Call for research proposals (Form 2 and project description)

Project No	**MB4_25_02N**
Title	**Data potential of automated vehicles for road infrastructure, traffic management, public transport integration, and vehicle interaction**
Publication date	05.12.2025
Submission date	**30.01.2026** at the latest
Funding request	CHF 450'000.- (incl. VAT)
Underlying documents	• Handbook – Research on Roads • Instructions for completing Form 2 These documents are available in German, French and Italian on the FEDRO website at guides, forms, factsheets.
Related projects	• MB4_20_01B_01 "Data Governance for Smart Mobility" (DAGSAM) • MB4_20_05E_01 "Minimum requirements for the infrastructure for connected, conditionally and highly automated vehicles" • MFZ_20_07A_02 "Sensor-based accident research and prevention: Exploring legal and technological opportunities"
Questions	Questions in relation to this call for proposals must be formulated in writing in one of Switzerland's national languages or in English. The answers will be made available to all interested parties on the FEDRO website at current calls for proposals. • Deadline for submitting written questions: 07.01.2026. Questions received after this date will not be answered. • Questions should be submitted to: Office of the Working Group Mobility 4.0 (MB4@bss-basel.ch) • Questions submitted before the deadline will be answered no later than: 14.01.2026
Submission	Interested research teams are invited to submit their research proposal to the office of the Working Group Mobility 4.0 (WG MB4*)* at MB4@bss-basel.ch with the reference 'Forschungsgesuch MB4_25_02N' The proposal should contain: • The completed Form 2 (as an Excel file): 'MB4_25_02N (Form 2) Data potential of automated vehicles for road infrastructure, traffic management, public transport integration, and vehicle interaction.xlsx'. This form must be downloaded from the FEDRO website at Current calls for proposals; • The project description (as a PDF and Word file). Proposals received after the deadline will not be considered. For instructions on completing Form 2 and preparing the project description, please see the Instructions for completing Form 2.

	Language: Form 2 and the project description must be submitted in one of Switzerland's national languages or in English.
Correspondence	All correspondence in relation to this call for proposals should be sent by email to the office of the Working Group MB4 (MB4@bss-basel.ch).
Composition of the Advisory Committee	The members of the Advisory Committee (MC) (cf. Form 2) are only selected and appointed by the Research Centre once the research application has been successfully selected. The working group provides feedback and recommendations when determining the BK. Furthermore, the rules formulated by FEDRO must be taken into account. The costs of an Advisory Committee are to be included in the application at a flat rate of CHF 5,000.
Evaluation of research proposals	**Formal check:** The office of the Working Group MB4 will check compliance with the following formal requirements: • Form 2 is completed correctly and in full. • The project description contains all sections with the required content. • The project description does not contain more than the maximum number of words permitted. Proposals not meeting the formal requirements will be excluded from the rest of the procedure, with appropriate justification. **Content evaluation and weighting:** The Working Group MB4 will evaluate the research proposals submitted on the basis of the following criteria and their weighting: • Amount of the funding request: 25% • Form 2: 25% • Project description: 50% The **amount of the funding request** is evaluated using the following formula (this creates a symmetrical treatment of the percentage difference): $Z_i = 3 + 4 * \text{Sign}(Y - X_i) * [\text{Abs}(Y - X_i) / Y]$ where: $Z_{i,Max} = 5$ $Z_{i,Min} = 1$ with: Z_i= Evaluation of the amount of the funding request in proposal *i* Y = Average funding request of all proposals X_i= Amount of the funding request in proposal *i* The **other criteria** are assessed on a scale from 0 to 5: 0 Cannot be assessed; no data available 1 Very poorly addresses the criterion; insufficient, incomplete information 2 Poorly addresses the criterion; does not adequately refer to the project 3 Addresses the criterion; broadly meets the requirements of the call for proposals 4 Addresses the criterion well; good quality 5 Addresses the criterion very well; excellent quality

Selection of the research proposal	The research proposal that optimally fulfils the specified criteria will be forwarded by the Working Group MB4 to FEDRO for further processing/evaluation by the Commission for Research on Roads. Based on the recommendation of the Commission for Research on Roads, FEDRO will make the final decision on how to proceed with the selected research proposal. In both the Working Group MB4 and the Commission for Research on Roads, recusal rules apply to members who work in the same company or institution as the applicant.
Reservation	Both the Working Group MB4 and FEDRO may decide not to award a research contract if they consider all the research proposals to be unsatisfactory. The decision on the funding of research is taken exclusively by FEDRO in the form of a ruling.

Information on the research project

1 Background

In the project "AmiGo", PostBus is developing a new automated on-demand mobility service in Eastern Switzerland. The service will use electric, automated vehicles that operate without a driver and are specially designed for scalable on-demand use. The vehicles will be bookable via an app and will accommodate up to four passengers.

