



Version dated 12.11.2020

Research on rail infrastructure

Research programme 2021–2024

File ref.: BAV-021.11-11/7

Change history

Date	Description, approval, notes
18.08.2020	Document created
25.08.2020	Version 0.1 First version with input from survey
28.08.2020	Version 0.2 Inputs from MB
09.09.2020	Version 0.3 for consultation FIA and GS DETEC
25.09.2020	Version 0.4 for consultation
29.10.2020	Version 1.0 for FIA decision
12.11.2020	Version 1.0 for DS / DC decision





File ref.: BAV-021.11-11/7

Contents

Summary	3
1 Introduction	5
1.1 Background	5
1.2 Research area and delimitation	5
1.3 Legal basis	6
2 Purpose of the rail infrastructure research programme	6
2.1 Strategic objectives	6
2.2 Outcome goals	7
3 Research priorities 2021–2024	7
3.1 Capacity optimisation	7
3.2 Integrated multi-modal mobility planning for future expansion phases	7
3.3 Environmental impact and rail infrastructure	8
3.4 Wear-optimised rail operations	8
3.5 Asset maintenance	8
3.6 Future safety requirements	8
3.7 Human-machine interaction	9
4 Coordination	9
5 Defining the direction of research	9
6 Organisation	10
6.1 Description of the available mechanisms	10
6.2 Official bodies and their roles	10
6.3 Award process	11
6.4 Process for evaluating applications and awarding grants	11
6.5 Target audience of the research programme	11
6.6 Monitoring, quality control and reporting	12
7 Financial resources	12
7.1 Funds	12
7.2 Subsidiarity / co-financing.....	12
7.3 Prioritisation	12
8 References	12



File ref.: BAV-021.11-11/7

Summary

Background:

Following the entry into force in 2016 of the Federal Act on the Fund to Finance Railway Infrastructure (RIFA), it has been possible to obtain research financing from the Rail Infrastructure Fund (RIF). The Federal Assembly sets the amounts that can be withdrawn for this purpose annually in the form of a separate budget item in the RIF. Two possible mechanisms are employed for funding research: research contracts and grants for third-party research projects. This is the second rail infrastructure research programme, covering the period from 2021 to 2024.

Aim of the research programme:

Under the Research and Innovation Promotion Act (RIPA; SR 420.1), third-party research must be grant-funded through a research programme. Under Article 16 RIPA, grants may be awarded to third parties provided such third parties are embedded within a research programme. The present research programme is intended to demonstrate where the main priorities lie in the field of rail infrastructure. The programme will create transparency on the criteria and conditions for obtaining funding from the Rail Infrastructure Fund. The aim is to ensure coordinated and implementation-centred funding of rail infrastructure research. This research programme falls under the Sustainable transport research strategy 2021–2024 (FEDRO/FOT).

Delimitation from other funding:

The existing legal framework provides other research funding options in addition to the RIF. Under the Federal Council's Dispatch on the first package of measures for Energy Strategy 2050 and the Popular Initiative "for an orderly withdrawal from nuclear energy" (Federal Gazette 2013 7561), the FOT can undertake energy efficiency research within its own area of responsibility (ESöV 2050). The revised Goods Carriage Act (GCarA; SR 742.41) provides for the funding of innovation in rail freight, while the Federal Act on Railway Noise Abatement Measures (RNAA; SR 742.144) makes provision for research funding and certain types of innovation promotion. Other bodies also accept applications for research and innovation funding, notably the following federal organisations:

- The Coordination Office for Sustainable Mobility (COMO) supports ideas for pioneering forms of mobility and mobility services (<https://www.energieschweiz.ch/projektfoerderung/komo/>).
- The Swiss Innovation Agency, Innosuisse, is the federal government's support agency for science-based innovation (<https://www.innosuisse.ch/>).

Research programme consultation:

Industry requirements and know-how were taken on board by consulting universities, universities of applied science, industry associations, infrastructure managers, and other federal offices during the drafting process.

Criteria and conditions:

Research projects can be financed via the RIF provided they contribute to rail infrastructure value retention and help improve the efficiency, cost-effectiveness, safety and environmental compatibility of rail operations, asset maintenance and upgrades. Projects must adequately feed into groundwork in the following areas at a functional level:

- rail infrastructure operation and asset maintenance;
- rail infrastructure upgrades (including planning, project development, funding and construction);
- the wheel-rail or infrastructure-rolling stock interface – this may also apply to certain rolling stock projects;
- the organisation and efficient use of rail infrastructure.



