



**Rail Freight Corridor Rhine-Danube**

**Corridor Information Document**

**Implementation Plan**

**V2.0 21-12-2023**



**VERSION CONTROL**

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| --- | --- | --- | --- |
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| 0.1 | PMO, WGs | 09-01-2020 | Creation of the first draft |
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| 1.3 | PMO | 08-09-2023 | Changes to the following chapters based on the comments and proposals of the Austrian and Hungarian MoTs:  2.3 Bottlenecks  5 Objectives and Performance of the Corridor |
| 1.4 | Infrastructure WG | 24-10-2023 | Annex 6.2 List of projects (further updates by GYSEV and MÁV) |
| 1.5 | Consultation with the RU Advisory Group | 21-11-2023 | 4 List of Measures  5 Performance and Objectives of the Corridor |
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# 1 Introduction

In 2010 the European Parliament and the Council adopted Regulation (EU) No 913/2010 concerning a European rail network for competitive freight, which entered into force on   
9th November 2010 (hereinafter referred to as Regulation), providing for the establishment of international Rail Freight Corridors (hereinafter referred to as Corridors). The purpose of creating Corridors is to increase international rail freight transport by making it more attractive and efficient. In Annex I to the Regulation, there were nine initial Corridors.

Annex II of Regulation (EU) No 1316/2013 of the European Parliament and of the Council concerning the establishment of the Connecting Europe Facility replaced the above-mentioned Annex of Regulation (EU) No 913/2010. In line with the amended list of initial Corridors, Rail Freight Corridor Rhine-Danube (hereinafter referred to as the Corridor) was established and became operational on 10 November 2020.

The Corridor connects the following nodes:

* Strasbourg-Mannheim-Frankfurt-Nürnberg-Wels
* Strasbourg-Stuttgart-München-Salzburg-Wels-Wien-Bratislava-Budapest-Arad-Brașov/Craiova-București-Constanța
* Čierna and Tisou (Slovak/ Ukrainian border) -Košice-Žilina-Horní Lideč-Praha-München/Nürnberg

The aim of the Corridor is to provide a high-quality service including a seamless crossing of national borders. Cooperation among Infrastructure Managers/Allocation Bodies is realised by harmonising capacity allocation, coordinating temporary capacity restrictions, traffic management, and investment planning along the Corridor.

The principal guidelines specified by the Regulation focus on:

* establishing a single contact point for designated capacity allocation on each Corridor;
* closer cooperation and harmonisation between Infrastructure Managers/Allocation Bodies and Member States both for the operational management of the infrastructures and for investments, in particular by putting in place a governance structure for each Corridor;
* increased coordination between the network and terminals (maritime and inland ports and marshalling yards);
* stable and reliable provision of the necessary infrastructure capacity allocated to international rail freight.

The purpose of this update to this document, which is part of the Corridor Information Document (hereinafter referred to as CID), is as follows:

* to present the current and known planned main characteristics of the Corridor and
* to create an inventory of the measures that are necessary for the further implementation of the Regulation and the further development of the Corridor.

This document was consulted with the Railway Undertaking and Terminal Advisory Group (hereinafter referred to as Advisory Groups) of the Corridor via a written procedure, then in an Advisory Group meeting on 21 November 2023. This final document was approved by the Executive Board (a requirement of Article 9 of the Regulation) of the Corridor comprising the representatives of the ministries in charge of transport on 18 December 2023.

