Network Statement 2019
For ordering and execution of timetabled transport operations from 9 December 2018 to 14 December 2019

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www.trasse.ch

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Operating points / route database
Available (in German only) at https://www.bls.ch (Unternehmen / Leistungen für Bahnunternehmen / Trassen und Netzzugang ⇒ Network Statement ⇒ Downloads)
## Overview of changes

### Sections in the Network Statement 2019 (Version 1.0) which have been changed from the Network Statement 2018

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Section</th>
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</table>
| General | Contact details and time frame updated  
EU guidelines updated  
ABS, NBS renamed Rail 2000 route  
Gotthard mountain route renamed Gotthard panoramic route |
| 1 General information | 1.3.1 Sections renamed and content updated  
1.3.5 New section for Hafenbahn Schweiz AG  
1.8.1.3 Hafenbahn Schweiz AG added  
1.8.1.6 Crypto Key Management contact point added  
1.11.1 Further information on abbreviations added  
1.11.2 Further information on terms used added |
| 2 Network access conditions | 2.4.1 Provisions for Italian RUs in traffic between the national border and Chiasso station  
2.4.1 Specific network access conditions for the Gotthard Base Tunnel route added.  
2.6 References to regulations concerning the transport of dangerous goods updated.  
2.7.1 Sections renamed and simplified with new sub-sections  
2.7.2.6 New method for listing the GSM-R routes  
2.7.2.6 National roaming from 2021  
2.7.2.9 Alignment with the EU standard  
2.7.2.11 Intervention contact details added |
| 3 Infrastructure | 3.3.3 Section simplified  
3.4.8 Information added to sections on work permits and braking regulations  
3.5.2.2 Updated to timetable year 2019  
3.5.3 Updated to timetable year 2019  
3.7.5 List of TMS types expanded  
3.8 GSM-R development list updated  
Commissioning dates for new ETCS Level 2 routes updated |
| 4 Capacity allocation | 4.2.3.1 Regulations governing the exceedance of guideline times for border stops  
4.2.5 Further information added on nationally requested train paths for cross-border train journeys  
4.3.2.1 Special vehicles updated  
4.4.1.3 Detailed regulations for standing time conflicts in freight services and for resolution of conflicts in locomotive stabling  
4.4.1.4 Distinction made between infrastructure manager and operational services of the infrastructure manager |
| 5 Services | 5.4.1 Renamed to Power supply  
5.4.2 Renamed to Water |
| 6 Prices and invoicing | 6.1.2.5 New factors for calculating the cancellation payment from 1 January 2019 onwards  
6.1.4 Alignment with the List of Services  
6.5.1 RU obligation to keep one currency throughout the calendar year (alignment with the List of Services) |
| 7 Data provision | |
7.1 Data provision specified (provision of data to FOS)
7.2 Data provision via the Swift-IN system removed
7.2 New elements for the provision of data on dangerous goods

8 Ex-catenary energy consumption (measured on the locomotive)

Entire section: Changes to terms and editorial changes
8.1.4 and 8.2.2 d) Section on transitional rules for energy measurement systems removed and transferred to the accompanying letter for the Network Statement
8.2.2 Section renamed
8.2.3 New elements for the parts inspection report
8.3 Section renamed
8.4 New section on handling missing data with components from 8.5
8.5 Renamed to Billing without measurement. Content updated

Network Statement 2019: Overview of changes
List of the most important changes in updated (amended) versions of the Network Statement 2019.

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<tr>
<th>Version</th>
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<th>Date</th>
<th>New (section, content)</th>
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<tr>
<td>2.0</td>
<td>1</td>
<td>14.11.2018</td>
<td>1.8 The address list is now published in the OneStopShop</td>
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<tr>
<td>2.0</td>
<td>2</td>
<td>14.11.2018</td>
<td>4.2.2.1 «Circumstances for which train path studies are appropriate» paragraph removed</td>
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<tr>
<td>2.0</td>
<td>3</td>
<td>14.11.2018</td>
<td>4.1.5 The provisions of the RFI apply to the route from Stabio to the border</td>
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<tr>
<td>2.0</td>
<td>4</td>
<td>14.11.2018</td>
<td>4.8 The volume of traffic is now calculated from the third instead of 30th day</td>
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1 GENERAL INFORMATION

1.1 Introduction

This Network Statement is published by the BLS Netz AG – hereinafter referred to as “IM” (infrastructure manager). It is an integrated contractual component of the track access agreement, and regulates the terms and conditions for using the BLS network. It is designed to enable railway undertakings (RUs) to find the information they require obtaining access to and carrying out their operations on the BLS network.

The independent train path allocation body Swiss Train Paths Ltd (hereinafter referred to as "trasse.ch") is responsible for allocating train paths (basic and ancillary services) on all standard gauge networks of Swiss Federal Railways SBB (including the SBB-operated Port railways of Switzerland Ltd, Sensetalbahn AG [STB] and Thurbo), BLS Netz AG and Schweizerische Südostbahn AG (SOB). trasse.ch is also responsible for ensuring that the timetable is structured in a non-discriminatory fashion. Chapter 4 explains the processes for ordering and allocating timetabled train paths (basic and ancillary services), as well as for the upstream and downstream steps associated with the allocation procedure, and highlights the relevant binding specifications.

1.1.1 Organisation of BLS Netz AG

The purpose of BLS Netz AG is to operate, maintain, extend and construct BLS Group’s rail infrastructure within the framework of the applicable legislation. In so doing, it provides RUs with a high-quality rail network, thereby improving the competitiveness of rail against transport by road. As manager of the Lötschberg corridor, it plays a key role in operations on rail freight corridor rhine - alpine (Rotterdam-Genoa).

Up-to-date information about BLS Netz AG is available at www.bls.ch.

Picture 1 – BLS (corporate image picture)

1.2 Objective (why issue a Network Statement?)

The Network Statement sets out in detail the general rules, deadlines, procedures and criteria concerning track access and charging and capacity allocation schemes. It also contains the information required to submit requests for infrastructure capacity. The Statement is fully up to date at the time of publication and contains details of the routes available to RUs and information setting out the conditions for access to these routes.
1.3 Legal framework

This Network Statement complies with the current legal framework in accordance with Railway Reform 2.2. Legislative changes will be added to the Network Statement as updates (cf. section 1.4.2). Changes will also be listed in the overview of changes. The EU rail transport directives already adopted by Switzerland are listed in Annex 1 to the overland trans-port agreement between the Swiss Confederation and the European Union. COTIF and CUI apply in Switzerland.

The applicable Swiss laws and ordinances are published in the Swiss Certified Compilation of Federal Legislation (SR), and are also available online at www.admin.ch.

Below is a list of the most important international and national legislation.

1.3.1 International legislation (excerpt)

<table>
<thead>
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<th>Full title</th>
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<tbody>
<tr>
<td>SR 0.742.403.1 – COTIF</td>
<td>Convention concerning International Carriage by Rail (COTIF).</td>
</tr>
<tr>
<td>SR 0.742.403.1 – Appendix E – CUI</td>
<td>Uniform Rules concerning the Contract of Use of Infrastructure in International Rail Traffic (CUI – Appendix E to the Convention concerning International Carriage by Rail) (COTIF; SR, 0.742.403.1)</td>
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Table 1 – International legislation
### 1.3.2 National legislation (excerpt)

<table>
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<th>Abbr.</th>
<th>Full title</th>
</tr>
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<td>COTIF</td>
<td>Convention concerning International Carriage by Rail (COTIF).</td>
</tr>
<tr>
<td>SR 0.742.403.1 – Appendix E</td>
<td>CUI</td>
<td>Uniform Rules concerning the Contract of Use of Infrastructure in International Rail Traffic (CUI – Appendix E to the Convention concerning International Carriage by Rail) (COTIF; SR, 0.742.403.1).</td>
</tr>
<tr>
<td>SR 0.740.72</td>
<td>LVA</td>
<td>Agreement of 21 June 1999 between the Swiss Confederation and the European Community regarding the transport of goods and passengers by rail and road (including Annexes and Final Act).</td>
</tr>
<tr>
<td>SR 742.101</td>
<td>EBG</td>
<td>Railways Act.</td>
</tr>
<tr>
<td>SR 742.122</td>
<td>NZV</td>
<td>Track Access Ordinance.</td>
</tr>
<tr>
<td>SR 742.122.4</td>
<td>NZV-BAV</td>
<td>BAV Ordinance on the Track Access Ordinance.</td>
</tr>
<tr>
<td>SR 742.101.4</td>
<td>–</td>
<td>Conduct of business regulation of the Railways Arbitration Commission.</td>
</tr>
<tr>
<td>SR 742.141.1</td>
<td>EBV</td>
<td>Railways Ordinance.</td>
</tr>
<tr>
<td>SR 742.141.11</td>
<td>AB-EBV</td>
<td>Implementing Provisions for the Railways Ordinance.</td>
</tr>
<tr>
<td>SR 742.144.1</td>
<td>VLE</td>
<td>Ordinance on Railway Noise Abatement.</td>
</tr>
<tr>
<td>SR 742.173.001</td>
<td>FDV</td>
<td>Swiss Train Loading and Running Regulations (R 300.1–15).</td>
</tr>
<tr>
<td>SR 742.412</td>
<td>RSD</td>
<td>Ordinance on the Carriage of Dangerous Goods by Rail.</td>
</tr>
<tr>
<td>SR 742.411</td>
<td>GTV</td>
<td>Ordinance on the Carriage of Goods.</td>
</tr>
<tr>
<td>SR 745.11</td>
<td>VPB</td>
<td>Ordinance on Passenger Transport.</td>
</tr>
<tr>
<td>SR 745.13</td>
<td>FPV</td>
<td>Timetables Ordinance.</td>
</tr>
<tr>
<td>SR 151.31</td>
<td>BehiV</td>
<td>Federal Ordinance on the Elimination of Discrimination against People with Disabilities.</td>
</tr>
</tbody>
</table>

Table 2 – National legislation
1.3.3 Joint provisions / regulations of SBB Infrastructure, BLS Netz AG and SOB Infrastructure (excerpt)

<table>
<thead>
<tr>
<th>Full title</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Infrastructure Implementing Provisions for the FDV and associated provisions (AB FDV), R I-30111</td>
<td></td>
</tr>
<tr>
<td>Local Train and Shunting Movement Regulations, R I-30121</td>
<td></td>
</tr>
<tr>
<td>RADN block tables, R I-30131</td>
<td></td>
</tr>
<tr>
<td>List of Infrastructure Services of Swiss Federal Railways (SBB) and BLS AG and the accompanying Implementing Provisions</td>
<td></td>
</tr>
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</table>

Table 3 – Provisions / regulations held jointly by SBB Infrastructure, BLS Netz AG and SOB Infrastructure

1.3.4 BLS Netz AG provisions / regulations (excerpt)

<table>
<thead>
<tr>
<th>Full title</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>General Terms and Conditions for the Use of Railway Infrastructure (AGB-ISB)</td>
<td></td>
</tr>
<tr>
<td>BLS Operating Provisions and Regulations</td>
<td></td>
</tr>
<tr>
<td>Network Statement</td>
<td></td>
</tr>
</tbody>
</table>

Table 4 – SBB Infrastructure provisions / regulations

1.3.5 SBB Infrastructure provisions / regulations (excerpt)

<table>
<thead>
<tr>
<th>Full title</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>General Terms and Conditions for the Use of Railway Infrastructure (AGB-ISB)</td>
<td></td>
</tr>
<tr>
<td>Network Statement</td>
<td></td>
</tr>
<tr>
<td>Necessary regulations for the RU</td>
<td></td>
</tr>
</tbody>
</table>

Table 5 – BLS Netz AG provisions / regulations

1.3.6 SOB Infrastructure provisions / regulations (excerpt)

<table>
<thead>
<tr>
<th>Full title</th>
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</thead>
<tbody>
<tr>
<td>General Terms and Conditions for the Use of Railway Infrastructure (AGB-ISB)</td>
<td></td>
</tr>
<tr>
<td>Network Statement</td>
<td></td>
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</tbody>
</table>

Table 6 – SOB Infrastructure provisions / regulations

1.3.7 Federal Office of Transport (BAV) provisions / regulations (excerpt)

<table>
<thead>
<tr>
<th>Full title</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Guideline – Track Access Permits, Safety Certification, valid from 01.07.2013 (in German language)</td>
<td></td>
</tr>
<tr>
<td>Application forms for safety certification, Parts A and B, track section module map (in German language)</td>
<td></td>
</tr>
<tr>
<td>Guideline – Acceptance of Railway Vehicles (in German language)</td>
<td></td>
</tr>
<tr>
<td>Guideline – Acceptance of Historic Railway Vehicles (in German language)</td>
<td></td>
</tr>
<tr>
<td>Guideline – Line closures in accordance with Art. 11b NZV (in German language)</td>
<td></td>
</tr>
</tbody>
</table>

Table 7 – Federal Office of Transport (BAV) provisions / regulations
1.4  Legal status

1.4.1  General remarks
The Network Statement is based on Directive 2001/34/EU. This publication thus follows the Network Statement model, which has developed into a standard within the European region.

The Swiss Federal Track Access Ordinance (NZV) also obliges the infrastructure manager to publish its track access conditions (Art. 10 NZV).

Art. 10 The infrastructure manager’s obligations

1. The infrastructure manager is to ensure non-discriminatory access to its network, by:
   a. applying the same rules both to itself and to third parties when allocating train paths and setting train path prices;
   b. treating third parties equally under the same conditions when allocating train paths and setting train path prices;
   c. not applying technical conditions which have no basis in current legislation or regulations;
   d. publishing the basic conditions for network access, where not detailed in this regulation, and by publishing the most important technical features of the track section, such as profile (gradient), curve radii, length of the passing tracks, platform lengths, route class and safety equipment;
   e. offering additional services (Art. 22) where this is possible with the existing infrastructure and available staff.
2. The BAV will specify the type and nature of the publications.

1.4.2  Liability
For those RUs that have concluded a track access agreement with BLS Netz AG, the Network Statement forms an integral part of the agreement.

All the conditions governing the use of railway infrastructures that are published in this Network Statement are subject to subsequent legislative changes. Insofar as additional requirements are introduced after publication of the Network Statement within the context of amendments to Swiss laws and ordinances, compliance with these requirements is mandatory. If these additional requirements come into effect during the period of validity of this Network Statement, they will be incorporated as editorial changes and listed in the overview of changes. BLS Netz AG accepts no liability for the consequences of subsequent amendments to legislation.

BLS Netz AG has made every effort to ensure that the information in the Network Statement 2019 is correct. It accepts no liability for direct or indirect damages suffered as a result of obvious defects and misprints in the Network Statement 2019 or other documents. Moreover, all responsibility for the contents of any external sites referred to by this publication (Links) is declined. Insofar as content on linked external sites contradicts the content of this Network Statement, the Network Statement shall take precedence. This condition does not apply to links to the official collection of Swiss laws and ordinances.

This Network Statement is published in German and English language versions. In the event of differences between language versions, the German version shall be legally binding.
1.4.3 Complaints procedure

1.4.3.1 BLS Netz AG (with the exception of chapter 4)
Complaints relating to the content of this Network Statement should be directed to the following contact point:
BLS Netz AG
Betrieb Trassen
Bahnhofstrasse 12
Postfach 48
CH-3700 Spiez
Phone +41 58 327 40 39
E-mail: netzzugang@bls.ch

1.4.3.2 Swiss Train Paths Ltd. (chapter 4)
Complaints relating to the content of chapter 4 should be directed to the following contact point:
Swiss Train Paths Ltd.
Schwarztorstrasse 31
Postfach
CH-3001 Bern
Phone +41 79 928 01 63
E-mail: info@trasse.ch
www.trasse.ch

1.4.3.3 Railways Arbitration Commission
Disputes relating to the granting of track access and the associated conditions are subject to claims to the Railways Arbitration Commission (SKE). The Commission’s decisions are subject to judicial review (Art. 29 LVA, Art. 40a bis EBG, Art. 25 NZV). For contact details, see section 1.8.4 Link

Art. 40a bis Tasks

1 The SKE will settle disputes about the granting of track access, about track access agreements and about how the charges for use of the infrastructure are calculated.

2 It has the authority to initiate investigations if there is any suspicion either that track access is being prevented or that it is not being granted in a non-discriminatory manner.

3 It determines the action to be taken and has powers to enforce such action.

4 Infrastructure managers, rail companies with track access and third parties involved in track access must provide the SKE with all the information required for its investigations and must submit the necessary documents. The right to refuse to provide information is governed by Article 16 of the Administrative Procedure Act dated 20 December 1968.

According to Art. 33f of the Administrative Court Act (VGG) decisions by the SKE can be referred to the Federal Administrative Court in St. Gallen

1.5 Network Statement structure
The structure of this Network Statement corresponds for the most part to that agreed upon by the RailNetEurope (RNE) Network Statement working group on 9 March 2016 in Bern (RNE-WG Network Statement).

The goal of a uniform structure is to enable readers across Europe to find the information they require for track access more easily in a uniform format.
1.6  Validity period and updates

1.6.1  Validity period
This Network Statement is valid for the ordering and execution of timetabled transport operations from 9 December 2018 to 14 December 2019.

1.6.2  Updates
The Network Statement will not be changed until the end of the relevant timetable year. This does not apply to future amendments to legislation or to purely editorial amendments listed in the overview of changes.

1.7  Publication
This Network Statement 2019 is available as a .pdf file on the BLS Netz AG website free of charge. Copies of regulations and more detailed BLS documentation can be obtained for a fee.

Picture 2 – Homepage BLS

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1 All Portable Document Format (PDF) files can be viewed and printed using Acrobat®Reader®. The program Acrobat®Reader® can be downloaded free of charge at www.adobe.com.
1.8 Contact addresses
The section below lists contacts from whom further information can be obtained.

For questions about chapter 4 of the NWS, please make direct contact with
Trasse Schweiz AG
Schwarztorstrasse 31
P.O. Box
3001 Bern
Switzerland Tel: +41 79 928 01 63
info@trasse.ch
www.trasse.ch

1.8.1 SBB Infrastructure / BLS Netz AG / SOB Infrastructure
1.8.1.1 Questions regarding basic, ancillary and miscellaneous service

<table>
<thead>
<tr>
<th>Topic</th>
<th>BLS Netz AG</th>
<th>SOB Infrastructure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price information and questions regarding</td>
<td>OneStopShop Hilfikerstrasse 3 CH-3000 Bern 65 E-mail: <a href="mailto:onestopshop@sbb.ch">onestopshop@sbb.ch</a></td>
<td>OneStopShop Hilfikerstrasse 3 CH-3000 Bern 65 E-mail:</td>
</tr>
<tr>
<td>invoicing</td>
<td><a href="http://www.onestopshop.ch">www.onestopshop.ch</a></td>
<td><a href="mailto:onestopshop@sbb.ch">onestopshop@sbb.ch</a></td>
</tr>
<tr>
<td></td>
<td>Ancillary and miscellaneous services:</td>
<td>Ancillary and miscellaneous services:</td>
</tr>
<tr>
<td></td>
<td>BLS Netz AG</td>
<td>SOB Infrastruktur</td>
</tr>
<tr>
<td></td>
<td>Betrieb Trassen Verkauf</td>
<td>Betrieb – Betriebsplanung Bahnhofplatz 7</td>
</tr>
<tr>
<td></td>
<td>Bahnhofstrasse 12</td>
<td>CH-9100 Herisau</td>
</tr>
<tr>
<td></td>
<td>Postfach 48 CH-3700 Spiez</td>
<td>Telephone: +41 58 580 76 15 E-mail: <a href="mailto:planung@sob.ch">planung@sob.ch</a></td>
</tr>
<tr>
<td></td>
<td>Telephone: +41 58 327 40 39</td>
<td></td>
</tr>
<tr>
<td></td>
<td>E-mail: <a href="mailto:netzzugang@bls.ch">netzzugang@bls.ch</a></td>
<td></td>
</tr>
<tr>
<td></td>
<td>BLS Netz AG</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Betrieb Planung</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bahnhofstrasse 12</td>
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<td>Postfach 48</td>
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<tr>
<td></td>
<td>CH-3700 Spiez</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Telephone: +41 58 327 35 78</td>
<td></td>
</tr>
<tr>
<td></td>
<td>E-mail: <a href="mailto:vorschriften.betrieb@bls.ch">vorschriften.betrieb@bls.ch</a></td>
<td></td>
</tr>
<tr>
<td>Ordering regulations For applicants</td>
<td>----------------------------------------------------------------------------</td>
<td>---------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>----------------------------------------------------------------------------</td>
<td></td>
</tr>
</tbody>
</table>

Table 8 – SBB/BLS/SOB contact addresses – Questions regarding basic, ancillary and miscellaneous services
### 1.8.1.2 Questions regarding train path studies, engineering possessions and NeTS-AVIS

<table>
<thead>
<tr>
<th>Topic</th>
<th>BLS Netz AG</th>
<th>SOB Infrastructure</th>
</tr>
</thead>
</table>
| Questions regarding infrastructure engineering possessions           | BLS Netz AG  
Betrieb Planung  
Koordinator Intervalle  
Bahnhofsstrasse 12 CH-3700 Spiez  
Telephone: +41 58 327 35 53  
E-mail: michael.rohr@bls.ch | SOB Infrastruktur  
Betrieb – Betriebsplanung Bahnhofplatz 7  
CH-9100 Herisau  
Telephone: +41 58 580 76 15  
E-mail: planung@sob.ch |
| NeTS-AVIS access rights                                              | SBB AG  
Infrastruktur Fahrplan und Netzdesign  
Fahrplan und Angebot  
Hilfikerstrasse 3  
CH-3000 Bern 65  
E-mail: beatrice.seydoux@sbb.ch  
Fachbus NeTS  
Telephone: +41 51 220 11 23  
E-mail: fachbus.nets@sbb.ch | SBB AG  
Infrastruktur Fahrplan und Netzdesign  
Fahrplan und Angebot  
Hilfikerstrasse 3  
CH-3000 Bern 65  
E-mail: beatrice.seydoux@sbb.ch  
Fachbus NeTS  
Telephone: +41 51 220 11 23  
E-mail: fachbus.nets@sbb.ch |

Table 9 – SBB/BLS/SOB contact addresses – Questions regarding train path studies, engineering possessions and NeTS-AVIS
### 1.8.1.3 Questions regarding track access

