

# Capacity Strategy 2026

DB Netz AG



Version 1.0

December 2022

# Table of Content

|  |           |
|--|-----------|
| Introduction .....   | 3         |
| <b>General comments.....</b>   | <b>3</b>  |
| <b>Status of the document, consultation and final endorsement .....</b>    | <b>4</b>  |
| <b>0. Geographical scope .....</b>   | <b>5</b>  |
| 0.1 Relevant border points .....   | 5         |
| 0.2 Geographic Scope.....  | 8         |
| <b>1. Expected Capacity of the Infrastructure.....</b>                     | <b>9</b>  |
| 1.1 General Principles .....   | 9         |
| 1.2 Additional Available Capacity .....                                    | 10        |
| 1.3 Reduced Available Capacity .....                                       | 11        |
| <b>2. Expected Temporary Capacity Restrictions with major impact .....</b> | <b>12</b> |
| 2.1 General principles .....   | 12        |
| 2.2 International coordination and consultation .....                      | 18        |
| 2.3 Major Impact TCRs .....  | 22        |
| <b>3. Expected Traffic Flows .....</b>                                     | <b>24</b> |
| 3.1 General Principles .....   | 24        |
| 3.2 Traffic flows.....   | 26        |
| <b>4. Validation &amp; Publication.....</b>                                | <b>29</b> |
| <b>5. Annex .....</b>  | <b>30</b> |

## Introduction

### General comments

TTR expects each Infrastructure Manager (IM) to publish a Capacity Strategy until 3 years prior to timetable-change (X-36). General aim of the Capacity Strategy is to provide indication on key values of capacity planning, i.e., on changes in the availability of the infrastructure, Temporary Capacity Restrictions (TCRs or “negative capacity”) as well as on commercial capacity (“positive capacity”) for a given timetable.

The Capacity Strategy is the earliest TTR-planning instrument, based on which the Capacity Model (June 2023 for Timetable 2025) and, for some of the first implementing IMs, the Capacity Supply (January 2024 for Timetable 2025) will be developed.



Figure 1: Steps of the TTR process (Source: RNE)

### The present document

- is the Capacity Strategy of DB Netz for Timetable 2026,
- meets the requirements of RNE’s Capacity Strategy Handbook, version 1.0<sup>1</sup>,
- focuses for Timetable 2026 on lines of international relevance,
- encloses four main chapters:
  - Description of the geographical scope,

<sup>1</sup> [https://cms.rne.eu/system/files/hb\\_capacity\\_strategy\\_1.0\\_2021-12-07\\_0.pdf](https://cms.rne.eu/system/files/hb_capacity_strategy_1.0_2021-12-07_0.pdf)  
Capacity Strategy 2026 – DB Netz AG

- Expected permanent changes in infrastructure capacity,
- Expected Temporary Capacity Restrictions (TCRs) with major impact,
- Expected traffic flows, whereby the values displayed are focused for Timetable 2026 on relevant border points within the geographical scope.

The Capacity Strategy targets applicants as well as their end customers, service facilities and terminals, policy decision makers as well as any other stakeholder to rail capacity planning and allocation.

### **Status of the document, consultation and final endorsement**

The present document is non-binding. It applies to Timetable 2026 and is an updated version of the Capacity Strategy 2025.

As a step forward compared to the preparation of the Capacity Strategy 2025, the final draft of the present document could be submitted to consultation of applicants as well as to terminals and service facilities between 9<sup>th</sup> and 16<sup>th</sup> December 2022.

The consultation was announced with the weekly customer newsletter<sup>2</sup> which targets among others Applicants, Terminals and Service Facilities. The draft document was made available on the dedicated TTR-page of DB Netz's website<sup>3</sup>.

With a year to go until the publication of the Capacity Strategy 2027, it is the aim of DB Netz to provide for a longer consultation time in the fourth Quarter of 2023.

The Capacity Strategy in its final version has been cleared for publication by the appointed representatives of DB Netz.

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<sup>2</sup> <https://www.dbnetze.com/infrastruktur-de/Kundeninformationen/2022-KW49-Konsultation-TTR-Kapazitaetsstrategie-2026-9913994#>

<sup>3</sup> <https://fahrweg.dbnetze.com/fahrweg-de/kunden/international/TTR-7792088>

## 0. Geographical scope

### 0.1 Relevant border points

The lines of international relevance were selected on basis of experience, starting from border points with the highest volume of international traffic, both passenger and freight.

The following border points were added compared to the Capacity Strategy 2025:

- To/from The Netherlands: Herzogenrath - Heerlen
- To/from Luxemburg: Trier - Wasserbillig
- To/from France: Perl - Apach
- To/from Austria: Lindau-Reutin - Lochau-Hörbranz

The updated geographical scope results in the following overview:

|          | BDK | ProRail  | Infrabel  | DB Netz   | PKP<br>PLK | Správa<br>železnic | SNCF<br>Réseau | SBB Infra | RFI | ACF  | ÖBB Infra |
|----------|-----|--|---|---|------------|--------------------|----------------|-----------|-----|--|-----------|
| BDK      |     |  |   | Flensburg<br>Weiche /<br>Padborg  |            |                    |                |           |     |  |           |
| ProRail  |     |  | Roosen-<br>daal-<br>Essen<br>Meer/<br>Hazeldonk<br>(HSL),<br>Maastrich/<br>Visé | Kaldenkirchen<br>/ Venlo,<br>Emmerich /<br>Zevenaar, Bad<br>Bentheim /<br>Oldenzaal,<br>Herzogenrath /<br>Heerlen |            |                    |                |           |     |  |           |
| Infrabel |     | Roosendaal/<br>Essen, Meer/<br>Hazeldonk<br>(HSL), |   | Aachen West /<br>Montzen,<br>Aachen Süd /<br>Hergenrath   |            |                    |                |           |     | Aubange/<br>Rodange,<br>Kleinbettingen/<br>Sterpenich, |           |

|                            |                                 |   |   |  |   |  |  |                                   |  |
|----------------------------|---------------------------------|---|---|--|---|--|--|-----------------------------------|--|
|                            |                                 | Maastricht/<br>Visé   |   |  |   |  |  | Gouvy/<br>Troisvierges            |  |
| <b>DB Netz</b>             | Flensburg<br>Weiche/<br>Padborg | Kaldenkirchen/<br>Venlo,<br>Emmerich/<br>Zevenaar, Bad<br>Bentheim/<br>Oldenzaal,<br>Herzogenrath/<br>Heerlen | Aachen<br>West /<br>Montzen,<br>Aachen<br>Süd /<br>Hergenrat<br>h | Frankfurt<br>(Oder)<br>Brücke/<br>Slubice/<br>Rzepin,<br>Horka/<br>Wegliniec                                   | Bad<br>Schandau/<br>Decin,<br>Schrinding<br>/ Cheb,<br>Furth im<br>Wald/<br>Ceska<br>Kubice | Perl/ Apach,<br>Saarbrücken/<br>Forbach, Keh<br>Strasbourg,<br>Müllheim/<br>Mulhouse,<br>Wörth/<br>Lauterbourg | Basel<br>Bad/Basel Bad<br>Rbf / Basel<br>SBB/Basel<br>SBB RB | Trier/<br>Wasserbillig            | Kiefersfelden/<br>Kufstein,<br>Freilassing/<br>Salzburg,<br>Passau/<br>Schärding,<br>Lindau-<br>Reutin/Lochau<br>-Hörbranz |
| <b>PKP<br/>PLK</b>         |                                 |   |   | Frankfurt<br>(Oder) Brücke/<br>Slubice/<br>Rzepin, Horka/<br>Wegliniec   |   |  |  |                                   |  |
| <b>Správa<br/>železnic</b> |                                 |   |   | Bad<br>Schandau/<br>Decin,<br>Schrinding/<br>Cheb, Furth im<br>Wald/ Ceska<br>Kubice                           |   |  |  |                                   |  |
| <b>SNCF<br/>Réseau</b>     |                                 |   |   | Perl/ Apach,<br>Saarbrücken/<br>Forbach, Keh<br>Strasbourg,<br>Müllheim/<br>Mulhouse,<br>Wörth/<br>Lauterbourg |   |  |  |                                   |  |
| <b>SBB<br/>Infra</b>       |                                 |   |   | Basel<br>Bad/Basel Bad<br>Rbf / Basel<br>SBB/Basel<br>SBB RB   |   |  |  | Luino,<br>Domodossola,<br>Chiasso |  |
| <b>RFI</b>                 |                                 |   |   |  |   |  |  | Luino,<br>Domodossola,<br>Chiasso | Brennero,<br>Tarvisio  |
| <b>ACF</b>                 |                                 |   | Aubange/<br>Rodange,  | Trier/<br>Wasserbillig   |   |  |  |                                   |  |

|                      |  |                       |
|----------------------|--|-----------------------|
|                      | Kleinbettin<br>gen/<br>Sterpenich<br>, Gouvy/<br>Troisviere<br>ges   |                       |
| <b>ÖBB<br/>Infra</b> | Kiefersfelden/<br>Kufstein,<br>Freilassing/<br>Salzburg,<br>Passau/<br>Schärding,<br>Lindau-<br>Reutin/Lochau<br>-Hörbranz | Brennero,<br>Tarvisio |

