

**austriatech**



# Future Traffic Management

**Dr. Daniela Wollrab, MSc, MPP**

# Drawing the way into the future

Where do we want to go?

- Where are we now?
- What is important?
- How should the path look like?



# The Deep Dive into the national TM System



Strategy and Implementation Preparation for Traffic Information through Integrated Traffic Management

Sept 2023 – Feb 2025

This project **analyses the status quo** in the traffic management and traffic information sector in Austria and **elaborates possibilities for further development**.



Ecological and Safe TRAffic systems by digitalising Law

Sept 2023 – Feb 2025

The project aims to develop recommendations for action to establish **digital road traffic legislation** based on selected use cases focusing on the increase of safety, efficiency and sustainability of the transport system and the respective benefits. Key aims are the **digitalization of traffic regulations** and **administrative processes**.



Urban Vehicle Access Regulations

Upgrading the Austrian ITS landscape to implement EU requirements on urban vehicle access regulations

Oct 2024 – Mar 2026

The objective of the project is to **identify ways of strengthening the Austrian ITS landscape to implement the EU requirements** for Urban Vehicle Access Regulations (UVAR).

Focus on additional signs.

## ***“G’scheiter statt Breiter” (transl. smarter instead of bigger)***

### The Challenge:

To find feasible and resilient alternatives to the prevailing practice to ease chronic congestion without the expansion of infrastructure

### Drawing a clear picture:

Conducting an analysis of the current set-up and state of the existing Digital Transport Infrastructure with focus on national Traffic Information and Management Systems in Austria

### Finding a new Focus to make a difference:

Cooperation, collaboration, communication among key stakeholders to become more efficient, sustainable and safe.

## Elaborating Integrated Traffic Management

### Integrated Traffic Management

#### Strategic transport planning

*long-term and sustainable impact on traffic patterns*

#### Operational

*situational influence on traffic conditions depending on the traffic situation, across all modes of transport*

##### Planning

- **Analysis** of long-term capacities and utilisation as well as regular bottlenecks and overloads
- **Planning** mobility strategies based on transport policy objectives
- **Ongoing evaluation** of impact (KPIs)

##### Implementation

- **Development of infrastructure and services** in line with strategic planning
- **Continuous control and information**, based on strategies, new infrastructures and offers