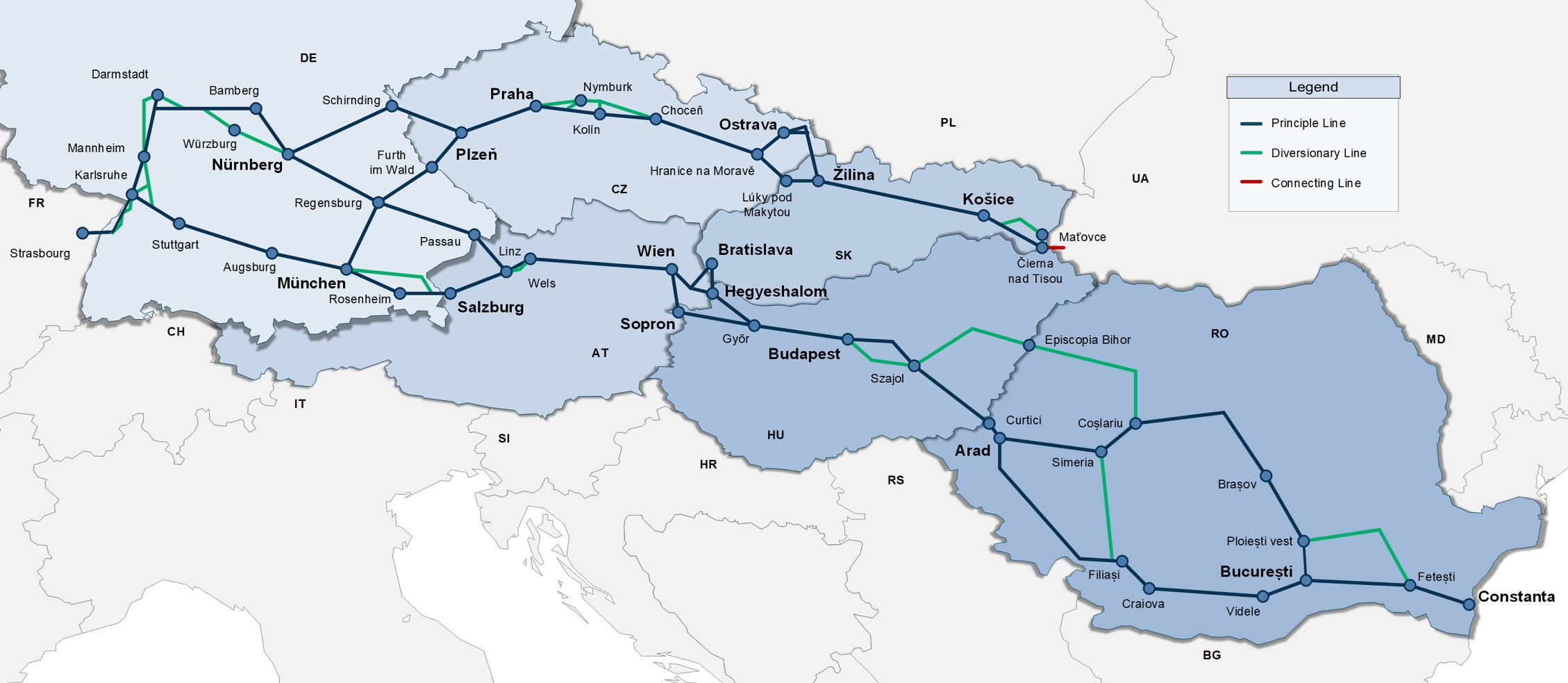
# 2 Corridor Description

## 2.1 Key Parameters of Corridor Lines

The Corridor is the transport backbone linking West, Central, and Eastern Europe by connecting France, Germany, Austria, the Czech Republic, Slovakia, Hungary, and Romania. The Corridor runs from the Strasbourg area and South-West Germany to the Romanian port of Constanta at the Black Sea and (in two distinct branches) at the Slovak-Ukrainian border. According to the results of the Transport Market Study (hereinafter referred to as TMS) elaborated for the operation of the Corridor, the Management Board (hereinafter referred to as MB) agreed on the following routing consisting of principal lines, possible diversionary lines and connecting lines according to the traffic flows.

The key parameters of the Corridor lines are displayed in the the Customer Information Platform: <https://cip.rne.eu>.