Table 1: Border crossings with neighboring IMs

## 0.2 Geographic Scope

The above-mentioned border points connect in a network as shown in the following schematic map:

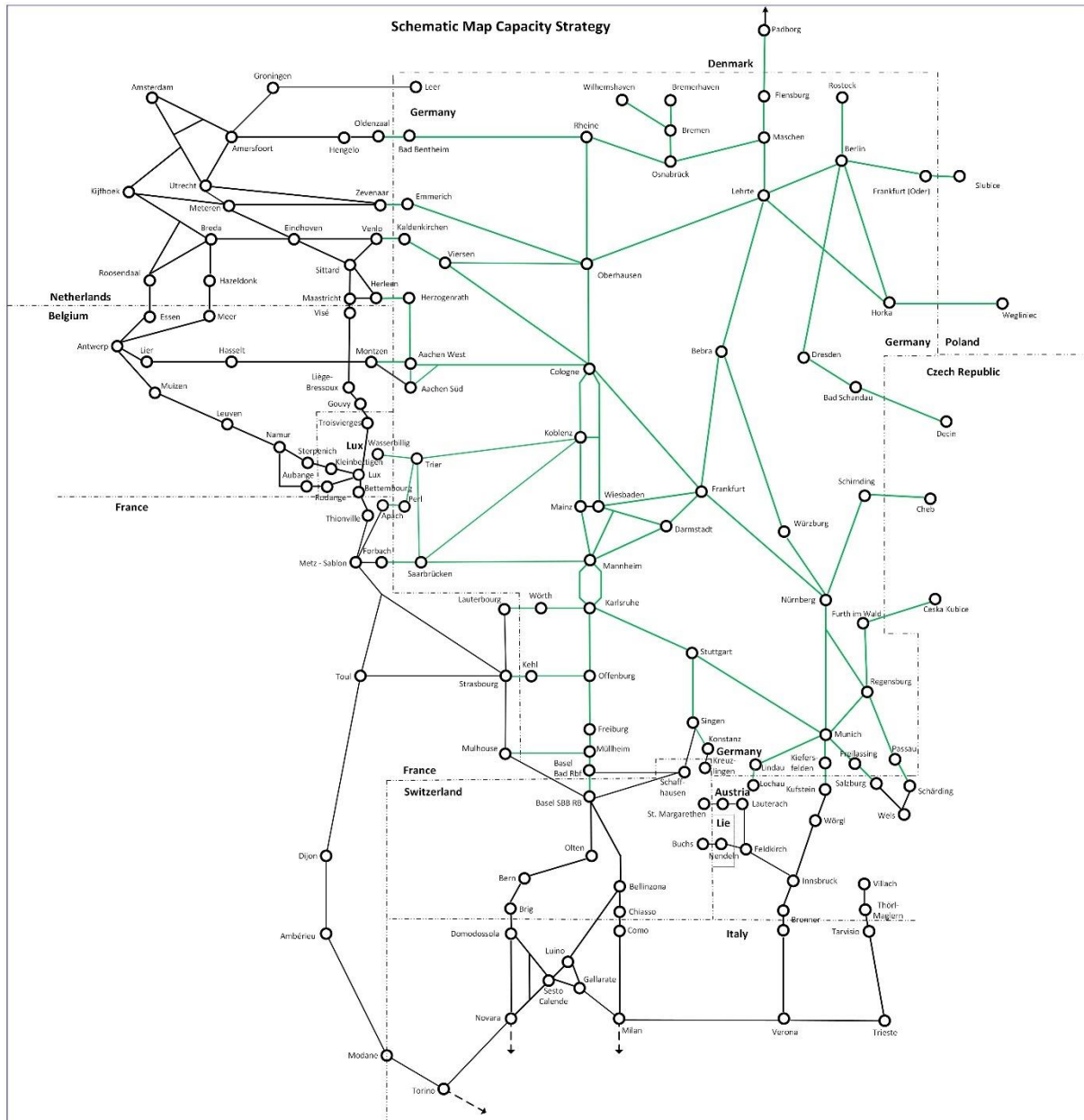


Figure 2: Schematic Map Capacity Strategy



# **1. Expected Capacity of the Infrastructure**

## **1.1 General Principles**

The present chapter provides an overview of significant positive or negative changes to the available capacity for Timetable 2026.

The projects listed in this chapter fulfill the following criteria:

- Unlike TCRs, the project has a permanent impact on the available capacity (Chapter 2),
- The project unfolds its effect on capacity in Timetable 2026. Subsequent Capacity Strategies will provide annual updates,
- The projects have a significant size and are located on network segments relevant for international traffic.

## 1.2 Additional Available Capacity

The following projects fulfill the above listed criteria:

| Network Segment                                       | Description  | Effect   | Impact on capacity as of |
|---|--|--|--------------------------|
| <b>2025</b>   |  |  |                          |
| Fulda   | Extension track 258  | Reduction of transport times in freight traffic, prevention of train path exclusion due to crossing of the tracks, use for overtaking of freight trains.   | 12/2025                  |
| Dresdner Bahn and ABS Berlin - Dresden                | New double-track construction (incl. electrification) and removal of level crossings                   | Travel time reduction between Dresden and Berlin. Opening up the efficiency of rail corridor 7.  | 12/2025                  |
| Westheim (Schwaben) / Neusäß                          | Central passing track in the area of Westheim (Schwaben) / Neusäß. Electrification Bodenseegürtelbahn. | Increase in operating quality (higher flexibility in operation due to additional overtaking option), shortening of transport time.   | 12/2025                  |
| Subterranean rail station and redesign node Stuttgart | Stuttgart 21   | Travel time reduction in regional and long-distance traffic. Prerequisite for the realisation of half-hourly intervals in long-distance traffic on the North-South corridor and Mannheim - Munich. | 12/2025                  |
| Sulzbach  | Simultaneous entries in Sulzbach.  | Compliance with node times and self-turning in Schwäbisch-Hall Hessental.  | 12/2025                  |
| POS North Ludwigshafen - Saarbrücken                  | ETCS POS North   | Travel time reduction.   | 12/2025                  |
| Ulm   | Optimised track plan.  | Creation of required capacities for through connections on the southern line and to Neu-Ulm from NBS and Filstalbahn.  | 12/2025                  |

|   |   |  |         |
|---|---|--|---------|
| Fulda Main Station  | Electrification of stabling sidings 30 to 35.   | Increase in operating quality and positive capacity effect through avoidance of empty runs to alternative parking locations; coverage of parking demand; relief of congested rail tracks | 12/2025 |
| Schlüchtern - Flieden   | Block optimization in section Schlüchtern - Flieden.  | Smoother operation and fewer capacity reducing braking processes.  | 12/2025 |
| <b>2026</b>   |   |  |         |
| ABS/NBS Karlsruhe - Offenburg - Freiburg - Basel (1. & 2. construction stage) | ABS/NBS Karlsruhe - Offenburg - Freiburg - Basel (route section 9: Müllheim - Auggen; including four track expansion Weil am Rhein - Haltingen) | Capacity increase and travel time reductions as well as unmixing of long-distance and regional and freight traffic.  | 04/2026 |
| Darmstadt-Eberstadt   | Extension of existing passing loop to 740 m.  | Driveability for 740 m trains.   | 06/2026 |
| Baruth  | Extension of existing passing loop to 740 m.  | Driveability for 740 m trains.   | 07/2026 |
| Wirtheim  | Extension of platforms in Wirtheim.   | Prerequisite for implementation for timetables from 2026 onwards. Avoidance of operational hindrances as well as excess holding times.   | 11/2026 |
| Gardelegen  | Creation of a new 740 m passing loop.   | Driveability for 740 m trains.   | 11/2026 |

Table 2: List of relevant infrastructure projects with positive capacity effects expected active by TT2026

### 1.3 Reduced Available Capacity

No permanent reductions in available capacity are planned for Timetable 2026.

## 2. Expected Temporary Capacity Restrictions with major impact

### 2.1 General principles

DB Netz is required to plan TCRs following “Annex VII”<sup>4</sup> and currently revising its planning processes accordingly.

Annex VII sets the frame for TCR-planning, the aim of which is to promote early planning, international coordination among Infrastructure Managers, transparency towards Applicants and planning stability. Ultimately, it pursues the goal of increased performance and competitiveness of rail services.