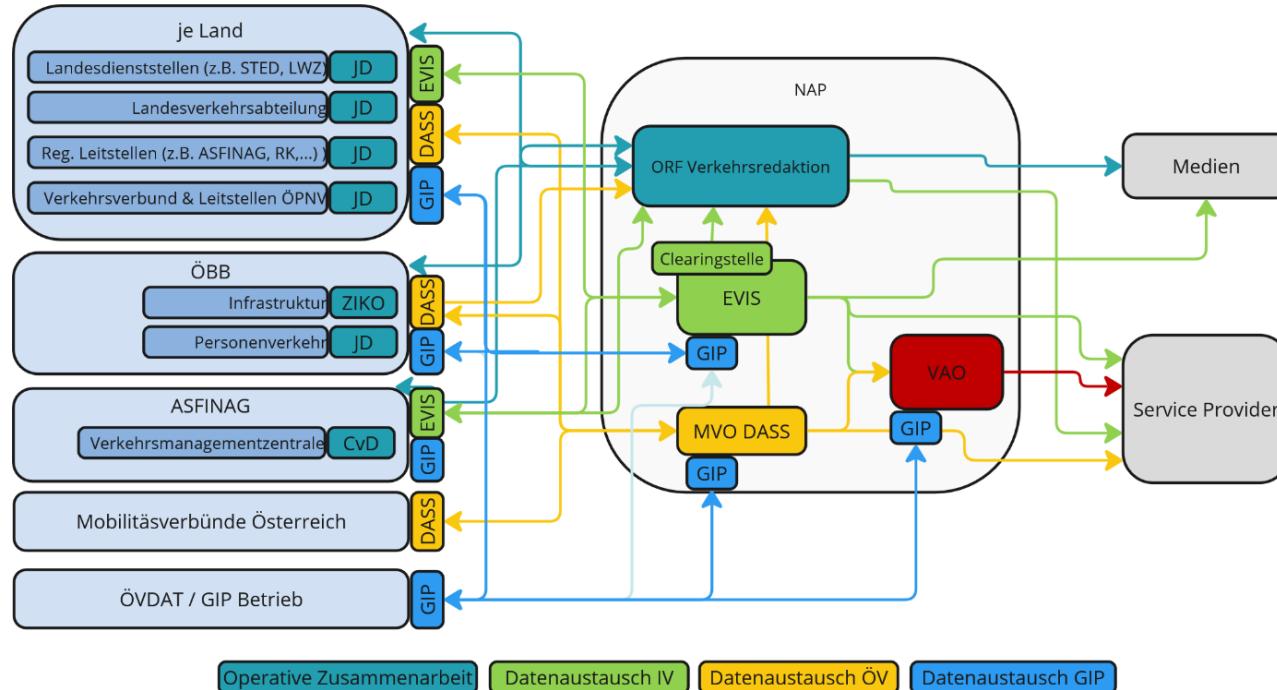
##### Control Strategy

- **Development of control strategies** for different traffic scenarios
- **Development of measures** for each scenario
- **Ongoing evaluation** of impact (KPIs)

##### Operation

- **Application** of control strategies for each traffic scenario
  - Control measures
  - Traffic information
- ...by utilizing of **all available services and infrastructures**

# The Austrian Traffic Information Infrastructure



(Source SAM.AT - Functional system diagram)

### Status Quo of legal considerations

- Neither **traffic management** nor **traffic information** are legal terms that have found their way into basic legislation.
- There is no established model or systematic with regard to the **allocation of responsibilities** between the federal government and the states, or between the state and private actors.
- The existing legal framework shows a **high fragmentation of competences** in the transport sector, which makes it difficult to implement cross-modal measures such as the establishment of multimodal transport management.
- Rail transport and local public transport are mainly based on private law regulations. But often show **lacking flexibility** for cross-modal measures at the operational level due to contractual limitations.
- **EU regulations on traffic management and traffic information** are becoming increasingly important. On one side, they are often perceived to further complicating the fragmented national legal situation but on the other side they trigger harmonisation activities.

# SAM.AT



## 5 Areas of action for improvement measures

### Establishing strategic control

The aim is to establish traffic management based on a systematized **cooperation between transport companies**, subjected to concrete and **binding strategic targets**.

#### *Focal areas:*

- strategic traffic control
- impact analysis of traffic management measures
- traffic optimization
- public transport prioritization
- strategic infrastructure measures
- ...

### Defining & strengthening responsibilities

The aim of this area is to establish a **resilient statutory basis for intermodal traffic management and information**.

#### *Focal areas:*

- defining and clarifying responsibilities
- raising awareness
- establishing a single point of contact
- ...

### Creating a central platform for traffic information

The aim is to create a centralised, Austria-wide **24/7 traffic information coordination centre** to ensure consistent traffic information

#### *Focal areas:*

- cooperation between national editorial offices
- Networking
- Clearing
- Reliable, consistent public transport and private transport information
- ...

### Improving cooperation between operational units

The aim is to **improve communication** between transport companies and units involved in operational transport management.

#### *Focal areas:*

- optimisation of operational processes
- communication from and with operational units
- technical networking
- ...