|  |  |  |  |
| --- | --- | --- | --- |
| **Country** | **Character** | **Line section / Terminal / Marshalling yard** | **Length of the line section /  City of the terminal or marshalling yard** |
| Austria | Principal lines | Salzburg-Steindorf bei Straßwalchen-Vöcklabruck-Wels | 101 km |
| Passau-Grieskirchen-Wels | 81 km |
| Wels-Linz-Enns-Amstetten-St. Pölten-Wien-Bruck a. d. Leitha-Parndorf-Kittsee | 282 km |
| Parndorf-Nickelsdorf-Hegyeshalom | 24 km |
| Wien-Ebenfurth-Baumgarten | 54 km |
| Diversionary line | Marchtrenk-Traun-Linz | 21 km |
| Connecting line | Tullnerfeld - Krems Terminal | 46 km |
| Terminals | Wels Vbf CCT/ROLA, ÖBB Infrastruktur AG | Wels |
| LINZ AG für Energie, Telekommunikation, Verkehr und Kommunale Dienste | Linz |
| Container Terminal Enns GmbH | Mauthausen |
| METRANS Terminal Krems an der Donau | Krems an der Donau |
| CTS Container Terminal Salzburg GmbH | Salzburg |
| Wiencont Container Terminal GmbH | Wien |
| Terminal Wien Inzersdorf -Süd, ÖBB Infrastruktur AG | Wien |
| Czech Republic | Principal lines | Schirnding/Cheb – Cheb | 11 km |
| Cheb-Plzeň | 106 km |
| Furth im Wald/Česká Kubice – Domažlice | 16 km |
| Domažlice-Plzeň | 57 km |
| Plzeň-Beroun-Praha-Poříčany | 144 km |
| Praha-Malešice – Praha-Libeň – Praha-Běchovice | 11 km |
| Poříčany-Kolín-Pardubice | 65 km |
| Pardubice-Choceň-Česká Třebová | 60 km |
| Česká Třebová-Olomouc-Přerov-Hranice na Moravě | 136 km |
| Hranice na Moravě-Horní Lideč/Lúky pod Makytou | 70 km |
| Hranice na Moravě-Ostrava-Dětmarovice-Český Těšín-Mosty u Jablunkova-Čadca | 126 km |
| Ostrava-Český Těšín | 38 km |
| Diversionary lines | Poříčany-Nymburk | 15 km |
| Praha-Lysá nad Labem- Nymburk-Velký Osek-Kolín | 72 km |
| Velký Osek-Hradec Králové-Choceň | 96 km |
| Terminals | Terminal Ostrava-Paskov | Vratimov |
| Metrans-Terminal Ostrava - Šenov | Havířov |
| Terminal Ostrava-Mošnov | Ostrava |
| Contargo-Terminal Plzeň | Plzeň |
| Metrans-Terminal Plzeň – Nýřany | Plzeň-Nýřany |
| Metrans-Terminal Praha-Uhříněves | Praha-Uhříněves |
| Terminal Pardubice | Pardubice |
| Rail Hub Terminal Česká Třebová | Česká Třebová |
| RCO-CSKD Terminal Přerov | Přerov |
| Metrans-Terminal Zlín - Želechovice/Lípa nad Dřevnicí | Lípa nad Dřevnicí |
| Terminal Agro Bohemia Kopřivnice | Kopřivnice |
| Port Mělník | Mělník |
| DUSS Terminal Lovosice | Lovosice |
| Marshalling yards | Cheb seř. obvod 2 | Cheb |
| Plzeň seř. n. | Plzeň |
| Beroun seř. n. | Beroun |
| Praha-Libeň | Praha |
| Kolín seř. nádraží | Kolín |
| Pardubice | Pardubice |
| Česká Třebová směr. sk. | Česká Třebová |
| Olomouc pravé předn. | Olomouc |
| Přerov předn. | Přerov |
| Valašské Meziříčí | Valašské Meziříčí |
| Ostrava-Kunčice | Ostrava |
| Bohumín-Vrbice | Bohumín |
| Ostrava pravé n. | Ostrava |
| Ostrava levé n. | Ostrava |
| France | Principal lines | Strasbourg-Kehl | 20 km |
| Terminals | Port Autonome de Strasbourg | Strasbourg |
| Hausbergen marshalling yard | Strasbourg |
| Germany | Principal lines | Kehl-Appenweier-Rastatt Süd (via 4000) | 50 km |
| Rastatt Süd-Rastatt-Durmersheim (via 4020)-Karlsruhe | 40 km |
| Karlsruhe-Hockenheim-Mannheim-Darmstadt-Aschaffenburg | 140 km |