File ref.: BAV-021.11-11/7

Priorities of the research programme

The research priorities list the key areas of rail infrastructure research that the FOT expects to deliver new knowledge with a practical application. They are listed in order of priority.



File ref.: BAV-021.11-11/7

1 Introduction

It has been possible to obtain research funding from the Rail Infrastructure Fund under the terms of the Federal Act on the Fund to Finance Railway Infrastructure (RIFA) since 1 January 2016. Initially, funding was limited to contract research. The establishment and approval of the first rail infrastructure research programme 2017–2020 created access to financial assistance – and thus to research project funding – with effect from 16 June 2017. This second rail infrastructure research programme, which covers the period from 2021 to 2024, pursues the same goals: The programme will create transparency on the criteria and conditions for obtaining funding from the Rail Infrastructure Fund. The aim is to facilitate coordinated and implementation-centred funding of rail infrastructure research.

1.1 Background

Following the adoption of FER1 by the Swiss electorate and the Cantons, the Railway Infrastructure Fund Act (RIFA) was approved and came into force on 1 January 2016. Since then it has been possible to obtain money from the Rail Infrastructure Fund (RIF) to finance research. The first rail infrastructure research programme was adopted in June 2017. Implementation of the second research programme will begin in 2021. This second programme will contribute to long-term goals such as the 2050 climate target¹ and support implementation of the Rail 2050 programme.

Rail infrastructure research falls under the “Sustainable transport research strategy 2021–2024” (FEDRO/FOT),² which is one of eleven research strategies being drawn up as the basis for the Federal Council Dispatch on funding education, research and innovation (ERI) between 2021 and 2024. This strategy coordinates and provides a transparent description of the policy research planned by federal agencies that have a stake in sustainable transport. It also forms a platform for orientation and collaboration with research players outside the Federal Administration. The concept of sustainable transport encompasses all aspects of freight and passenger transport by road and rail, including non-motorised transport (pedestrian and cycle traffic). In the present context, “sustainable” means managing mobility in as environmentally sound a manner as possible (ecological sustainability), satisfying mobility requirements in as economically efficient manner as possible (economic sustainability) and giving all population groups and regions of the country access to mobility (social sustainability).

1.2 Research area and delimitation

This research programme applies to the payment of grants for research activities that have a direct bearing on rail infrastructure. This means research projects that contribute to rail infrastructure value retention and help improve the efficiency, cost-effectiveness, safety and environmental compatibility of rail operations, asset maintenance and upgrades. It also extends to projects at the interface between infrastructure and rolling stock if these are beneficial to infrastructure.

Projects must adequately feed into groundwork in the following areas at a functional level:

- rail infrastructure operation and asset maintenance;
- rail infrastructure upgrades (including planning, project development, funding and construction);
- the infrastructure-rolling stock interface – this may also apply to rolling stock projects;
- the organisation and efficient use of rail infrastructure.

Safety (which also extends to environmental protection) is not an independent criterion in this delimitation, but should be regarded as an integral component of the above-mentioned areas.

¹ [Climate target 2050: Net zero greenhouse gas emissions \(PDF, 217 kB, 26.02.2020\)](#)

² https://www.astra.admin.ch/dam/astra/de/dokumente/forschung_im_strassenwesen/forschungskonzept_nachhaltiver-verkehr_2021-2024.pdf.download.pdf/11_Forschungskonzept-Nachhaltiger_Verkehr_2021-2024_D.pdf



File ref.: BAV-021.11-11/7

In terms of the overall research and innovation process, the scope for project funding is limited in particular to the initial phases of research and development³. Funding can be provided for the ideas, concept and development phases, encompassing basic research, applied research and experimental development. Activities that could be classified as innovation cannot generally be funded.

Since innovation funding focuses mainly on the later testing and implementation phases, it falls outside the scope of this research programme. Innovation funding is primarily the responsibility of Innosuisse. In addition, the Goods Carriage Act (GCarA) makes provision for investment grants for technical innovation in rail freight. As well as the rail infrastructure research described above, the RIF can be used to fund research and innovation under the Federal Act on Railway Noise Abatement Measures (RNAA). However, this research programme does not cover the substance and focus of the activities in question, which are described in the Environment research strategy (in German)⁴.

Research and innovation cannot, however, always be clearly distinguished from each other. Projects often include activities that can be classified as research and development, as well as those that come under the heading of innovation. Therefore, in exceptional cases, innovation projects may fall within the framework of this research programme. This would be the case if a project were to contain significant research and development components as well as activities defined as innovation.