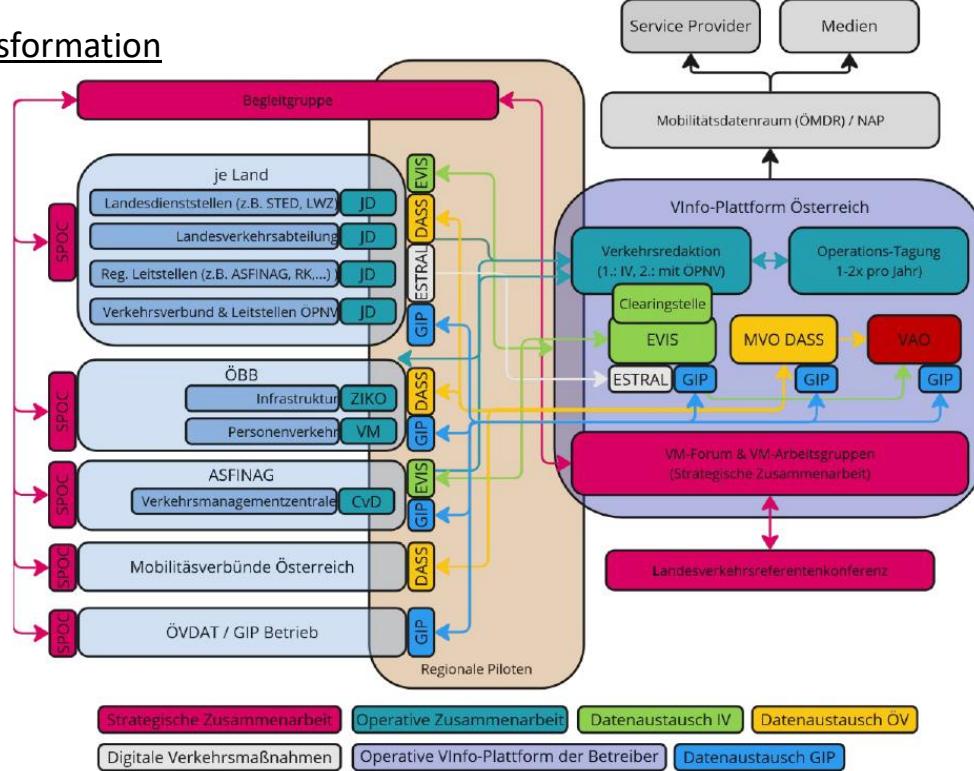
### Adapting the legal framework

The aim of this action area is to create clarity regarding responsibilities and competences through **explicit legal regulations**.

These regulations act as legal framework to support and enable the objectives and aims set out in the other action areas.

# SAM.AT

## The Transformation



(Source SAM.AT - Target vision for operational and strategic cooperation)



**Project recommendations:**

- 19 proposed measures
- 3 years implementation period

# SAM.AT



## Next Steps

- **A new Call for a follow-up project is out with focus on:**
  - Proof of Concept (PoC) – Implementation in one or more federal states
    - Key areas of research and demonstration: clear elaboration of an efficient **cooperation among stakeholders** within the federal state, **implementation of the SPOC concept** (Single Point of Contact), highlighting of necessary **infrastructure, regulations, and coordination processes**, harmonization and digitization of **traffic regulations** (e.g. departure restrictions)
  - Preparation for Austria-wide Rollout

# The Deep Dive into the national TM System



Strategy and Implementation Preparation for Traffic Information through Integrated Traffic Management

Sept 2023 – Feb 2025

This project **analyses the status quo** in the traffic management and traffic information sector in Austria and elaborates **possibilities for further development**.



Ecological and Safe TRAffic systems by digitalising Law

Sept 2023 – Feb 2025

The project aims to develop recommendations for action to establish **digital road traffic legislation** based on selected use cases focusing on the increase of safety, efficiency and sustainability of the transport system and the respective benefits. Key aims are the **digitalization of traffic regulations** and **administrative processes**.



Urban Vehicle Access Regulations

Upgrading the Austrian ITS landscape to implement EU requirements on urban vehicle access regulations

Oct 2024 – Mar 2026

The objective of the project is to **identify ways of strengthening the Austrian ITS landscape to implement the EU requirements** for Urban Vehicle Access Regulations (UVAR).

Focus on additional signs.

# ESTRAL

## The challenge

Legal: The current legal framework does not provide the possibilities for an **authentic promulgation in digital form**