| Aschaffenburg-Gemünden-Waigolshausen-Bamberg-Nürnberg | 220 km |
| Nürnberg-Regensburg-München | 238 km |
| Regensburg-Passau | 117 km |
| Karlsruhe-Pforzheim-Mühlacker | 40 km |
| Mühlacker-Ludwigsburg-Stuttgart-Ulm-Augsburg-München | 287 km |
| München-Rosenheim-Freilassing-Salzburg | 148 km |
| Nürnberg-Marktredwitz-Schirnding-Cheb | 140 km |
| Regensburg-Schwandorf-Furth im Wald-Domažlice | 74 km |
| Diversionary lines | Appenweier-Rastatt Süd (via 4280) | 40 km |
| Rastatt-Ettlingen West (via 4000)-Karlsruhe-Bruchsal-Heidelberg-Mannheim | 93 km |
| Darmstadt-Frankfurt am Main, Mannheim-Groß Gerau-Frankfurt am Main-Hanau-Aschaffenburg | 27 km,  98 km |
| Gemünden-Würzburg-Nürnberg | 132 km |
| Bruchsal-Mühlacker | 32 km |
| München-Mühldorf am Inn-Freilassing | 140 km |
| Terminals | Contargo Karlsruhe Rheinhafen | Karlsruhe |
| Klumpp + Müller GmbH & Co. KG | Kehl |
| ETK Euro Terminal Kehl GmbH | Kehl |
| DUSS-Terminal Karlsruhe by DB | Karlsruhe |
| Fruchtcargo Container-Depot Wörth | Karlsruhe |
| Container Yard Speyer Contargo | Karlsruhe |
| Contargo Wörth | Karlsruhe |
| DP World Germersheim | Mannheim |
| DUSS-Terminal Mannheim-Handelshafen | Mannheim |
| RoRo-Terminal Mannheim | Mannheim |
| Kobler Container Depot | Mannheim |
| Contargo Rhein-Neckar Mannheim | Mannheim |
| Kombi-Terminal Ludwigshafen KTL | Ludwigshafen |
| Mannheimer Tankwagenreinigung Container Depot | Mannheim |
| Cotac Depot Mannheim | Mannheim |
| Terminal Worms, Rhenania Worms AG | Mannheim |
| Hempt Container-Depot Worms | Mannheim |
| GUT Gernsheimer Umschlags-und Terminalbetriebsgesellschaft GmbH & Co. KG | Gernsheim |
| DUSS-Terminal Frankfurt/Main-Ost | Frankfurt am Main |
| Trimodal Container terminal Aschaffenburg -TCA | Frankfurt am Main |
| Contargo Rhein-Main GmbH, Contargo Frankfurt-Ost | Frankfurt am Main |
| Contargo Industriepark Frankfurt - Höchst GmbH | Frankfurt am Main |
| Frankenbach Container Terminals GmbH | Mainz |
| TriCon Container Terminal Nürnberg | Nürnberg |
| DB Cargo AG | Nürnberg |
| CDN Container Depot Nürnberg GmbH | Nürnberg |
| DUSS-Terminal Stuttgart Hafen | Stuttgart |
| SCT Stuttgarter Container Terminal GmbH | Stuttgart |
| DUSS-Terminal Kornwestheim | Kornwestweim (Stuttgart region) |
| DUSS-Terminal Augsburg-Oberhausen | Augsburg |
| Container Terminal Regensburg (CTR) | Regensburg |
| DUSS-Terminal Regensburg-Ost | Regensburg |
| Cargo Center Bayern –Wiesau | Wiesau |
| baymodal Bamberg GmbH | Bamberg |
| Kloiber Container Depot Augsburg | Augsburg |
| DUSS-Terminal Ulm | Ulm |
| CDM Container Depot München GmbH & Co. Service KG | München |
| DUSS-Terminal München-Riem | München |
| TRANSLOG Transport + Logistik GmbH | Schweinfurt |
| DUSS-Terminal Landshut | Landshut |
| Parsdorfer Tankwagenreinigung Container Depot | München |
| Hungary | Principal lines | Baumgarten-Sopron-Győr | 93 km |
| Rajka-Hegyeshalom | 13 km |
| Hegyeshalom-Győr-Tata-Budapest-Újszász-Szolnok | 285 km |
| Szolnok-Szajol-Békéscsaba-Lőkösháza-Curtici | 136 km |
| Diversionary lines | Budapest-Cegléd-Szolnok | 88 km |
| Szajol-Püspökladány-Biharkeresztes-Episcopia Bihor | 130 km |