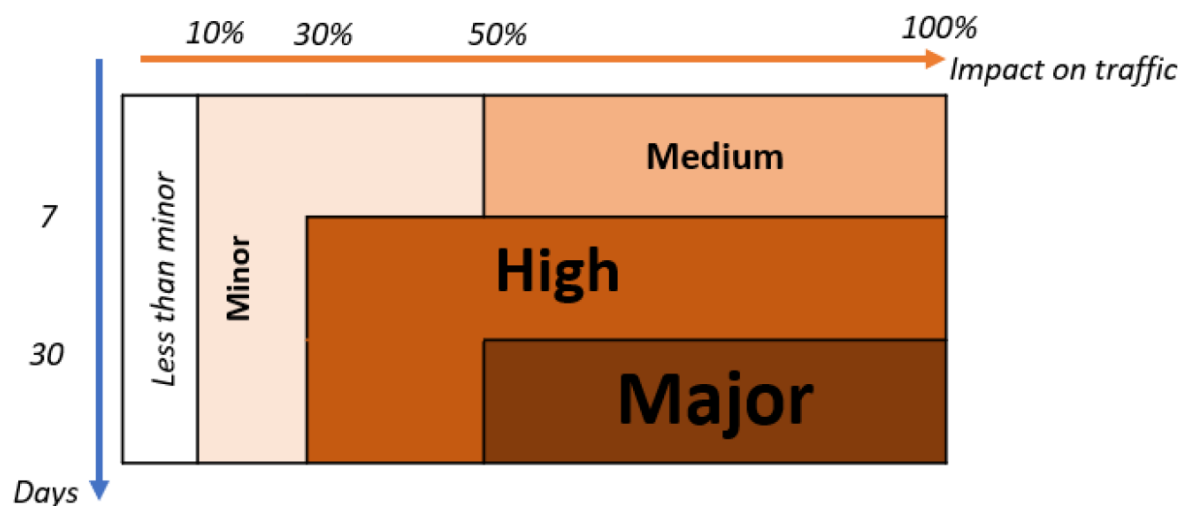


Figure 3: Overview of Annex VII-categories of TCRs (Source: RNE)

A full implementation of Annex VII is expected to be achieved in calendar year 2027 for Timetable 2028. The processes of regular TCR-Planning, consultation and international coordination described in this Chapter are therefore subject to further adjustments that will be duly explained in the following Capacity Strategies.

<sup>4</sup> COMMISSION DELEGATED DECISION (EU) 2017/775 - of 4 September 2017 - replacing Annex VII to Directive 2012/34/EU of the European Parliament and of the Council establishing a single European railway area (europa.eu)

## Maintenance windows (IPO) principles

At DB Netz, a distinction is made between two instruments for considering maintenance work: maintenance corridors and timetable windows.

Maintenance corridors ('longer' closures, e.g., twice a year for one to two weeks at night, normally in track-changing operation) are planned during the medium-term capacity management phase, i.e., five to three years ahead, and processed up to X-26. Planning results are available as of X-26.

Timetable windows (regular - periodic - closures, e.g., one or two days a week for 6 hours for a longer period of up to one year) are planned two years ahead and processed by X-21. Planning results are available as of X-21.

## Regular TCRs

DB Netz is gradually introducing a TCR-planning process structured in three consultation phases. The first consultation phase aims at the publication of high and major impact TCRs until X-24, whereas the second consultation phase aims at the publication of high and major impact TCRs as well as of medium impact TCRs until X-12. The third consultation phase is dedicated to minor impact TCRs to be published until X-4.

DB Netz further detailed the TCR fourfold typology of Annex VII into eight TCR-categories from the lowest impact TCRs in Category 1 (very low time impact, less than 10% impact on traffic volume) to the highest impact TCRs in Category 8 (time impact over 30 days and impact on traffic volume over 50%).

| DB Netz-internal category | Number of TCR consecutive days | Share in % of the estimated impacted traffic volume | Impact on other networks |
|---------------------------|--------------------------------|---|--------------------------|
| 1                         | Irrelevant                     | Up to 10%   | Irrelevant               |
| 2                         | Up to 7                        | More than 10%                                       | Irrelevant               |
| 3                         | Up to 7                        | More than 10% and up to 50 %                        | Yes                      |
| 4                         | Up to 7                        | More than 50%                                       | Yes                      |
| 5                         | More than 7                    | More than 10% and up to 30%                         | Irrelevant               |

|   |              |               |            |
|---|--------------|---------------|------------|
| 6 | More than 7  | More than 30% | Partly     |
| 7 | At least 30  | More than 50% | Irrelevant |
| 8 | More than 30 | More than 50% | Partly     |

Table 3: Further TCR-categorization on basis of Annex VII

The impact on traffic volume is evaluated following a method that puts nominal capacity in relation with the estimated volume of path allocations in the relevant Annual Timetable.

The first consultation phase concentrates on bundling TCR-windows in space (“TCR-corridors”) and time (weekdays, weekends, days and/or nights) considering the extent of the capacity restriction (total or one-track-closure). The objective is to reduce the impact on traffic to the largest extent possible. The first consultation phase starts approximately forty months ahead of timetable change with the first publication of intended TCR-windows, the final draft of which are published X-24.

The second consultation phase focuses on updating the TCR-planning and detailing the effect of a TCR on path concepts following such criteria as total train routing, train routing from the end of the TCR-stretch to its destination, travel time incl. extensions because of TCRs, network effects of a cancellation or a deviation, potential for further delays and operational costs. Depending on the outcome of the evaluation, the TCRs will be taken in the Annual Timetable as capacity not available for commercial use and around which annual path requests will be planned. The second consultation phase may include smaller TCRs, not considered during the first consultation phase.

The third consultation phase addresses non-ATT relevant TCRs.

### **Impact of the Program “High-Performance-Network” (“Hochleistungsnetz” or “HLN”) on TCR-Planning principle**

The aging German Railway network is being renovated and developed by means of a record-high number of TCRs. Considered against a dynamic demand for rail services, that number sets the network under capacity pressure resulting in a dramatically deteriorating service quality, as made visible by a steadily worsening punctuality. In this environment, DB Netz was asked in July 2022 to plan TCRs differently, using TCR-bundles for significantly extended periods of time whenever relevant.

The aim is to deliver a “High-Performance Network” on the main lines by 2030.

Goals of the Program are:

- robust components for a reliable Infrastructure,
- high equipment and configuration standards for a performing Infrastructure able to handle an increasing number of trains,
- attractive railway stations and replacement transport services during TCRs for a better customer experience,
- long, TCR-free periods of time after general renovation for better planning.

The Program is planned to start with a five month-total closure of the segment Frankfurt - Mannheim (“Riedbahn”, s. below, TCR #1) in the second half of 2024.

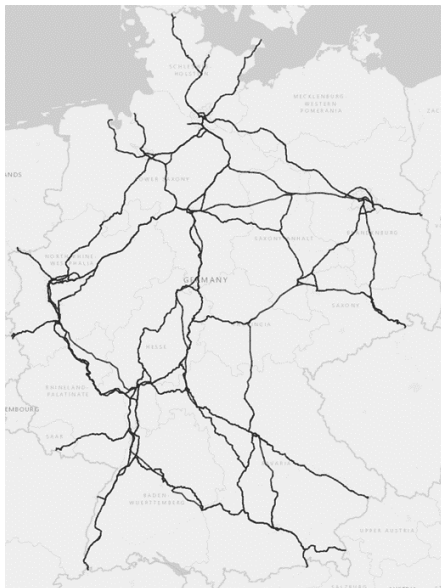


Figure 5: High-Performance Network 2030

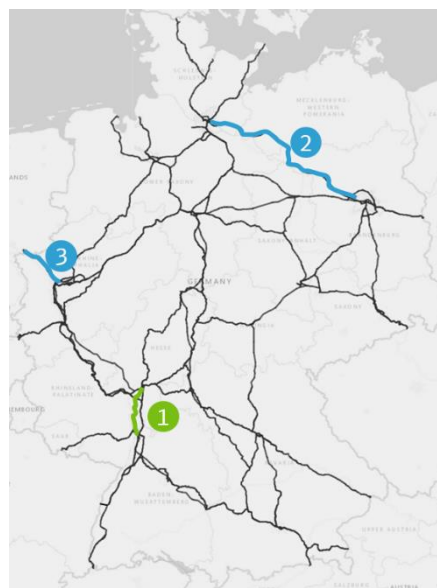


Figure 4: First three HLN-TCRs

Two TCRs are planned to follow in 2025, i.e. Hamburg - Berlin and the already known TCR Emmerich-Oberhausen.

HLN-TCRs for timetable 2026 will be communicated in March 2023. In addition, HLN-induced re-planning of already communicated TCRs cannot be excluded. DB Netz is currently reviewing possible changes for Timetable 2025 and 2026.

Notwithstanding communication using regular channels, an updated status will be added with the Capacity Strategy 2027 in December 2023.

Until then, the present Capacity Strategy displays by default the latest communicated TCR-planning status, as published on 19<sup>th</sup> of July 2022.

### **Planning of TCRs and diversionary lines**

DB Netz applies no “TCR-exclusion-zone” principle, following which a TCR on a line would automatically cause a TCR-exclusion on its diversionary line(s).

The multiplicity of routing options, that can reach for some TCR-corridors as much as three-hundred rerouting options for freight, the complexity of traffic flows on a network, the biggest share of which is used by several market segments, requires the highest possible flexibility to best conciliate TCR-implementation and the lowest possible impact on available capacity.

By means of an algorithm, such TCR-exclusion may however be decided when TCRs on two or more “TCR-corridors” cause capacity usage on diversionary lines to overstep their maximum capacity, i.e. 125% of the capacity providing for acceptable quality standards (“Nennleistung”).

As an example, TCRs may be planned at the time on the left- and the right-bank of the Rhine, as long as either through a remaining available track on each side in case of single-track closure and/or the 125%-threshold is not reached on other potential diversionary lines – in our example the Altenbeken-line.

The earliest overview of diversionary lines and their estimated capacity usage on a weekly basis is delivered each year with the publication of TCR-corridors, on 1<sup>st</sup> August of each year (X-40)<sup>5</sup>.