Organisational: Current **organisational processes** have to be adapted

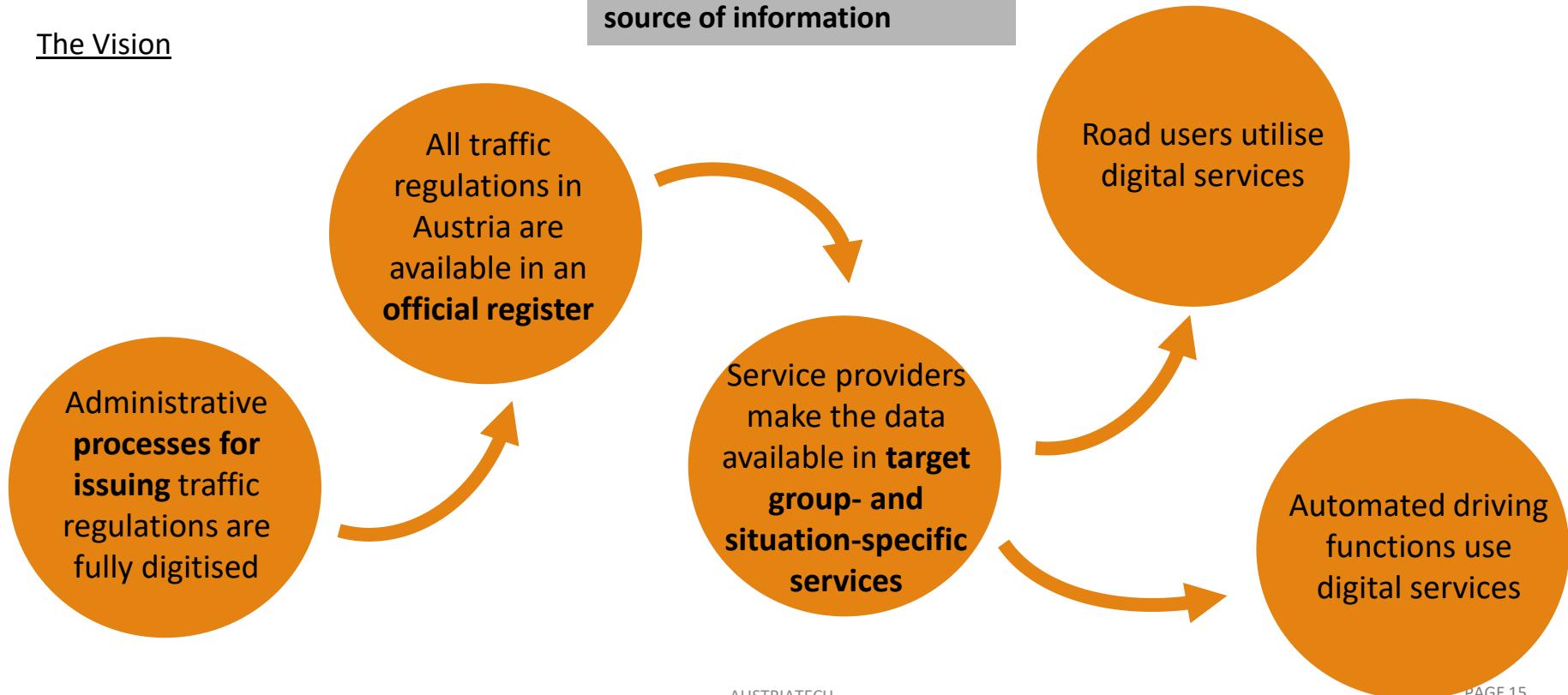
Technical & Quality: Among several **system performance issues**, it has to be ensured that there are no **contradictions to physical signs** on the street

## Setting the frame:

Developing a common vision. Understanding the current processes, limitations and potentials.