<table>
<thead>
<tr>
<th>Topic</th>
<th>BLS Netz AG</th>
<th>SOB Infrastructure</th>
</tr>
</thead>
</table>
| **Basic questions** | BLS Netz AG  
Betrieb Trassen Verkauf  
Bahnhofstrasse 12  
Postfach 48  
CH-3700 Spiez  
Telephone: +41 58 327 40 39  
E-mail: netzzugang@bls.ch | SOB Infrastruktur  
Betrieb – Betriebsplanung Bahnhofplatz 7  
CH-9100 Herisau  
Telephone: +41 58 580 76 15  
E-mail: planung@sob.ch |
| **Technical track access questions** | Coordinated by:  
BLS Netz AG  
Betrieb Trassen Verkauf  
Bahnhofstrasse 12  
Postfach 48  
CH-3700 Spiez  
Telephone: +41 58 327 40 39  
Fax: +41 58 327 35 50  
E-mail: netzzugang@bls.ch | Coordinated by:  
SOB Infrastruktur  
Betrieb – Betriebsplanung Bahnhofplatz 7  
CH-9100 Herisau  
Telephone: +41 58 580 76 15  
E-mail: planung@sob.ch |
| **Central point of contact for test runs** | Coordinated by:  
BLS Netz AG  
Betrieb Trassen Verkauf  
Bahnhofstrasse 12  
Postfach 48  
CH-3700 Spiez  
Telephone: +41 58 327 40 39  
E-mail: netzzugang@bls.ch | Coordinated by:  
SOB Infrastruktur  
Betrieb – Betriebsplanung Bahnhofplatz 7  
CH-9100 Herisau  
Telephone: +41 58 580 76 15  
E-mail: planung@sob.ch |
| **Questions regarding exceptional loads/special consignments** | Coordinated by:  
BLS Netz AG  
Betrieb Trassen Verkauf  
Bahnhofstrasse 12  
Postfach 48  
CH-3700 Spiez  
Telephone: +41 58 327 40 39  
E-mail: netzzugang@bls.ch | Coordinated by:  
SOB Infrastruktur  
Betrieb – Betriebsplanung Bahnhofplatz 7  
CH-9100 Herisau  
Telephone: +41 58 580 76 15  
E-mail: planung@sob.ch |
| **Questions regarding heavy loads** | Coordination by:  
BLS Netz AG  
Betrieb Trassen Verkauf  
Bahnhofstrasse 12  
Postfach 48  
CH-3700 Spiez  
Telephone: +41 58 327 40 39  
E-mail: netzzugang@bls.ch | Coordination by:  
SOB Infrastruktur  
Betrieb – Betriebsplanung Bahnhofplatz 7  
CH-9100 Herisau  
Telephone: +41 58 580 76 15  
E-mail: planung@sob.ch |

Table 10 – SBB/BLS/SOB contact addresses – Questions regarding track access
1.8.1.4 Questions regarding day-to-day operations / emergency numbers

<table>
<thead>
<tr>
<th>Topic</th>
<th>BLS Netz AG</th>
<th>SOB Infrastructure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central point of contact for day-to-day</td>
<td>BLS Netz AG</td>
<td>SOB Infrastruktur</td>
</tr>
<tr>
<td>operations and emergency numbers</td>
<td>Betrieb Durchführung</td>
<td>Betriebszentrale</td>
</tr>
<tr>
<td></td>
<td>Betriebszentrale Bahnhofstrasse 14</td>
<td>Bahnhofplatz 7</td>
</tr>
<tr>
<td></td>
<td>CH-3700 Spiez</td>
<td>CH-9100 Herisau</td>
</tr>
<tr>
<td></td>
<td>Telephone: +41 58 327 58 71</td>
<td>Telephone: +41 71 354 72 06</td>
</tr>
<tr>
<td></td>
<td>Fax: +41 58 327 35 20</td>
<td>E-mail: <a href="mailto:bfl@sob.ch">bfl@sob.ch</a></td>
</tr>
<tr>
<td></td>
<td>E-mail: <a href="mailto:disposition.bz@bls.ch">disposition.bz@bls.ch</a></td>
<td></td>
</tr>
</tbody>
</table>

Table 11 – SBB/BLS/SOB contact addresses – Questions regarding day-to-day operations/emergency numbers

1.8.1.5 Questions regarding GSM-R SIM cards

<table>
<thead>
<tr>
<th>Topic</th>
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<th>SOB Infrastructure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Swiss GSM-R SIM cards</td>
<td>SBB AG Infrastruktur Telecom</td>
<td>SBB AG Infrastruktur Telecom</td>
</tr>
<tr>
<td></td>
<td>Poststrasse 6</td>
<td>Poststrasse 6</td>
</tr>
<tr>
<td></td>
<td>CH-3072 Ostermundigen</td>
<td>CH-3072 Ostermundigen</td>
</tr>
<tr>
<td></td>
<td>Telephone: +41 51 220 11 82</td>
<td>Telephone: +41 51 220 11 82</td>
</tr>
<tr>
<td></td>
<td>E-mail: <a href="mailto:helpdesk.gsm-r@sbb.ch">helpdesk.gsm-r@sbb.ch</a></td>
<td>E-mail: <a href="mailto:helpdesk.gsm-r@sbb.ch">helpdesk.gsm-r@sbb.ch</a></td>
</tr>
</tbody>
</table>

Table 12 – SBB/BLS/SOB contact address – Questions regarding GSM-R SIM cards

1.8.2 Swiss Federal Office of Transport (BAV)

<table>
<thead>
<tr>
<th>Topic</th>
<th>Contact person</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic questions</td>
<td>Bundesamt für Verkehr BAV</td>
</tr>
<tr>
<td></td>
<td>CH-3003 Bern</td>
</tr>
<tr>
<td></td>
<td>Telephone: +41 58 462 57 11</td>
</tr>
<tr>
<td></td>
<td>Fax +41 58 462 58 11</td>
</tr>
<tr>
<td></td>
<td><a href="http://www.bav.admin.ch.netz@bav.admin.ch">www.bav.admin.ch.netz@bav.admin.ch</a></td>
</tr>
</tbody>
</table>

Table 13 – Contact address – Swiss Federal Office of Transport (BAV)
1.8.3 Railways Arbitration Commission (SKE)

<table>
<thead>
<tr>
<th>Topic</th>
<th>Contact person</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic questions</td>
<td>Schiedskommission im Eisenbahnverkehr</td>
</tr>
<tr>
<td></td>
<td>Monbijoustrasse 51A</td>
</tr>
<tr>
<td></td>
<td>CH-3003 Bern</td>
</tr>
<tr>
<td></td>
<td>Telephone: +41 31 322 55 84</td>
</tr>
<tr>
<td></td>
<td>Fax: +41 31 322 54 75</td>
</tr>
<tr>
<td></td>
<td><a href="http://www.ske.admin.ch">www.ske.admin.ch</a></td>
</tr>
</tbody>
</table>

Table 14 – Contact address – Railways Arbitration Commission (SKE)

1.8.4 RailNetEurope (RNE)

<table>
<thead>
<tr>
<th>Topic</th>
<th>Contact person</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic questions</td>
<td>Joint Office – RailNetEurope</td>
</tr>
<tr>
<td></td>
<td>Oelzeltgasse 3/8</td>
</tr>
<tr>
<td></td>
<td>A-1030 Wien</td>
</tr>
<tr>
<td></td>
<td>Telephone: +43 1 907 62 72 00</td>
</tr>
<tr>
<td></td>
<td>Fax: +43 1 907 62 72 90</td>
</tr>
<tr>
<td></td>
<td><a href="http://www.rne.eu">www.rne.eu</a></td>
</tr>
</tbody>
</table>

Table 15 – Contact address – RailNetEurope (RNE)

1.9 Rail freight corridors

General Information Link.


1.10 RailNetEurope – international collaboration between infrastructure managers

RailNetEurope (RNE) was founded in January 2004 as a not-for-profit organisation of infrastructure managers (IMs) and train path allocation bodies. RNE is dedicated to the promotion of cross-border travel and transport on the European rail network.

The goal of RNE is to support RUs in their international activities (freight and passenger services) and to improve the performance of rail networks. RNE members harmonise the conditions governing international rail transport and maintain cooperation with the aim of promoting European rail operations to the benefit of the entire European rail industry.

RNE’s mandates are carried out by four permanent working groups and a number of ad hoc project groups, which are coordinated by the Joint Office in Vienna.

Currently, the RailNetEurope organisation includes 38 IMs and train path allocation bodies, each with full member, partial member or client status. The IMs manage an overall rail network of 230,000 km. In its daily operations, RNE is committed to simplifying and harmonising international collaboration: this includes Europe-wide planning, standardised marketing and sales strategies for train paths (including Network Statements), collaboration between IMs in the area of operations management, real-time cross-border information exchange, and various customer services (monitoring, reporting, etc.).
1.10.1 OneStop Shop (OSS)
The European IMs have signed an agreement under the auspices of RailNetEurope (RNE) which creates the framework for a joint sales and marketing operation, centred on a network of national contact points (OSSs). This gives customers the option of submitting their international train path requests (except for catalogued corridor train paths) to any OSS, and their chosen OSS will then take responsibility for coordinating all sections of the request.

Processing will take place in close collaboration with the relevant partners:
- Customer support and information on products and services
- Provision of all relevant track access information for the entire route
- Processing of international path requests
- Customer-oriented path planning for all time horizons
- Provision of quotes for the entire international route

Each national OSS is part of the international network aiming to make track access as easy as possible for its customers. The OSSs also provide train path price information and can compile operational reports.

With these specified national contact points, all customers should have access to competent, efficient and non-discriminatory support for all matters relating to international operations. A list of the national contact points is available from [www.rne.eu](http://www.rne.eu).

In Switzerland, both domestic and international train path requests and orders should be submitted directly to trasse.ch (cf. chapter 4).

1.10.2 RNE-Tools

<table>
<thead>
<tr>
<th>Tool</th>
<th>Link</th>
</tr>
</thead>
<tbody>
<tr>
<td>Path Coordination System (RNE PCS)</td>
<td><a href="http://pcs.rne.eu/">http://pcs.rne.eu/</a></td>
</tr>
<tr>
<td>Charging Information System (RNE CIS)</td>
<td><a href="http://cis.rne.eu/">http://cis.rne.eu/</a></td>
</tr>
<tr>
<td>Train Information System (RNE TIS)</td>
<td><a href="http://tis.rne.eu/">http://tis.rne.eu/</a></td>
</tr>
</tbody>
</table>

Table 16 – RNE-Tools

1.11 Glossary
The most important abbreviations and terms used are listed in the two tables below.

A pan-European glossary produced by RNE is available at: [http://www.rne.eu/ns_glossary.html](http://www.rne.eu/ns_glossary.html)

1.11.1 Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>AB-EBV</td>
<td>Implementing Provisions for the Railways Ordinance</td>
</tr>
<tr>
<td>AB-FDV</td>
<td>Implementing Provisions for the Train Loading and Running Regulations</td>
</tr>
<tr>
<td>ABS</td>
<td>Upgraded high-speed line (Solothurn–Wanzwil)</td>
</tr>
<tr>
<td>ADFV</td>
<td>Grants Ordinance</td>
</tr>
<tr>
<td>AGB-ISB</td>
<td>General Terms and Conditions for the Use of Railway Infrastructure</td>
</tr>
<tr>
<td>AVIS</td>
<td>SBB’s job management and information system</td>
</tr>
<tr>
<td>BAV</td>
<td>The Swiss Federal Office of Transport (part of UVEK)</td>
</tr>
<tr>
<td>BLS</td>
<td>BLS AG/BLS Netz AG</td>
</tr>
<tr>
<td>CBT</td>
<td>Ceneri base tunnel</td>
</tr>
<tr>
<td>CEN</td>
<td>The European Committee for Standardisation</td>
</tr>
<tr>
<td>CH</td>
<td>Switzerland (Confoederatio Helvetica)</td>
</tr>
<tr>
<td>CIS</td>
<td>Cargo Information System</td>
</tr>
<tr>
<td>CLC</td>
<td>CENELEC – The European Committee for Electrotechnical Standardisation</td>
</tr>
<tr>
<td>COTIF</td>
<td>Convention concerning International Carriage by Rail</td>
</tr>
<tr>
<td>CUI</td>
<td>Uniform Rules concerning the Contract of Use of Infrastructure in International Rail Traffic</td>
</tr>
<tr>
<td>DB</td>
<td>Deutsche Bahn AG</td>
</tr>
<tr>
<td>Abbreviation</td>
<td>Meaning</td>
</tr>
<tr>
<td>--------------</td>
<td>---------</td>
</tr>
<tr>
<td>DfA</td>
<td>SBB database of fixed installations</td>
</tr>
<tr>
<td>DML</td>
<td>Zurich cross-city link</td>
</tr>
<tr>
<td>DOLS</td>
<td>Scheduling and operational control centre, Spiez</td>
</tr>
<tr>
<td>EBG</td>
<td>Railways Act</td>
</tr>
<tr>
<td>EBV</td>
<td>Railways Ordinance</td>
</tr>
<tr>
<td>EDIFACT</td>
<td>Electronic Data Interchange For Administration Commerce and Transport</td>
</tr>
<tr>
<td>EC</td>
<td>European Communities</td>
</tr>
<tr>
<td>EIRENE</td>
<td>European Integrated Railway Radio Enhanced Network</td>
</tr>
<tr>
<td>EN</td>
<td>European standard</td>
</tr>
<tr>
<td>ERA</td>
<td>European Railway Agency</td>
</tr>
<tr>
<td>ERTMS</td>
<td>European Rail Traffic Management System</td>
</tr>
<tr>
<td>ETCS</td>
<td>European Train Control System</td>
</tr>
<tr>
<td>ETM</td>
<td>European Transmission Module</td>
</tr>
<tr>
<td>EU</td>
<td>European Union</td>
</tr>
<tr>
<td>EVN</td>
<td>European Vehicle Number. The 12-digit vehicle number registered in the national register of vehicles (Art. 5i EBV)</td>
</tr>
<tr>
<td>RU</td>
<td>Railway undertaking</td>
</tr>
<tr>
<td>FTH/FAG</td>
<td>Form, type and hazard</td>
</tr>
<tr>
<td>FDV</td>
<td>Train Loading and Running Regulations</td>
</tr>
<tr>
<td>FPV</td>
<td>Timetables Ordinance</td>
</tr>
<tr>
<td>FTE</td>
<td>Forum Train Europe</td>
</tr>
<tr>
<td>FOS</td>
<td>Formation Service</td>
</tr>
<tr>
<td>GBT</td>
<td>Gotthard base tunnel</td>
</tr>
<tr>
<td>GSM-R</td>
<td>Global System for Mobile Communication – Railway Infrastructure</td>
</tr>
<tr>
<td>IM</td>
<td>Infrastructure manager</td>
</tr>
<tr>
<td>LBS</td>
<td>Lötschberg base tunnel route</td>
</tr>
<tr>
<td>LBT</td>
<td>Lötschberg base tunnel</td>
</tr>
<tr>
<td>LVA</td>
<td>Overland Transport Agreement</td>
</tr>
<tr>
<td>NBS</td>
<td>New high-speed line (Mattschton–Rothrist)</td>
</tr>
<tr>
<td>NaEP</td>
<td>Change of use process, safety</td>
</tr>
<tr>
<td>NEAT</td>
<td>New transalpine rail routes</td>
</tr>
<tr>
<td>NZV</td>
<td>Track Access Ordinance</td>
</tr>
<tr>
<td>NZV-BAV</td>
<td>BAV Ordinance on the Track Access Ordinance</td>
</tr>
<tr>
<td>OSS</td>
<td>One Stop Shop</td>
</tr>
<tr>
<td>PNL</td>
<td>Usable platform length</td>
</tr>
<tr>
<td>R</td>
<td>Regulation/radius</td>
</tr>
<tr>
<td>RA</td>
<td>Piggyback service</td>
</tr>
<tr>
<td>RADN</td>
<td>Block tables</td>
</tr>
<tr>
<td>RID</td>
<td>The European Agreements Concerning the International Carriage of Dangerous Goods by Rail (Règlement concernant le transport international ferroviaire de marchandises dangereuses)</td>
</tr>
<tr>
<td>DIR</td>
<td>EU Directive</td>
</tr>
<tr>
<td>RNE</td>
<td>RailNetEurope</td>
</tr>
<tr>
<td>RNE CIS</td>
<td>Charging Information System</td>
</tr>
<tr>
<td>RNE PCS</td>
<td>Path Coordination System</td>
</tr>
<tr>
<td>RNE TIS</td>
<td>Train Information System</td>
</tr>
<tr>
<td>ROLA</td>
<td>Piggyback service</td>
</tr>
<tr>
<td>RSD</td>
<td>Ordinance on the Carriage of Dangerous Goods by rail and cableway</td>
</tr>
<tr>
<td>RTE</td>
<td>Swiss Public Transport Association (VöV) compilation of technical rail regulations</td>
</tr>
<tr>
<td>SBB</td>
<td>Swiss Federal Railways</td>
</tr>
<tr>
<td>SiBe</td>
<td>Safety certification</td>
</tr>
<tr>
<td>SIM</td>
<td>Simplon Inter-Modal</td>
</tr>
<tr>
<td>SKE</td>
<td>Railways Arbitration Commission</td>
</tr>
<tr>
<td>SOB</td>
<td>Schweizerische Südostbahn AG</td>
</tr>
<tr>
<td>STB</td>
<td>Sensetalbahn</td>
</tr>
<tr>
<td>TNZ</td>
<td>SBB Infrastructure’s Technical Track Access unit</td>
</tr>
<tr>
<td>trasse.ch</td>
<td>Swiss Train Paths Ltd.</td>
</tr>
<tr>
<td>TS</td>
<td>European technical specification (generally accepted technical standard which also has the status of a...</td>
</tr>
<tr>
<td>Abbreviation</td>
<td>Meaning</td>
</tr>
<tr>
<td>--------------</td>
<td>---------</td>
</tr>
<tr>
<td>TSI</td>
<td>Technical Specifications for Interoperability</td>
</tr>
<tr>
<td>TV</td>
<td>Transport Ordinance</td>
</tr>
<tr>
<td>TZ</td>
<td>Transport number</td>
</tr>
<tr>
<td>UIC</td>
<td>International Union of Railways</td>
</tr>
<tr>
<td>UVEK</td>
<td>Swiss Federal Department of the Environment, Transport, Energy and Communications</td>
</tr>
<tr>
<td>VL</td>
<td>Connecting line</td>
</tr>
<tr>
<td>VLE</td>
<td>Ordinance on Railway Noise Abatement</td>
</tr>
<tr>
<td>VLS</td>
<td>Federal Law on Railway Noise Abatement</td>
</tr>
<tr>
<td>V6V</td>
<td>Swiss Public Transport Association</td>
</tr>
<tr>
<td>VPB</td>
<td>Ordinance on Passenger Transport</td>
</tr>
<tr>
<td>VSS</td>
<td>Swiss Association of Road and Transport Professionals</td>
</tr>
<tr>
<td>WTMS</td>
<td>Wayside train monitoring system</td>
</tr>
<tr>
<td>ZIS</td>
<td>Train information system</td>
</tr>
</tbody>
</table>

Table 17 – Abbreviations
### 1.11.2 Terms used

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applicant</td>
<td>An RU, an international consortium of RUs or any other company which is interested in carrying out rail traffic operations.</td>
</tr>
<tr>
<td>Notified Body NoBo</td>
<td>Body responsible for carrying out inspections and issuing certificates in conjunction with evaluations of compliance (Link).</td>
</tr>
<tr>
<td>Designated Body DeBo</td>
<td>Checks compliance with Notified National Technical Rules as per EU directives 2008/57/EC and 2011/217/EU.</td>
</tr>
<tr>
<td>Order conflict/train path conflict</td>
<td>Situation in which two or more mutually conflicting train paths cannot be allocated.</td>
</tr>
<tr>
<td>Railway undertaking (RU)</td>
<td>Public or private company whose main purpose is to provide rail services to transport passengers and/or freight, for which it must also secure the necessary motive power.</td>
</tr>
<tr>
<td>EuroSIGNUM</td>
<td>SIGNUM information in Eurobalises based on ERTMS/ETCS language packet 44 (NID_XUSER=2).</td>
</tr>
<tr>
<td>EuroZUB</td>
<td>ZUB information in Eurobalises based on ERTMS/ETCS packet 44 (NID_XUSER=2).</td>
</tr>
<tr>
<td>Timetables Ordinance</td>
<td>The Timetables Ordinance (FPV) regulates the process of creating, publishing and changing the timetable of public transport services for passengers.</td>
</tr>
<tr>
<td>Movement type</td>
<td>The movement type is a grouping element for several vehicle types that do not differ with respect to their physical characteristics. Movement types are only assigned by the infrastructure manager.</td>
</tr>
<tr>
<td>Vehicle type</td>
<td>The vehicle type describes the sort of vehicle.</td>
</tr>
<tr>
<td>Basic service</td>
<td>The definition of a basic service is derived from Art. 21 NZV and is described in more detail in the infrastructure managers' lists of infrastructure services.</td>
</tr>
<tr>
<td>Infrastructure</td>
<td>All fixed systems and installations required to provide rail transport service, such as tracks, trackside equipment, train protection systems and stations. &quot;Infrastructure&quot; as defined by the EBG also includes the operation of these systems.</td>
</tr>
<tr>
<td>Conflict resolution negotiations</td>
<td>Process to alleviate an order conflict. The train path allocation body and the relevant infrastructure manager work together with the applicant involved in the conflict to find reasonable alternative train paths.</td>
</tr>
<tr>
<td>Catalogued corridor train paths</td>
<td>Train paths established in advance on a rail freight corridor in accordance with EU Regulation 913/2010. Catalogued corridor train paths are offered for the entire length of the corridor or for specified sections of corridor for cross-border rail traffic. As regards annual timetable requests, catalogued corridor train paths are published eleven months before a timetable change. As regards the interim timetable, residual capacity is published two months before a timetable change. Catalogued corridor train paths are reserved exclusively for cross-border rail traffic.</td>
</tr>
<tr>
<td>Corridor OSS</td>
<td>A common point of contact established for a rail freight corridor by the infrastructure managers and the train path allocation bodies, to which applicants can submit orders for catalogued corridor train paths (incl. feeder train paths). The corridor OSS provides details of the train path allocation and of the conditions for using the network and allocates the catalogued corridor train paths in the name of and on behalf of the infrastructure manager and the train path allocation body concerned.</td>
</tr>
<tr>
<td>NeTS-AVIS</td>
<td>Network-wide track management system ordering tool.</td>
</tr>
<tr>
<td>NeTS-PLAN</td>
<td>Network-wide track management system planning tool.</td>
</tr>
<tr>
<td>Track access</td>
<td>Track access is the opening of the railway network to third-party providers without discrimination. These providers are called network users.</td>
</tr>
<tr>
<td>Track access permit</td>
<td>The track access permit enables rail companies to run services on foreign rail infrastructure. In Switzerland, such permits are issued by the BAV once reliability and financial performance criteria have been met.</td>
</tr>
<tr>
<td>Track access agreement</td>
<td>The track access agreement, as defined in Art. 9b para. 2 EBG governs the content of collaboration between an infrastructure manager and a network user.</td>
</tr>
<tr>
<td>Change of use process, safety (NaeP)</td>
<td>Risk assessment of safety-related concerns, questions and aspects by SBB Infrastructure. This is carried out as standard on the basis of a new RU service request in the planning horizon of 5 years in order to identify any newly emerging safety shortfalls (see section 3.2.1 for detailed description).</td>
</tr>
<tr>
<td>Path Coordination System</td>
<td>Planning and ordering tool for cross-border freight and passenger train paths.</td>
</tr>
<tr>
<td>Framework agreement in accordance with Art. 12b NZV</td>
<td>The infrastructure manager and the companies interested in putting on rail traffic (Art. 9a para. 4 EBG) may conclude a framework agreement on track access specifying the characteristics of the train paths to be allocated. A framework is generally concluded for two timetable periods but for no longer than ten years. It may not grant any exclusive rights of use. It may be terminated by the infrastructure operator in order to improve usage of the relevant track. The agreement may specify compensation payments for cases such as this.</td>
</tr>
<tr>
<td>Safety certification</td>
<td>Safety certification is awarded by the BAV subject to the provision of a safety management system (SMS) by the network user. It recognizes that the network user has fulfilled the relevant safety requirements to run services on a defined route, particularly those involving its staff, the rolling stock used and internal organization.</td>
</tr>
<tr>
<td>Term</td>
<td>Definition</td>
</tr>
<tr>
<td>---------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Train path</td>
<td>A train path is defined as the basic service, i.e. the travel “slot” reserved for a train on the rail network defined in terms of place and time, as well as the associated ancillary services.</td>
</tr>
<tr>
<td>Train path request</td>
<td>“Train path requests” are applications for train path registrations submitted each second Monday in April for both the annual timetable and the interim timetable.</td>
</tr>
<tr>
<td>Interim timetable</td>
<td>Changes to the annual timetable arising from train path orders that are submitted after the deadline for definitive train path ordering.</td>
</tr>
<tr>
<td>Ancillary services</td>
<td>Services provided by infrastructure managers that can be applied for by an applicant in addition to the straightforward use of a train path. These include train stabling, shunting in marshalling yards, etc.</td>
</tr>
</tbody>
</table>

Table 18 – Terms used
2 TRACK ACCESS CONDITIONS

2.1 Introduction
Permits for RUs to use the Swiss rail network are issued by the BAV. Permits are issued subject to the provisions of the Railways Act (EBG) and Track Access Ordinance (NZV). The administrative procedure for obtaining access is described in the BAV’s guidelines on obtaining track access and safety certification, and is depicted in the graphic below.

