

ESTRAL.demo: Demonstrator for a Traffic Measures Register

Traffic regulations are still primarily communicated through physical traffic signs and road markings, without a comprehensive, consolidated digital record of all traffic measures. ESTRAL.demo develops a demonstrator for a central Traffic Measures Register (dt. Verkehrsmaßnahmenregister – VMR) and carries out a proof of concept that demonstrates the practical feasibility of the concepts developed in the predecessor project ESTRAL, creating a sound basis for decision-making on an Austria-wide rollout.

Machine-interpretable traffic information is becoming increasingly important for traffic control, navigation and automated driving. EU Directive 2010/40/EU and Delegated Regulation (EU) 2022/670 already require the mandatory provision of reliable traffic information in DATEX II format, while ITS services place ever higher demands on data quality, timeliness and real-time capability. However, existing systems such as the GIP and EVIS.AT cover only parts of this and do not provide a consolidated overview of all valid traffic measures.

ESTRAL.demo builds directly on the predecessor project ESTRAL ("Ecological and Safe TRAffic systems by digitalising Law"). ESTRAL developed the conceptual, legal, technical and organizational foundations for the digital promulgation of traffic measures, similar to what has long been established in the federal legal information system (RIS), together with a detailed implementation plan. At the core of this concept is a central Traffic Measures Register serving as the Austria-wide data pool for all currently valid traffic regulations, from permanent to temporary, dynamic and mobile measures. ESTRAL.demo now translates these conceptual results into a working demonstrator for the first time and proves their practical feasibility.

To this end, a software demonstrator for the Traffic Measures Register is developed, offering three core functions: storage with historization of current and historical traffic measures in DATEX II format, a syntactic, semantic and plausibility check of new data before it is accepted, and consolidation for deriving dedicated information layers (e.g. a speed map from urban areas, motorways and restrictions). The demonstrator maps the entire core process: demo data from various digitization tools is transferred to the register via standardized interfaces, processed there, and then passed on to downstream ITS services (e.g. Verkehrs Auskunft Österreich), where its benefits are shown using selected reference services.

In addition, the project develops methods for digitizing traffic measures, standardizations for mapping traffic regulations, a draft operator model, a cost estimate for setup and operation, and recommendations for the transition to operational use.

The centralized quality control and uniform provision represent a fundamental innovation compared to the currently fragmented data situation. All parties along the value chain benefit:

public administration through digitized and standardized processes, service providers through trustworthy and complete data, and road users through reliable, needs-based services.

Key project data:

Duration:	06/2026 – 08/2028
Funding programme:	Digital Transformation in Mobility & Rail4Climate 2025
Funding source:	Klima- und Energiefonds
Administered by:	FFG
Project Partners:	PRISMA solutions (Coordinator) ASFINAG Maut Service Kuratorium für Verkehrssicherheit ÖVDAT Salzburg Research Verkehrsauskunft Österreich FH OÖ Logistikum

Contact FH OÖ Logistikum:

Dr. Manuel Walch, MSc, BA
manuel.walch@fh-steyr.at

