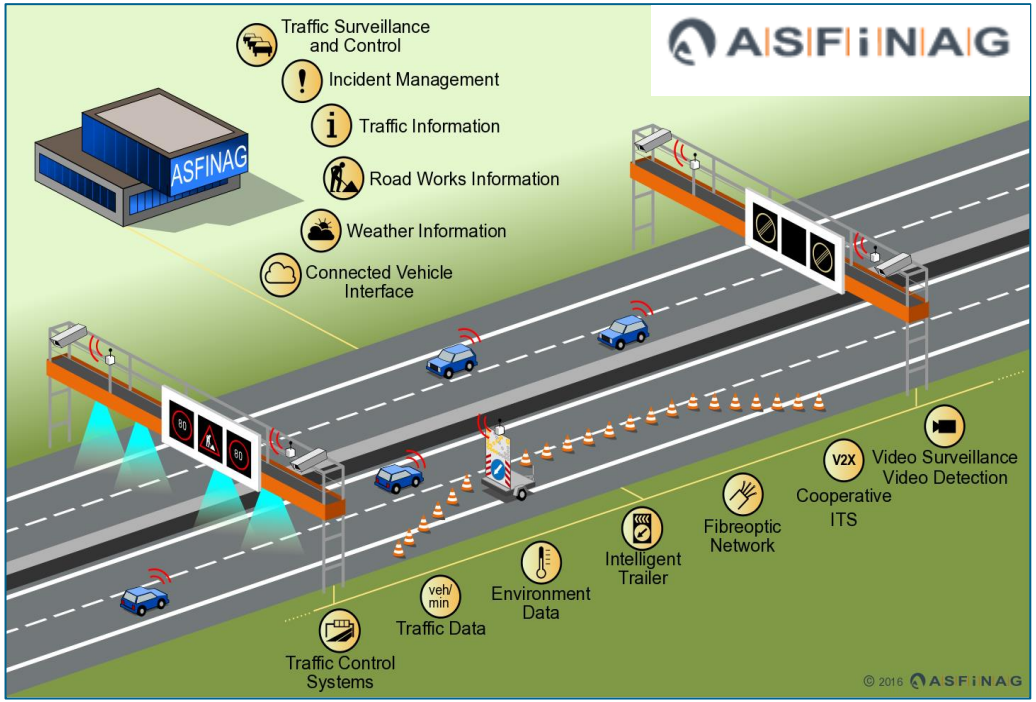

activities on
labs / test environments
CZECH REPUBLIC
SLO-
VA-
KIA
GERMANY
Vienna
Urban Chauffeur
Automated Hubs &
Planning Lab
Upper Austria
DigiTrans - Logistics
Vienna
Lower
Austria
Upper
Austria
C-ITS Corridor
C-Roads
Salzburg microPT
Last Mile Shuttles
Asfinag DTI
Vorarl-
berg
Tyrol
Salzburg
Styria
Burgen-
land
LIECH-
TEN-
STEIN
Tyrol
Styria
AlpLab –
Highway Pilot & Safety
HUNGARY
Carinthia
SWITZER-
LAND
ITALY
SLOVENIA
CROA-
TIA

First implemented Austrian Test Region

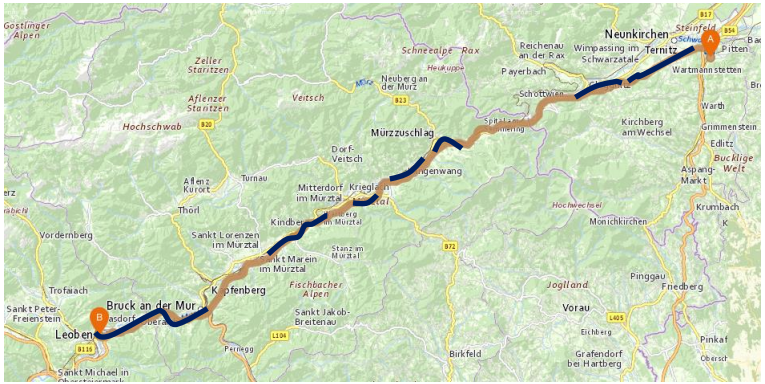
ALP.Lab

Austrian Light Vehicle Proving Region for Automated Driving

Digital Infrastructure

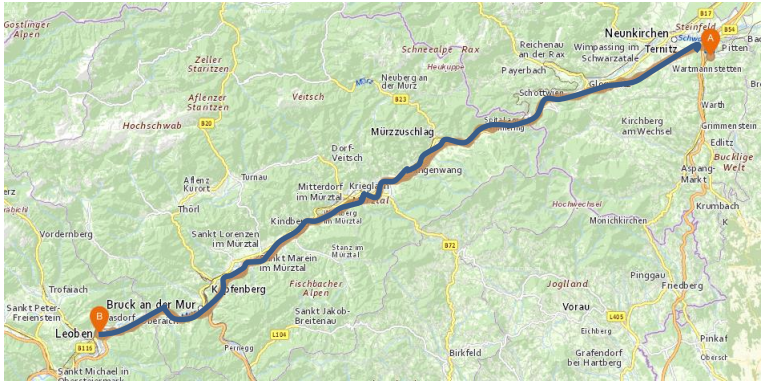


Vehicle Sensors



Vehicle Sensors & DTI

automated
manual

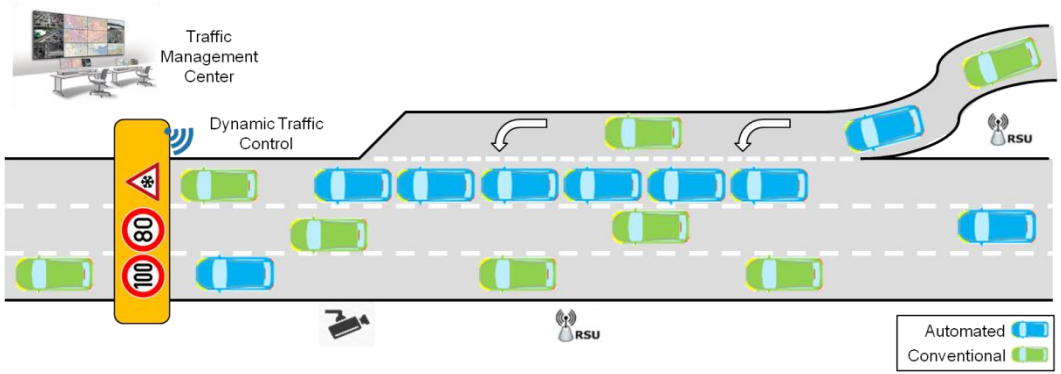


EU Horizon 2020 - INFRAMIX

- **Enable** the **coexistence** of automated and conventional vehicles in **specific scenarios**.
- Design, upgrade, adapt and test both **physical and digital elements** of the road infrastructure.

3 Scenarios:

- Dynamic lane assignment
- Roadworks zones
- Bottlenecks



Test-Environments - Collaboration Needs:

- shared simulation environment and data structure
- common scenario catalogue
- common test procedures & targets

  - Cross-border Collaboration
  - Cross-border Learning

Thank you for your attention!

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