Figure 1 – Procedure for obtaining network access

2.2 General access conditions
The most important access conditions can be found:
- in the track access guideline (Track Access Permit, Safety Certification)
- in the Railways Act (EBG), articles 9a and 9b, and
- in the Track Access Ordinance (NZV) and the NZV-BAV.

2.2.1 What you need to request a train path
The requirements for train path requests are set out in chapter 4.
2.2.2 Which freight and / or passenger trains are entitled to track access? Art. 4 NZV

Subject to statutory considerations and other provisions mentioned in this document, any company is entitled to request track access. The safety and reliability of a company are important access criteria, and are described as follows in article 4 of the Track Access Ordinance (NZV):

Art. 4 Professional competence
(Art. 8d para. 1a EBG)

As part of the procedure for awarding safety certification, the railway company must furnish evidence of its professional competence to provide safe and reliable rail operations

2.2.3 Track access permit, Art. 9 EBG

Track access permits are issued by the BAV. All application documentation should be submitted to the contact point listed in section 1.8.3.

Article 9 of the Railways Act (EBG) describes the requirements for the issuance of a track access permit as follows:

Art. 8c Track access permit and safety certification
1. Any company wishing to carry out rail traffic operations requires approval as a rail traffic company (track access permit) and safety certification. The Federal Council can provide for exceptions in the case of companies operating locally.
2. A rail company which has obtained safety certification is entitled to conduct rail operations on all its own routes and on other routes to which the safety certification applies.
3. The company must observe Swiss statutory requirements, i.e. a. technical and commercial regulations;
   b. regulations relating to activities with safety implications.
4. The right, granted in accordance with Articles 6–8 of the Carriage of Persons Act dated 20 March 2009, to convey passengers regularly and on a commercial basis is reserved.

Art. 8d Issue and renewal of the track access permit
1. The BAV will issue a track access permit if the company:
   a. has a satisfactory organisational structure and possesses the necessary knowledge and experience to ensure safe and reliable operations;
   b. is solvent and has adequate insurance cover;
   c. meets the reliability standards required of those persons responsible for the company’s management;
   d. observes workplace safety regulations and subscribes to the working conditions applicable to the rail industry sector;
   e. has its registered offices in Switzerland.
2. A track access permit will be issued for ten years at most. It can be renewed.
3. Where an agreement has been reached with other countries about mutual recognition, then permits issued by these countries will also apply within Switzerland.
Art. 3 NZV elaborates on this as follows:

Art. 3 Track access permit (Art. 8c and 8d EBG)

1. The Federal Office of Transport (BAV) will decide whether to issue or renew a track access permit within three months of receiving an application.

2. It may limit the track access permit to certain types or traffic or certain routes.

Track access for foreign railway undertakings is governed by Art. 9 NZV:

Art. 9

Track access permits issued by other countries may be recognised for journeys on cross-border routes without the need for an interstate agreement about mutual recognition

The overland transport agreement between Switzerland and the EU is authoritative.

2.2.4 Safety certification, Art. 8e EBG

Safety certification is issued by the BAV. All application documentation should be submitted to the contact point listed in section 1.8.3.

Art. 8e Issue and renewal of safety certification

1. Safety certification is issued by the BAV.

2. Safety certification includes approving the railway company’s safety management system and approving the precautions it has taken to ensure that operations on the relevant routes are carried out safely.

In particular, the company must prove that:

a. its employees possess the relevant qualifications to ensure safe operations;

b. the rolling stock meets the requirements for safe operations.

3. Safety certification is issued for five years at most. It can be renewed.

4. Where an agreement has been reached with other countries about mutual recognition, then safety certification issued by these countries will also apply within Switzerland.

2.2.5 Solvency (insurance), Art. 5 NZV

Article 5 of the Track Access Ordinance (NZV) describes the solvency-related requirements as follows:

Art. 5 Solvency

(Art. 8d para. 1b EBG)

1. The railway company will be regarded as solvent if statements made by it indicate that it will be able to meet its financial obligations for at least one year.

2. If this solvency requirement cannot be met, but financial restructuring is in progress, the BAV can issue provisional approval valid for at most six months.

3. The details required in respect of solvency are set out in the Annex.

Art. 5a Insurance cover (Art. 8d para. 1b EBG)

1. Insurance cover will be regarded as adequate if the company can show that it is insured against the consequences of its liability up to a sum of CHF 100 million per incident or can offer securities to the same value.
If the insurance policy is terminated before the date in the document which shows that insurance cover exists, then the insurance company must undertake to continue to provide cover for claims for compensation or damage in accordance with the terms of the policy until such time as the permit is withdrawn but for no longer than 15 days after the BAV has been informed that the policy has been terminated. The date on which the permit is withdrawn is deemed to be the day on which the withdrawal order takes legal effect.

2.3 General Terms and Conditions
The General Terms and Conditions for the Use of Railway Infrastructure (AGB-ISB) form an integral part of the track access agreement (see Appendix 7.10). For capacity allocation, the provisions of Swiss Train Paths Ltd. set out in chapter 4 apply.

2.3.1 Framework Agreement, Art. 12b NZV
See section 4.4.4.

2.3.2 Track access agreement, Art. 15 – 17 NZV
Provisions concerning the track access agreement are covered in articles 15-17 of the Track Access Ordinance (NZV).

If all the requirements set out in section 2.2 are satisfied, a track access agreement may be signed. If the BAV is unable to issue permits by the time requested, the track access agreement will be concluded subject to permits actually being granted. This agreement governs the general aspects of collaboration between the IM and the RU. It must be produced in written form and in duplicate in an official Swiss language or in English, and must contain the following constituent parts:

- details of the allocation of the requested basic and ancillary services
- the General Terms and Conditions for the Use of Railway Infrastructure (AGB-ISB)
- the IM’s list of infrastructure services
- the IM’s Network Statement
- the applicant’s train path request or details of services order.

By concluding a track access agreement, the RU is not bound to place train path orders. The template for such an agreement can be found via Link 6. Swiss Train Paths Ltd., the body responsible for the impartial allocation of train paths (chapter 4), also receives a copy of each track access agreement.

2.3.2.1 Accounting code
RUs are identified by means of an accounting code for ordering and invoicing services (cf. General Terms and Conditions for the Use of Railway Infrastructure, Link 5).

The RU must comply with the following rules in its use of the accounting code (if already issued):

- The accounting code issued must be used every time a train path is ordered
- Train paths (train numbers) must be ordered with a single accounting code for all sections of the route.

2.4 Regulations and recommendations

2.4.1 Track access conditions
All relevant Swiss laws and ordinances should be viewed as track access conditions. Likewise, any conditions placed by the licensing authorities on the issue of track access permits, rolling stock permits and safety certification must also be observed without exception.
The conditions stated in the track access agreements themselves must also be observed. This also applies to the provisions of the integral components of the track access agreements in their current forms, i.e. for

- any conditions (set by the train path allocation body) regarding train path allocation
- the General Terms and Conditions for the Use of Railway Infrastructure (BLS Netz AG)
- the IM’s list of infrastructure services
- this Network Statement, including rules referenced therein.

Specific track access conditions apply to the Lötschberg base tunnel route (LBS), and compliance with these is mandatory.

These route-specific track access conditions are available at: https://www.bls.ch/de/unternehmen/leistungen-fuer-dritte/leistungen-fuer-evu

The IM has the right to make checks on RUs and shall notify the BAV of any irregularities or hazardous situations (Art. 24 NZV).

### 2.4.2 Train Loading and Running Regulations, Art. 11a EBV

The provisions concerning the Train Loading and Running Regulations are set out in article 11 of the Railways Ordinance (EBV) as follows.

1. The Swiss Train Loading and Running Regulations (FDV) are issued by the BAV.
2. In order to facilitate the provision of short-distance cross-border services, it can authorise the use of the neighbouring country’s train loading and running regulations.”

The FDV are issued in the form of an ordinance, and are published as part of the official collection of Swiss laws at www.admin.ch or on the BAV website.

**Picture 3 – Scheduling and operational control centre Spiez**
2.4.3 Operating rules, Art. 12 EBV

The provisions concerning operating rules are set out in article 12 of the Railways Ordinance (EBV) as follows.

"1. The operating rules required for operation and maintenance are issued by the railway undertakings, which shall ensure that they are applicable in practice and user-friendly.

2. These rules must be submitted to the BAV in good time – usually three months before planned implementation. Operating rules deviating from the Train Loading and Running Regulations issued by the BAV on the basis of Art. 17 para 3 EBG must be submitted to the BAV for approval at least three months before planned implementation. The instructions on the function, operation and maintenance of a facility or vehicle should together make up an appropriate operation manual.

3. The railway undertakings shall ensure that the necessary documents are available to users.

4. The network user is bound by those operating regulations containing rules relating to the route being used and concerning:
   a. the implementation of public law obligations;
   b. the braking ratio required for a certain speed (including stop brake) and the permitted thrust and shear forces;
   c. the use of combustion-based motive power units in tunnels;
   d. the loading gauge to be maintained;
   e. the permitted axle load and load per metre;
   f. the operation of vehicles with large wheel bases and of overlength trains;
   g. the maximum current drain from the overhead power lines;
   h. the official language to be used;
   i. electromagnetic compatibility.

5. The BAV is responsible for ensuring that the operating regulations are as uniform as possible for performing rail operations."

RUWs with an allocated accounting code can obtain all mandatory operating rules issued by BLS Netz AG for a fee from the contact point listed in section 1.8.1.1 Supplementary instructions on operating rules will be sent to the relevant RUWs by post.

Members of the Swiss Public Transport Association (VÖV) should contact:

Verband öffentlicher Verkehr VÖV
Dählhölzliweg 12
CH-3000 Bern 6
Telefon: +41 31 359 23 23
E-mail: RTE@voev.ch
RTE-Webshop: www.rte.voev.ch

2.4.4 Technical / operational recommendations, Art. 12a EBV

The provisions concerning technical/operational recommendations are set out in article 12a of the Railways Ordinance (EBV) as follows.

Technical/operational recommendations for infrastructure use are issued by the infrastructure manager. These recommendations help minimise operational disruptions and draw network users’ attention to possible damage events. They contain, in particular, tips regarding:

a. infrastructure wear and tear;

b. ideal train lengths, draw-hook loads, driving characteristics, derailment safety;

c. protection of goods against load shifting and damage"
2.5 Special consignments/heavy loads

The provisions concerning special consignments SC can be found in the following documents:

- UIC Leaflet 502, Annex 1 ([www.uic.org](http://www.uic.org))
- The Infrastructure Implementing Provisions for the FDV and associated provisions (AB-FDV Infrastructure), I-30111.

For the transportation of heavy loads (details required include, in particular, axle arrangement and axle loads) not covered by the provisions of UIC leaflet 700, a case-specific processing time applies. This shall be agreed/decided upon on a case-by-case basis depending on the type of heavy goods transport. We kindly request that you contact us well in advance.

For more information, please contact BLS Netz AG at the contact point listed in section 1.8.1.3.

Special consignments only run as freight trains and are recorded in the CIS, with the exception of test runs and measuring trips (spec. train numbers; no CIS) BLS Netz AG reserves the right to commission the RU for special consignments.

BLS Netz AG subdivides special consignments as follows:

- Special consignments that do not foul the gauge (SC no fouling)
- Special out-of-gauge consignments (SC fouling)
- Special out-of-gauge consignments according to simplified notification procedure under R I-50089
- Special laterally out-of-gauge consignments (SC with lat. fouling)

Within ordering procedures BV1 to BV4a train path requests are only accepted for the following SCs:
- SC no fouling
- SC with fouling as per R I-50089 without notification

The other SCs must be ordered within the scope of the remaining capacity in the current timetable as per section 4.3.2.

2.6 Dangerous goods

The RSD Ordinance (Ordinance on the transportation of dangerous goods with railways and cable-ways/SR 742.412), I-50026 (I-B provisions on the transportation of dangerous goods and other liquids classed as an aquatic hazard) and I-50062 (Restrictions on the transportation of dangerous goods with chlorine as a main substance) apply to the carriage of dangerous goods.

2.6.1 Recommended operational measures for short platforms

Background

An RU will always react quicker to changing market needs faster than any necessary infrastructure adjustments can be made. Furthermore, IMs will not be able to implement the defined platform length everywhere and to the required deadlines. It is therefore possible for planned trains to be longer than the existing platform length. Without appropriate (structural or operational) countermeasures, there is a potential risk to passengers.

If no structural measures (temporary platform adjustments) can be implemented within a reasonable deadline, it is up to the RU to implement operational measures. This should be taken into account at the planning stage.

The operating rules are designed to regulate the handling of unexpected situations for which no plans can be made in advance.

Recommended operational measures
The IM has undertaken a one-time assessment of the safety and effectiveness of possible operational measures. The IM recommends implementing the operational measures below where necessary and possible.

Operational measures A to L are considered safe.

Measures M to R are considered insufficient. However, insufficient measures can be logically combined to produce further safe operational measures. (For example, reserving an occupied but conductorless composition [M] is recommended, as long as an automated announcement is also made on the train [N]).

<table>
<thead>
<tr>
<th>Operational measures</th>
<th>Residual risk/comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A</strong> ²) Locking individual empty coaches on conductorless and conductor-staffed trains</td>
<td></td>
</tr>
<tr>
<td><strong>B</strong> ²) Locking individual occupied coaches on conductor-staffed trains</td>
<td>Possible errors can be prevented by staff</td>
</tr>
<tr>
<td><strong>C</strong> No stop</td>
<td></td>
</tr>
<tr>
<td><strong>D</strong> ³) Reserving empty compositions on conductor-staffed trains (train marked accordingly)</td>
<td>Technical fault; staff can forget to perform action</td>
</tr>
<tr>
<td><strong>E</strong> ²) Locking individual occupied coaches on conductorless trains</td>
<td>An escape route must be available at all times. This must be in the platform area.</td>
</tr>
<tr>
<td><strong>F</strong> Active directing of passengers on the platform by staff with special mandate</td>
<td>Staff must also prevent passengers from leaving the train</td>
</tr>
<tr>
<td><strong>G</strong> ³) Reserving empty compositions on conductorless trains (train marked accordingly)</td>
<td>Technical fault; staff can forget to perform action</td>
</tr>
<tr>
<td><strong>H</strong> ³) Reserving occupied compositions on conductor-staffed trains (train marked accordingly)</td>
<td>Technical fault; staff can forget to perform action</td>
</tr>
<tr>
<td><strong>I</strong> ⁴) Situation regulated with fixed stopping-point markings</td>
<td>Observance of the stopping point tolerance: 5m</td>
</tr>
<tr>
<td><strong>J</strong> Construction measures (fencing) in the train alighting area at eye level</td>
<td>Overriding regulations must still be adhered to (e.g. clearance profile)</td>
</tr>
<tr>
<td><strong>K</strong> “Pick-up only stop”: Publication in all timetable documentation and customer information systems for conductorless and conductor-staffed trains</td>
<td>Low risk of non-observance by passengers (habit, tact) Aimed at avoiding alighting outside the platform area</td>
</tr>
<tr>
<td><strong>L</strong> Restricted stop: communication to passengers in advance</td>
<td>Unofficial stop, e.g. for schoolchildren only</td>
</tr>
<tr>
<td><strong>M</strong> ³) Reserving occupied compositions on conductorless trains (train marked accordingly)</td>
<td>Technical fault; staff can forget to perform action</td>
</tr>
<tr>
<td><strong>N</strong> Automated audio announcement on train: &quot;Please take care when alighting&quot; or &quot;Please alight from the front/back of the train&quot;. (Multilingual, depending on the region)</td>
<td>Technical fault; provision of information on board; passengers disregard instructions (&quot;surfeit of information&quot;) Support with visual displays where possible</td>
</tr>
<tr>
<td><strong>O</strong> Dynamic automated signage on train: &quot;Please take care when alighting&quot;; &quot;Please alight from the front/back of the train&quot;. (Multilingual, depending on the region)</td>
<td>Technical fault; provision of information on board; passengers disregard instructions (&quot;surfeit of information&quot;)</td>
</tr>
<tr>
<td><strong>P</strong> Poster displays in stations/on trains</td>
<td>Insufficient attention paid/implementation -&gt; supplementary measure only (raising awareness)</td>
</tr>
<tr>
<td><strong>Q</strong> Audio announcement on train by train staff (specific mandate): &quot;Please take care when alighting&quot; or &quot;Please alight from the front/back of the train&quot;. (Multilingual, depending on the region)</td>
<td>Staff can forget to perform action; technical fault; provision of information on board; passengers disregard instructions (&quot;surfeit of information&quot;)</td>
</tr>
<tr>
<td><strong>R</strong> Passive directing of customers on the platform by staff as a secondary mandate</td>
<td>Distraction by other tasks; staff must also prevent passengers from leaving the train</td>
</tr>
</tbody>
</table>
Table 19 – Operational measures in the event of inadequate usable platform length

The IM considers other operational measures as insufficient and advises against implementing these. The RU is responsible for adhering to track access conditions.

<table>
<thead>
<tr>
<th>Footnote</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1)</td>
<td>According to the BAV, the needs of passengers with slightly reduced mobility (e.g. older passengers) can be taken into account to assess the safety of operations. A step with a maximum height of approximately 230-300 mm is currently considered state of the art. Access points with steps larger than 300 mm do not reflect the level of safety required and should therefore be avoided.</td>
</tr>
<tr>
<td>2)</td>
<td>Locking individual doors, coaches or parts of trains (compositions) mechanically prevents passengers from boarding or alighting outside the desired areas.</td>
</tr>
<tr>
<td>3)</td>
<td>Reserving individual compositions mechanically prevents passengers from boarding or alighting outside the desired areas (as long as rolling stock is equipped to do this).</td>
</tr>
<tr>
<td>4)</td>
<td>Implemented by the IM where possible.</td>
</tr>
</tbody>
</table>
2.7 Vehicle acceptance and maintenance Art. 17a, Art. 17b, Art. 17c EBG

Article 7 of the Track Access Ordinance (NZV) regulates the acceptance of rolling stock as follows:

Art. 17a Register of approved vehicles

1 The BAV keeps a register of all vehicles in Switzerland which have been approved in accordance with this law.

2 Possessors of an operating permit (keepers) must have their vehicles entered in the BAV’s register.

3 The register can be accessed by all safety authorities and accident investigation agencies both within and outside Switzerland as well as by all other persons with a legitimate interest.

Art. 17b Maintenance of vehicles

1 The person named in the register of vehicles approved for use in Switzerland is responsible for maintaining that vehicle.

2 If the vehicle has not been registered or if no person is named in the register as being responsible for the vehicle, then the duty of maintaining the vehicle falls upon either the keeper or, alternatively, the person who exercises actual control over the vehicle.

3 The Federal Council can specify requirements for persons responsible for maintenance and for persons entrusted with carrying out maintenance.

Art. 17c Assessment of safety-relevant aspects

1 The BAV’s approval procedure includes a risk-oriented assessment of safety-relevant aspects based on safety reports or random inspections.

2 The BAV will specify those aspects in respect of which the applicant must furnish a safety report.

The Federal Office of Transport (BAV) is responsible for accepting rolling stock (obtaining the necessary operating permit/type acceptance). All application documentation should be submitted to the contact point listed in section 1.8.3. The following documents set out the legal basis for rolling stock acceptance:

- Railways Act (EBG; SR 742.101)
- Ordinance on the Construction and Operation of Railways (Railways Ordinance [EBV]; SR 742.141.1)
- Implementing Provisions for the Railways Ordinance (AB EBV; SR 742.141.11)
- BAV Directive Approval of rolling stock based on Arts. 6a, 7 and 8 of the Ordinance on the Construction and Operation of Railways (Railways Ordinance [EBV])

Examination of the technical track access conditions (infrastructure requirements) by SBB Infrastructure’s Technical Track Access unit (TNZ) forms part of the BAV’s approval procedure (see, in particular, the approval guideline) and is a compulsory requirement for track access through SBB Infrastructure.