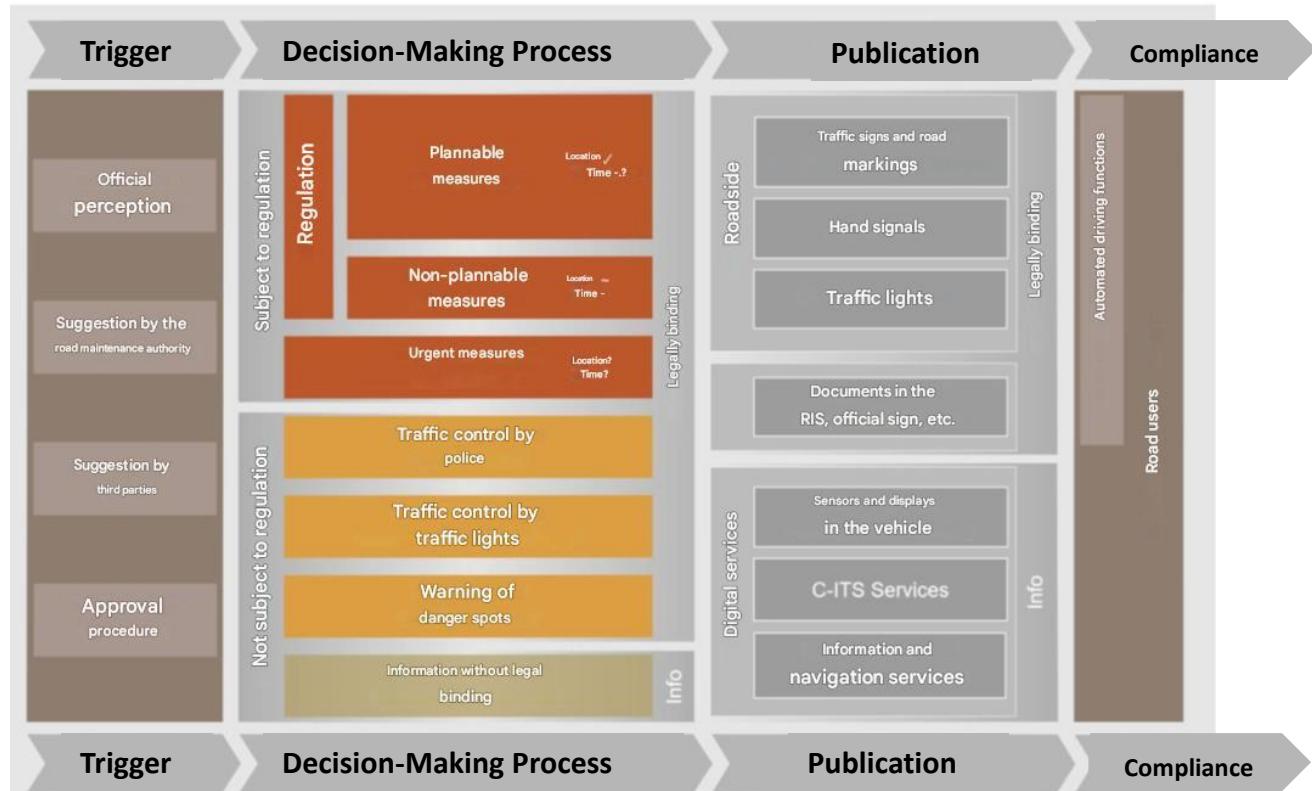
## The focus:

Use Cases: UC1-Road closures and restrictions, UC2-Truck driving bans, UC3-Roadworks, UC4-Special regulations for electric vehicles



# ESTRAL

## The Status Quo of traffic regulations in in Austria



# ESTRAL

## Key Findings – Focus Trigger & Decision-Making-Process

It is essential to also fully digitize the process steps prior to the publication (trigger & decision-making process) otherwise the full potential of the digitalization of traffic measures cannot be optimal utilized

- These are the **official investigation procedure** and the **official decision-making process**
- These process steps have been revised in such a way that they follow a **uniform scheme** for
  - both plannable and non-plannable events,
  - as well as for the partially required subsequent documentation of the decision-making process as a result of the digitization of the inventory

# ESTRAL

## Key Findings – Focus implementation of the digital promulgation

Digital traffic measures will be published in a **new traffic-measure-register**, which is the central Austrian data pool with all currently relevant traffic regulations

- from permanent to temporary, dynamic and mobile traffic measures
- **all categories of the road network** are covered (=> authorities and road operators from all regional authorities have to be involved)
- service providers have access to this register of traffic measures and **integrate the legally binding traffic measures** into their services
- digitalization of **existing traffic signs and road markings** is required to achieve **completeness** of the underlying data

## Next Steps

Call for a follow-up project is out

- Objective and Expected Impact:
  - Development of a **proof of concept (PoC)** for an **“Austrian Traffic Measures Register.”** This register is intended to include all traffic measures in Austria and provide them in a machine-readable format
  - Establishment of **organizational and technical prerequisites** to provide a solid foundation for potential future adjustments to the legal framework
  - Development of methods and tool for:
    - Comprehensive digital recording of traffic measures for the selected use cases
    - Automated generation of digital traffic measures
    - Managing inconsistencies between physical and digital information, and different digital information sources.

Our (ATE) next Steps are :

- Active and regular input of national activities on European level

# The Deep Dive into the national TM System



Strategy and Implementation Preparation for Traffic Information through Integrated Traffic Management

Sept 2023 – Feb 2025

This project **analyses the status quo** in the traffic management and traffic information sector in Austria and **elaborates possibilities for further development**.