### **Consultation and coordination**

DB Netz consults applicants and service facilities at three levels:

- Regionally, in seven areas corresponding to the regional subdivisions of DB Netz (North, East, Southeast, South, Southwest, Center and West), currently in March and October of each year covering multiple time periods.

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<sup>5</sup> S. Annex A for an overview on of capacity estimates on diversionary lines to TCR windows published on 16<sup>th</sup> July 2022 for Timetable 2026.



- Nationally, currently in July of each year, covering multiple time periods as well.

On regional and national levels, DB Netz starts this process at X-40. Nonetheless, this consultation process is under revision and will be adapted in the next few months to better match Annex VII-requirements.

- Internationally, in seven areas: from/to Belgium and The Netherlands, Scandinavia, Poland, the Czech Republic, the Brenner Corridor (Austria and Italy) Switzerland as well as France, Luxemburg and the South of Belgium. The mapping considers traffic flows and diversionary options in case of TCRs on a line of international relevance.

Regional and national consultations are organized around two instruments:

- meetings (*“Bau- und Informationsdialog”* or *“TCR an Information Dialog”*), during which DB Netz informs and Applicants may comment
- online observation phases, following which Applicants are given the opportunity to deliver an opinion in written form

International consultations in the Annex VII-target picture are organized in meetings expected to take place in principle in early autumn (approx. X-39, X-27, and X-15) and in early spring (approx. X-31 and X-19). The exact month of consultation depends on how the milestones of all involved IMs can be coordinated to provide applicants with up-to-date information.

DB Netz considers the comments received to the extent possible.

DB Netz plans to coordinate internationally with neighboring IMs in meetings that precede the consultation of applicants by one or few days. These coordination meetings are planned equally in early autumn and in spring. Aim of the coordination is primarily to ensure bi- or trilaterally coherent bundling of TCRs as well as a coherent estimate of remaining capacity on diversionary lines.

The TCRs listed in this Chapter fulfill the following criteria:

- The TCR falls in the category of major TCRs in Figure 3
- Within this category, the TCR is expected to have a significant impact on international traffic due to its duration, its volume and/or location

- The TCR will impact capacity of Timetable 2026, regardless of its start and completion date
- The TCR is financed

### **Escalation process**

DB Netz has agreed with its neighbour-IMs on no pre-defined escalation process. Aim of starting with coordinating information at the earliest possible stage is to identify planning inconsistencies when they can be repaired. For Applicants, escalation takes place within the regular national processes.

## **2.2 International coordination and consultation**

### **BaneNor - Trafikverket - Banedanmark – DB Netz („ScanMed North Group”)**

TCR-coordination among IMs and information to Applicants are conducted within Rail Freight Corridor Scandinavian-Mediterranean. TCR-coordination takes place in several meetings a year. It addresses TCRs two to three years ahead, depending on the TCRs at stake, as well as short term information matters whenever deemed appropriate.

A slightly adapted format was introduced on 6<sup>th</sup> and 7<sup>th</sup> October 2022, with a focus on Timetable 2025 (X-27), using a GANTT-Chart<sup>6</sup> in Excel-Format that delivers an overview of the planned Single-Track- and Total-Closures in eight hour-time windows on Annex VII-relevant stretches<sup>7</sup>.

This GANTT-Chart is used both for coordinating among Infrastructure managers as for information towards Applicants. It is further planned as an intermediary solution until implementation of the TCR-Tool<sup>8</sup> that, depending on the use of that tool on all sides of the involved border(s), DB Netz strives for during 2023 for at least part of the coordination areas.

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<sup>6</sup> S. Annex B

<sup>7</sup> An “Annex VII-relevant stretch” is meant as either a segment from the start / until the end of which traffic must be transferred to other transport modes or diverted because of TCR-planning, or a segment designated as a diversionary line at the end of which traffic can be transferred back to train or be planned back on its regular path

<sup>8</sup> <https://cms.rne.eu/tcr-documentation/content/tcr-tool-videos>

Coordination among IMs took place on day 1 (6<sup>th</sup> October) and Information towards Applicants followed on day 2 (7<sup>th</sup> October). Day 2 was attended by approximately twenty representatives of the market, reflecting a significant increase of interest for an international exchange on harmonised TCR-planning.

The same format will be applied for Timetable 2026 (X-31) in May 2023. Timetable 2025 (X-19) will further be addressed.

### **Infrabel – ProRail – DB Netz („BeNeDe Group“)**

Trilateral TCR-planning currently focuses during several meetings a year on the coordination of TCRs among Infrabel, ProRail and DB Netz two timetables ahead.

The same two-day model and GANTT-Chart as for the border to Scandinavia were experimented on 21<sup>st</sup> and 22<sup>nd</sup> September 2022 with a focus on Timetable 2025. Day 2 (22<sup>nd</sup> September) was attended by approximately forty representatives of the market.

Just as for the border to Scandinavia, the same format will be applied for Timetable 2026 (X-31) in May 2023. Timetable 2025 (X-19) will further be addressed.

### **DB Netz – SNCF Réseau - ACF/CFL - Infrabel**

The Annex VII-target approach for international coordination and consultation including TCR-bundling, cross-border overview of diversionary lines and estimation of capacity, has been tested between DB Netz, SBB Infrastruktur, SNCF Réseau, ACF/CFL, Infrabel, ÖBB Infrastruktur, RFI and applicants ahead of a total closure in the Rhine Valley in the late summer 2024.

After further analysis of regular interactions between national networks, DB Netz, SNCF Réseau, ACF/CFL and Infrabel on the one side, and SBB Infrastruktur on the other side, decided to split the group for regular coordination, bringing together the former group in one and the latter in another two-day format, each with its own GANTT-Chart.

The first day 1-coordination meeting took place between SNCF Réseau AFC/CFL and Infrabel on 16<sup>th</sup> September 2022 with a focus on Timetable 2025.

Just as for the border to Scandinavia as well as to Belgium and The Netherlands, a two day-format will be applied for Timetable 2026 (X-31) in May 2023 together with the introduction of the GANTT-Chart already used in the above-mentioned ScanMed North Capacity Strategy 2026 – DB Netz AG

and BeNeDe Group. Timetable 2025 (X-19) will further be addressed. An exchange of views with Applicants on the X-27-Milestone (Timetable 2025) may be planned for the beginning of 2023.

### **DB Netz – PKP-PLK**

Coordination between DB Netz and PKP-PLK takes place for short term TCR-planning. DB Netz and PKP-PLK have taken in the third quarter of 2022 first common steps to determine the possible scope of early TCR-planning. Further steps are planned until the end of 2022.

### **DB Netz – SZ (“Elbe Valley-Group”)**

TCR-coordination and consultation in the Elbe Valley-Group has been established in Autumn 2021 and addresses TCRs three years ahead. It is structured in two meetings, in October and in May, during which a first part (“day 1”) dedicated to coordination with neighbouring IMs is followed by a second part (“day 2”) enlarged to an exchange of information with applicants.

In this area, the GANTT-Chart has not been introduced, as maps<sup>9</sup> had previously been commonly established as visualization instrument until the TCR-Tool can be used.

The third two-day format meeting took place on 18<sup>th</sup> and 19<sup>th</sup> October.

Approximately forty representatives from the market attended Day 2. Staying consistent with the general milestone planning, Timetable 2026 (X-31) will be addressed in May 2023, together with further planning steps for Timetable 2025 (X-19).

### **DB Netz – SBB Infrastruktur („Rhine Valley Rail“-Group)**

Bilateral coordination of TCRs has so far taken place as part of the regular TCR-planning processes two to three years ahead, depending on the TCRs at stake. The Annex VII-target approach for international coordination and consultation including TCR-bundling, cross-border overview of diversionary lines and estimation of capacity,

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<sup>9</sup> S. Annex B  
Capacity Strategy 2026 – DB Netz AG

has been tested between DB Netz, SBB Infrastruktur, SNCF Réseau and applicants ahead of a total closure in the Rhine Valley in the late summer 2024.

The first Day 1-exchange, using a GANTT-Chart well established in the area<sup>10</sup>, took place on 16<sup>th</sup> November 2022 and focused on Timetable 2025 (X-27). Timetable 2026 will be addressed as of May 2023 (X-31).

The introduction of Day 2, both for Timetable 2025 and Timetable 2026, which was originally planned for Autumn 2022 (respectively X-27 and X-39), has been postponed to May 2023. Reason for this is the launch of the program “High-Performance Network”, with consequences on TCR-Planning cornerstones not reliable enough to be shared and bring added value to the market.

### **DB Netz – ÖBB Infrastruktur – RFI („Brenner Group“)**

TCR-coordination and consultation on the Brenner corridor has been up and running for over ten years, and addresses TCRs two to three years ahead, depending on the TCRs at stake, as well as short term information matters whenever deemed appropriate. It is structured in two meetings, in June and November, during which a first part (“day 1”) dedicated to coordination with neighboring IMs is followed by a second part (“day 2”) enlarged to applicants.

In this area, the GANTT-Chart has not been introduced considering that another, well established Excel-based overview had previously been used. This overview will continue to be used until the TCR-Tool can be used.

The last Day 1 – Day 2-cycle took place on the Brenner segment on 17<sup>th</sup> October and 9<sup>th</sup> November, with a focus shortened to Timetable 2025 (X-27). As for the Rhine Valley Rail-Group, reason for this is the launch of the program “High-Performance Network”, with consequences on TCR-Planning cornerstones not reliable enough to be shared and bring added value to the market. Timetable 2026 will be addressed again in May 2023 (X-31).