The main focus of the investigative work is on making certain that the vehicles and SBB Infrastructure’s equipment and systems are mutually compatible in order to ensure their safe and reliable interaction. The TNZ specifies, in consultation with the applicant (RU, vehicle manufacturer,
independent testing body), those infrastructure requirements for which evidence of compliance must be provided and checks whether the conditions have been met and the relevant evidence has been furnished (particularly in the case of uniquely Swiss requirements, so-called national technical rules). The TNZ issues non-objection certificates (similar to a report) for each aspect as its formal comment on the evidence submitted and as confirmation of compliance with the infrastructure requirements (proof of compatibility):

- Provisional non-objection certificates (for test runs)
- Definitive non-objection certificates (for commercial journeys)

In addition, the TNZ assists interested RUs/vehicle keepers and vehicle manufacturers in acquiring track access, i.e. everything from producing the specification document right up to acceptance for running operations on SBB Infrastructure’s rail network. In this way, the unit makes an important contribution to the safe operation of vehicles on SBB Infrastructure’s rail network and to preventing disruptions to rail operations.

2.7.1 On-board train control device with trackside signalling

This definition (formerly train protection) affects train movements with shunting, engineering, track-laying, track maintenance and historical vehicles on the Swiss standard gauge network. On 4 November 2013, the BAV enacted the following requirements (in German), see Link (minimum train control system requirements).

2.7.1.1 Minimum on-board equipment with trackside signalling

Vehicles that want to travel on the BLS Infrastructure network (excluding ETCS Level 2 routes) must be equipped with at least ETM-S (SIGNUM system) or ETM-M (SIGNUM and ZUB system). Each vehicle for which a type approval or operating licence is requested must be equipped with an ETCS train control system according to Baseline 3 or must at a minimum be ready for straightforward retrofitting.

The signal positions (warning and stop signals) and speed monitoring shall be transmitted to the vehicle from the Eurobalise/Euroloop via the following transmission paths:

- Packet 44 to the ETM antenna of the ETM-S (SIGNUM system) or to the ETM antenna of the ETM-M or ZUB 262 (SIGNUM and ZUB system) (ETCS Level 0)
- ETCS telegram to the ETCS antenna of a vehicle equipped with an ETCS system according to Baseline 3 (ETCS Level 1 Limited Supervision)

The systems must have at least the following software versions:

- ETM-M: Version 01.00
- ETM-S: Version 01.00
- ZUB 262 ct (DAZ version): Version 12.51
- ZUB 262 ct (MVB version): Version 12.52
- ETCS Baseline 3: BL 3.4.0

2.7.1.2 Minimum on-board equipment for ETCS Level 2 cab signalling

Vehicles must be fitted with an approved and functioning on-board ETCS system in order to travel on routes equipped with ETCS Level 2 (cab signalling).
2.7.2  BLS Netz AG guidelines and requirements

2.7.2.1  Wheel / track interaction
Wheel/track interaction is based on the limiting conditions and limit values set out in the AB-EBV. An inspection is to be conducted taking into account the relevant Swiss legal provisions/specialities and in accordance with CEN standard EN 14363 (Testing for the acceptance of running characteristics of railway vehicles – Testing of running behaviour and stationary tests).

The following serve as guidelines and benchmarks:
- Adherence to the limiting conditions and limit values set out in the AB-EBV
- Internationally recognised standards (EN 14363, EN 15663, UIC 518, UIC 645)
- The Swiss track network with its many very small curve radii 250 m ≤ R < 400 m (test range 4 in accordance with EN 14363 and UIC 518)
- Specific lines with a significant number of extremely small curve radii R < 250 m in accordance with R I-50127 (test range 5, not covered by EN 14363 or UIC 518)
- Ensuring that points on tight curves can be traversed safely and without undue strain on the track and maintaining the minimum buffer overlap in accordance with R I-50007
- Minimum technically traversable radius (curve radius) in accordance with R I-50007
- Specific SBB / BLS regulations (R I-50007, R I-50064)

2.7.2.2  Interface between load limits of vehicles and infrastructure
In accordance with EN 15528 and R I-50064 (technical specification for effecting the interface between load limits of vehicles and infrastructure in line with the EU standard EN 15528), the line category is determined by the maximum wheelset load and the mass per unit of length. The line category of an entire train is always determined based on the vehicle in the train that has the highest load, i.e. that is in the highest-numbered line category. Compatibility is ensured if the vehicle’s line category (or payload limit for freight wagons) is the same as or lower than the line’s own category, taking account of the maximum permitted speed.

2.7.2.3  Pantograph / overhead line interaction
Pantographs require component approval from the BAV in accordance with the BAV Guideline on the Acceptance of Railway Vehicles.

The following requirements apply for the interaction between pantographs and overhead lines on the BLS network:
- Adherence to the limiting conditions and limit values set out in the AB-EBV
- Adherence to the force criteria in accordance with EN 50367
- Adherence to the contact wire uplift criteria in accordance with EN 50119
- Adherence to the pantograph requirements in accordance with EN 50206
- Infrastructural requirements governing the interaction between pantographs and overhead lines in accordance with R I-50088
- Verification of pantograph gauges (see also section 3.3.2.1)
- Optimised pantograph horns
- SBB Infrastructure’s many different overhead power line systems (compliance will be demonstrated over several reference sections of track depending on the intended employment)
- Specific SBB regulations (R I-50088)
2.7.2.4 Flange lubrication ("Spurkranzschmierung")
All rolling stock in use on the BLS network must have flange lubrication ("Spurkranzschmierung"). Detailed requirements governing the lubricants to be used (especially with regard to their environmental impact), the required quantities and frequency of lubrication can be found in the Swiss Public Transport Association's Technical Rail Regulation 49410.

2.7.2.5 Electrical requirements for motive power units
In order to guarantee safe and reliable interaction of motive power units with infrastructure installations and systems, the following conditions must be met and the corresponding proof submitted with the type acceptance for the motive power units:

2.7.2.5.1 Requirements for input admittance
In order to reliably prevent the line-side converters of motive power unit converters, including the associated line-side converter controller, from generating network resonances and thus possibly rendering the traction current supply network unstable, the input admittance frequency response must be passive for any values above a defined threshold frequency. The corresponding requirements for input admittance of motive power unit converters and the specifications for motive power unit frequency response measurements are set out in SBB Regulation R I-20005. This regulation is a binding operating rule within the meaning of Art. 12 para.4g EBV.

2.7.2.5.2 Requirements for power limitation
In order to prevent failures arising from under- or overproduction in the case of special configurations of the traction power supply network, motive power units must be equipped with a frequency-dependent power limitation function in accordance with SBB Regulation I-55068.

In order to prevent a power outage in the event of a weak power grid, e. g. where there are long supply bypasses or special circumstances such as failure of a substation, motive power units must be equipped with a voltage-dependent power or current limitation function in accordance with SBB Regulation I-50069.

The regulations are binding operating rules within the meaning of Art. 12 para. 4g EBV for vehicles accepted for operation as from 1 January 2011. For older motive power units, the aim is for these functions to be added within the context of general software updates.

Current versions of these documents can be obtained from the relevant contact point as per section 1.8.1.3.

2.7.2.5.3 Compatibility with track-release systems
Adherence to EN 50238 will ensure the compatibility of all rolling stock with track-release systems. This standard is divided into three sections: process (EN 50238-1, formerly EN 50238), parasitic currents (CLC/TS 50238-2) and magnetic interference (TS 50238-3).

The use of eddy current braking systems or other braking systems that are not dependent on wheel-rail adhesion is not permitted on the rail network of BLS Netz AG Infrastructure for normal or emergency braking processes. Exceptions include:

- Electromagnetic brakes, which may be used for emergency braking. This also includes rapid brake applications initiated by the driver.
- The use of eddy current brakes which affect the infrastructure is only possible following additional local inspections or a route upgrade. Route-specific compatibility with track-release systems must be assured (unsuitable axle counters can be permanently damaged or destroyed) and the permanent way upgraded accordingly.

More detailed documents exist for BLS Netz AG which set out specific Swiss characteristics supplementing the provisions of CLC/TS 50238-x. These are:

- SBB Regulation J78 on parasitic currents and
- SBB Regulation J84 on magnet interference.
All rolling stock with electronic equipment on board (and in particular static convertors with output of 500 W or higher) must be able to prove compliance for all parts of that equipment with EN 50238, R I-50097 and R I-50098. Depending on the vehicle and the operational concept, proof of compliance obtained abroad on a 15 kV/16.7 Hz system (and, as necessary, 25 kV/50 Hz for certain of SBB Infrastructure’s cross-border routes) may also be presented for EN 50238 parts. Details of any CLC/TS 50238 parts that are not yet complete are contained in in R I-50097 und R I-50098.

2.7.2.6 En route communication
Across the BLS Netz AG network, drivers of vehicles without built-in GSM-R-compatible cab radios must carry a device enabling them to communicate with Infrastructure (GSM-R roaming-compatible mobile phone on GSM-R roaming routes; GSM-R native-compatible mobile phone on GSM-R native routes).

The track access conditions are authoritative for the Lötschberg base tunnel route.

2.7.2.7 Brakes
Eddy current or other static friction braking systems may not be used for service or emergency braking on SBB Infrastructure’s rail network.

Exceptions include:
- Electromagnetic rail brakes may be used for emergency braking. This also includes rapid braking initiated by the driver.
- The use of eddy current brakes which act on the infrastructure is only possible following additional local inspections or a route upgrade. Route-specific compatibility with track-release systems must be demonstrated (axle systems which are not intended for this purpose could suffer permanent damage) and the permanent way must be approved for their use.

2.7.2.8 Sanding (greater adhesion)
Equipment which automatically dispenses sand if the driver initiates emergency or rapid braking is not permitted and must be deactivated for rail operations within Switzerland. Sanding by single traction units of up to four axles, including multiple unit control, is not permitted on SBB Infrastructure’s rail network when travelling at less than 40 km/h. (Exceptions are emergencies in order, for example, to avoid passing a signal at danger or to prevent a collision)

2.7.2.9 Aerodynamics
In order to ensure safe operation when affected by side winds, the standard vehicle wind characteristic curves in accordance with DB Netz AG’s Guideline (RiL) 80704 (section 807.0413) must be adhered to when travelling at every speed over 140 km/h to the vehicle’s maximum speed. As far as is known today, this guideline covers all parts of the SBB network which are critical as regards side wind, in particular the Mattstetten–Rothrist high-speed line (NBS). A special risk assessment should be submitted if the standard wind characteristic curves cannot be adhered to.

2.7.2.10 Negotiating curves at high speed
For negotiating curves at speeds above the R series (tilting trains, passive tilt mechanisms), a route-specific licence for the higher speed is required for each route travelled in addition to the general vehicle licence (operating permit with R series licence). Further details on licensing requirements and procedures can be found in Document R I-20019.

2.7.2.11 Intervention (rescue/rerail of trains)
Before commercial commissioning of newly registered vehicle types, Intervention ([Infrastruktur Betrieb, Intervention Frutigen, kommando.LBS@bls.ch] has to be informed with technical documentations in accordance with R I-50131 (Operational intervention requirements governing the registration of new rail vehicles) for the purpose of towing. If necessary RU (or the manufacturer) instructs the necessary specific vehicle information.
2.8 Staff acceptance, Art. 6 NZV

The BAV is responsible for approving staff. The provisions contained in Regulations (EU) No. 1158/2010 and No. 1169/2010 apply. All application documents are to be submitted to the office mentioned under section 1.8.3 (BAV).

2.9 Recording voice communications during train traffic management

Voice communications during train traffic management on the BLS Netz AG rail network are recorded. These recordings allow reconstruction of the chain of communication related to an incident leading to an accident or a dangerous situation.
3 Infrastructure

3.1 Introduction

In analogy to EU practice, infrastructure is defined as meaning all resources (including staff and installations) that need to be available and in working order for train services to operate. This primarily includes the infrastructure capacity (train paths) and installations that facilitate access to the rail system such as platforms, including their access routes. The term “infrastructure” covers both capacity management and operations. Power supply installations are also part of infrastructure.

The SBB Infrastructure, BLS Netz AG and SOB Infrastructure networks are organised in accordance with the valid train-path allocation regulations (AB-EBV re Art. 17).

Further information on infrastructure can be found under link 2 (SBB network map/train path map) and link 4 (route database).

The description of the network in chapter 3 is updated for every Network Statement (including the outlook for further infrastructure development in section 3.9).

![Railway station Goppenstein](image)

3.2 Network

3.2.1 Information on the rail infrastructure

The network’s geographical features and limitations are listed in the route database (line data for BLS Netz AG) and are available for consultation online at [www.bls.ch](http://www.bls.ch).

3.2.1.1 Change of use process safety

BLS Infrastructure reserves the right to initiate a change of use process safety (NAeP), i.e., a risk assessment of safety-relevant concerns, questions and elements. This is carried out as standard on the basis of a new service request (request/order for a new train path by an RU/applicant) or other triggering criteria in order to identify any newly emerging safety shortfalls (e.g., insufficient...

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platform lengths, missing departure blocking devices, missing stop boards, insufficient flank protection measures, etc. RUs are requested by BLS Infrastructure to always complete a "Basic information on the RU" form. To simplify the form-filling process, the most common vehicle types used in passenger traffic are preselected in a vehicle matrix. The following criteria are applied (list not necessarily conclusive):

**Passenger trains:**
The NAeP focuses primarily on systematic changes to or increases in the frequency of the service offer or on extensive changes to the rolling stock to be used in the medium term (planning horizon ≤ 6 years). BLS Infrastructure thus requires detailed basic information at an early stage. This includes rolling stock lengths and types, cycles and information on train personnel as well as forwarding. As previously, the NAeP is also used for individual scheduled or special extra trains, e.g. during peak hours, to which additional coaches/modules are attached or which operate during at least one timetable year with different rolling stock. Other major trigger criteria are changes in stops, stations with new train turn-arounds and new crossing points/overtaking points.

**Freight trains:**
If system/catalogue paths or shunting processes at stations are fundamentally modified or routes/service points have freight paths (re)assigned to them. If the NAeP is conducted, the RU should expect to receive a response in no less than thirty days.

If safety-relevant infrastructure measures are identified, SBB Infrastructure clarifies whether the RU can compensate for these through organisational measures. If not, SBB Infrastructure reserves the right to only approve the service request after relevant infrastructure upgrades have been implemented or to reject it on the grounds of insufficient project funds.

The majority of the safety-relevant infrastructure elements are based on the Implementing Provisions for the Railways Ordinance (AB-EBV), with which all RUs and IMs are obliged to comply.

### 3.2.1.2 Exceptional use of infrastructure
The RU shall notify the IM of the exceptional use of infrastructure (e.g. major events, exceptionally high frequency of services, a large number of visitors/private individuals near the track, etc.) as early as possible so that the necessary safety measures may be organised.
### 3.2.1.3 Border crossings / adjoining networks

BLS Netz AG does not border on any foreign infrastructures, and in Switzerland borders mostly on the infrastructure of Swiss Federal Railways (SBB) AG. Below is a list of the bordering networks (IMs):

<table>
<thead>
<tr>
<th>Station (proprietary boundary)</th>
<th>Bordering network (standard gauge)</th>
<th>URL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bern</td>
<td>SBB</td>
<td><a href="http://www.sbb.ch">www.sbb.ch</a></td>
</tr>
<tr>
<td>Brig (Brig Lötschberg)</td>
<td>SBB</td>
<td><a href="http://www.sbb.ch">www.sbb.ch</a></td>
</tr>
<tr>
<td>Burgdorf</td>
<td>SBB</td>
<td><a href="http://www.sbb.ch">www.sbb.ch</a></td>
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<td>Ins</td>
<td>ASM</td>
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<td>Ins</td>
<td>TPF</td>
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<td>Interlaken Ost</td>
<td>BOB</td>
<td><a href="http://www.jungfrau.ch">www.jungfrau.ch</a></td>
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<td>Interlaken Ost</td>
<td>ZB</td>
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</tr>
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<td>Kerzers</td>
<td>SBB</td>
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<td>SBB</td>
<td><a href="http://www.sbb.ch">www.sbb.ch</a></td>
</tr>
<tr>
<td>Neuchâtel (Neuchâtel Mail)</td>
<td>SBB</td>
<td><a href="http://www.sbb.ch">www.sbb.ch</a></td>
</tr>
<tr>
<td>Obermatt</td>
<td>SBB</td>
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</tr>
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<tr>
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<td>SBB</td>
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<tr>
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<tr>
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<td>SBB</td>
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</tr>
<tr>
<td>Zweisimmen</td>
<td>MOB</td>
<td><a href="http://www.mob.ch">www.mob.ch</a></td>
</tr>
</tbody>
</table>

Table 20 – Adjoining networks

### 3.2.2 More detailed information

More detailed information on the scope of infrastructure can be found in the following documents:


### 3.3 Network description

BLS Netz AG maintains a standard gauge track network of around 420 km. The network stretches from Lake Neuchâtel to Brig and from the Jura via Emmental into the Lucerne hinterland. The main corridor runs from Thun to Brig through the 34.6 km-long Lötschberg base tunnel and the 14.6 km-long Lötschberg summit tunnel. The network also covers the following routes: Spiez – Interlaken Ost, Spiez – Zweisimmen, Thun – Burgdorf, Burgdorf – Langnau, Burgdorf – Solothurn, Solothurn – Moutier, Moutier – Lengnau, Langenthal – Wolhusen, Ramsei – Sumiswald-Grünen, Bern – Belp – Thun, Bern – Schwarzenburg and Bern – Neuchâtel.
More information about BLS Netz AG is available on the company's website under Infrastructure.

### 3.3.1 Geographical description

#### 3.3.1.1 Lines and tracks

There are no separate tracks for passenger and freight services. The transit route from Thun via Kandersteg to Brig is double-track throughout. The route through the Lötschberg base tunnel is also double-track, with the exception of a 20 kilometre-long single-track section. The rest of the BLS Netz AG network is generally single-track with double-track sections. Detailed information on the BLS network can be found in the Appendices.

#### 3.3.1.2 Track gauge / curve radii

Track gauge:
- The track gauge is 1435 mm.

Curve radii:
- The minimum radius on main tracks is 185 m.
- In existing station layouts, double slips with a radius of 160 m are authorised.

Industrial and private sidings are governed by separate rules. Details of deviations on specific routes are provided in the route database. See also [UIC-leaflet 502](#) (Exceptional consignments – Outline procedure).

#### 3.3.1.3 Stations

Details of BLS Netz AG stations can be found in the database of operating points in Appendix 7.9.

### 3.3.2 Technical data

You will find technical data on the BLS network and Terms of Use in Regulations R I-30111 (AB FDV), R I-30121 (Local Train and Shunting Movement Regulations) and R I-30131 (RADN), which can be obtained from the Swiss Public Transport Association ([www.voev.ch](#)), or from the Swiss Association of Road and Transport Professionals ([www.vss.ch](#)), and in the route database in Link 4. A diagrammatic map with numbers marking the various modules forms part of the BAV's track access guideline (German).

#### 3.3.2.1 Clearance / loading gauge

**Unlimited-use vehicles:**
- Upper area: max. EBV O1 (including UIC G1)
- Lower area: in accordance with UIC Leaflet 505-1
- Calculation rules (calculation of vehicle construction gauge) associated with the reference line: in accordance with UIC Leaflet 505-1

**Vehicles designed for use on specific routes (especially double-deck cars):**
- Upper area: max. EBV O2
- Lower area: in accordance with UIC Leaflet 505-1
- Calculation rules (calculation of vehicle construction gauge): in accordance with UIC Leaflet 505-1 (for vehicles running exclusively in Switzerland: in accordance with EBV special regulation).

*Please note: the calculation of vehicle construction gauge in accordance with EN 15273-2 (with Austria variant for CH) corresponds to the vehicle construction gauge calculation in UIC 505-1.*
Intermodal transport:
- Route code for the Gotthard corridor: C60/384 – P60/384 – NT50/375
- Route code for the Basel – Lötschberg – Brig – Domodossola (SIM) corridor: C80/405 – P80/405 – NT70/396

Pantographs:
- Pan head width 1450 mm, insulated end horns, envelope: in accordance with UIC Leaflet 608
- Profile certification for pantographs in accordance with EN 15273-2, UIC 505-1
- Exception for historic vehicles: pan head with 1320 mm authorised.

Technical aspects of track access with regard to the loading gauge are described in detail in Regulation R I-20030 (Technical Aspects of Track Access: The Vehicle Clearance Line – The Impact of the Loading Gauge on Vehicles and their Loads). Details of restrictions to specific routes are provided under Link 4 (route database).

3.3.2.2 Route classes
See Appendix 7.3 (route database) and R I-30111 (AB-FDV), section 5.1 (and section 2.7.2.2).

3.3.2.3 Inclines and gradients
See Appendix 7.2 (gradient list) and R I-30131 (RADN).
For steep inclines, see Table R I-30111, section 5.4 (AB FDV).

3.3.2.4 Maximum authorised speed
Maximum authorised speeds depend on the nature of the route section, the rolling stock and the braking ratios, and are indicated in Regulation I-30131 (RADN).

3.3.2.5 Maximum train lengths
See R I-30111 (AB-FDV), section 5.2, points 1.1 and 1.2.

3.3.2.6 Power supply
The power system is 15 kV/16.7 Hz; voltage and frequency tolerances comply with European standard EN 50163.

3.3.3 Train control systems and en route communications

3.3.3.1 Signalling systems
On the BLS Infrastructure network, the L and N signal systems are used for train journeys with trackside signalling.

The ETCS Level 2 system is used with cab signalling.

SIM trains should abide by signals for piggyback trains on the Frutigen – Kandersteg – Brig – SBB – Domodossola routes.
3.3.3.2 En route communications
A diagram of en route communications on the BLS Netz AG network can be found in Appendix 7.6 (line connection).

3.4 Traffic restrictions
All running restrictions in force on BLS's infrastructure as set out in the local regulations on general and shunting movements (RI-30121) are reserved. The key points are as follows.

3.4.1 Specialised infrastructure
No restriction on use has been imposed under Art. 24 of EU Directive 2001/14.

3.4.1.1 SIM (Simplon-Inter-Modal)
The SIM corridor includes the Basel – Lötschberg – Domodossola route and permits the carriage of loads with a maximum clearance profile of P80/405 – C80/405 – NT70/396.
More detailed information, including accepted SIM routes, can be found in RI-30111(AB-FDV) section 5.1.