The project will start in December 2025 with mapping trips. A trial operation with a selected user group is planned for the first half of 2026. During this phase, the vehicles will continue to be accompanied by a safety driver. The first trips without safety drivers are then scheduled to take place in the course of 2026. Regular operation with up to 25 automated vehicles is scheduled to begin in the first quarter of 2027 at the latest.

As part of FEDRO's road research, four research projects are being carried out to provide scientific support for the introduction of the service:

1. Mobility use and demand: Effects of an automated on-demand mobility service in peri-urban and rural areas on mobility behaviour from the user's perspective

2. Acceptance of automated on-demand mobility services and their potential to promote the attractiveness of rural areas

3. Data potential of automated vehicles for road infrastructure, traffic management, public transport integration, and vehicle integration

4. Deployment of operators to monitor and support driverless vehicles

The research is managed by a higher-level project management team at FEDRO (“overall project management”) and supervised by an advisory committee.

This call for tenders relates to the research project "Data potential of automated vehicles for road infrastructure, traffic management, public transport integration, and vehicle interaction".

The increasing automation of road traffic, particularly through automated (Level 4) and highly automated (Level 5) vehicles, offers considerable potential for improving infrastructure and traffic management processes. These vehicles generate extensive sensor data that can provide information on road conditions (e.g. slipperiness, leaves, potholes), traffic conditions (e.g. density, flow) as well as critical traffic situations (e.g. near misses, hard braking).

However, there is currently no systematic validation of these vehicle data specific to Switzerland: firstly, often the collected data is not sufficiently processed for operational use for authorization to operate, traffic safety monitoring of Avs, traffic management, road maintenance and public transport system operation. Secondly, the transferability of international approaches is limited due to specific challenges posed by the Swiss climate, alpine topography and cantonal responsibilities. The “AmiGo” project offers the opportunity to investigate the data potential of automated vehicles and vehicle interaction in real-world operations.

2 Research needs and objectives

The aim of the research project is to derive, validate and operationalise findings from vehicle-to-infrastructure communication and vehicle-to-vehicle communication relating to road conditions, safety, traffic flow, integration into public transport and the compliance with regulatory requirements while in operation.

Based on these findings, the study will make recommendations for the practical use of vehicle data in traffic control, maintenance, public transport integration, safety monitoring and for the compliance with the regulatory requirements. The results of the research project will provide the basis for validated data models, risk maps, APIs and data products for traffic management, maintenance, public transport control centres

and validation of regulatory obligations for allowing AVs to obtain authorization to operate and life-long operation requirements.

3 Expected content and deliverables

The following results and services are expected within the scope of this project:

1) Analysis of robust and scalable vehicle signals: The study should investigate which signals from vehicle data can be reliably and accurately recorded under various conditions (especially regarding seasons, weather and topography). It should also identify which of these signals are suitable for scalable use in traffic management.

2) Concept for privacy-compliant integration into existing data systems: The research should examine how vehicle data can be linked with existing infrastructure data, such as counting stations, weather data or accident data in a manner that complies with data protection regulations. The project must consider use case 7 (“Automated Driving”) of the national mobility data infrastructure (MODI). The goal is to gain insights into how vehicle data can be effectively merged with existing data platforms and analysis methods and integrated into the operational processes of the federal government, the cantons and public transport control centres.

3) Derivation of prioritised data products and API interfaces: Based on the analysis, the study should identify which data products or API interfaces offer the greatest practical benefits for traffic control, maintenance (including winter services), public transport control centres and verifiable regulation application for safety purpose. The use cases should be described and evaluated in terms of their operational added value.

The added value and scalability of vehicle data compared to other sources of data collection (e.g. municipal vehicles, public buses, mobile phone data) should be highlighted.

The research should focus on the pilot project and initially address the research questions based on this specific case. The results are then to be situated within the current state of knowledge in the national and international literature. Findings from completed and ongoing national and international research projects (such as MB4_20_01B_01 "Data Governance for Smart Mobility" (DAGSAM), MB4_20_05E_01 "Minimum requirements for the infrastructure for connected, conditionally and highly automated vehicles", MFZ_20_07A_02 “Sensor-based accident research and prevention: Exploring legal and technological opportunities”) are to be considered for this purpose. Any differences in relation to other research projects are to be identified and explained. This requires both the pilot project and the objects of investigation of the studies used for comparison to be contextualised (e.g. about the technologies employed and the spatial conditions).

It is expected that various data will be used and various collection and analysis methods will be applied. The project description should indicate which data and methods are to be used. Data from the pilot project will be made available for research purposes. Data collection and management will be carried out centrally by the overall project management. The actual availability of data cannot be determined at this stage. Once the project has started, the specific data requirements (e.g., usage, operating, and booking data) for the research must be compared with the actual availability of data in consultation with the overall project management. The overall project management will also coordinate any primary surveys conducted by the research institutions as part of the research projects.

Expected project start: End of 2026/start of 2027

Expected project duration: 24 months