1.3 Legal basis

The relevant legal texts are Art 16 para. 2 let. c [RIPA](#), [RIFA](#), [CPFO](#) and [SubA](#).

In addition, the guidelines of the Interdepartmental coordination committee for federal policy research on “Quality in federal policy research” (in German, version of 26 March 2014)⁵ and the federal government’s general terms and conditions for research contracts (GTC, version of December 2013)⁶ apply.

Since this research programme deals only with the payment of research grants, it does not cover the awarding of research contracts under Article 16 para. 2 letter d RIPA. Unlike research grants (subsidies), which are paid according to the rules of the Federal Act on Financial Assistance and Subsidies, (SubA, SR 616.1), research contracts have to be awarded in accordance with the Federal Act on Public Procurement (PPA, SR 172.056.1).

2 Purpose of the rail infrastructure research programme

The purpose of this research programme is to promote coordinated and implementation-centred rail infrastructure research. The research programme sets out the criteria and conditions for awarding grants. Priority content areas are defined for the 2021–2024 period. These are intended to illustrate the research issues that projects should cover in order to be eligible for funding. It also defines the order of priorities.

2.1 Strategic objectives

The research funded by the programme should offer benefits in terms of preserving the value of the rail infrastructure, ensuring efficient, safe operation and maintenance and delivering infrastructure upgrades. Compliance with the applicable safety and environmental regulations and nature conservation requirements is required.

³ For a definition of R&D, see chapter 2, Frascati Manual 2015 (OECD) https://aramisnet.kaformatik.ch/Wiki/bv3/r/frascati/frascati_en.pdf?t=1479471690

⁴ https://www.ressortforschung.admin.ch/html/dokumentation/Forschungskonzepte_17-20/03_Umwelt-1609-D_2016-02-25.pdf

⁵ https://www.ressortforschung.admin.ch/html/dokumentation/publikationen/RichtlinienQS_dt_Revision_V.6.pdf

⁶ https://www.bkb.admin.ch/dam/bkb/de/dokumente/Hilfsmittel/AGB/AVB_Forschungsauftraege.pdf.download.pdf/Allgemeine%20Vertragsbedingungen%20des%20Bundes%20f%C3%BCr%20Forschungsvertr%C3%A4ge.pdf including the handbook https://intranet.bbl.admin.ch/bbl_kp/de/home/beschaffen/dokumente-der-bkb/handbuch-avb-forschungsauftraege.html



File ref.: BAV-021.11-11/7

2.2 Outcome goals

The results of the research will help optimise operating, maintenance and/or investment costs and improve the safety and environmental compatibility of rail infrastructure. Improving the efficiency of upgrades, operations and asset maintenance by just 1% would translate into annual savings of about CHF 45 million.

Findings from the projects supported by the programme will feed into new regulations, requirements and best practices or into the amendment of existing provisions and practices. Thus the programme will also help improve the efficiency of the FOT's oversight and supervisory activities.

3 Research priorities 2021–2024

The following list of research priorities sets out the most important rail infrastructure research issues and outlines a few examples of areas that the FOT expects to deliver significant advances in knowledge during the 2021–2024 period. The priorities are divided into three action areas. The action areas are not intended as an order of priority but should be regarded as a process for advancing knowledge. Priorities may exert an effect across several action areas. The priorities are listed in order of importance, the first being highest and the last lowest. However, prioritisation is only one of several award criteria that will be evaluated (for details see section 6.3).

Depiction of rail infrastructure research action areas



3.1 Capacity optimisation

Technological and operational measures at overall system level (the triangle formed by infrastructure, rolling stock and production) can go a long way towards optimising available network capacity. Capacity optimisation should be completely reconfigured by extending it beyond a simple train path slot perspective to a holistic view of capacity. This holistic view should include capacities between the vehicle (container/passenger change), passenger flow capacity and passenger management capacity as far as access to trains. Capacity optimisation in this context requires an integral approach to securing knowledge. Methods for securing knowledge must be developed. New, dynamic standard technologies help increase capacity by such measures as a coordinated, dynamic timetable or coordinated construction planning/possession planning, etc. The COVID situation has highlighted the need for simpler methods/technologies for adapting capacities and availability.