3.4.2 Environmental restrictions
Vehicles must be compatible with environmental protection requirements.

3.4.3 Dangerous goods
For restrictions in stations and at operating points, see I-30121.

3.4.4 Tunnel restrictions
Steam locomotives may not use the Frutigen – Kandersteg – Brig (Lötschberg tunnel), Frutigen – Visp (Lötschberg base tunnel), Oberdorf – Gänsbrunnen (Weissenstein tunnel) and Grenchen Nord – Moutier (Grenchenberg tunnel) routes.
Diesel power may only be used on the Frutigen – Kandersteg – Brig (Lötschberg tunnel), Frutigen – Visp (Lötschberg base tunnel), Oberdorf – Gänsbrunnen (Weissenstein tunnel) and Grenchen Nord – Moutier (Grenchenberg tunnel) routes with an assisting electric locomotive.
Exception: the use of diesel motive power is authorised for motive power units normally used for shunting services, for Infrastructure maintenance service vehicles, for assistance services and for Infrastructure test runs.

Other exceptions and restrictions can be found in R I-30121 (Local Train and Shunting Movement Regulations).

### 3.4.5 Bridge restrictions
Running restrictions on bridges can be found in R I-30121.

### 3.4.6 Lavatory systems
Only vehicles with controlled emission toilet systems are permitted on routes with specific track access conditions (Rail 2000 route Mattstetten-Rothrist, GBT, LBT), see also Link.

### 3.4.8 Service vehicles
Owing to their use on work sites (construction service), certain railway vehicles are classed as “rail-bound construction and maintenance machines” (for construction, maintenance and inspection of the trackbed, substructures, engineering works and overhead contact line systems, self-driving or towed) in accordance with the BAV directive on the approval of rolling stock as service vehicles.

These include:
- Rail-bound vehicles (or machines) according to EN 14033
- Road/rail vehicles (or machines) according to EN 15746
- Demountable machines according to EN 15955
- Trailers according to EN 15954

The following are classed as working equipment (not service vehicles):
- Portable machines and trolleys according to EN 13977

For the area of application “Driving and working on railway infrastructures”, service vehicles also require an operating licence from the BAV as a prerequisite to use on the BLS Netz AG Infrastructure track network. However, simplifications are possible for service vehicles under certain conditions in accordance with Article 48 Paragraph 7 of the Railways Ordinance (EBV).

In addition to the FOT operating licence, road/rail vehicles [2], demountable machines [3] and trailers [4] require a work permit from BLS Infrastructure. The use of unbraked service vehicles is prohibited regardless of the gradient. This applies in particular to trailers [4], which may only be used with automatic brakes.

Service vehicles which cannot meet the technical network access conditions (infrastructure requirements) (e.g. road/rail vehicles), or for which the infrastructure requirements have not been fully examined, are classed as special vehicles under the train service regulations (TSR) (see I-30111, Chapter 4.2, Clause 4 as a supplement to TSR R 300.4, Clauses 2.2.4 and 2.3.7) and are subject to specific conditions of use. If service vehicles are used for train journeys (e.g. commercial shunting operations) in centralised areas, the same infrastructure requirements must be met as for conventional railway vehicles.

### 3.5 Infrastructure availability

#### 3.5.1 Route opening times, Art. 6 NZV BAV

1. The normal operating hours for a route shall be deemed to be the time period between the first and last passenger train listed in the official timetable publication.

2. From Monday to Friday, routes suitable for freight operations should generally be open from 4.00 a.m. onwards.

3. The routes specified in Appendix 4 (BLS: Thun – Brig) shall in principle be open 24 hours a day.
The legally defined route opening times (see above) will only be announced after train path allocation for the 2016/2017 timetable and will be published online as of November 2016 (www.onestop-shop.ch).

3.5.2 Fixed maintenance windows

Engineering periods for maintenance on LBS (Frutigen – Ferden – Visp)
The following engineering periods are planned throughout the timetable period:
- Sunday nights: complete closure, 21.45-05.45
- Monday nights: integrated single-track operation, 20.45-05.00
- Tuesday to Friday/Saturday 2 weeks in January and two weeks in December, 21.00-05.00
- LBT Lötschberg Base Tunnel
  - 4 Nights Saturday/Sunday + Monday/Tuesday – Wednesday/Thursday complete closure 23:45 – 05:00 (rail milling)

Engineering periods for SIM maintenance (Frutigen – Kandersteg – Brig)
- Saturday nights: complete closure for SIM trains, 20.00-06.00

Precise times of engineering periods will be communicated to the RU in accordance with the process described in section 4.5 below (regular mailing of the rail replacement [BES] list).

For usage restrictions due to infrastructure upgrades, maintenance and expansion, see section 4.5. Specific usage restrictions may arise due to conditions imposed by planning approval ordinances issued by the relevant licensing authority.

3.6 Infrastructure facilities

3.6.1 Passenger stations

A list of all stations open for passenger services can be found in the database of operating points (Appendix 7.9).

Platform lengths at passenger stations are also listed in Appendix 7.9.

The RU is obliged to use only rolling stock that is compatible with stations (in terms of platform height). Train length should not exceed the length of the platform. Vehicles on which the doors can be locked from a central point away from the platform are also acceptable.
If the RU does operate inappropriate formations, it is responsible for meeting the additional require-
ments necessary to maintain the required standard of passenger safety and comfort at its own ex-
 pense. The RU is also responsible for bearing any costs for required measures even if, at the time
that train paths were allocated / ordered, exceptions were agreed with regard to restrictions because
of platform height or length.
Recommended operational measures in the event of inadequate usable platform length can be found
in section 2.4.4.1.
BLS Netz AG is not liable for damages if the formations concerned are incompatible with a particular
station. The state of the installations at the time of train path allocation shall prevail.

3.6.2 Freight terminals
The BLS Netz AG doesn't operate freight terminals.

3.7 Service facilities

3.7.1 Train formation yards
Information on this subject can also be provided by the contact point listed in section 1.8.1.

3.7.2 Sidings
Information on this subject can also be provided by the contact point listed in section 1.8.1.

3.7.3 Maintenance and supply installations
Information on this subject can also be provided by the contact point listed in section 1.8.1.

3.7.4 Tank installations
Information on this subject can also be provided by the contact point listed in section 1.8.1.

3.7.5 Technical installations (wayside train monitoring systems)
BLS has installed various wayside train monitoring systems (WTMS) across its network that are used
to monitor the technical condition of rolling stock and loading. If maximum permitted values are ex-
ceeded, BLS Operations will intervene as per BLS’s operating regulations.
Wayside train monitoring systems consist of various sensor and surveillance systems, reliably de-
tecting technical problems on trains and facilitating the necessary response (e. g. halting trains or
reducing speeds) by providing immediate, location-independent data analysis. A dense and com-
prehensive network of static track-mounted measuring equipment checks relevant physical charac-
teristics of trains as they pass at scheduled section speed. Response stations are fitted with the
necessary reporting systems. The following measuring systems are distributed throughout the BLS
network to enhance safety:

- **Clearance profile and antenna detectors**
  Prevent prevent clearance gauge limits being exceeded and the aerials of vehicles on piggyback trains
  coming into contact with the catenary.

- **Fire and chemical detectors**
  Prevent prevent safety-critical situations as a result of fires or the shedding of hazardous goods.

- **Wheel load check points**
  Detect load displacement, overloading and serious wheel defects.

- **Hot axle box and blocked brake detectors**
  Report the temperature of axle bearings, wheel rims and brake discs, making it possible to pre-
  vent derailments as a result of axle and wheel failures.
3.8 Information on future upgrades

- Natural disaster alarm systems
  Monitor rockfalls, landslips, avalanches, flooding.
  SBB’s train monitoring facility (IZ-ZKE) in Erstfeld coordinates operations in an alarm situation.

- BLS Netz AG is expanding its network to cater for Bern and Central Switzerland S-Bahn services (new double-track sections, station renovations, crossing places, platform lengthening, signalling upgrades, etc.).
- Adaptations to comply with the provisions of the Swiss Equal Opportunities for People with Disabilities Act (“BehiG”)

Detailed information about individual construction projects can be found on the BLS Netz AG website under "Building projects".

The BAV published information on the further development of its ETCS strategy on 14 November 2014 (Link in German).
4 CAPACITY ALLOCATION

4.1 Introduction

4.1.1 Purpose of these provisions
This 4th chapter, compiled by Trasse Schweiz AG (trasse.ch), explains the processes and provisions for ordering and allocating timetabled train paths (basic and ancillary services), as well as the steps which need to be taken before and after the allocation procedure, and cites the relevant regulations. These are mandatory and apply to all applicants.

Ordering and allocating catalogued corridor train paths is carried out in accordance with the procedures and provisions for freight traffic corridors Rhine–Alpine or North Sea–Mediterranean. Details can be found in chapter 4 of the relevant corridor information documents, published on the corresponding websites of the corridor organisations (www.corridor-rhine-alpine.eu, www.rfc2.eu).

4.1.2 Legal basis
The definitive legal requirements for ordering and allocating train paths and ancillary services can be found in the Railways Act (EBG; especially Articles 9a and 9b), in the Rail Network Access Ordinance (NZV; particularly section 4) and in the Federal Office of Transport’s Ordinance to the Rail Network Access Ordinance (NZV-BAV). This list is by no means exhaustive.

The deadlines for ordering train paths and ancillary services are defined and published by the Federal Office of Transport (BAV) for the coming two-year timetable period.

4.1.3 The requirement to order train paths
The SBB (cf. Section 1.1), BLS and SOB rail networks may only be used if the appropriate train paths have been ordered and allocated. In order to ensure coordination with other rail traffic movements, this also applies to the infrastructure managers themselves if they are intending to use their own networks for their own operations (e.g. special service vehicles) or have their own needs to use parts of the network (e.g. the need to park vehicles in marshalling yards).

The requirement for train paths to be ordered is irrespective of the frequency and regularity of the intended network usage. Both regular-service train paths (for regular movements) and special train paths (for one-off movements) must be ordered.

4.1.4 Permits and documents required for train path orders
It is not absolutely essential for a track access permit (see section 2.2.3), a safety certificate (see section 2.2.4) and a track access agreement (section 2.3.2) to have been issued before a train path is applied for and allocated. At least one month before commencing operations, the applicant must either submit a track access permit or instruct a railway company to carry out the rail movements. The safety certificate must have been issued at the very latest by the time rail operations commence (Art. 9a para. 4 EBG).

Applicants who, at the time they apply for a train path, have not yet concluded a track access agreement with the relevant infrastructure manager are requested by trasse.ch to confirm in writing within five (5) working days that they acknowledge and accept the network access conditions set out in this Network Statement, especially the prices (chapter 6). Without this written confirmation, trasse.ch will not process the train path request.

If an applicant is not able to use a train path which has been definitively ordered and firmly allocated because the track access permit, the safety certificate or the track access agreement have not been issued in time or because the name of the rail company instructed to carry out the rail movements...
on the applicant’s behalf is not known, then the applicant will be liable to pay compensation as laid down in the infrastructure managers’ current service provision catalogues.

4.1.5 Geographical areas to which these provisions apply

In addition to the networks listed in section 1.1 – and on the basis of treaties or bilateral agreements between the infrastructure managers and subject to the relevant foreign legislation – these provisions apply to the routes between the border in the Simplon tunnel and Domodossola, from Pino-Confine to Luino, from Les Verrières-Frontière to Pontarlier and from Boncourt to Delle. However, these provisions do not apply to the SBB routes from Vallorbe to the border in the Mont d’Or tunnel, from Le Locle-Col-des-Roches to the border in the Col-des-Roches tunnel and from La Plaine to the border. The SNCF Réseau conditions apply to these three cases. The provisions of the RFI apply to the route from Stabio to the border. For more information on train paths for cross-border routes, please see section 4.2.4.

4.2 Process description

4.2.1 Overview

Train paths can be ordered for the annual or current timetables. Figure 2 is a simplified pictorial representation of the individual phases of the train path order process and shows the sections of this chapter in which each phase is explained.

4.2.2 Train path requests/orders

4.2.2.1 Train path studies

Explanatory notes

Train path studies (timetable studies) enable applicants to examine the feasibility of new or amended service concepts, using an iterative process to develop them further with a view to ordering train paths for the annual or current timetables.

Requests for train path studies should be submitted to the relevant infrastructure manager (see section 1.8 for contact address).

Binding nature of train path studies

Responses to the results of train path studies in no way constitute binding approvals for the allocation of timetabled train paths, and do not exempt the applicant from submitting train path requests in accordance with the normal ordering procedure.

Optional monitoring of the study by trasse.ch

In order to ensure that there is no discrimination, companies which request studies can demand that the study process be monitored by trasse.ch. If they disagree with the methods used to carry out the study, they can also approach trasse.ch once the studies are complete. (For the relevant contact address, see section 1.8).
4.2.2.2 Annual timetable

Requests for train paths and provisional allocation

Train paths (basic services) for the annual timetable should be requested from trasse.ch no later than 9 April 2018 using the NeTS-AVIS ordering tool. (For international train paths, see section 4.2.4.). The planning data in the NeTS-AVIS ordering tool will be available to applicants from 28 February 2018.

The applicant shall ensure that its train path requests are submitted on time and in the correct format, using the prescribed ordering tool. trasse.ch cannot complete this task on behalf of the applicant under any circumstances; it can also not add any missing information or correct any incorrect details. However, trasse.ch can offer assistance with operating the ordering tool to new or inexperienced applicants, as long as they register their interest at least one month before submitting the train path requests.

If requests are incomplete or not plausible, trasse.ch will set a deadline of five (5) working days to amend or correct insufficient, missing or impermissible details. If the applicant does not meet this demand, trasse.ch will not process the train path request. If the necessary details only reach trasse.ch after the deadline, the relevant request will be processed with a lower priority than other requests submitted in full and on time.

Variant requests, i.e. applications with two or more implementation options, are not permitted because they take up unnecessary planning time and tie up track capacity. In the event of a variant request, therefore, trasse.ch will grant the party making the request a grace period of five (5) working days to decide on one order variant and withdraw the other(s). If the applicant fails to comply with this request in good time, trasse.ch will not consider the variant request.

If, by the train path request deadline, too little is still known about certain requirements for train paths to be allocated in the normal way (e.g. locomotive and tractor-hauled freight trains), it is recommended that these train paths are ordered subsequently. However, retrospectively orders are assigned a lower priority than requests submitted on time.

Applicants will receive from trasse.ch a provisional allocation of train paths for domestic routes on 1 June 2018 and a provisional allocation of train paths for cross-border routes on 2 July 2018. This gives the applicant a binding train path offer, and thus the assurance of being able to develop its production concepts. Each provisional allocation is made subject to the feasibility of the ancillary services ordered. In the event of outstanding conflicts, train paths will only be allocated once these have been resolved, but as soon as possible.

Requesting and allocating ancillary services

For the annual timetable ordered ancillary services, in particular capacities for stabling trains and using loading sidings/facilities must be ordered no later than 22 June 2018 using the “Ancillary Services Order Form”. trasse.ch will definitively allocate these additional services on 20 August 2018. In the event of outstanding conflicts, train paths will only be allocated once these have been resolved, but as soon as possible.

Formation groups in marshalling yards influence train path allocation for the related basic service. For this reason, requests to use formation groups in marshalling yards in the annual timetable must be submitted by 9 April 2018 using the NeTS-AVIS ordering tool together with requests for the basic services.

The customer service team at trasse.ch will be on hand to provide advice and support to applicants if anything is unclear (See section 1.8 for the contact address).
Submission of train path requests after the normal train path allocation deadline
Train paths for the annual timetable can still be requested after the normal deadline has passed. However, requests of this kind will be allocated a lower priority than those submitted on time and, irrespective of the type of traffic, will be processed on a first come, first served basis.

Definitive train path orders and allocation
The train paths requested (basic services) must have been definitively ordered by 13 August 2018. trasse.ch will definitively allocate the basic services on 20 August 2018.

Catalogued corridor train paths for freight traffic
Ordering and allocating catalogued corridor train paths is done in accordance with the procedures and provisions for freight traffic corridor Rhine-Alpine or North Sea-Mediterranean (www.corridor-rhine-alpine.eu, www.rfc2.eu).

4.2.2.3 Current timetable

Ordering train paths
Train paths and ancillary services can also be ordered at short notice for the current timetable year. However, orders submitted during the current timetable are given a lower priority than those ordered and allocated for the annual timetable and can only take up remaining capacity. They will be allocated on a first come, first served basis, regardless of the traffic type involved.

Train paths for the current timetable year are to be requested using the NeTS-AVIS ordering tool (for international train path requests, see section 4.2.4). Infrastructure managers are bound to their offer for five (5) working days. If the offer is not accepted within this period, it will be deemed to have been refused by the applicant.

Catalogued corridor train paths for freight traffic
Ordering and allocating catalogued corridor train paths is done in accordance with the procedures and provisions for freight traffic corridor Rhine-Alpine or North Sea-Mediterranean (www.corridor-rhine-alpine.eu, www.rfc2.eu).

4.2.3 Train path catalogues

4.2.3.1 National train path catalogue
For freight traffic on the north-south Gotthard and Lötschberg-Simplon corridors, train path catalogues – as defined in EU Directive 2012/34 (Art. 40 para. 5 and Annex VII, section 4) – are available as an ordering aid when submitting train path requests and for service planning.

Annual timetable process
The train path catalogues will be posted from the middle of January on the trasse.ch website (keyword: Services/Usage of train paths) and will show the train paths available for transalpine freight traffic in the forthcoming annual timetable. The times specified in the train path catalogues for border stops and shift changes should be taken into account when requesting train paths. Orders for border stops that exceed the guideline times are possible but will put an excessive strain on the capacity of the nodal point. In the event of conflicts with other orders that cannot be resolved by mutual agreement, the shorter of the requested standing times takes priority (see section 4.4.1.3).

Remaining capacity in the current timetable
The train path catalogues published on the trasse.ch website (keyword: Services/Usage of train paths) show the remaining capacity available in the current timetable. They are to be used as a planning aid for train path orders in the current timetable. Updates are usually published at the annual timetable update intervals coordinated internationally in each case.
4.2.3.2 Catalogued train paths for freight traffic corridors

The OSSs for the freight traffic corridors Rhine-Alpine and North Sea-Mediterranean publish the catalogued corridor train paths in the Path Coordination System (PCS) ordering tool. Unlike catalogued national train paths, catalogued corridor train paths cannot be varied, i.e. train path requests must adhere strictly to the published train path parameters. The choice of proposed operating points for the catalogued corridor train paths (known as Flex-PaPs) specially designated for this purpose is the only exception. These can be reduced by the applicant if they are not required. Further details can be found in the relevant corridor information documents published on the corresponding websites of the corridor organisations (www.corridor-rhine-alpine.eu, www.rfc2.eu).

4.2.4 Train paths for cross-border services
(does not apply to catalogued corridor train paths)

Ordering formalities

Train paths for cross-border services (except for catalogued corridor train paths) can either be applied for from the relevant national train path allocation bodies or from the OSS network operated by the infrastructure managers and independent train path allocation bodies affiliated to RailNetEurope (RNE). The OSS network allows applicants to use the PCS ordering tool to submit their harmonised requests for the entire international route to a single train path allocation body affiliated to the network. Details of the train path request and allocation procedures for cross-border traffic can be found in the “Procedures for International Train Path Requests” guideline (see www.rne.eu; keyword Timetabling).

When crossing over to networks operated by non-Swiss infrastructure managers, orders should be submitted as detailed on the trasse.ch website (Search term: “regulations at border stations” for services/usage of train paths).

Note

Formal allocation of train paths takes place in accordance with the relevant national provisions.

4.2.5 Information required for train path requests and orders

Annual and current timetables

Compulsory fields as specified in the ordering tools:

- Applicant’s name
- Cross-border services: name(s) of the foreign partner applicants
- Name of the RU instructed to carry out the rail movement (if already known, cf. section 4.1.4)
- Accounting code (if available, cf. section 2.3.2.1)
- Train number (if known) or train path catalogue number
- Traffic period (days and periods of travel)
- Traffic type/train category
- Departure point of the requested train path including departure time; if not the same as the train run, plus the departure station including departure time
- Destination point of the requested train path including arrival time; if not the same as the train run, plus the destination station including arrival time
- Border crossings, including requested handover time(s)
- Routing (at least 1 operating point per transit country for international services)
- Intermediate stops, including details of time required (with additional information about, for example, change of system, removal of a wagon group, increase/decrease in motive power, change of locomotive crew, etc.)
- Train characteristics:
· Formation, diesel/electric locomotive(s) (including type), wagon/coach type
· Gross weight
· Train length including locomotives
· Loading gauge for intermodal train paths
· Train and brake sequence (with braked weight percentage)
· Top speed

- Further information on nationally requested train paths for cross-border train journeys: from train ... (incl. train relation “from/to”) / for train ... (incl. train relation “from/to”)
- Additional information for train paths for light engine trains: from train ... (incl. train relation)/ for train ... (incl. train relation)
- ETCS
- SMS-RU (the RU responsible for the safety management system)

Ancillary services (sidings and formation groups in marshalling yards)
Compulsory fields as specified in the ordering tools and order forms.
- Applicant’s name
- Accounting code (if available, cf. section 2.3.2.1)
- Name of the RU instructed to carry out the rail movement (if already known, cf. section 4.1.4)
- Train number (if known)
- Traffic data
- Operating point
- Arrival time at operating point
- Departure time from operating point
- Composition (motive power unit[s], diesel/electric, number of wagons/coaches, type, length in metres)
- Special platform requirements (details of platform number or loading platform including time period from … to …)

4.2.6 Changes to train path requests and orders
The details supplied when requesting or ordering train paths (see section 4.2.5) are binding. Any subsequent change to these details must be made using the ordering tool and must be in the form of a cancellation and a new order. However, excluded are changes that have no impact on the train path allocation and therefore do not require cancellation and reordering.

Train paths may not be sold nor transferred to another company (Art. 9a para. 5 EBG). The contract under which a RU is instructed to carry out the rail movement on behalf of another company does not count as trading in train paths.

The conditions shown in the relevant corridor information documents (www.corridor-rhine-alpine.eu/www.rfc2.eu) apply to catalogued freight traffic corridor train paths Rhine-Alpine or North Sea-Mediterranean.