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<sup>10</sup> S. Annex B  
Capacity Strategy 2026 – DB Netz AG

## 2.3 Major Impact TCRs

| TCR (project name   | Project proposal defined | Project approved by the IM's management | Financing secured | Comments/ Explanations   |
|---|--------------------------|---|-------------------|--|
| <b>2025</b>   |                          |   |                   |  |
| SFS Köln - Rhein/Main   | yes                      | yes                                     | yes               | ETCS equipment. Construction works are planned during 2025 and 2026. Track closures are expected.  |
| Node Köln - Expansion south of Gummersbacher Straße (ASG)                           | yes                      | yes                                     | yes               | Track extension from 4 to 6. Construction works are planned during 2025 and 2026. Track closures are expected.                                 |
| Uelzen - Salzwedel - Stendal and Stendal - Magdeburg - Halle (OKN) and node Stendal | yes                      | yes                                     | yes               | Double slip and double track expansion. Construction works are planned during 2025 and 2026. Track closures are expected.                      |
| ABS 46 Emmerich - Oberhausen  | yes                      | yes                                     | yes               | Multi-track expansion. Construction works are planned during 2025 and 2026. Track closures are expected.                                       |
| Rheintalbahn  | yes                      | yes                                     | yes               | Diverse culverts and renewal F-cables in the area Freiburg. Construction works are planned between 2025 and 2027. Track closures are expected. |
| Node Dresden  | yes                      | yes                                     | yes               | Renewal grade separation structure. Construction works are planned between 2025 and 2027. Track closures are expected.                         |
| Node Hamburg  | yes                      | yes                                     | yes               | Bridge renewals. Construction works are planned between 2025 and 2027. Track closures are expected.  |

|                          |     |     |     |  |
|--------------------------|-----|-----|-----|--|
| Dresden - Bad Schandau   | yes | yes | yes | Construction of new rail link Dresden - Prague. Construction works are planned between 2025 and 2027. Track closures are expected. |
| <b>2026</b>              |     |     |     |  |
| VDE 8.1 and node Bamberg | yes | yes | yes | Railway expansion Nürnberg - Bamberg and ETCS. Construction works are planned during 2026. Track closures are expected.            |
| Fallersleben - Lehrte    | yes | yes | yes | Track and switch renewals. Construction works are planned during 2026 and 2027. Track closures are expected.                       |

*Table 4: List of MVP-relevant Crucial Major Impact TCRs with temporary capacity impacts during TT2026*

## 3. Expected Traffic Flows

### 3.1 General Principles

In the TTR-context and ahead of the implementation of the “Deutschlandtakt”, DB Netz is working on developing instruments for drivable, network-wide optimized capacity planning.

A first try was published as a pilot 1<sup>st</sup> April 2022 on DB Netz’s website. The mKoK<sup>11</sup> (Medium-term concept for optimized capacity utilization) elaborated on previous Deutschlandtakt-planning processes, Timetable 2021 as well as on customer input on planned changes or additional trains compared to Timetable 2021. It applied primarily to Timetable 2024 and has been used in Germany to drive the allocation of framework contracts for Timetables 2024 and 2025. It has been furthermore the best available data basis for the present Chapter in the Capacity Strategy 2025.

DB Netz proceeded for the Capacity Strategy 2026 slightly differently. The mKoK 2024-2025 will be updated in an mKoK 2026-2031 – yet not until the first quarter of 2024 in its final, published version. For that reason, it is expected to deliver the basis for the Capacity Model 2026.

As regards the present Capacity Strategy 2026, DB Netz used the Technical Basis Timetable (“Technischer Basisfahrplan” or “TBF”), a non-published, sample timetable, the purpose of which is originally to evaluate the impact of TCR-planning on timetable concepts. The TBF compiles the last available Annual Timetable (ATT) as well as known and proven changes in timetable concepts and new concepts, to the extent applicants involved us in planning and/or defining them.

The figures below, delivered per hour per market segments (long distance passenger, regional passenger, and rail freight traffic) result from the following steps:

- a rule-of-three calculation of the number of trains per market segment in the hour with highest demand on basis of TBF-data.

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<sup>11</sup> published at <https://fahrweg.dbnetze.com/fahrweg-de/kunden/nutzungsbedingungen/nutzungsbedingungen/rahmenvertrag-1369214>



- a comparison with the train numbers of the neighboring Infrastructure Managers and, in case of divergences, a plausibility check both against the latest available Annual Timetable (ATT) and the mKoK 2024/2025.
- eventually and in coordination with TBF- as well as ATT-experts the most plausible figure was selected. In general, non-recurrent traffic (“Einzellagen”) were withdrawn from the estimate.

As a result, these experience-based figures, though considering forward-looking yet non-exhaustive knowledge of possible, future market development, are to be read as not more than an indication (“best guess”) most likely to be updated when preparing the Capacity Model.

| Category      | Name                             | Parameters  |
|---------------|----------------------------------|---|
| Long distance | Electric multiple unit train     | 250 km/h – 300 km/h (High Speed Traffic)<br>230 km/h (Tilting System) |
| Long distance | Electric multiple unit train     | 230 km/h  |
| Long distance | Locomotive-hauled train          | 160 km/h – 200 km/h   |
| regional      | Regional-Express (RE)            | Accelerated regional and local transport                              |
| regional      | Regionalbahn (RB)                | Regional and local transport with all stops                           |
| regional      | Suburban train<br>(e.g.: S-Bahn) | Local transport   |
| freight       | Sample train 1                   | E-traction, 1.600 t, 100 km/h   |
| freight       | Sample train 2                   | E-traction, 1.600 t, 120 km/h   |
| freight       | Sample train 4                   | E-traction, 2.000 t, 100 km/h   |
| freight       | Sample train 5                   | E-traction, very heavy or very slow                                   |
| freight       | Sample train 6                   | Diesel, 1.600 t, 100 km/h   |
| freight       | Sample train 7                   | Diesel, 2.000 t, 100 km/h   |

Table 5: Overview of train categories and parameters

### 3.2 Traffic flows

| Border point                         | passenger train paths per hour |          | freight train paths per hour |
|--------------------------------------|--------------------------------|----------|------------------------------|
|                                      | long distance                  | regional |                              |
| Flensburg Weiche (DE) - Padborg (DK) | 1,5                            | 0        | 2                            |

| Border point                      | passenger train paths per hour |          | freight train paths per hour |
|-----------------------------------|--------------------------------|----------|------------------------------|
|                                   | long distance                  | regional |                              |
| Aachen West (DE) - Montzen (BE)   | 0                              | 0        | 4*                           |
| Aachen Süd (DE) - Hergenrath (BE) | 1                              | 1        | 0                            |

\* Up to five freight train paths per hour may be possible

| Border point                       | passenger train paths per hour |          | freight train paths per hour |
|------------------------------------|--------------------------------|----------|------------------------------|
|                                    | long distance                  | regional |                              |
| Kaldenkirchen (DE) - Venlo (NL)    | 0                              | 1        | 3                            |
| Emmerich (DE) - Zevenaar (NL)      | 1                              | 1        | 4*                           |
| Bad Bentheim (DE) - Oldenzaal (NL) | 0,5                            | 1        | 2                            |
| Herzogenrath (DE) - Heerlen (NL)   | 0                              | 2        | 0**                          |

\* Up to five freight train paths per hour may be possible.

\*\* In principle, path capacity allows 8 freight trains per direction between approx. 22:00 and 6:00. Currently not feasible due to noise restrictions in the Netherlands.

#### Effects of total and single-track closure Emmerich

The figures displayed in this chapter disregard in principle the effect of TCRs on capacity. The duration of ABS Emmerich-Oberhausen (s. Chapter 2.3) justifies publishing adjusted capacity estimates during periods of single track and total closure on the segment Emmerich - Oberhausen. The use of diversionary routes via Aachen-Montzen-Netherlands or Herzogenrath-Heerlen are currently in discussion with the involved stakeholders. Whether these diversionary routes provide for enough capacity depends on various IM parameters, legal regulations in the Netherlands (noise protection).

| Single track closure<br>Emmerich   | passenger train paths per<br>hour per direction * |          | freight train paths per<br>hour per direction * |
|------------------------------------|---|----------|---|
|                                    | long distance                                     | regional |   |
| Kaldenkirchen (DE) - Venlo (NL)    | 0   | 1        | 3   |
| Emmerich (DE) - Zevenaar (NL)      | 0,5   | 1        | 1,8   |
| Bad Bentheim (DE) - Oldenzaal (NL) | 0,5   | 1        | 2,5**   |
| Herzogenrath (DE) - Heerlen (NL)   | 0   | 2        | 0***  |

\* Total capacity (regular traffic + diversion)

\*\* This number deviates from the number published by ProRail (2 freight paths per hour per direction) in the Capacity Strategy 2026. This agree-to-disagree is known to both IMs and will be further elaborated together with the TCR Emmerich – Oberhausen. Further developments will consider the coordination formats set out in Annex VII.