Ecological and Safe TRAffic systems by digitalising Law

Sept 2023 – Feb 2025

The project aims to develop recommendations for action to establish **digital road traffic legislation** based on selected use cases focusing on the increase of safety, efficiency and sustainability of the transport system and the respective benefits. Key aims are the **digitalization of traffic regulations** and **administrative processes**.



Urban Vehicle Access Regulations

Upgrading the Austrian ITS landscape to implement EU requirements on urban vehicle access regulations

Oct 2024 – Mar 2026

The objective of the project is to **identify ways of strengthening the Austrian ITS landscape to implement the EU requirements** for Urban Vehicle Access Regulations (UVAR).

Focus on additional signs.



# UVAR\_Austria

## The challenge:

Making **supplementary signs** digitally fit.

Key challenge is on one hand the **technical mapping or mappability of UVAR in DATEX II** and on the other hand, on the adaptation of **existing governance structures** in order to be able to provide data on UVAR in the required quality.

## Setting the frame:

Developing a clear understanding on of the technical possibilities and existing governance structure.

## The focus:

Technical standards. Suggestion for a laxative catalogue for supplementary signs. Quality control of data and processes (NAP).

Use Cases: UC1-Road closures and restrictions, UC2-'Delivery Vehicles Only', UC3-Truck Driving Ban, UC4-Urban Zones

# UVAR\_Austria

## Current Project Status:

**Technical work:** on-going – Focus on DATEX II

**Governance Structures:** key areas and processes were identified which are crucial for a successful and long-lasting digitalisation of supplementary signs to a high quality.

- Data Input (GIP, EVIS)
  - Centrally > high effort for input vs low effort for high quality assurance
  - De-centrally > low/now effort for input vs high effort and challenge for quality assurance
- Consistent training (material) for data input
- Acceptance and integration of new processes in daily routines
- Difference of regulation processes and regulation content across Austria > need to establish a nationally consistent minimum definition of content of regulations of traffic measures
- Obligatory use of data by service providers

# UVAR\_Austria

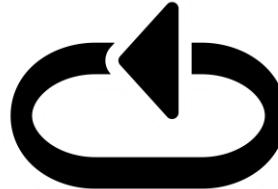
## Suggestions for Next Steps:

- Adaptation of governance structures: set-up of regional **Competence Nodes** as service points for processes and digitalisation activities
  - Decentral solution
  - Data quality assurance
  - Decision making competence remains at federal states
  - Close link to region and local authorities and communities
  - Intra- and Inter-regional cooperation can be strengthened
  - Higher adaptation to changes in ITS regulations
- Presentation and mirror the national **technical solution** on European level and standardisation group(s) to ensure interoperability
- Harmonisation also of **national legislative framework** in European context

# Austrian Expertise as part of European Cooperation

**C** C-ROADS

**TM 2.0**



**National**

 **SAM|AT**

 **ESTRAL**

**UVAR\_Austria**  
Urban Vehicle Access Regulations

# METR



## What is the overall goal of METR (Management for Electronic Traffic Regulations)?

Enable an automated provision of digital traffic rules and regulations that machines can **understand** and **trust**.

Focus on automated driving functions and systems (L1-L5) and driver information systems (incl. L0).

## What is METR not?

It is NOT something new to replace DATEX, TN-ITS, C-ITS, TPEG, TransModel, etc.

On the contrary - it supplies these services with reliable data

EUROPEAN STANDARDS

CEN TC278 Intelligent Transport Systems (ITS)



# METR

## Why do we need METR?

- Across European countries traffic laws are often based on common sense, moral and ethics. This is difficult to impossible for machines to interpret.
- To ensure an **interoperable** and harmonized digitalization of the operations of road authorities, including rules and regulations within a **trusted** and secure setting.

### For example:

Imagine a car with L3/L5 automation from Portugal getting a mandatory convoy regulation in Norway.  
How will it know how to react?

This L3/L5 equipped car must follow a genuine regulation but shall ignore a false regulation.  
How will it know which is true or false?