| Terminals | Terminal ÁTI Györ by ÁTI DEPO Zrt. | Győr |
| Port of Győr-Gönyű Logistics Center | Győr |
| Sopron container terminal by GYSEV CARGO Zrt. | Sopron |
| Metrans Terminal Budapest by METRANS, a.s. | Budapest |
| Mahart Container Center | Budapest |
| Rail Cargo Terminal BILK Budapest by BILK Kombiterminal Co. Ltd. | Budapest |
| Port of Budapest Logistics Center | Budapest |
| Ro-Ro Terminal Baja | Baja |
| Szolnok Industrial Park and Logistics Service Centre | Szolnok |
| Marshalling yards | Ferencváros-Rendező | Budapest |
| Szolnok-Rendező | Szolnok |
| Romania | Principal lines | Lőköshaza/Curtici (HU/RO) | 11 km |
| Curtici - Arad | 17 km |
| Arad - Timisoara | 57 km |
| Timisoara - Orsova | 187 km |
| Orsova – Filiaşi | 102 km |
| Filiasi - Craiova | 36 km |
| Arad - Simeria | 157 km |
| Simeria - Coslariu | 69 km |
| Coslariu - Sighisoara | 98 km |
| Sighisoara - Brasov | 129 km |
| Brasov - Predeal | 26 km |
| Predeal - Brazi | 92 km |
| Brazi - Chitila (Bucuresti) | 52 km |
| Chitila (Bucuresti) - Fetesti | 147 km |
| Fetesti - Constanta | 78 km |
| Diversionary lines | Biharkeresztes - Oradea Est (HU/RO) | 22 km |
| Oradea Est - Cluj Napoca Est | 155 km |
| Cluj Napoca Est - Coslariu | 99 km |
| Craiova - Videle | 158 km |
| Videle - Chitila (Bucuresti) | 50 km |
| Simeria - Filiasi | 202 km |
| Ploiești Triaj – Buzău – Făurei – Fetești | 204 km |
| Connecting line | Făurei – Galați | 92 km |
| Terminals | Railport Arad | Arad |
| Oradea Intermodal Vest | Oradea |
| Cluj Napoca | Cluj Napoca |
| Turda - Rofersped | Turda |
| Semenic (Timişoara Sud) | Timisoara |
| Allianso Terminal Ploiești | Ploiesti |
| Bucureşti Sud | București, Ilfov |
| Tibbett Logistics | Bucuresti, Ilfov |
| Bucharest International Rail Freight Terminal (BIRFT) | București, Ilfov |
| Bucharest Intermodal Terminal by Yusen Logistics Co., Ltd. | București, Ilfov |
| UMEX Terminal Constanta | Constanta |
| APM Terminal Constanta | Constanta |
| DP World Constanta | Constanta |
| SOCEP Terminal Constanta | Constanta |
| Marshalling yards | Chitila | Chitila (București) |
| Brașov | Brașov |
| Bucureşti | Bucureşti |
| Ploiești | Ploiești |
| Craiova | Craiova |
| Simeria | Simeria |
| Slovakia | Principal lines | Čadca-Žilina | 30 km |
| Lúky pod Makytou-Púchov-Žilina | 64 km |
| Žilina-Vrútky-Liptovský Mikuláš-Poprad-Spišská Nová Ves-Kysak-Košice | 243 km |
| Barca-Výh. Slivník (Výh.8) | 33 km |
| Výh. Slivník (Výh.8)-Čierna nad Tisou | 57 km |
| Barca-Košice (via Košice predmestie) | 4 km |
| Barca-Haniska pri Košiciach | 6 km |
| Kittsee-Bratislava Petržalka-Rusovce-Rajka | 17 km |
| Diversionary line | Výh. Slivník (Výh.8) -Maťovce | 56 km |
| Connecting line | Čierna nad Tisou-UA border (Chop) | 4 km |
| Terminals | TIP Žilina (Metrans) | Žilina - Teplička |
| RCO Žilina | Žilina |
| RCO Košice | Košice |
| Metrans-Terminal Košice | Košice - Haniska pri Košiciach |
| TKD Dobra | Dobra |
| Bratislava Palenisko by Slovenská plavba a prístavy (SPaP) a.s. | Bratislava |
| UKV Terminal Bratislava ÚNS | Bratislava |
| Metrans Dunajská Streda | Dunajská Streda |
| MLC Maťovce (Premako) | Maťovce |
| RCO Ružomberok (Lisková) | Ružomberok |