\*\*\* In principle, path capacity allows 8 freight trains per direction between approx. 22:00 and 6:00. Currently not feasible due to noise restrictions in the Netherlands.

| Total closure Emmerich             | passenger train paths per<br>hour per direction * |          | freight train paths per<br>hour per direction * |
|------------------------------------|---|----------|---|
|                                    | long distance                                     | regional |   |
| Kaldenkirchen (DE) - Venlo (NL)    | 0,5   | 0        | 3,5   |
| Emmerich (DE) - Zevenaar (NL)      | 0   | 0        | 0   |
| Bad Bentheim (DE) - Oldenzaal (NL) | 0,5   | 1        | 2,5   |
| Herzogenrath (DE) - Heerlen (NL)   | 0   | 2        | 0**   |

\* Total capacity (regular traffic + diversion)

\*\* In principle, path capacity allows 8 freight trains per direction between approx. 22:00 and 6:00. Currently not feasible due to noise restrictions in the Netherlands.

| Border point   | passenger train paths per<br>hour* |          | freight train paths per<br>hour* |
|--|------------------------------------|----------|----------------------------------|
|  | long distance                      | regional |                                  |
| Frankfurt (Oder) Brücke (DE) - Slubice / Rzepin (PL) | 1                                  | 0        | 2                                |
| Horka (DE) - Wegliniec (PL)                          | 0                                  | 0        | 1                                |

\* Due to PKP-PLK planning to implement TTR at a later stage, the numbers displayed in this table have not been aligned for TT 2026 and are solely endorsed by DB Netz.

| Border point                   | passenger train paths per<br>hour* |          | freight train paths per<br>hour* |
|--------------------------------|------------------------------------|----------|----------------------------------|
|                                | long distance                      | regional |                                  |
| Bad Schandau (DE) - Decin (CZ) | 1                                  | 1        | 3,5                              |
| Schirnding (DE) - Cheb (CZ)    | 0                                  | 1        | 0                                |

|  |   |     |   |
|--|---|-----|---|
| Furth im Wald (DE) - Ceska Kubice (CZ) | 0 | 0,5 | 0 |
|--|---|-----|---|

*\* Due to SZ planning to implement TTR at a later stage, the numbers displayed in this table have not been aligned for TT 2026 and are solely endorsed by DB Netz.*

| Border point                   | passenger train paths per hour |          | freight train paths per hour |
|--------------------------------|--------------------------------|----------|------------------------------|
|                                | long distance                  | regional |                              |
| Trier (DE) - Wasserbillig (LU) | 0                              | 2        | 0,5                          |

| Border point                    | passenger train paths per hour |          | freight train paths per hour |
|---------------------------------|--------------------------------|----------|------------------------------|
|                                 | long distance                  | regional |                              |
| Perl (DE) - Apach (FR)          | 0                              | 0,5      | 0                            |
| Saarbrücken (DE) - Forbach (FR) | 0,5                            | 1        | 2                            |
| Kehl (DE) - Strasbourg (FR)     | 0,5                            | 2        | 1,5                          |
| Müllheim (DE) - Mulhouse (FR)   | 0                              | 1        | 1                            |
| Wörth (DE) - Lauterbourg (FR)   | 0                              | 1        | 0                            |

| Border point   | passenger train paths per hour |          | freight train paths per hour |
|--|--------------------------------|----------|------------------------------|
|  | long distance                  | regional |                              |
| Basel Bad/ Basel Bad Rbf (D) - Basel SBB / Basel SBB RB (CH) | 1,5                            | 3        | 5*                           |

*\* An increase to eight freight train paths per hour will only be possible with four-track strong trailer (not before 2028).*

| Border point                              | passenger train paths per hour |          | freight train paths per hour |
|---|--------------------------------|----------|------------------------------|
|   | long distance                  | regional |                              |
| Kiefersfelden (DE) - Kufstein (AT)        | 2                              | 2        | 3                            |
| Freilassing (DE) - Salzburg (AT)          | 3                              | 6        | 2*                           |
| Passau (DE) - Schärding (AT)              | 0,5                            | 1        | 3,5                          |
| Lindau-Reutin (DE) - Lochau-Hörbranz (AT) | 0,5                            | 2        | 0,5                          |

*\* Up to 4 freight train paths per hour may be possible to Salzburg Lieferung.*

## **4. Validation & Publication**

The present document has been validated by the Steering Committee of the Project KaZu Novum (Kapazitätsplanung und -Zuweisung der Zukunft). It will be published on the corporate website as well as on the dedicated RNE website.

## 5. Annex

### Annex A: Overview of diversionary lines and their estimated capacity usage (document in German)

Due to the size of the document, Annex A will be published on the dedicated TTR webpage of the DB Netz website<sup>12</sup>.

### Annex B: Instruments for international construction coordination and client exchange

**GANTT-Chart (Screenshot) as currently used in the ScanMed North and BeNeDe Groups and planned to be used from May 2023 for the euro-regional coordination area DB Netz – SNCF Réseau – ACF/CFL - Infrabel**

#### 1. Main Table:

| EIU / IM | Strecke   | VzG / Bautaktkorridor   | Hauptgrenzübergang<br>(=> synchronisieren) | Hauptgrenz- oder<br>Inlandstrecke /<br>Main border line<br>or inland line | TCR planning /<br>New TCR? TCR<br>change? | Monat |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|----------|---|-------------------------|--|---|---|-------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
|          |   |                         |  |   |   | KW    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|          |   |                         |  |   |   | Dez   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|          |   |                         |  |   |   | Fr    | Sa | So | Mo | Di | Mi | Do | Fr | Sa | So | Mo | Di | Mi | Do | Fr | Sa | So | Mo | Di | Mi | Do | Fr | Sa | So | Mo | Di | Mi | Do | Fr | Sa | So |
|          |   |                         |  |   |   | 08    | 09 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 |    |    |    |    |    |    |    |
| DB Netz  | Köln - Riomerskirchen -<br>(Viersen)                | 2611, 2522 / 1155, 1423 | Venlo                                      | Inland  | TCR                                       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|          |   |                         |  |   | new TCR? TCR change?                      |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| ProRail  | Venlo - Eindhoven - Boistel                         |                         | Venlo                                      | Hauptgrenzstrecke /<br>Main border line                                   | TCR                                       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|          |   |                         |  |   | new TCR? TCR change?                      |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| ProRail  | Boistel - Tilburg - Breda -<br>Kijlhoek (Rotterdam) |                         | Venlo                                      | Inland  | TCR                                       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|          |   |                         |  |   | new TCR? TCR change?                      |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| ProRail  | Sittard - Roermond - Venlo<br>grens                 |                         | Venlo                                      | Inland  | TCR                                       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|          |   |                         |  |   | new TCR? TCR change?                      |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| DB Netz  | Bad Bentheim - Rheine                               | 2026, 2331 / 1551, 1121 | Bad Bentheim                               | Hauptgrenzstrecke /<br>Main border line                                   | TCR                                       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|          |   |                         |  |   | new TCR? TCR change?                      |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| DB Netz  | Rheine - Osnabrück - Löhne                          | 2392 / 1552, 1554       | Bad Bentheim                               | Inland  | TCR                                       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|          |   |                         |  |   | new TCR? TCR change?                      |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| ProRail  | Bad Bentheim - Hengelo -<br>Deventer - Amersfoort   |                         | Bad Bentheim                               | Hauptgrenzstrecke /<br>Main border line                                   | TCR                                       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|          |   |                         |  |   | new TCR? TCR change?                      |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| ProRail  | Amersfoort / Utrecht -<br>Amsterdam                 |                         | Bad Bentheim                               | Inland  | TCR                                       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|          |   |                         |  |   | new TCR? TCR change?                      |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |

- Eight-hour time windows aggregated in days and months
- Geographical segmentation bundled per border point
- One Xls-Sheet per Timetable-year
- „Colouring“ of non available time windows according to the type of capacity restriction (s. Colour-code further below)
- Update-tracking („new TCR?/TCR-change?“)

<sup>12</sup> <https://fahrweg.dbnetze.com/fahrweg-de/kunden/international/TTR-7792088>

## GANTT-Chart (Screenshot) as currently used in the ScanMed North and BeNeDe Groups and planned to be used from May 2023 for the euro-regional coordination area DB Netz – SNCF Réseau – ACF/CFL - Infrabel

### 2. Colour-code to fill the main table

| Legende Baumaßnahme / TCRs  |  |
|---|--|
|  | Totalsperrung / total closure  |
|  | einseitige Sperrung / single track closure   |
|  | Totalsperrung unterbrochen / total closure interrupted   |
|  | einseitige Sperrung unterbrochen / single track closure interrupted  |
|  | Totalsperrung ohne internat. Auswirkung / total closure without internat. impact   |
|  | einseitige Sperrung ohne internat. Auswirkung / single track closure without internat. impact  |
|  | in Prüfung (Verschiebung o.Ä.) / under clarification (rescheduling etc.)   |
|  | angeforderte Baufreiheit / request for avoiding TCRs (Note: constraint rules can be set and are respected as long as no conflict arise be-tween each other, and in case it does, compliance or violation decision is made based on "consequence minimizing rules") |
|  | New or changed TCR since "last coordination" / neue oder veränderte Bau-MN seit letzter Koordination   |
|  | Deleted TCR since "last coordination" / gelöschte Bau-MN seit letzter Koordination   |