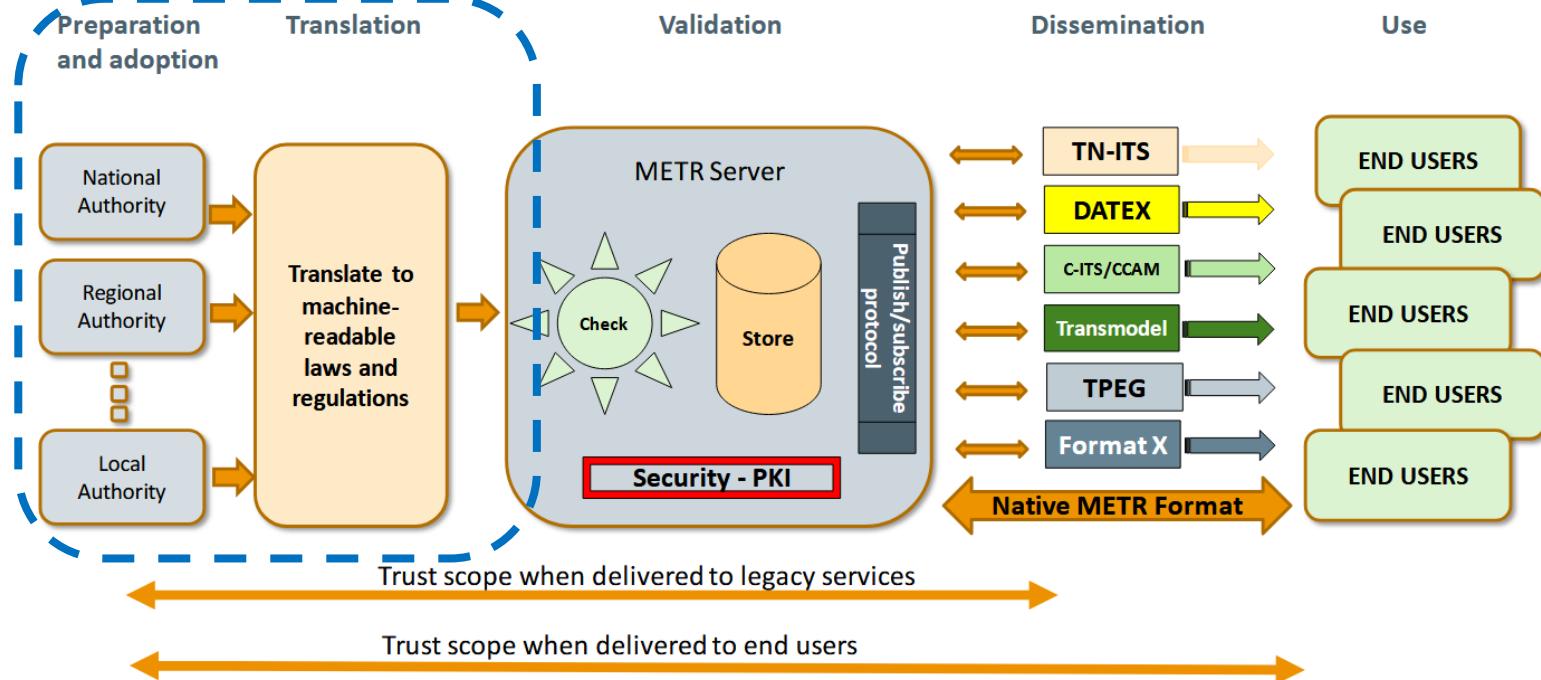


### UN Convention on Road Traffic

*Chapter II, Article 8: Every vehicle shall have a driver.*

*Chapter II, Article 7: Every driver, pedestrian or other road user shall conduct **himself** in such a way as not to endanger or obstruct traffic; **he** shall avoid all behaviour that might cause damage to persons, or public or private property.*

# METR



# Future Traffic Management Needs

- Resilient, robust, adaptive, agile
- Sustainable, proactive, fair, measurable and verifiable
- Interoperable, harmonised, cooperative
- Trusted, secure and safe
- Consistent and standardised
- Fir Automation L3

# Thank you for your attention!

**Dr. Daniela Wollrab, MSc, MPP**

**Team Leader Digital Mobility**

Raimundgasse 1/6  
1020 Vienna, Austria

T: +43 1 26 33 444

F: +43 1 26 33 444-10

[office@austriatech.at](mailto:office@austriatech.at)

[www.austriatech.at](http://www.austriatech.at)