4.3 Deadlines

4.3.1 Annual timetable
Path assignment is normally coordinated with the timetabling process for passenger services. The BAV specifies the deadlines for the submission of train path requests, the allocation procedure and the timetabling procedure. The following deadlines apply specifically to the 2019 timetable:
- 9 April 2018 Application deadline for normal path allocation
- 1 June 2018 Provisional allocation by trasse.ch for domestic services
22 June 2018          Deadline for ordering ancillary services
02 July 2018          Provisional path allocation by trasse.ch for cross-border services
13 August 2018        Deadline for definitive train path orders
20 August 2018        Definitive train path allocation (incl. ancillary services) by
                        trasse.ch
9 December 2018       The timetable changes

The dates for the provisional allocation of train paths may vary in the event of outstanding conflicts
(see also section 4.2.2.2).

### 4.3.2 Current timetable

Art. 11 para. 3 NZV states that the final deadline for train path requests is:
- 17:00 on the day before execution of single, irregular movements by RUs which have already
  booked other train paths on a route within the same timetable period;
- 30 days before the train is first due to run in all other cases.

#### 4.3.2.1 Exceptions

For measuring trips, test runs and trips on special vehicles (e. g. Diplory) the minimum order dead-
line is five (5) working days.

**Order deadlines for special consignments (SC)**
- SC that do not foul the gauge Vmax ≥ 80 km/h: as per section 4.3.2
- SC that do not foul the gauge Vmax < 80 km/h: 4 days
- SC out-of-gauge Vmax ≥ 80 km/h with no other conditions of carriage *: as per section
  4.3.2
- SC out-of-gauge and other conditions of carriage * or Vmax < 80 km/h: 4 days
- SC out-of-gauge as per l-50089 without notification: as per section 4.3.2
- SC out-of-gauge as per l-50089 with notification: 4 days
- SC out-of-gauge laterally: 10 days

* other conditions of carriage as per l-30111 5.1.

Changes at short notice (e. g. load shifting, missing transport plan) can only be processed for SC
with order deadline as per section 4.3.2.

#### 4.3.2.2 Catalogued corridor train paths for freight traffic

The deadlines published in the corridor information documents (book 4) apply to the ordering and

### 4.4 Allocation process

#### 4.4.1 Coordination process

#### 4.4.1.1 Principles

**Ban on improper orders of empty slots**

As a basic principle, any party making a request can determine its desired train path freely and
without any restrictions. It must therefore be able to purchase the train paths required to implement
its production plans or expected customer orders in good time even if it has not yet concluded any
contracts with its end customers at this point in time. However, orders submitted with the sole in-
tention of impeding a competitor and/or securing a better starting position in the path allocation
process in respect of competing path orders (particularly to circumvent the applicable order of pri-
ority) are not permitted. If trasse.ch suspects empty orders of this kind that represent an abuse of
rights and lack an underlying business plan, it may request that the ordering party provide
additional information and documentation to demonstrate the credibility of the actual or planned traffic. If this documentation or information is not submitted in the requisite quality or at all, the path request may be completely or partially rejected.

Multiple orders for the same transport task
If it is suspected that multiple orders are being placed for traffic runs with the same transport task (e.g. in the case of ongoing tenders), trasse.ch will request information on the background to the order (customer, business plan). trasse.ch thereby takes applicants’ need for confidentiality vis-à-vis competitors into account as far as possible.

In the case of multiple orders that are communicated transparently to the applicants involved, trasse.ch aims to superimpose both requests in identical train paths. If this succeeds, the train path will be allocated to the applicant who can provide evidence of transport. If none of the applicants can provide evidence of transport by the allocation deadline, they will all receive a conditional allocation.

If the applicants involved insist on confidentiality vis-à-vis their competitors, or if the attempt to combine the various requests on a single train path fails, all requests involved, without limitation, remain in the normal process.

Obligation to participate in the coordination process
trasse.ch aims to approve as many train path requests as possible. If it receives requests for simultaneous, mutually incompatible train paths, it will instigate coordination procedures based on the NZV-BAV and (in the same vein) Art. 46 of EU Directive 2012/34. The ordering parties affected are obliged to participate in these procedures, in particular by taking part in conflict resolution negotiations and submitting the information and documentation requested by trasse.ch. If an ordering party fails to comply with its participation obligation either in whole or in part and, in so doing, hinders or prevents the performance of the coordination procedure, then it shall bear the adverse consequences. This may extend to its path request being partially or completely rejected.

Ancillary services
There is a distinction between ancillary services that are essential for the provision of a basic service and ancillary services with no direct connection to a basic service. In the case of conflicts where no mutually acceptable solution can be reached, a higher degree of flexibility is expected from those ordering ancillary services with no direct connection to a basic service.

Catalogued corridor train paths for freight traffic

4.4.1.2 Annual timetable
As part of the coordination procedure, ordering parties will, where possible, be offered alternative paths that differ from those originally requested. In the interests of optimising the use of infrastructural capacity, trasse.ch may request that each ordering party be flexible, for both passenger and freight traffic, so that additional path requests can be implemented. However, the connections along an agreed public transport and freight transport chain must be guaranteed. In the case of high-frequency passenger traffic, this applies to connections between trains running at a frequency of up to and including every half hour. In the case of trains that increase frequency from half-hourly services, the degree of flexibility expected goes above and beyond guaranteeing connections.

If in the coordination process no agreement can be reached in the coordination process, train paths will be allocated based on the terms of the EBG, the NZV and the NZV-BAV according to the following procedures:
1. Train path allocation conflict resolution on the basis of the network usage plan (NNP)

Train paths are allocated on the basis of the NNP 2019. However, no rights or obligations can be derived from the NNP for individual transport companies, since the plan only safeguards capacity for particular types of traffic and not for individual companies.

2. Prioritisation

If it is not possible to offer applicants any alternatives, even with the expected flexibility, or if no mutually acceptable solution to the order conflict can be reached, trasse.ch will perform the allocation in accordance with the legal requirements, giving priority to the requests which do not restrict the number and quality of train paths safeguarded in the NNP for either its own or other types of traffic.

If the number of train path applications submitted for a particular type of traffic exceeds the provision in the NNP or if there are train path request order conflicts for which no mutually acceptable solution can be found, the following order of priority will be applied:

a. Order conflicts involving passenger services only
   1. Requests made on the basis of a framework agreement (Art. 12c para. 2 (a) NZV).
   2. Requests for high-frequency passenger services.
   3. Trains which yield a higher contribution margin for each train path request in question.

b. Order conflicts that do not exclusively involve train paths for passenger services.
   1. Requests made on the basis of a framework agreement (Art. 12c para. 2 (a) NZV).
   2. Freight trains for which, for technical reasons, in particular the critical clearance gauge, no alternatives can be offered. The onus of proof lies with the company submitting the application.
   3. Requests made on the basis of agreed transport chains for freight transport for which a year-round request is made but no possible alternatives exist. This applies to trains for which a year-round request exists, where these trains are part of connection systems in domestic wagonload freight including the express network or postal and parcel services.
   4. Requests for trains which run more than once during the timetable year, depending on how frequently they will run. The requests are divided into the following three categories, in decreasing order of priority:
      - Trains which operate on an average of ≥ 5 day per week each year,
      - Trains which operate on an average of ≥ 3 to < 5 days per week each year,
      - Trains which operate on an average of ≥ 1 to < 3 days per week each year.

The number of requested train path days is taken as a measurement variable. Within each category, the requests are considered to be of equal importance. If seasonal train services reach a yearly average of less than one day of operation per week, they are compared with the actual number of days of travel ordered per timetable year.

If the order of priority described in a or b does not produce a result and if the conflicts cannot be resolved, trasse.ch will conduct a bidding process.

In the case of order conflicts relating to free capacity (remaining capacity not safeguarded by the NNP), priority is given to high-frequency passenger services (Art. 9b para 4 EBG). If the order conflict cannot be resolved on this basis, trasse.ch will conduct a bidding process.

3. Bidding process

The object of the bidding process is the individual train path for which more than one allocation request has been submitted.

trasse.ch will simultaneously inform all applicants involved of its intention to conduct a bidding process. Applicants will be requested to submit a bid by a specified deadline (date and time). The
period for the submission of the bid will be four (4) working days, unless those involved in the bidding process agree on a different time limit.

If a passenger services application is involved in the bidding process, the bid must at least be equal to the contribution margin defined in Art. 20 NZV for the passenger services application for the train path in respect of which the conflict has arisen.

The train path will be awarded to the highest bidder without any further negotiations. trasse.ch will ensure that the amount to be paid is a maximum of CHF 1000 more than the second-highest bid.

If two or more identical bids are submitted, the bidding process will be continued until one bid emerges as the winner.

4.4.1.3 Ancillary services
The applicant may specify a desired track when ordering. However, there is no entitlement to use a specific track.

A coordination process is also conducted in the event of conflicts which arise when ancillary services are ordered. If no agreement can be reached in the coordination process, ancillary services will be allocated according to the following procedure:

1. Orders for ancillary services that are essential for the provision of basic services are given priority over those that have no direct connection to basic services. In the case of orders for ancillary services with a direct connection to basic services, the ancillary services are given the same priority as the associated basic service.

2. Ancillary services which have no direct connection to a basic service are allocated in the following order:
   A. Ancillary services for/requirements, for which, for technical reasons, no alternatives can be offered.
   B. Ancillary services for requirements which are used repeatedly during the timetable year, depending on the frequency of the registered requirements. The assessment is carried out in a similar way to the procedure for train path conflicts in the annual timetable.

If the order of priority described above fails to resolve an order conflict and the ancillary service cannot therefore be allocated to an ordering party, trasse.ch will conduct a bidding process. The ancillary service will be allocated to whichever applicant submits the highest bid. The winner will pay a maximum of CHF 1,000 more than the second-highest bid. trasse.ch will invoice the successful applicant directly. The bid price must also be paid even if the ancillary service allocated as a result of the bidding process is not used or is subsequently relinquished.

In the event of complex conflict situations involving multiple applicants and/or variable allocation possibilities, trasse.ch will determine the precise procedure and communicate this to the parties involved.

**Detailed regulations for standing time conflicts in freight services**
The train standing time is the time period from the train’s arrival until the start of its onward journey, during which it uses up track capacity at the hub stations. If there is insufficient capacity at a hub station to cover the requested standing times, the standing time conflicts are coordinated with the aim of finding alternative solutions under commercially acceptable conditions for all the requested services (train paths plus additional services). If no agreement can be reached, the capacity shall be allocated according to the duration of the requested standing time in the station where the conflict has occurred. The request with the shortest stopover time is the first to be taken into consideration. In the case of cross-border trains with train path and standing time conflicts, once
coordination is complete, the allocation decisions for first the train paths and then the standing times are made at the border stations. trasse.ch oversees the details of the process and informs the affected applicants in the event of a conflict.

**Detailed regulations for resolution of conflicts in locomotive stabling**

As a basic principle, there is no entitlement to a specific siding. trasse.ch allocates the sidings so as to achieve the highest possible degree of capacity utilisation of the facility. Conflicts between siding capacity orders for locomotives are coordinated in a first step. If no agreement can be reached, the following order of priority applies:

1. Locomotives in productive use;
2. Reserve locomotives;
3. Repair locomotives and other stabling requirements not directly connected to basic services. If this order of priority does not produce a conclusive result and if the remaining conflicts cannot be resolved, trasse.ch will conduct a bidding process. If siding capacity is available for a locomotive category, but not in a sufficient quantity/quality, trasse.ch will ask all ordering parties within this category to take part in a bidding process. Bids are to be submitted for each order item. The available capacity will be allocated according to the value of the submitted bids. trasse.ch will ensure that the amount to be paid is a maximum of CHF 1000 more than the highest bid for which no allocation is granted.

**4.4.1.4 Current timetable**

Train path orders (basic and ancillary services) for the BLS, SBB and SOB networks for the current in-year period will be handled by the responsible infrastructure manager. If the applicant’s order can be met as requested, the infrastructure manager will allocate the train path directly. If a train path ordered for the current in-year period conflicts with train paths which have already been allocated, the infrastructure manager will, where possible, offer alternatives. If there are no adequate alternatives or if the ordering party does not accept the alternatives offered, the infrastructure manager will consult trasse.ch. Depending on the nature of the conflict, trasse.ch will invite the affected applicant and the infrastructure manager to a conflict resolution meeting which trasse.ch will chair.

In the event of a conflict, in-year train path orders will be exclusively allocated by trasse.ch; this includes rejecting applications. Orders following an offer of a train path must be received by the infrastructure at least three (3) working days before the date on which the service is to run.

For reasons of time, train path orders which affect immediate operations will be directly handled, allocated and, as appropriate, rejected by the operational services of the infrastructure manager. This affects train path orders submitted later than 8:00 on the day before the service is to be run (weekends, i.e. Saturdays and Sundays, and public holidays as per the NeTS calendar do not count as the day before or as working days). The last possible order deadline for receipt of an order by the operational services of the infrastructure manager is 90 minutes before the train’s departure time. The infrastructure manager will inform trasse.ch of any orders it has rejected. trasse.ch will subsequently check whether the order was correctly handled and whether the decision to reject it was taken without discriminating against the applicant and was well founded.

**4.4.2 Arbitration in the event of a dispute over train path allocation**

The SKE is responsible for dealing with complaints about track access. If it is suspected that track access is being prevented or granted in a discriminatory manner, the SKE is also authorised to instigate investigations.

The procedure for disputes about catalogued corridor train paths is set out in the provisions of the relevant freight traffic corridors ([www.corridor-rhine-alpine.eu](http://www.corridor-rhine-alpine.eu), [www.rfc2.eu](http://www.rfc2.eu)).
4.4.3 Congested routes

In the event that trasse.ch is unable to grant train path requests because of a lack of capacity on a route, or if there are reliable indications that this will be the case, the route is deemed to be congested. In such circumstances, trasse.ch is entitled in accordance with Art. 12a para. 3 NZV to cancel train paths already allocated to optional trains, and not to offer these any longer, insofar as this results in better capacity utilisation on the route in question. trasse.ch can also withdraw train paths and allocate them to another applicant if the train path on the congested route is being used to a lesser extent than as may be specified in the published track access conditions (Art. 12 para. 4 NZV).

trasse.ch will work together with the relevant infrastructure manager(s) to conduct a capacity analysis to determine the reasons for the bottleneck which has led to the route being deemed congested. Depending on the cause and the likely duration of the capacity shortage, trasse.ch will highlight possible short- to medium-term relief measures. It will submit the capacity analysis to the Federal Office of Transport, which, on request, can declare the highlighted measures as binding.

The above provisions apply to both lines and nodal points and to both basic and ancillary services.

At the time of printing, no routes have been declared as congested for the 2019 timetable year.

4.4.4 Framework agreements on capacity allocation

Applicants and IM may conclude framework agreements in accordance with Art. 12b NZV.

4.5 Train path allocation in the event of temporary capacity restrictions

Art. 11b NZV and the Federal Office of Transport guideline “Line closures in accordance with Art. 11b NZV” govern the arrangements made by infrastructure managers in the event of capacity restrictions. According to these regulations, the infrastructure manager must announce temporary capacity restrictions for construction and maintenance work no later than two months prior to the train path application deadline. Under certain conditions, the regulations also allow for notification at shorter notice.

The infrastructure managers will plan maintenance and upgrade work as part of the network timetable production process. In principle, the applicants will be informed at the earliest possible moment. The applicants’ interests will be incorporated into this planning process and taken into account as far as possible.

Not all temporary capacity restrictions are included in the NNP, since these are sometimes only planned after the deadline for ordering train paths has passed. Art. 10 NZV-BAV governs the procedure which applies in the event that the number of train paths for each type of traffic safeguarded in the NNP for the standard hour can no longer be implemented during the capacity restriction.

In the event of temporary capacity restrictions which are not taken into account in the NNP, efforts will be made to reach an amicable solution with the applicants concerned. If no mutually acceptable solution can be found, the train paths will, as far as possible, be allocated to the types of traffic on the basis of the NNP. This means that, in a first step and for the duration of the capacity restriction, train path requests which exceed the safeguarded scope for each traffic type in the time without the capacity restriction and place demands on the remaining capacity will not be considered.

If the restricted capacity is still insufficient for the allocation of train paths in accordance with the NNP specifications, the infrastructure manager can, for the duration of the capacity restriction only,
adjust the planned number of train paths and their quality for each type of traffic for the affected route and for the diversion routes considered. Train paths will be allocated in accordance with the provisions of section 4.4.1.2 of this Network Statement.

If, at the time of the train path allocation in the annual timetable process in accordance with section 4.3.1, temporary capacity restrictions have been announced, but it has not yet been possible to make definitive plans for the specific impact on the individual train paths, applicants will be allocated train paths subject to appropriate conditions.

Applicants will be notified in writing of planned maintenance and upgrade work affecting train paths which have already been allocated.

4.6 Non-usage of definitively allocated train paths

If definitively allocated train paths are cancelled, this must be done using the corresponding ordering tool. The precise requirements and conditions for the non-usage of definitively allocated train paths (basic and ancillary services) can be found in the relevant provisions (in particular the list of services) of the infrastructure managers. Different provisions may apply to the congested routes as per section 4.4.3 for both definitively and provisionally allocated train paths.

Non-usage of train paths for cross-border services must be coordinated with the relevant non-Swiss partner railway company. When cancelling, the agreements made with partner companies must be quoted in the ordering tool under “Details” (e.g. “Project is not being implemented” or “Train paths on the non-Swiss routes have been cancelled by the partner applicant”).

The provisions applicable to freight traffic corridors take precedence over national provisions in the event of non-usage of allocated catalogued corridor train paths Rhine-Alpine or North Sea-Mediterranean the national provisions (www.corridor-rhine-alpine.eu, www.rfc2.eu).

4.7 Special consignments and dangerous goods

4.7.1 Special consignments

The provisions for special consignments (SC) can be found in section 2.5. The order deadline for the train path can be found in sections 4.3.2. The ordering railway company must supply the necessary information together with the train path order. The infrastructure transport agreement drawn up must be available when the train path request is made, and the SC number provided.

4.7.2 Dangerous goods

The provisions for the carriage of dangerous goods can be found in section 2.6. The order must include the RID risk category for the freight to be transported.

4.8 Special measures to be taken in the event of disruption

Art. 14 NZV applies in the event of disruptions to operations. Infrastructure managers are authorized to issue instructions to RUs. Both the infrastructure managers and the RUs have an obligation to inform each other and to provide mutual assistance in the form of personnel and materials in order to resolve the disruption and restore the public transport service.

If the disruption is expected to close the line for several days, the IM shall draw up an emergency timetable in consultation with the RU concerned and publish it. If the line closure is expected to last longer than three (3) days, trasse.ch will calculate the share of overall freight traffic on the closed line and the diversion route that is attributable to the RU. It will allocate train paths on the diversion
route to each RU based on their share of overall traffic on the closed line and the diversion route.
In doing so, it may revoke paths in passenger and freight traffic that it has already allocated if this
helps to optimise capacity utilisation.

4.9 Test runs

Test runs deviating from current regulations fall under the special regulations issued by SBB
Infrastructure (I-30023), by BLS Netz AG or by SOB Infrastructure and the Implementing Provi-
sions for Test Runs as per FDV R 300.6, section 6.1. The relevant central points of contact are
listed in section 1.8
5 SERVICES

5.1 Introduction

SBB Infrastructure offers basic, ancillary and miscellaneous services in accordance with the Track Access Ordinance (NZV).

5.2 Basic services (Art. 21 NZV)

Basic services include:

1. Use of the train path in a predetermined quality, including train operation services;
2. Use of electricity ex catenary;
3. The safe and true-to-schedule run of operations on the line, in the stations passed through and in the nodes, including telecommunication and IT services necessary for the management of operations;
4. For passenger trains, the use of a track along a platform at the departure, intermediate and destination stations, according to the requirements of the system traffic, and the access of the passengers to the public amenities of these stations;
5. The use of tracks by the unaltered train in goods traffic between agreed departure and destination points.

5.3 Access to service facilities and supply services

5.3.1 Access to service facilities

5.3.1.1 Passenger stations
For information on stations and services, see Link

5.3.1.2 Freight terminals
For information on terminal locations, see Link.

5.3.1.3 Marshalling yards
For information on the list of services for shunting stations, see

5.3.1.4 Sidings
For information on section 2.4 of the List of Services

5.3.1.5 Maintenance
For fleet and maintenance information for passenger services,
For fleet and maintenance information for freight services, see

5.3.1.6 Other technical installations
More information at the following

5.3.1.7 Lake and inland port facilities
More information at the following

5.3.1.8 Assignment tracks/train formation facilities
More information at the following
5.3.1.9 Purchasing operating materials
Contact: einkauf.railbuyer@sbb.ch.

5.3.2 Services in facilities
For the list of services for shunting stations, see

5.3.2.1 Shunting
For the list of services for shunting stations, see

5.3.2.2 Other services
For the list of services for shunting stations, see

5.4 Ancillary services (Art. 22 NZV)

1. The infrastructure manager defines the prices of the following ancillary services without discrimination, insofar as these can be provided with the existing infrastructure and available personnel, and publishes these (Art. 10):

   a. Keeping paths available for optional trains;
   b. Track allocation in the event of a delay requested by the railway undertaking and not caused by scheduled traffic;
   c. Stabling of train compositions;
   d. Shunting routes;
   e. Provision of water and electricity to, and disposal of rubbish, sewage and waste water from, stationary passenger trains;
   f. Use of loading tracks and facilities;
   g. Shunting in marshalling yards;
   h. Keeping routes open outside of normal operating hours;
   i. Marshalling services if these are not provided in marshalling yards;
   j. Additional customer information services;
   k. Assistance for staff on board long-distance services to improve operations, in particular video surveillance on platforms.

2. The prices covered by paragraphs 1a-c and f are to be set as scarcity prices as a function of demand and investment value on a location-by-location basis. All other prices are to be set analogously in accordance with the principles laid out in Article 19. In addition, a pro rata element can be added for capital and amortisation costs in respect of assets used mainly in the provision of ancillary services.

3. Services defined in paragraph 1i can be purchased by the network user from other companies as well as from the infrastructure manager, at freely negotiable prices. In this case they are treated as miscellaneous services (as defined in Art. 23).
Ancillary services must be ordered. For information on ancillary services which can be provided locally on an individual basis, contact the SBB/BLS onestopshop@sbb.ch. Ancillary service prices are published in the current list of infrastructure services.

5.4.1 Power supply
See list of services, section

5.4.2 Water
See List of Services, section 2.5

5.4.3 Exceptional loads, transport of dangerous goods
Exceptional loads: see section 1.8.1.3
Dangerous goods: see List of Services, section 1.2.2

5.4.4 Other services
See List of Services, section 2

5.5 Miscellaneous services (Art. 23 NZV)
Miscellaneous services can be purchased by RUs from other companies as well as from the IM, at freely negotiable prices. They are not part of network access and comprise, in particular:

a. …
b. Distribution services;
c. Luggage handling;
d. Clearance of faults not impairing operations, light maintenance, heavy maintenance, cleaning of vehicles;
e. Telecommunication and IT services not directly connected with the operation of the train.