## 2.2 Corridor Terminals

All terminals along designated lines have been determined as part of the Corridor as well, except if a terminal does not have any relevance for the traffic on the Corridor. The marshalling yards, major rail-connected freight terminals, rail-connected intermodal terminals in seaports, airports and inland waterways belong to the terminals listed in chapter 2.1. Terminals are also displayed in the CIP accessible via <https://cip.rne.eu>.

## 2.3 Bottlenecks

The bottlenecks which hinder smooth and competitive rail freight transport can be grouped into the following categories:

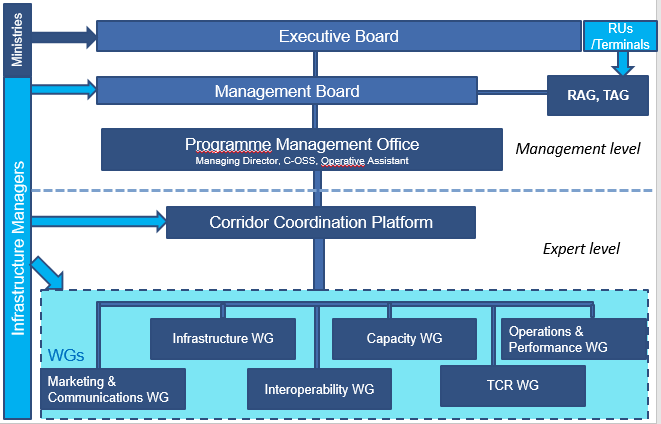
* infrastructural bottlenecks
  + Sections which do not meet the TEN-T requirements specified in   
    Article 39 (2a) of the Regulation (EU) No 1315/2013 of the European Parliament and of the Council.
* operational bottlenecks
  + Capacity and traffic management issues during the train run.
* administrative bottlenecks
  + Effects of non-harmonised rules and procedures.
* capacity bottlenecks
  + Issues in relation with capacity planning and path allocation. This includes on the one hand, the lack of multi-annual planning works due to missing multi-annual financing environment, on the other hand, congested infrastructure, too, which is defined in Art. 47 of Directive 2012/34/EU.

The detailed list of already identified infrastructural and capacity bottlenecks together with the suggested measures towards their removal can be found in the Capacity Management Plan included in Annex 6.1.a.

The list of congested lines is included in Annex 6.1.b.

## 2.4 Corridor Governance

Information about the current governance structure of the Corridor can be found in chapter 1.4 of the CID and is displayed below, too.



# 3 Market Analysis Study

The first Transport Market Study (TMS) of the Corridor was conducted in 2020 and can be found on its website: <https://rfc-rhine-danube.eu/documents/>.

Its major finding was that the Corridor has a highly important strategic role, being one of the main East-West links across Continental Europe.

The Corridor is planning to update its TMS within the framework of a joint project of all Corridors, which is coordinated by RailNetEurope (RNE). The main benefits of the common project are as follows: more efficient use of resources of all participating stakeholders and comparable TMSs over all corridors.

The baseline of the common basis to be used for the updates of the individual TMSs are

* a feasibility study approved by the RNE General Assembly (GA) in December 2022 and
* commonly agreed Guidelines approved by the RNE GA in May 2023.