## GANTT-Chart (Screenshot) as used in the Rhine Valley Rail Group

| Jahresübersicht N-S Achse 2025                 |  |  |  | T = Titel (für Filter notwendig)  |  | b = Bedürfnis an andere ISB (wird bei Inhalt in Spalte E automatisch generiert) |  | Text = Änderung   |  | Spiegel |  | Einspur/Chassiersperre |  | Totalsperre |  | div. Intervalle |  |
|--|--|--|--|---|--|---|--|---|--|---------|--|------------------------|--|-------------|--|-----------------|--|
| Stand 30.11.2022                               |  |  |  |   |  |   |  |   |  |         |  |                        |  |             |  |                 |  |
| Strecke, Bauarbeiten                           |  |  |  | zusätzliche Informationen (z.B. Dauer der Sperre, Abhängigkeiten, Arbeit in Schichten usw.) |  | Auswirkungen auf den Fahrplan (z.B. Ausfälle, Absenkung, Umleitungen usw.)      |  | Bedürfnisse an andere ISB (z.B. Anzahl Trassen, Umleitungsstrecke usw.) |  | NNP     |  | eff                    |  | G           |  |                 |  |
| Strecke, Bauarbeiten                           |  |  |  | zusätzliche Informationen (z.B. Dauer der Sperre, Abhängigkeiten, Arbeit in Schichten usw.) |  | Auswirkungen auf den Fahrplan (z.B. Ausfälle, Absenkung, Umleitungen usw.)      |  | Bedürfnisse an andere ISB (z.B. Anzahl Trassen, Umleitungsstrecke usw.) |  | NNP     |  | eff                    |  | G           |  |                 |  |
|  |  |  |  |   |  |   |  |   |  |         |  |                        |  |             |  |                 |  |
| T Karlsruhe - Baden-Baden                      |  |  |  | TSP VZG4020 F+MI ROH-RRR<br>ESP VZG4000 RMUG-RRR<br>Detailplanung noch nicht bekannt        |  | Verspätung, Rückstau von SGV, Umleitungen Gäubahn, Ausfall von SPNV-Linien      |  | Grenzübergang Schaffhausen statt Basel ca. 35-40 Trassen/Tag            |  |         |  |                        |  |             |  |                 |  |
| b GE RRA für K1 in RRA                         |  |  |  |   |  |   |  |   |  |         |  |                        |  |             |  |                 |  |
| b Vorbereitung und Herstellung Endzustand RRAS |  |  |  | ESP N+TSP WENRRAS-RAP VZG4000+VZG4280<br>Detailplanung noch nicht bekannt                   |  | Verspätung, Rückstau von SGV, ggf. Umleitungen Gäubahn                          |  | Grenzübergang Schaffhausen statt Basel ca. 5-10 Trassen/Tag (Nacht)     |  |         |  |                        |  |             |  |                 |  |
| T Baden-Baden - Offenburg                      |  |  |  |   |  |   |  |   |  |         |  |                        |  |             |  |                 |  |
| b Vorbereitung und Herstellung Endzustand RRAS |  |  |  | ESP N+TSP WENRRAS-RAP VZG4000+VZG4280<br>Detailplanung noch nicht bekannt                   |  | Verspätung, Rückstau von SGV, ggf. Umleitungen Gäubahn                          |  | Grenzübergang Schaffhausen statt Basel ca. 5-10 Trassen/Tag (Nacht)     |  |         |  |                        |  |             |  |                 |  |
| b IBN ESTW RO+RNS+RLSW                         |  |  |  | ESP N+TSP WEN RAP-RO VZG4000+VZG4280<br>Detailplanung noch nicht bekannt                    |  | Verspätung, Rückstau von SGV, ggf. Umleitungen Gäubahn                          |  | Grenzübergang Schaffhausen statt Basel ca. 5-10 Trassen/Tag (Nacht)     |  |         |  |                        |  |             |  |                 |  |
| b ETCS KorRaip                                 |  |  |  | TSP WEN VZG4000 RAP-RO<br>Detailplanung noch nicht bekannt                                  |  | Verspätung, Rückstau von SGV, ggf. Umleitungen Gäubahn                          |  | Grenzübergang Schaffhausen statt Basel ca. 5-10 Trassen/Tag (Nacht)     |  |         |  |                        |  |             |  |                 |  |
| T Offenburg - Freiburg                         |  |  |  |   |  |   |  |   |  |         |  |                        |  |             |  |                 |  |
| b IBN ESTW RO+RNS+RLSW                         |  |  |  | TSP VZG4000 RO-RLSW<br>Detailplanung noch nicht bekannt                                     |  | Verspätung, Rückstau von SGV, Umleitungen Gäubahn, Ausfall von SPNV-Linien      |  | Grenzübergang Schaffhausen statt Basel ca. 35-40 Trassen/Tag            |  |         |  |                        |  |             |  |                 |  |
| b WE RORW                                      |  |  |  | TSP WE erforderlich<br>Detailplanung noch nicht bekannt                                     |  | Verspätung, Rückstau von SGV, Umleitungen Gäubahn, Ausfall von SPNV-Linien      |  | Grenzübergang Schaffhausen statt Basel ca. 35-40 Trassen/Tag            |  |         |  |                        |  |             |  |                 |  |

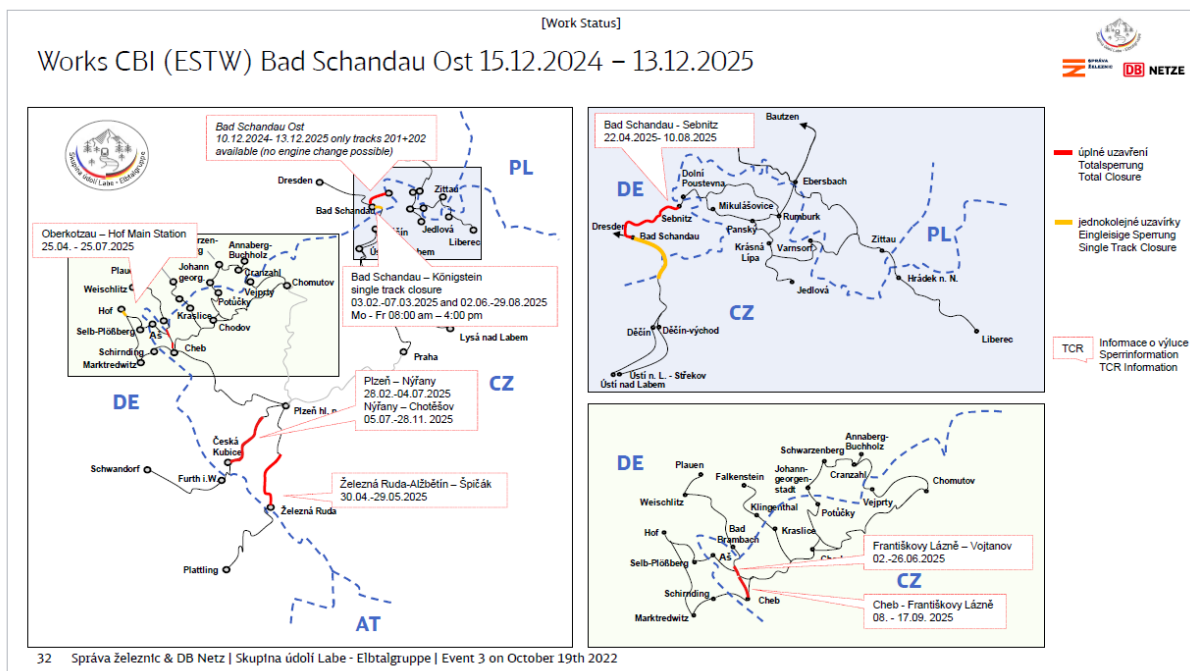
- Day/Night time windows aggregated in days and months
- Successive geographical segmentation (border-points: Basel, Schaffhausen)
- One Xls-Sheet per Timetable-year
- „Colouring“ of non-available time windows according to the type of capacity restriction and additional information in a separate column
- Further information and, if available, first impact on capacity and capacity requirements to the neighbour-IM