5.5.1 Access to the telecommunications network
More information at the following

5.5.2 Customer information
More information at the following

5.5.3 Railway Technology Centre
More information at the following

5.5.4 Travelcards & tickets
More information at the following

5.5.5 Inspecting vehicles
More information at the following
5.5.6 Responsibility for movable equipment at stations

The allocation of responsibility between RUs and IMs for the movable equipment needed for train operation is set out in the following list. RUs are obliged to purchase, maintain and hold in stock all the materials for which they assume responsibility according to the list below.

IMs place the movable equipment for which they assume responsibility at the disposal of all RUs, without discrimination and in the required quantity.

|   | Brake bars | RU |

6 PRICES AND INVOICING

6.1 Right to compensation (Art. 9b EBG)

1 The licensed railway undertaking is entitled to charge a fee for the use of its infrastructure.

2 The participating undertakings shall set out the detailed arrangements regarding access rights and fees in an agreement. If the participants fail to reach a consensus, a decision will be made by the SKE (Art. 40a).

3 The fee payable shall be determined without discrimination and must cover at least the usual marginal costs accrued in respect of a modern railway line; these marginal costs are defined for each line category by the BAV. It shall take into account, in particular, the different costs within the network, the environmental impact of the rolling stock and demand aspects. In the case of regular passenger services, the fee will comprise the marginal costs defined by the BAV for the relevant line category and the revenue share from the service defined by the franchising authority.

4 The BAV defines the basis for calculation of charges and arranges for their publication. In defining the basis for calculation, the BAV ensures that comparable routes are subject to uniform levels of train path pricing and that optimal use is made of rail capacity.

6.1.1 Basis for train path prices (Art. 18 NZV):

1 Payment as per article 9b of the EBG (train path price) comprises a basic service price and the charges for ancillary services.

2 The price for basic services is composed of:

- the minimum price;
- the contribution margin;
- the electricity price.

3 The train path charge for a route is always determined via the same procedure and without discrimination.
6.1.2 Basic services (Art. 19 NZV)

1 The minimum price for all types of traffic corresponds to the standard marginal costs, which take into account the different infrastructure costs throughout the network, demand and the environmental impact of vehicles used.

2 The BAV sets the minimum price for each route category based on information provided by the infrastructure managers, and divides it in accordance with the cause of each cost:
   a. per train-kilometre (minimum price train path);
   b. per train based on wear and tear caused by the train’s vehicles (minimum price wear and tear).

3 The minimum price varies according to the following price factors, surcharges and discounts:
   a. demand-related price factor for each train path;
   b. quality-related price factor for each train path;
   c. demand-related stop surcharge;
   d. quality-related surcharges and discounts for the environmental impact caused by the vehicles used;
   e. discount for trips on routes with ETCS.
   f. discount for locomotives that help to optimise line capacity utilisation.

4 The BAV specifies the locomotives and discounts according to number 3 letter f.

5 Third parties may be assigned the task of checking the calculation of wear and tear caused by vehicles.

6.1.2.1 Contribution margin (Art. 20 NZV)

1 The contribution margin for non-franchise-holders’ passenger services amounts to CHF 0.0027 per offered kilometre, except in the case of empty runs.
The contribution margin for franchise-holders’ passenger trains is calculated based on traffic revenues, including those generated by the sale of tickets, reservations, supplements and the carriage of luggage.

The contribution margin for franchise-holders’ passenger trains is determined by the franchising authority as follows:

1. For ordered services, 18 months before the start of the respective timetable year, after consultation with the relevant infrastructure managers, network users and clients;
2. For all other services, at the time the franchise is granted, on the basis of the application/at the request of the relevant IMs. If the franchise is being granted for a period greater than five years, provision should be made for regular review and realignment of the contribution margin.
3. Contribution margins for franchise-holders' passenger trains must be published.
4. No contribution margin will be deducted for freight services, subject to paragraph 5.
5. If the contribution margin is defined as part of a bidding process as per Article 12 paragraph 1, this is the amount owed.

6.1.2.2 Electricity price (Art. 20a NZV)

1. The BAV sets the electricity price based on information from infrastructure managers so that overall, no uncovered costs arise.
2. The electricity price is increased by 20% during peak periods and reduced by 40% between 22:00 and 06:00.
3. If network users forego the installation and calibration of measuring devices for electricity consumption on vehicles, infrastructure managers are at liberty to set rates for each train category based on sample measurements. IMs are obliged to take into account electricity consumption for comfort features and the energy efficiency of vehicles in this process.

6.1.2.3 Low-noise bonus (Art. 19b NZV)

1. Railway undertakings operating freight trains fitted with disc brakes, drum brakes or composite brake blocks are entitled to claim a low-noise bonus of:
   a. CHF 0.01 per axle-kilometre for vehicles with a wheel diameter of less than 50 centimetres;
   b. CHF 0.02 per axle-kilometre for vehicles fitted with composite brake blocks or drum brakes and with a wheel diameter of less than 50 centimetres;
   c. CHF 0.03 per axle-kilometre for vehicles fitted with disc brakes and with a wheel diameter of 50 centimetres or more.
2. The BAV will establish individual categories for vehicles with other or combined braking systems, taking into account permissible and operating values.
Claims should be made for a calendar year and submitted to the BAV no later than the end of June the following year. They must include:

a. a list of all vehicles included in the low-noise bonus claim;
b. details of the brakes fitted to these vehicles and their wheel diameters;
c. the total distance covered by each vehicle in axle-kilometres;
d. any other details requested by the BAV that are necessary to assess the claim.

Claims upheld by the BAV are to be forwarded to the relevant infrastructure managers.

Infrastructure managers are responsible for issuing low-noise bonuses.

6.1.2.4 Discount for the ETCS train control system (Art. 19c NZV)

On request, a train-path price discount of CHF 25,000 per fitting of ETCS to rolling stock per year will be granted for journeys on routes converted to the ETCS train control system.

The discount will be granted up until 31 December 2024 for vehicles which were taken into service before 1 January 2013 and which do not run either on the Mattstetten-Rothrist route or on the Lötschberg, Gotthard or Ceneri Base Tunnel routes.

Vehicles whose ETCS equipment was subsidised by the federal government will not receive a discount.

Requests must always be made for a calendar year and be submitted to the BAV no later than the end of June of the following year. If the deadline for submitting requests is not observed, entitlement to the discount shall lapse.

6.1.2.5 Cancellation payment (Art. 19d NZV)

If a railway undertaking relinquishes use of a train path it has been definitively allocated on particular days, a cancellation payment shall replace the train path price. This covers in particular the administration costs incurred and helps to cover contingency costs.

The cancellation payment equates to the train-path minimum price according to Article 19 clause 3 letters a–c, multiplied by the following factors:

a. 0.2 if relinquished up to 61 days in advance;
b. 0.5 if relinquished up to 31 days in advance;
c. 0.8 if relinquished by 17:00 the previous day;
d. 1 if relinquished after 17:00 the previous day;
e. 2 if relinquished after the scheduled departure time of the train.

On congested lines (Art. 12a) the cancellation payment also becomes due if the following are relinquished:

a. a provisionally allocated train path if the allocation had been in place for at least five working days;
The following new factors will apply from 1 January 2019 onwards:
c. 0.7 if relinquished up to 5 days in advance;
d. 0.8 if relinquished up to 24 hours before the scheduled departure time along the train path;
e. 1 if relinquished less than 24 hours before the scheduled departure time along the train path;
f. 2 if relinquished after the scheduled departure time along the train path.

6.1.3 Services relating to section 5.3.2
List of services for shunting stations [Link].

6.1.4 Ancillary services (Art. 22 NZV)
The additional services include ordered and agreed services (reserved) and services required at short notice that can be provided subject to the resources (staff and vehicles) and capacity (installations) being available. Services ordered at short notice are processed according to the “first in, first served” principle. See also 5.4.

6.1.5 Miscellaneous services
IMs offer a range of miscellaneous services where resources are available (as per Art. 23 NZV). More information about these services, together with the relevant terms and conditions, is available from the contact point listed in section 1.8.1.1.

6.2 Train-path pricing system
More information at the following [Link].

6.3 Charges
The currently applicable charges are set out in SBB/BLS/SOB Infrastructure's [List of Infrastructure Services].

6.4 Accounting arrangements
Accounting is carried out via the joint SBB/BLS/SOB train path sales agency using the I-Prix system. Services are allocated using the accounting code.

6.4.1 Accounting code
As mentioned in section 2.3.2.1 above, the accounting code serves primarily to identify the RU and as a means of securing income (calculation of basic, ancillary and miscellaneous services). In addition to the conditions pertaining to the accounting code mentioned above, the rules of procedure in section 2.3.2.1 must be followed.

6.4.2 Basic rule train category (passenger or freight train)

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Passenger services</th>
<th>Freight services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Composition</td>
<td>1) Mostly passenger wagons or</td>
<td>1) Mostly freight wagons</td>
</tr>
<tr>
<td></td>
<td>2) historic rolling stock (P/F) not used commercially</td>
<td></td>
</tr>
<tr>
<td>Train category/train number</td>
<td>Empty stock train-chartered train</td>
<td>Freight train</td>
</tr>
<tr>
<td>----------------------------</td>
<td>----------------------------------</td>
<td>--------------</td>
</tr>
<tr>
<td>Data acquisition</td>
<td>FOS</td>
<td>CIS-Infra</td>
</tr>
<tr>
<td>RID</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

- Mostly = number of metres
- Definition of historic rolling stock as per *Guideline – Acceptance of Historic Railway Vehicles (in German language)* section 3

Trains with RID must run as freight trains recorded in CIS-Infra.

### 6.5 Invoicing

#### 6.5.1 Basic principle

The infrastructure manager will issue invoices monthly in Swiss francs (CHF) or, on request, in euros (EUR). In the latter case, the RU undertakes to keep to the chosen currency for a calendar year. The invoice date determines the exchange rate. The RU should pay the invoice within 30 days. Complaints regarding invoices must also be received by the invoice originator at the latest 30 days after invoicing.

### 6.6 Changes to charges

We reserve the right to make changes to the statutory services and charges. Legislative changes which take effect after the publication of this Network Statement and which conflict with provisions of the applicable Network Statement will be added as editorial updates.

### 6.7 Billing arrangements

See *List of Infrastructure Services* section 4.2, Invoicing.
7 Provision of data

The data collected will be used to provide the relevant infrastructure service (e.g. timetable planning, route setting, customer information). The data will also be disclosed to third parties if required for providing services and/or to fulfil overriding obligations (e.g. statutory requirements).

7.1 Passenger services and locomotive-hauled trains (passenger and freight services)

Composition data (as defined correctly by the RU and the IM) for both passenger services and all locomotive-hauled trains (passenger and freight services) must be provided to SBB Infrastructure before the departure of the train.

- Data provision to FOS via an electronic interface using defined messages (XML) according to the interface specifications in consultation with SBB Infrastructure. The notification format is designed in such a way that the European standards for cross-border data exchange (TSI TAF/TAP) and the requirements of the user-based train-path pricing system (TPS 2017) are met. The RUs shall bear their own costs for planning up to and including migration and for modifying their system in line with the new notification process. Experts from SBB Infrastructure will be on hand to offer migration support and advice on request.

- Direct data entry in the FOS user interface. The respective RU must bear the costs of the internet connection between the RU and SBB Infrastructure and for the Citrix basic account. SBB Infrastructure offers free training in using the new input interface. Users’ time and wage costs shall be borne by the parties involved themselves.
  - The RUs can automatically import the formations stored in NeTS for annual and daily data into FOS if desired (no charge). The relevant RU is responsible for recording the linking of the train formation plan designations used in NeTS to the FOS drive types and for checking that the imported data is correct and complete. Automatically generated data is just as relevant to billing as data that has been recorded manually or supplied via an interface.
  - FOS transmits the freight service tractions to CIS-Infra for all supply channels and can be checked/updated during train inspection. If the locomotive type, number of locomotives and route are identical to the data confirmed during train inspection, the EVN number is updated in the production calendar once train inspection is complete.

The RU must send data to SBB Infrastructure as:
1. Provision of complete annual data via XML or GUI at the latest one week after provisional train path allocation (for the SBB Infrastructure annual planning).
2. Subsequent provision of complete annual data at a two-week interval (even if no changes have been made) so that it can be ensured that the annual data is up to date.
3. The supply window (production calendar) for the daily data is -3 to +20 days, based on the current day of operation. Changes must be transmitted immediately during this time window. Complete daily data must be provided for every new day moved into the time window (today + 20 days). The daily data may differ from the communicated annual data and is used to determine the deviations and as a basis for billing. It must still be delivered even if the daily and annual data are identical. Voluntary delivery up to +40 days is possible. If the RU cannot make a delivery by +20 days, NeTS can also order generated daily data from FOS.

Required train formation operating data (to be submitted electronically):
- train path ID
- train number
- operating day or traffic period
- timetable period
- RU
- formation journeys with start and end operating points including arrival and departure times.
- coupling of the formation element (inward train, outward train) at the start or end of the formation journey
- Productive power (vehicles of the same rotation that are assigned together)
- Direct run of the wagons (coupling of formation elements between trains without the passengers having to leave the vehicles)
- movement type:
  RUs must provide the movement type per unit that may not be separated operationally, in the formation data. The movement type determines the wear and tear dependent part of the train-path costs and the vehicle dynamics characteristics. The movement type is allocated and managed by SBB Infrastructure.
- Vehicle type:
  The vehicle types must be provided with the same semantics as previously. Each vehicle type relates to a wagon body. All wagon bodies that are part of a specific articulated vehicle must be provided under the same movement type.
- Equipment features (seats 1st and 2nd class air-conditioning, wheelchair spaces; air-conditioning and other)
- Wagon number for reservations
- Whether the locomotive is towed. Optional, for deduction from train-path costs
- Vehicle condition for customers: open, closed
- EVN of the vehicles, mandatory for locomotives and articulated trains
  The EVN is the 12-digit vehicle number registered in the register of vehicles.
- Train sequence (optional)
- Brake sequence (optional)
- Operating power of the locomotive
- Role of the locomotive

The complete list of data to be provided was defined in the interface specification between RUs and FOS.

If the RU with responsibility for safety management (SMS-RU) given at the time the train path is ordered changes, the change must be ordered with NeTS-AVIS before the train departs on the affected section of line.

If data cannot be submitted electronically due to a fault at the RU’s premises or with the Internet, or if SBB’s systems are unavailable, then the RU must retrospectively enter or submit the data required for operational purposes in or to these systems as soon as possible after the interruption.

If data is not transferred to the billing system correctly, billing shall be based on the standard values for each train type published in SBB Infrastructure’s list of services.

FachBus FOS will be glad to assist with any questions, problems and orders for access rights to use the application.


7.2 Freight services

The freight train composition data defined correctly by the RU and the IM must be entered into SBB Infrastructure's Cargo Information System (CIS) before the departure of the train (for locomotive-hauled trains see section 6.2.2.1). The RU may supply data free of charge as follows: Direct entry into the Infrastructure CIS over the internet or a Citrix emulation using the "Train controlling" application only. The RU must bear the costs of the internet connection.

- Advanced use of the Infrastructure CIS via the internet or a Citrix emulation, and in particular integrated use of its applications UIC-HERMES advance train notifications (border and special handover station), GREM (cross-border messages = international data exchange) and AHA (CIS analyses) or electronic delivery from Infrastructure CIS (XML-CISTDEVU) is offered subject to a fee, and can be arranged as a miscellaneous service by separate request.

Consignment-related wagon data, which forms the basis for train controlling, can be transmitted via UIC Hermes advance train notification (Treno)

Delivery of the required operational data via a different interface is possible at the RU's request. The costs incurred by the IM for developing, operating and possibly modifying new interfaces will be charged to the RU.

If electronic data transfer is not possible because of a fault with the RU's systems, or if SBB's systems become unavailable, the required operational data must be submitted to the designated office ("Netzleitung Güterverkehr" [Freight Traffic Network Administration Centre], Bern) by fax +41 51 227 39 24 or e-mail: netzleitung-g@sbb.ch. A corresponding model list (template) can be obtained from the system managers. The required operational data must also be entered into the system/delivered electronically by the RU once the disruption has been resolved.

Application managers from SBB Infrastructure's Information Technology unit will be glad to assist with any questions, problems and requests for access rights to the CIS-Infra programmes.

SBB Infrastruktur
I-B-APM
Hilfikerstrasse 3
CH 3000 Bern 65

E-Mail: zis@sbb.ch

Required train operating data (to be submitted electronically):
- railway undertaking (accounting code)
- train number
- departure date
- train's departure station code (incl. UIC country code)
- train's destination station code (incl. UIC country code)
- UIC border entry code (if any) and scheduled date of border crossing
- special interchange station for wagons (if any)
- message type
- motive power units along entire route: code number and EVN, position in train, brake type, unladen and braked weights, energy (combustion-based or electric regenerative/non-regenerative), locomotive Vmax, brake loading weight required to bring the train to a stop (in kilonewtons or tonnes)
- train and brake sequence
- train's maximum speed
- wagon number plus loading unit number for intermodal traffic
- relevant consignment identification number(s)
- consignment accounting code or RU's RICS code for the transferring and accepting RU/carrier
- country code of the wagon or consignment's forwarding station
- wagon or consignment forwarding station code
- loading point (if forwarding station is in Switzerland)
- country code of the wagon or consignment's destination station
- wagon or consignment destination station code
- unloading point (if destination station is in Switzerland)
- routing code (of the foreign destination station)
- for cross-border services at least the wagons' UIC border entry and/or departure code (UIC routes) for Switzerland
- wagon's position number in the train composition
- composition group in the train
- number of axles per wagon
- wagon's unladen weight
- length over buffers
- handbrake type code and Handbrake loading weight (in kilonewtons or tonnes)
- wagon's brake type, status and equipment
- braked and brake changeover weights and the wagon's current braked weight
- any special characteristics of the brakes
- number of brake units on wagon
- load limit chart
- agreed chart
- maximum speed of wagon (as a function of load, construction and damage)
- load weight
- any faults on the wagon bill and damage
- date of last overhaul and safety allowance
- date of last special inspection and period between inspections (if applicable)
- load carriage restriction code (damage/engineering; if applicable)
- form, type and hazard (FTH/FAG) code
- SMS-RU (safety management system). Indication of the responsible RU for the route.

Data entry mandatory from 2018 timetable and for train path requests/orders from 2018 timetable (section 4.2.5).
The following supplementary information is required for all wagons carrying dangerous goods and, for intermodal traffic, every loading unit containing dangerous goods:

- Hazard number (Number indicating the level of danger): for conveying type “tank” or “loose bulk goods”
- Material number (UN number)
- RID class
- packing group
- Form, type and hazard (FTH/FAG) code.

For freight wagons or loading units in combined traffic with more than 8 tonnes of dangerous goods packed in limited quantities (LQ), the following additional information must be reported:

- Form, type and hazard (FTH/FAG) 97

The following supplementary information is required for exceptional loads:

- load carriage restriction
- form, type and hazard (FTH/FAG) code
- permit number of exceptional load (see also section 2.5).

Before departure of the train, a “departure check without wagons” or “empty” message must be created in CIS for any station from which a freight train operates without a load. If this train check or empty message is not entered, the default amount for the corresponding type of train will be invoiced. To change a freight train (with or without load) to a light engine on an order, the order needs to be cancelled and a new one submitted (cf. section 4.2.6).

If the RU with responsibility for safety management (SMS-RU) given at the time the train path is ordered changes, the change must be recorded in the CIS Infra offer before the train departs on the affected section of line.

If data is not transferred to the billing system completely or correctly, billing shall be based on the standard values for each train type published in SBB Infrastructure’s list of services.

If the services being provided by IMs include ancillary and miscellaneous services as well as train paths, further information may need to be submitted.

The right to modify required operational data or to require delivery of additional data in line with legal requirements is reserved. Particular attention should be paid to the stipulations of the Customs Act of 18 March 2005 (ZG; SR 631.0), the Customs Ordinance of 1 November 2006 (Art. 125; ZV; SR 631.01), and the Technical Specification for Interoperability – Telematic Applications for Freight (TSI-TAF). The data catalogue for the summary customs declaration can be obtained from the Federal Customs Administration.

7.3 Planning, Production and Information System assembly yards

From 2018/2019, SBB Infrastructure will be introducing the LoPPIS (Local Planning, Production and Information System) in several assembly yards. The data/information required for the services to be performed in the assembly yards (planning, stabling, shunting, intended departing train, etc.) must be input in the underlying CIS-Infra systems by the time the relevant train/assembly arrives at the latest in order for the data/information to be available in LoPPIS in good time.
If desired, more comprehensive LoPPIS functionality can be provided for a fee. This will be agreed separately on request as a miscellaneous service.

The application managers will be happy to help with any questions, problems and orders for access rights relating to the use of LoPPIS.

SBB Infrastruktur
I-B-APM
Hilfikerstrasse 3
CH 3000 Bern 65
E-Mail: loppis@sbb.ch

7.4 Wear and tear factor (provision of data, vehicle pricing)

The minimum wear and tear price is based per train on the wear and tear category of the train’s vehicles. For billing purposes data as per sections 7.1 and 7.2 is required for the individual vehicles. For vehicles that are not priced or are unknown billing will be based on the default values published in the list of services.

Note to RUs: The contact for support relating to vehicle pricing is published appropriately on the OneStopShop.

7.5 Application for a new movement type

Before a new or technically modified vehicle can be introduced on to SBB Infrastructure’s network, an application must be submitted for a new transport type to which this vehicle can be assigned. Journey times are calculated on this basis for train path planning and operating systems.

The procedure for doing this is as follows:

- At the same time as the application for the initial or new registration of the vehicle (provisionally for measuring trips or definitively) the applicant (manufacturer, vehicle keeper, RU) must submit a list of the vehicle dynamics values to zlr@sbb.ch.

A summary of the driving dynamics values required can be found in the OneStopShop.

- SBB Infrastructure will inform the applicant within 30 days of receiving all required data of the movement type applicable to these vehicles. The train path order can then be placed as per section 7.1
- Where longer procurement projects are involved, the applicant is advised to apply for the movement type with provisional data at an early stage.

The rolling stock data office at zlr@sbb.ch will be happy to answer any questions.
8 Power supply ex catenary (measured on the locomotive)

The energy measurement systems must comply with the specifications under section 8.1. The corresponding certificate of conformity from a conformity assessment body must be submitted to the IM.