New planning, construction and organisational measures for the use and sizing of public facilities have to be developed to accommodate growing numbers of people. Public facilities are increasingly becoming capacity bottlenecks within the system. Given the dynamic nature of travel routes and service structures, overall management of RU/infrastructure manager customers should aim to improve customer management in the event of a disruption and minimise the number of people changing trains at critical hubs. In terms of optimising customer management, platform edge interfaces (RU/infrastructure manager, e.g. stopping accuracy) are an interesting area.

3.2 Integrated multi-modal mobility planning for future expansion phases

The effect that changes in mobility habits and new overall offerings will have on network upgrades is currently unclear, but may become an extremely important factor in future service expansion stages. Multi-modal mobility planning allows greater flexibility in asset management and makes it easier to absorb long- and medium-term changes in mobility behaviour. Easy access to multi-modal mobility and thus to end-to-end transport chains will represent an important factor in the appeal of public transport in conjunction with more public forms of private transport. Total mobility facilities will have to be de-



File ref.: BAV-021.11-11/7

veloped for multi-modal transport chains, along with links and accompanying production processes. These considerations are not restricted to passenger services. Linking in new forms of transport will also become increasingly important in freight traffic (in combination with rail transport).

3.3 Environmental impact and rail infrastructure

Rail infrastructure and the environment have a direct reciprocal effect on each other. Rail transport's environmental advantages currently give it the edge. New mobility offerings present a risk of this lead dwindling or not being recognised. In some cases there is no basis for steering and communication. Climate change is not the sole factor behind increasing environmental challenges. In the consciousness of the public and politicians, rail traffic is the subject of rising expectations (avoiding disruptions, disposing of waste, promoting diversity, improving the carbon footprint of buildings etc., CO₂-optimised infrastructure, vegetation control, fine particulates). New materials and manufacturing processes can help improve rail infrastructure upgrades and maintenance and in so doing facilitate progress towards a circular economy.

3.4 Wear-optimised rail operations

The fundamental principles underlying interaction between infrastructure and rolling stock determines the safety, availability and above all cost-efficiency of the system. Measures to ensure that infrastructure and rolling stock meet their service life and availability requirements should be developed. Research should focus on the interaction between wheels and rails (vehicle and track) and between vehicles and overhead power lines. As far as is known, no basic research has been carried out anywhere in Europe, particularly with regard to metre-gauge lines. Overall optimisation is the only way of achieving cost ceilings and cost reductions in the system.

In addition to the wear element factored into train path prices, additional incentives should be found to break down silo mentality-driven attitudes to transport and infrastructure and achieve an overarching perspective on wear.

3.5 Asset maintenance

As asset maintenance resources become an ever greater problem, there is a need for fundamentally new approaches to, and methods of, maintenance. It is first necessary to identify the causal relationships so that they can be combined with the new approaches and methods (e.g. predictive maintenance) to achieve an optimum level of maintenance. New monitoring systems (for example on scheduled trains) combined with big-data approaches give rise to new inspection methods that ensure maintenance is carried out at the most cost-effective time. Combined with process-supporting peripheral systems and containers with the correct asset data (e.g. BIM), this produces synergies between investment projects and maintenance. The inferences on asset condition enable products to better achieve their full service life. The primary prerequisite is knowledge of optimal construction methods and optimal asset maintenance for individual products and the system as a whole.

3.6 Future safety requirements

The necessity of maintaining high safety standards is indisputable. However, there is a risk that new technologies and processes, lack of knowledge, lack of practical experience or lack of migration strategies will tend to higher safety requirements. Using simulations to maintain safety standards in the event of exceptional incidents, to adapt standards to new technologies and procedures (e.g. driverless operation) and for strategies to combat cyber threats, risk assessment and evaluations could generate a high benefit level. Overall, an effort should be made to reduce complexity within the rail system and increase agility, while factoring in the need for interoperability in the European context. Advancing digitalisation makes cyber security an increasingly important issue. The impact of climate change on infrastructure is growing. Trends in society, overlaid by rising passenger numbers, are impacting passenger safety (for example at platform edges). Subjective safety in access areas and on board trains is in-



File ref.: BAV-021.11-11/7

fluencing user behaviour. Progress in automated driving is creating safety issues of the type that are becoming increasingly apparent in road traffic.

3.7 Human-machine interaction

This is an interface that continues to develop, and one that still includes a large number of unresolved issues in terms of its effects and consequences for rail infrastructure (e.g. virtual rail operations). Changes in job profiles (monotony versus safety) and requirements (normal operation versus disruption) combined with the associated shortage of drivers present major challenges for the system while no suitable countermeasures are available to address the causes. Unsupervised shunting movements are still one of the bigger safety loopholes in the system. Shunting operations tie up resources by virtue of the large proportion of manual steps involved in the process.