The timeline of the common project is as follows:

|  |  |  |
| --- | --- | --- |
| **Milestone** | **Deadline** | **Responsible body** |
| Elaborating on common Guidelines for the updates of the TMSs of the Corridors | January 2023 | RNE Joint Office and TMS experts of Corridors |
| Tendering | May 2023 | RNE Joint Office |
| Conducting the common basis for the update | November 2023 | Consultant and RNE Joint Office |
| Executing the updates to the individual TMSs of the Corridors | May 2024 | Corridor |
| Post-processing of the results of the updated TMS | November 2024 | Corridor |
| Publishing the results of the updated TMS | December 2024 | Corridor |

# 4 List of Measures

This chapter lists the schedule of the measures necessary for the further implementation and development of the Corridor.

Measures for the further implementation of the Regulation:

In order for the continuous and full implementation of the Regulation, the Corridor is planning to deliver the following output. The implementation is financially supported by the EU grant agreement referred to in chapter 6.4.

|  |  |  |
| --- | --- | --- |
| **Deliverable** | **Additional information** | **Deadline** |
| Updated Implementation Plan | Incl. specially the main conclusions of the updated Transport Market Study | next scheduled update  by the end of 2024 |
| Updated Transport Market Study | Incl. observed and expected changes in the traffic on the Corridor, as a consequence of its being established, covering the different types of traffic, both regarding the transport of freight and the transport of passengers | next scheduled update  by the end of 2024 |
| More frequent updates to the document including the planned temporary capacity restrictions | The Advisory Groups were consulted on their needs and expectations regarding the frequency of publication in October 2022. | implementation target by the end of 2023, but latest by the end of 2024 depending on feasibility |
| Promoting procedures for optimal coordination between the operation of the railway infrastructure and the terminals | Between IMs, RUs, and terminals along the Corridor by evaluating existing procedures and participating in the Rail Collaborative Decision-Making project. | by the end of 2024 |
| Promoting the compatibility between the performance schemes of the IMs along the corridor | By analysing if their are any problematic differences between the currently applicable schemes and investigating the need and room for higher compatibility. | by the end of 2024 |

Measures for the further development of the Corridor:

The Corridor will continue with activities for the further development of rail freight traffic as follows.

1. Cross-border cooperation:

Primarily, such activities comprise the strengthening of cross-border cooperation between neighbouring IMs, the RUs using the border sections concerned, and the terminals operating at and feeding the border sections concerned. The aim is to remove barriers at the borders, thus create an as efficient, fast, and seamless crossing of trains at the borders as possible. To this end, IMs, RUs, and terminals are working in close cooperation with each other. Regular monitoring and meetings are conducted to jointly identify the obstacles, create concrete improvement measures, and ultimately to implement them. An important indicator for assessing the quality of international rail freight traffic at the borders is the KPI measuring the dwell time.

Massive work needs to be done on monitoring and reducing the dwell times at these borders:

* Passau – Schärding (DB InfraGO – ÖBB Infra)
* Lőkösháza – Curtici (MÁV – CFR; common border section and cross-border cooperation group with OEM)
* Rajka - Rusovce (GYSEV – ZSR; common border section with OEM)

In case of need, strengthening cross-border cooperation on further border sections will be considered, too, depending on the dwell time and the number of international freight trains per border.

In order to complement the above activities, upon the request of the Advisory Group, an analysis of cross-border procedures should be conducted along the Corridor and a to-do list should be delivered in order to improve the processes, thus to increase international rail freight business. This activity should start in 2024.

1. Coordination of procedures in traffic management

Furthermore, in order for a further optimised coordination of traffic management between the IMs, the terminals, as well as the RUs, the Corridor participates in the Rail Collaborative Decision-Making (hereinafter referred to as R-CDM) project coordinated by RailNetEurope.

1. Coordination of planned temporary capacity restrictions

Upon the request of the RU Advisory Group, improvement actions should be defined by identifying best practices.

## 4.1 Coordination of Planned Temporary Capacity Restrictions

The currently applicable processes are described in chapter 4.4 of the CID.

As an additional measure for further development, the following IMs along the Corridor started using the TCR tool operated by RNE in 2023: SNCF Réseau, MÁV, SZCZ, ZSR. This tool provides for a user-friendly overview via a digital map displaying the TCRs uploaded by the IMs. Implemention of the usage of the tool is ongoing by the other IMs.