The RU must ensure that the measurement readings are correctly recorded and can be taken remotely. Measurement readings must be transmitted to infrastructure managers in accordance with the standard as per UIC leaflet 930 “Exchange of data for cross-border railway energy settlement”. Regardless of the measurement service provider selected, the RU is responsible to IM for complying with the requirements and correct data provision as per section 7.

8.1 Requirements for energy measurement systems

The following standards and guidelines are relevant to the implementation of energy measurement systems on locomotives:

1. EN 50463 “Railway applications – energy measurement on board trains”
2. TSI LOC&PAS (EU Regulation 1302/2014 or newer), section 4.2.8.2.8, including Annex D
3. UIC-leaflet 930 “Exchange of data for cross-border railway energy settlement”

In order to be approved for actual invoicing, energy systems on vehicles must meet one of the following requirements:

8.1.1 Energy measurement system in accordance with EN50463

The energy measurement system meets the requirements of the standard EN 50463 “Railway applications – energy measurement on board trains”. Conformity has been confirmed by a conformity assessment body.

8.1.2 Energy measurement system in accordance with TSI

The energy measurement system (EMS) meets the requirements of TSI LOC&PAS Clause 4.2.8.2.8, including Annex D (version 2014 or newer). Conformity has been confirmed by a conformity assessment body.

8.1.3 Energy measurement systems on existing vehicles

In the present case, existing vehicles are railway vehicles that were first put into operation before 1 January 2018. Energy measurement systems that have been installed on existing vehicles and do not meet the requirements under section 8.1.1 or 8.1.2 may be approved upon consultation with the infrastructure manager for traction current billing, as long as the implementation provisions for EMS on existing vehicles according to the leaflet “Energy measurement systems” are complied with.

In such cases, the assessment report of the conformity assessment body must indicate the deviations from the requirements under section 8.1.1 or 8.1.2.

8.2 Registration of vehicles for actual invoicing

8.2.1 Registration process

The registration form may be requested in writing from SBB Infrastructure Energy, Measurement and Billing. E-mail: daien.bs@sbb.ch. Further information can be obtained from the OneStopShop.

The RU or vehicle keeper submits the completed registration form (specifying the EVN and identification number of the measurement device) to the infrastructure manager along with the necessary
conformity certificates for the vehicle type (according to 8.2.2) and individual vehicle (according to 8.2.3). If the certificates have already been filed for the vehicle type with the same measurement system, these do not have to be filed again for the subsequent individual vehicle registration. Complete and correct individual vehicle documents must be submitted for each vehicle.

In general, the RU or vehicle keeper receives confirmation that their data and certificates are complete or a request to submit any missing documents within five working days from receipt of the registration request.

If the data and certificates are complete, the RU or vehicle keeper receives a corresponding confirmation of the completeness and of the start of the observation phase (generally within five working days). The purpose of the observation phase is to verify that the energy measurement system is working correctly. In order that this can be completed within two months, the following requirements must be met at the same time:

- The vehicle is in operation in Switzerland.
- The vehicle is used for at least 15 operating days.
- In this time, the energy measurement system provides complete data.
- In this time, complete data is also provided via the railway operating systems (EVN).

After successful completion of the observation phase, the vehicle is activated for actual billing and the vehicle keeper receives a corresponding confirmation.

For vehicles registered by the RU or vehicle keeper, energy invoicing is performed exclusively on the basis of the values measured on the vehicle (for exceptions see section 8.2.6), regardless of which RU is using it.

**8.2.2 Conformity certification documents per vehicle type**

For each vehicle type (e.g. Re420, RABe521 etc.) and material type (integration of a specific combination of voltage transformer, current transformer, measurement device and/or other components of the energy measurement system), the following documents must be presented to the infrastructure manager:

- **a)** For energy measurement systems that comply with EN 50463 as per 8.1.1
  - Certificate of conformity from a conformity assessment body
  - Assessment report from a conformity assessment body

- **or**

- **b)** For energy measurement systems that comply with TSI LOC&PAS (EU Regulation 1302/2014 or newer) as per section 8.1.2
  - EC Intermediate Statement of Verification from a conformity assessment body
  - Assessment report from a conformity assessment body

- **or**

- **c)** For existing vehicles (as per section 8.1.3) that do not fully comply with EN 50463 or TSI LOC&PAS (EU Regulation 1302/2014 or newer)
  - EN50463 or TSI LOC&PAS conformity report from conformity assessment body, including indication of the deviations from the requirements.
  - Declaration of conformity from the applicant (as per the data sheet “Energiemes-ssysteme” (“Energy measurement systems”) on www.onestopshop.ch).
8.2.3 Conformity certification documents for each locomotive

The following certification documents must be submitted to the infrastructure manager for each vehicle:

- Parts inspection report for the energy measurement system installed on the vehicle. The report contains at least the following data on the energy measurement system:
  - Installation date
  - Installation site
  - Designation, class and scale of the voltage transformer
  - Designation, class and scale of the current transformer
  - Complete EVN and all CPID
  - Designation and serial number of the energy calculation function/energy measurement device/meter
  - Reference to the assessment report and certificate of conformity EN50463 or to EC Intermediate Statement of Verification TSI

Calibration certificates for the “energy calculation function” system components. These must include the date on which the validity of the calibration expires.

8.2.4 Maintenance of conformity

Changes to the energy measurement system (e.g. replacement of an energy measurement device) that affect the validity of the conformity according to 8.1 must be reported via an updated registration form and a parts inspection report. Where applicable, the updated certification according to 8.2.2 “Conformity certification documents per vehicle type and material type” must be submitted.

8.3 Submission of data for actual billing of traction current

Network users are to transmit energy measurements to the IM in accordance with the specifications of UIC leaflet 930 to the IM’s billing system EREX-Exchange. The infrastructure manager uses the system EREX Exchange for this. The RU is responsible for implementing the relevant interfaces with EREX-Exchange.

Readings are to be provided to SBB Infrastructure daily date on which the train ran + 3 days by 22:00).

In order to ensure that readings can be attributed to a train, the data provided in accordance with section 7 must without fail include all EVN\(^1\) and must be made available to the ISB within 3 days (at the latest the date on which the train ran + 3 days by 22:00) via the agreed systems. This data is collected and used exclusively for energy billing.

8.4 Handling missing data

If the vehicle is registered for the actual billing of traction current, replacement values are used in the event of missing/implausible data that are determined by taking relevant factors into account, such as the vehicle type, weight and route. The situations where this applies include

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\(^1\) European Vehicle Number. The 12-digit vehicle number registered in the national register of vehicles (Art. 5i EBV).
a) failure of the energy measurement system.
b) incorrect or implausible data that is therefore invalid, or missing data for individual sections of a train route.
c) failure to submit the data to the infrastructure manager on time in accordance with section 8.3.

If the necessary data for a locomotive according to section 8.3 is not submitted for 30 successive operating days, billing will be based on the flat-rate consumption values per train type published in the IM’s List of Services. The RU must submit a request to the infrastructure manager SBB AG in order to return to actual billing.

8.5 Billing without measurement

If the RU renounces the use of energy measurement systems for on-vehicle measurement of power consumption that comply with section 8.1, invoices for the basic service will be based on the flat-rate consumption values per train type published in the IM’s List of Services.

The flat-rate consumption values may also be used for the entire train if:
- one train uses locomotives that are both registered and unregistered for the actual calculation of traction current, or
- the EVN locomotive number of a registered vehicle is missing or incorrect.

8.6 Billing address

The IM will, as indicated under section 7, submit invoices for using the basic traction current service exclusively to the train operating RU or to the debicode allocated to the train or service.
9 APPENDICES

9.1 Network Map

Network map

- BLS infrastructure
- SBB infrastructure
- FS (RFI) infrastructure

Station / location BLS
Halt BLS

Station / location SBB / RFI
Halt SBB / RFI

As of 14.08.2012
### 9.2 Gradient list (gradients in °/00)

#### 9.2.1 Thun – LBS – Visp

<table>
<thead>
<tr>
<th>Route section</th>
<th>Gradient in °/00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thun – Gwatt</td>
<td>8.4</td>
</tr>
<tr>
<td>Gwatt – Spiez</td>
<td>12.7</td>
</tr>
<tr>
<td>Spiez – Frutigen</td>
<td>13.8</td>
</tr>
<tr>
<td>Frutigen – Visp</td>
<td>7.8</td>
</tr>
<tr>
<td>Visp – Frutigen</td>
<td>8.5</td>
</tr>
<tr>
<td>Frutigen–Spiez</td>
<td>0.8</td>
</tr>
<tr>
<td>Spiez – Thun</td>
<td>4.7</td>
</tr>
</tbody>
</table>

#### 9.2.2 Frutigen – Kandersteg – Brig

<table>
<thead>
<tr>
<th>Route section</th>
<th>Gradient in °/00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frutigen – Kandersteg</td>
<td>27.6</td>
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<tr>
<td>Kandersteg – Göppenstein</td>
<td>14.5</td>
</tr>
<tr>
<td>Brig – Lalden</td>
<td>22.2</td>
</tr>
<tr>
<td>Lalden – Hohten</td>
<td>24.3</td>
</tr>
<tr>
<td>Hohten – Göppenstein</td>
<td>27.2</td>
</tr>
<tr>
<td>Göppenstein – Kandersteg</td>
<td>4</td>
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</tbody>
</table>

#### 9.2.3 Spiez – Interlaken Ost

<table>
<thead>
<tr>
<th>Route section</th>
<th>Gradient in °/00</th>
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</thead>
<tbody>
<tr>
<td>Spiez – Interlaken Ost</td>
<td>9.2</td>
</tr>
<tr>
<td>Interlaken Ost – Spiez</td>
<td>15</td>
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</tbody>
</table>

#### 9.2.4 Spiez – Zweisimmen

<table>
<thead>
<tr>
<th>Route section</th>
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</tr>
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<tbody>
<tr>
<td>Spiez – Wimmis</td>
<td>4</td>
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<tr>
<td>Wimmis – Erlenbach</td>
<td>14.9</td>
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<tr>
<td>Erlenbach – Oberwil</td>
<td>23.8</td>
</tr>
<tr>
<td>Oberwil – Weissenbach</td>
<td>18.7</td>
</tr>
<tr>
<td>Weissenbach – Zweisimmen</td>
<td>25.2</td>
</tr>
<tr>
<td>Boltigen – Oberwil</td>
<td>15.3</td>
</tr>
<tr>
<td>Oberwil – Spiez</td>
<td>6</td>
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</table>

#### 9.2.5 Solothurn – Moutier

<table>
<thead>
<tr>
<th>Route section</th>
<th>Gradient in °/00</th>
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</thead>
<tbody>
<tr>
<td>Solothurn – Moutier – Solothurn</td>
<td>25.4</td>
</tr>
<tr>
<td>Moutier – Gänsbrunnen</td>
<td>27.7</td>
</tr>
<tr>
<td>Solothurn – Gänsbrunnen</td>
<td>17.9</td>
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</table>
### 9.2.6 Solothurn – Burgdorf

<table>
<thead>
<tr>
<th>Route section</th>
<th>Gradient in %/00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solothurn – Burgdorf</td>
<td>10.4</td>
</tr>
<tr>
<td>Burgdorf – Solothurn</td>
<td>5.7</td>
</tr>
</tbody>
</table>

### 9.2.7 Burgdorf – Langnau i.E.

<table>
<thead>
<tr>
<th>Route section</th>
<th>Gradient in %/00</th>
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</thead>
<tbody>
<tr>
<td>Burgdorf – Hasle-Rüegsau</td>
<td>9.8</td>
</tr>
<tr>
<td>Hasle-Rüegsau – Ramsei</td>
<td>9.8</td>
</tr>
<tr>
<td>Ramsei – Langnau i.E.</td>
<td>11.9</td>
</tr>
</tbody>
</table>

### 9.2.8 Hasle-Rüegsau – Thun

<table>
<thead>
<tr>
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<th>Gradient in %/00</th>
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</thead>
<tbody>
<tr>
<td>Hasle-Rüegsau – Konolfingen</td>
<td>25.3</td>
</tr>
<tr>
<td>Brenzikofen – Thun</td>
<td>10.9</td>
</tr>
<tr>
<td>Thun – Heimberg</td>
<td>6.6</td>
</tr>
<tr>
<td>Heimberg – Konolfingen</td>
<td>20.5</td>
</tr>
<tr>
<td>Konolfingen – Biglen</td>
<td>25.3</td>
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</table>

### 9.2.9 Ramsei – Sumiswald-Grünen

<table>
<thead>
<tr>
<th>Route section</th>
<th>Gradient in %/00</th>
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<tbody>
<tr>
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<tr>
<td>Grünenmatt – Sumiswald-G.</td>
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</table>

### 9.2.10 Langenthal – Wolhusen

<table>
<thead>
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<th>Gradient in %/00</th>
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</thead>
<tbody>
<tr>
<td>Langenthal – Rohrbach</td>
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<tr>
<td>Rohrbach – Huttwil</td>
<td>20.3</td>
</tr>
<tr>
<td>Huttwil – Hüswil</td>
<td>23.6</td>
</tr>
<tr>
<td>Gettnau – Wolhusen</td>
<td>25.3</td>
</tr>
<tr>
<td>Wolhusen – Menznau</td>
<td>25.3</td>
</tr>
<tr>
<td>Menznau – Gettnau</td>
<td>13.3</td>
</tr>
<tr>
<td>Gettnau – Hüswil</td>
<td>18.1</td>
</tr>
<tr>
<td>Hüswil – Huttwil</td>
<td>21.8</td>
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</table>
9.2.11 Bern – Belp – Thun

<table>
<thead>
<tr>
<th>Route section</th>
<th>Gradient in %/00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bern – Belp – Thun – Belp – Bern</td>
<td></td>
</tr>
<tr>
<td>Bern – Holligen (Gleis 100/200)</td>
<td>14.8</td>
</tr>
<tr>
<td>Holligen – Weissenbühl</td>
<td>4.4</td>
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<tr>
<td>Weissenbühl – Kehrsatz</td>
<td>9.6</td>
</tr>
<tr>
<td>Kehrsatz – Belp</td>
<td>23</td>
</tr>
<tr>
<td>Belp – Uetendorf</td>
<td>13.2</td>
</tr>
<tr>
<td>Uetendorf – Thun</td>
<td>2</td>
</tr>
<tr>
<td>Thun – Uetendorf</td>
<td>13.2</td>
</tr>
<tr>
<td>Uetendorf – Seftigen</td>
<td>13.2</td>
</tr>
<tr>
<td>Seftigen – Belp</td>
<td>12</td>
</tr>
<tr>
<td>Belp – Kehrsatz</td>
<td>23</td>
</tr>
<tr>
<td>Kehrsatz – Holligen</td>
<td>8.5</td>
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<tr>
<td>Holligen – Bern (Gleis 100/200)</td>
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</table>

9.2.12 Bern – Schwarzenburg

<table>
<thead>
<tr>
<th>Route section</th>
<th>Gradient in %/00</th>
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</thead>
<tbody>
<tr>
<td>Bern – Schwarzenburg – Bern</td>
<td></td>
</tr>
<tr>
<td>Bern – Holligen (Gleis 100/200)</td>
<td>14.8</td>
</tr>
<tr>
<td>Holligen – Köniz</td>
<td>14</td>
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<tr>
<td>Köniz – Gasel</td>
<td>32.4</td>
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<tr>
<td>Gasel – Schwarzwasserbrücke</td>
<td>11.3</td>
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<tr>
<td>Schwarzwasserbrücke – Schwarzenburg</td>
<td>35.3</td>
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<tr>
<td>Schwarzwasserbrücke – Mittelhäusern</td>
<td>26.5</td>
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<tr>
<td>Mittelhäusern – Fischermätteli</td>
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<tr>
<td>Fischermätteli – Holligen</td>
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</tr>
<tr>
<td>Holligen – Bern (Gleis 100/200)</td>
<td>1.9</td>
</tr>
<tr>
<td>Bern – Holligen (Gleis 100/200)</td>
<td>14.8</td>
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</tbody>
</table>

9.2.13 Bern – Kerzers – Neuchâtel

<table>
<thead>
<tr>
<th>Route section</th>
<th>Gradient in %/00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bern – Kerzers – Neuchâtel – Kerzers – Bern</td>
<td></td>
</tr>
<tr>
<td>Bern – Holligen (Gleis 100/200)</td>
<td>14.8</td>
</tr>
<tr>
<td>Holligen – Rosshäusern</td>
<td>10.3</td>
</tr>
<tr>
<td>Rosshäusern – Kerzers</td>
<td>2.8</td>
</tr>
<tr>
<td>Kerzers – St-Blaise-Lac</td>
<td>11.7</td>
</tr>
<tr>
<td>St-Blaise-Lac – Neuchâtel</td>
<td>18.1</td>
</tr>
<tr>
<td>Neuchâtel – Marin-Epagnier</td>
<td>11.7</td>
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<tr>
<td>Marin-Epagnier – Kerzers</td>
<td>6.9</td>
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<tr>
<td>Kerzers – Rosshäusern</td>
<td>18.6</td>
</tr>
<tr>
<td>Rosshäusern – Holligen</td>
<td>3.2</td>
</tr>
<tr>
<td>Holligen – Bern (Gleis 100/200)</td>
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</tr>
</tbody>
</table>

9.2.14 Moutier – Grenchen Nord – Lengnau

<table>
<thead>
<tr>
<th>Route section</th>
<th>Gradient in %/00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moutier – Grenchen Nord – Lengnau – Grenchen Nord – Moutier</td>
<td></td>
</tr>
<tr>
<td>Moutier – Grenchen Nord – Lengnau</td>
<td>3.5</td>
</tr>
<tr>
<td>Lengnau – Grenchen Nord - Moutier</td>
<td>15.4</td>
</tr>
</tbody>
</table>
### 9.2.15 Gradient list for approach routes (SBB, RFI)

<table>
<thead>
<tr>
<th>Route section</th>
<th>Gradient in %/00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basel – (SBB) – Thun – (SBB) – Basel</td>
<td></td>
</tr>
<tr>
<td>Basel SBB PB/RB – Tecknau – Olten</td>
<td>11</td>
</tr>
<tr>
<td>Olten – Bern via Burgdorf</td>
<td>10</td>
</tr>
<tr>
<td>Olten – Wanzwil (NBS) – Bern</td>
<td>15</td>
</tr>
<tr>
<td>Bern – Thun</td>
<td>11</td>
</tr>
<tr>
<td>Thun – Bern</td>
<td>10</td>
</tr>
<tr>
<td>Bern – Olten via Burgdorf</td>
<td>11</td>
</tr>
<tr>
<td>Bern – Wanzwil (NBS) – Olten</td>
<td>20</td>
</tr>
<tr>
<td>Olten – Tecknau – Basel SBB PB/RB</td>
<td>8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Route section</th>
<th>Gradient in %/00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visp – (SBB) – Brig – (SBB / RFI) – Domodossola</td>
<td></td>
</tr>
<tr>
<td>Domodossola – (RFI / SBB) – Brig – (SBB) – Visp</td>
<td></td>
</tr>
<tr>
<td>Visp – Brig</td>
<td>10</td>
</tr>
<tr>
<td>Brig – Domodossola II</td>
<td>5</td>
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<tr>
<td>Domodossola II – Brig</td>
<td>25</td>
</tr>
<tr>
<td>Brig – Visp</td>
<td>0</td>
</tr>
</tbody>
</table>
9.3 Network map: BLS route-classes

Route-classes

- **Cleared for route-class D4**
  - maximum permissible wheelset load: 22.5 t
  - maximum permissible load per meter: 8.0 t/m

- **Cleared for route-class D3**
  - maximum permissible wheelset load: 22.5 t
  - maximum permissible load per meter: 7.2 t/m

- **Cleared for route-class C3**
  - maximum permissible wheelset load: 20 t
  - (20.5 t for coaches with load capacity D or special raster)
  - maximum permissible load per meter: 7.2 t/m

**Interlaken West - Interlaken Ost / Spiez - Zweisimmen: Limitations are regulated in the „Local Train and Shunting Movement Regulations“ (R 30121)***

- **SBB infrastructure**
- **FS (RFI) infrastructure**

Station / location BLS
- Halt BLS

Station / location SBB / RFI
- Halt SBB / RFI

As of 16.04.2013
9.4 Network map: Gradient profiles

Gradient profiles

- C 25/344
- Admitted for TZ 949
- HP P 60/384 - C 60/384 - NT 50/375 (incl. double-decker coach)
- SIM P 80/405 - C 80/405 - NT 70/396
- SIM-trains with special train loading and running regulations

- Infrastruktur SBB
- Infrastruktur FS (RFI)

Station / location BLS
Halt BLS

Station / location SBB / RFI
Halt BLS

As of 18.04.2013
9.5 Network map: Double-decker coaches

EBV O2 / Double-decker coaches

- Blue: Cleared for double-decker coaches
- Orange: Closed for double-decker coaches

SBB infrastructure
FS (RFI) infrastructure

Station / location BLS
Halt BLS
Station / location SBB / RFI
Halt SBB / RFI

As of 09.12.2018

Version: 1.2
9.6 Network map: Line connection

![Network map]

**Line connection**

- **GSM-R Roaming**
- **GSM-R Native**
- **No service in the Weissenstein tunnel**
  (for more restrictions see the line database)

- **SBB infrastructure**
- **FS (RFI) infrastructure**

**Station / location BLS**
- Halt BLS

**Station / location SBB / RFI**
- Halt SBB / RFI

Date: 28.10.2015
9.7 Network map: Control equipments for trains

Control equipments for trains

- Hot-box- and blocked-brake detectors at Holligen (km 2.529), St. Blaise-Lac (km 38.353), Heustrich-Emdtal (km 5.100), Kandergrund (km 17.265), LBT (km 32.310) and Laiden (km 67.490)

- Profile and aerial detecting equipment (PAO) Heustrich-Emdtal (km 5.500)

The installation covers every train on the double track in both directions of traffic.
9.8 Route database
The data for the sections of the BLS Netz AG can be found at:
http://www.bls.ch/d/infrastruktur/trassen.php

9.9 Operating points
The data of the operating points of the BLS Netz AG can be found at:
http://www.bls.ch/d/infrastruktur/trassen.php

9.10 General Terms and Conditions for the Use of Railway Infrastructure
The General Terms and Conditions for the Use of Railway Infrastructure (AGB-ISB) can be found at: http://www.bls.ch/d/infrastruktur/trassen-agb-bls.pdf

9.11 Track access agreement
A track access agreement template can be found at:
http://www.bls.ch/d/infrastruktur/trassen-voraussetzungen.php