## GANTT-Chart (Screenshot) as used in the Brenner Group

| Map | Show all | New     | Changed   | Deleted |         |      |                   |                   |          |             |                        |                |                  |             |                     |                    |               |             |  |  |  |  |  |
|-----|----------|---------|-----------|---------|---------|------|-------------------|-------------------|----------|-------------|------------------------|----------------|------------------|-------------|---------------------|--------------------|---------------|-------------|--|--|--|--|--|
| IM  | ID       | Section | Direction | Line    | Year    | Week | Period from       | Period to         | Duration | Time of day | Reason for restriction | Traffic impact | Traffic measures | Description | Internal coordinate | In early timetable | IM Project ID | Last update |  |  |  |  |  |
|     |          |         |           | From To | From To |      | Date from Date to | Date from Date to |          |             |                        |                |                  |             |                     |                    |               |             |  |  |  |  |  |
|     |          |         |           |         |         |      |                   |                   |          |             |                        |                |                  |             |                     |                    |               |             |  |  |  |  |  |
|     |          |         |           |         |         |      |                   |                   |          |             |                        |                |                  |             |                     |                    |               |             |  |  |  |  |  |
|     |          |         |           |         |         |      |                   |                   |          |             |                        |                |                  |             |                     |                    |               |             |  |  |  |  |  |
|     |          |         |           |         |         |      |                   |                   |          |             |                        |                |                  |             |                     |                    |               |             |  |  |  |  |  |
|     |          |         |           |         |         |      |                   |                   |          |             |                        |                |                  |             |                     |                    |               |             |  |  |  |  |  |
|     |          |         |           |         |         |      |                   |                   |          |             |                        |                |                  |             |                     |                    |               |             |  |  |  |  |  |
|     |          |         |           |         |         |      |                   |                   |          |             |                        |                |                  |             |                     |                    |               |             |  |  |  |  |  |
|     |          |         |           |         |         |      |                   |                   |          |             |                        |                |                  |             |                     |                    |               |             |  |  |  |  |  |
|     |          |         |           |         |         |      |                   |                   |          |             |                        |                |                  |             |                     |                    |               |             |  |  |  |  |  |
|     |          |         |           |         |         |      |                   |                   |          |             |                        |                |                  |             |                     |                    |               |             |  |  |  |  |  |
|     |          |         |           |         |         |      |                   |                   |          |             |                        |                |                  |             |                     |                    |               |             |  |  |  |  |  |
|     |          |         |           |         |         |      |                   |                   |          |             |                        |                |                  |             |                     |                    |               |             |  |  |  |  |  |
|     |          |         |           |         |         |      |                   |                   |          |             |                        |                |                  |             |                     |                    |               |             |  |  |  |  |  |
|     |          |         |           |         |         |      |                   |                   |          |             |                        |                |                  |             |                     |                    |               |             |  |  |  |  |  |
|     |          |         |           |         |         |      |                   |                   |          |             |                        |                |                  |             |                     |                    |               |             |  |  |  |  |  |
|     |          |         |           |         |         |      |                   |                   |          |             |                        |                |                  |             |                     |                    |               |             |  |  |  |  |  |
|     |          |         |           |         |         |      |                   |                   |          |             |                        |                |                  |             |                     |                    |               |             |  |  |  |  |  |
|     |          |         |           |         |         |      |                   |                   |          |             |                        |                |                  |             |                     |                    |               |             |  |  |  |  |  |
|     |          |         |           |         |         |      |                   |                   |          |             |                        |                |                  |             |                     |                    |               |             |  |  |  |  |  |
|     |          |         |           |         |         |      |                   |                   |          |             |                        |                |                  |             |                     |                    |               |             |  |  |  |  |  |
|     |          |         |           |         |         |      |                   |                   |          |             |                        |                |                  |             |                     |                    |               |             |  |  |  |  |  |
|     |          |         |           |         |         |      |                   |                   |          |             |                        |                |                  |             |                     |                    |               |             |  |  |  |  |  |
|     |          |         |           |         |         |      |                   |                   |          |             |                        |                |                  |             |                     |                    |               |             |  |  |  |  |  |
|     |          |         |           |         |         |      |                   |                   |          |             |                        |                |                  |             |                     |                    |               |             |  |  |  |  |  |
|     |          |         |           |         |         |      |                   |                   |          |             |                        |                |                  |             |                     |                    |               |             |  |  |  |  |  |
|     |          |         |           |         |         |      |                   |                   |          |             |                        |                |                  |             |                     |                    |               |             |  |  |  |  |  |
|     |          |         |           |         |         |      |                   |                   |          |             |                        |                |                  |             |                     |                    |               |             |  |  |  |  |  |
|     |          |         |           |         |         |      |                   |                   |          |             |                        |                |                  |             |                     |                    |               |             |  |  |  |  |  |
|     |          |         |           |         |         |      |                   |                   |          |             |                        |                |                  |             |                     |                    |               |             |  |  |  |  |  |
|     |          |         |           |         |         |      |                   |                   |          |             |                        |                |                  |             |                     |                    |               |             |  |  |  |  |  |
|     |          |         |           |         |         |      |                   |                   |          |             |                        |                |                  |             |                     |                    |               |             |  |  |  |  |  |
|     |          |         |           |         |         |      |                   |                   |          |             |                        |                |                  |             |                     |                    |               |             |  |  |  |  |  |
|     |          |         |           |         |         |      |                   |                   |          |             |                        |                |                  |             |                     |                    |               |             |  |  |  |  |  |
|     |          |         |           |         |         |      |                   |                   |          |             |                        |                |                  |             |                     |                    |               |             |  |  |  |  |  |
|     |          |         |           |         |         |      |                   |                   |          |             |                        |                |                  |             |                     |                    |               |             |  |  |  |  |  |
|     |          |         |           |         |         |      |                   |                   |          |             |                        |                |                  |             |                     |                    |               |             |  |  |  |  |  |
|     |          |         |           |         |         |      |                   |                   |          |             |                        |                |                  |             |                     |                    |               |             |  |  |  |  |  |
|     |          |         |           |         |         |      |                   |                   |          |             |                        |                |                  |             |                     |                    |               |             |  |  |  |  |  |
|     |          |         |           |         |         |      |                   |                   |          |             |                        |                |                  |             |                     |                    |               |             |  |  |  |  |  |
|     |          |         |           |         |         |      |                   |                   |          |             |                        |                |                  |             |                     |                    |               |             |  |  |  |  |  |
|     |          |         |           |         |         |      |                   |                   |          |             |                        |                |                  |             |                     |                    |               |             |  |  |  |  |  |
|     |          |         |           |         |         |      |                   |                   |          |             |                        |                |                  |             |                     |                    |               |             |  |  |  |  |  |
|     |          |         |           |         |         |      |                   |                   |          |             |                        |                |                  |             |                     |                    |               |             |  |  |  |  |  |
|     |          |         |           |         |         |      |                   |                   |          |             |                        |                |                  |             |                     |                    |               |             |  |  |  |  |  |
|     |          |         |           |         |         |      |                   |                   |          |             |                        |                |                  |             |                     |                    |               |             |  |  |  |  |  |
|     |          |         |           |         |         |      |                   |                   |          |             |                        |                |                  |             |                     |                    |               |             |  |  |  |  |  |
|     |          |         |           |         |         |      |                   |                   |          |             |                        |                |                  |             |                     |                    |               |             |  |  |  |  |  |
|     |          |         |           |         |         |      |                   |                   |          |             |                        |                |                  |             |                     |                    |               |             |  |  |  |  |  |
|     |          |         |           |         |         |      |                   |                   |          |             |                        |                |                  |             |                     |                    |               |             |  |  |  |  |  |
|     |          |         |           |         |         |      |                   |                   |          |             |                        |                |                  |             |                     |                    |               |             |  |  |  |  |  |
|     |          |         |           |         |         |      |                   |                   |          |             |                        |                |                  |             |                     |                    |               |             |  |  |  |  |  |
|     |          |         |           |         |         |      |                   |                   |          |             |                        |                |                  |             |                     |                    |               |             |  |  |  |  |  |
|     |          |         |           |         |         |      |                   |                   |          |             |                        |                |                  |             |                     |                    |               |             |  |  |  |  |  |
|     |          |         |           |         |         |      |                   |                   |          |             |                        |                |                  |             |                     |                    |               |             |  |  |  |  |  |
|     |          |         |           |         |         |      |                   |                   |          |             |                        |                |                  |             |                     |                    |               |             |  |  |  |  |  |
|     |          |         |           |         |         |      |                   |                   |          |             |                        |                |                  |             |                     |                    |               |             |  |  |  |  |  |
|     |          |         |           |         |         |      |                   |                   |          |             |                        |                |                  |             |                     |                    |               |             |  |  |  |  |  |
|     |          |         |           |         |         |      |                   |                   |          |             |                        |                |                  |             |                     |                    |               |             |  |  |  |  |  |
|     |          |         |           |         |         |      |                   |                   |          |             |                        |                |                  |             |                     |                    |               |             |  |  |  |  |  |
|     |          |         |           |         |         |      |                   |                   |          |             |                        |                |                  |             |                     |                    |               |             |  |  |  |  |  |
|     |          |         |           |         |         |      |                   |                   |          |             |                        |                |                  |             |                     |                    |               |             |  |  |  |  |  |
|     |          |         |           |         |         |      |                   |                   |          |             |                        |                |                  |             |                     |                    |               |             |  |  |  |  |  |
|     |          |         |           |         |         |      |                   |                   |          |             |                        |                |                  |             |                     |                    |               |             |  |  |  |  |  |
|     |          |         |           |         |         |      |                   |                   |          |             |                        |                |                  |             |                     |                    |               |             |  |  |  |  |  |
|     |          |         |           |         |         |      |                   |                   |          |             |                        |                |                  |             |                     |                    |               |             |  |  |  |  |  |

- „From - to“ Time entries
- Successive geographical segmentation (border-points: Kiefersfelden, Freilassing)
- One Xls-Sheet per Timetable-year
- Entry of capacity restriction type and type of required traffic measure by means of a drop down-list
- Short description of the TCR

## Maps as used in the Elbe Valley Group





- Visualisation of non-available network segments according to capacity restriction type
- Maps display a network of potential TCR and diversionary lines (border-points: Bad Schandau, Horka, Hof/Schirnding)
- Two maps zoom on the most complex networks of main and diversionary lines
- Further information (exact segment and time of closure) displayed in boxes connected to the TCR-segment