4 Coordination

The programme will be coordinated at Department level by the relevant body (VERUM). In addition, individual projects may be discussed with certain federal offices or the General Secretariat if necessary.

Moreover, there will be collaboration with private research bodies, universities, universities of applied science, institutes, other federal agencies and centres of excellence. Workshops will be held on specific topics where necessary. The research programme also funds international conferences organised by Swiss institutes. Inclusion of and collaboration with infrastructure managers, cantonal authorities and stakeholder professional associations are also very important.

Projects funded by the research programme are supervised by advisory groups, who are deployed on a case-by-case basis. The specialists are assigned on a situation-driven basis and in line with the focus of the particular project. This ensures that the available scientific, business and political expertise is incorporated as effectively as possible, while also simplifying implementation of research results. The research results benefit various associations and organisations in addition to the Federal Administration. The results are primarily communicated by publishing the final reports on the Confederation's ARAMIS website. They may also be distributed to interested parties, presented at symposia and academic conferences, and published in specialist journals. Ongoing stakeholder dialogue is actively pursued, though not in the form of an institutionalised dialogue involving additional bodies but one that is properly adapted to the needs of the stakeholders in question.

5 Defining the direction of research

Under Article 16 para. 5 RIPA, the Department is responsible for federal policy research in its area of responsibility. The direction of research is thus determined when the Department approves a research programme. The priorities are generally redefined every four years. The FOT has compiled this Research programme on behalf of DETEC, taking account of the "Sustainable transport research strategy 2021-2024" (in German) and in coordination with the research programme of the Energy Strategy for Public Transport 2050 (in German) and the "innovation in regional passenger transport funding" programme. The priorities are based on the Department's internal research needs, which are agreed during consultation with the relevant actors in the field. The State Secretariat for Education, Research and Innovation (SERI) provides methodology support for the direction of this research programme.

6 Organisation

6.1 Description of the available mechanisms

Under this research programme, grant applications may be submitted for research projects. The FOT may support these projects by means of a subsidy, using money from the Rail Infrastructure Fund,



File ref.: BAV-021.11-11/7

provided particular conditions have been fulfilled. It is important to note, however, that there is no entitlement to research funding. The FOT reserves the right to reject applications.

The conditions are fulfilled as long as the following apply: The content of research projects reflects the principles and/or detailed research priorities, as set out above. The content fills gaps in knowledge not investigated by previous research and not protected by patent. FOT funding usually gives preference to applied research since there has to be a direct link to rail infrastructure. Basic research is permissible, but should be carried out in conjunction with an industry partner capable of ensuring that findings can be implemented at a later stage. The results of research projects funded by the FOT must be published. Experimental development also extends to projects such as prototype operation, pilot applications and first-time use provided the experimental (research) phase is still in progress.

Thus only projects that include research and development activities⁷ will be funded:

- Basic research;
- Applied research;
- Experimental development.

Activities that could be classified as innovation cannot generally be funded. However, exceptions are possible, as described under 1.2.

Contract research projects are also eligible for funding from the Rail Infrastructure Fund. However, this research programme does not cover such contracts, which are subject to the public procurement procedure under PPA/PPO (see section 1.3).

6.2 Official bodies and their roles

The following organisational structures within the FOT ensure that rail infrastructure research is handled and coordinated efficiently:

- **The research and innovation committee (FIA)** is responsible for deciding whether to fund applications. It ensures that applications are coordinated with the research activities being undertaken under the Energy Strategy for Public Transport 2050 research programme and the “innovation in regional passenger transport funding” programme. The research committee can make circular resolutions and generally meets four times a year. It consists of members of the FOT Directorate.
- **The specialist sections** are responsible for the technical assessment of applications. The specialist sections are responsible for steering and supervising the research projects chosen for funding.
- **The Policy/Management Affairs Section** is responsible for coordination work. It is responsible for determining needs and thus also for compiling the research programme.
- **The external staff office** provides administrative and specialist support for the Management Affairs Section.

6.3 Award process

Applications for research project funding are treated the same way as grants, the award process being geared to SubA.

⁷ For a definition of R&D, see chapter 2 of the Frascati Manual 2015 (OECD) https://aramisnet.kaformatik.ch/Wiki/bv3/r/frascati/frascati_en.pdf?t=1479471690



File ref.: BAV-021.11-11/7

6.4 Process for evaluating applications and awarding grants

Research applications are evaluated by internal experts. External experts may also be consulted as necessary. The research and innovation committee decides which projects should receive grants, generally meeting four times a year to do so.

The following assessment criteria are applied when evaluating applications. For information purposes, the indicators for these assessment criteria are given in brackets.

- **Objectives, affinity to the priorities of the rail infrastructure research programme** (specific and measurable objectives – affinity to the research programme's priorities – affinity and benefits to value retention and safe, efficient, rail infrastructure operation or upgrades of existing infrastructure – description of background and preliminary work – innovative aspects – consideration of main risks)
- **Effects** (target audience, knowledge transfer measures – benefit and significance for sustainable rail infrastructure, infrastructure managers, transport companies and their operating environment)
- **Organisation and resources** (project quality – scheduling with description of products and milestones – role of applicant and division of responsibilities – human resources: competencies and experience of key persons)
- **Costs** (estimate of overall costs, co-financing and cost distribution – cost-benefit ratio of the project – consideration of possible earnings from the project)
- **Steering and support** (the specialist sections must be able to provide the necessary resources)

The research priorities, as described in section 3, shall in particular apply in the given order when projects attain equivalent evaluation results and have to be weighed up against each other to determine distribution of limited financial resources. A project that investigates high-priority issues will have better chances of being awarded a grant.

Documents for submitting projects (application form) can be found on the FOT website at <https://www.bav.admin.ch/bav/en/home/topics/research.html>.

6.5 Target audience of the research programme

Grants will be awarded to research institutes of the ETH Domain, universities, universities of applied science and private and public research institutes provided the projects concerned are not commercial in nature.

Note:

Since funding takes the form of grants for research projects, the Subsidies Act applies, as described in section 1.3. Under Article 7 letters c and d of the Subsidies Act, grant recipients must make such contributions of their own as are commensurate with their economic capacity and take reasonable independent action to exhaust the remaining funding options. Against this background, the competent authority is obliged to examine submissions to establish whether they concern **projects of a commercial nature** (i.e. if the research is likely to result in profit-generating products). The competent authority must also verify whether the tasks covered by the grant have been completed in accordance with Art. 25 para. 1 SubA.

Should the federal authorities need to recall the grant, the grant recipient will have to settle the project and its conditions with the federal authorities on a case-by-case basis under the terms of the service agreement/contract/official decision in question.



File ref.: BAV-021.11-11/7

6.6 Monitoring, quality control and reporting

Quality control is carried out by the FOT's supervising experts at project level. The Management Affairs Section carries out monitoring at research programme level. This involves evaluating the extent to which the research projects have helped reduce expenditure from the RIF. An annual report on rail infrastructure research activities is submitted to the FOT Directorate and DETEC General Secretariat. The results of individual research projects are published on the FOT website.

7 Financial resources

7.1 Funds

The financial resources are drawn from the Rail Infrastructure Fund. Parliament defines the overall amounts for research activities annually. Planning for the 2021–2024 period is as follows:

- 2021: CHF 3.75 million
- 2022: CHF 3.75 million
- 2023: CHF 3.75 million
- 2024: CHF 3.75 million

7.2 Subsidiarity / co-financing

Under the subsidiarity principle, grants made to research projects may only cover a proportion of their total costs. The proportion funded by the Confederation must not exceed 40% of the total. This amount may be increased to a maximum of 60% in exceptional cases (see also section 6.5).

Anyone applying for grants for the same project but under different regulations is obliged to inform the authorities. Failure to do so may result in financial assistance or payments that have been obtained under false premises having to be repaid.

7.3 Prioritisation

If the total payments applied for exceed the available financial resources, projects will be prioritised as follows:

- By topic, in the listed order of priority, where the first priority is weighted highest and the last weighted lowest.
- By project type, with weighting decreasing in the following order: applied research, basic research, experimental development.
- The benefit that the results may be expected to yield in terms of their contribution to the efficiency, cost-effectiveness, safety and environmental compatibility of rail infrastructure operations, asset maintenance and upgrades.

8 References

Federal Council, Federal Council's legislative planning goals 2019-2023, [Link to document \(in German\)](#)

Federal Office of Transport, FOT strategy for 2019. [Link to document \(in German\)](#)

Federal Roads Office and Federal Office of Transport, Sustainable transport research strategy 2020-2024, [Link to document \(in German\)](#)