## 4.2 Corridor OSS

The tasks of the C-OSS, the legal background, and the related documentation are described in section 4.2 of the CID.

## 4.3 Capacity Allocation Principles

The currently applicable processes including specific rules related to the overlapping sections between the Corridor and the Rail Freight Corridor Orient / East – Med (hereinafter referred to as the OEM Corridor), are described in detail in Chapter 4.3 of the CID.

## 4.4 Applicants

The currently applicable processesare described in point 4.3.2 of the CID.

## 4.5 Traffic Management

IMs coordinate international traffic with neighbouring IMs on a bilateral level. In this manner, they ensure that all traffic on the network is managed in the most optimal way.

Detailed rules and procedures regarding traffic management along the Corridor are described in Chapter 4.5 of the CID.

## 4.6 Traffic Management in Event of Disturbance

The communication procedure and the available tools are described in Chapter 4.5.3 of the CID.

## 4.7 Quality Evaluation

The provisions of Article 19 of the Regulation set requirements regarding the quality evaluation of rail freight services on the Corridor.

The performance of the Corridor is measured through key performance indicators listed in Chapter 5 and targeted customer satisfaction surveys mentioned in Chapter 4.7.2.

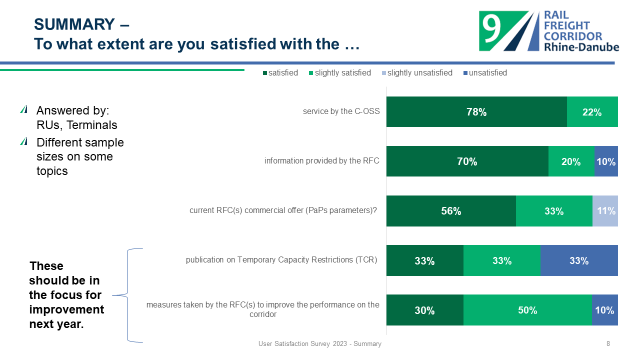
### 4.7.1 Performance Monitoring Report

According to Article 19 (2) of the Regulation the MB monitors the performance of rail freight services on the Corridor and publishes the results once a year.

### 4.7.2 User Satisfaction Survey

According to Article 19 of the Regulation the quality of service on the Corridor is also measured through user satisfaction surveys conducted on a yearly basis. Inputs for this survey are delivered by the RAG/TAG members. The results are published on the website of the Corridor.

The Corridor prepares an action plan in order to find solutions for the top areas in which most of the respondents request improvement.



## 4.8 Corridor Information Document

The Corridor Information Document is published by the 2nd Monday of January every year together with the PaP catalogue and is kept regularly up-to-date. It complies with the Corridor Information Document Common Texts and Structure of RailNetEurope. It is published on the website of the Corridor (<https://rfc-rhine-danube.eu/cid-books/>), as well as in the CIP (<https://cip.rne.eu>).

# 5 Objectives and Performance of the Corridor

The objectives of the Corridor have been harmonised with the objectives of RFC Orient/East-Med and the two corridors are closely cooperating with each other in order to achieve them.

In general, the objectives of the Corridor are as follows:

* Increasing the modal share of rail freight,
* Improving procedures and facilitating accessibility of railways, and
* Providing better, more reliable services.

The Corridor aims to reach these objectives by

* Attracting customers with the services of the C-OSS, providing easier access for customers in order to reduce the drawback of different national systems.
* Facilitating solving issues that need higher level attention especially when out of the transport sector.
* Continuous improvement of processes concerning the operation of the railway infrastructure.

In particular, the objectives specific to the core processes capacity management and train performance management are described below:

Punctuality:

Improving the punctuality of freight trains running on the Corridor is essential in order to increase the share of rail in the model split. Therefore, one of the Corridor’s focal points is to undertake effective measures to further enhance Train Performance Management (hereinafter referred to as TPM) including setting of quality targets and thereby shifting the focus of TPM activities from monitoring to management of punctuality.

Generally, the punctuality of a train is measured on the basis of comparisons between the time planned in the timetable of a train identified by its train number and the actual running time at certain measuring points. A measuring point is a specific location on the route, where the trains running data is recorded. The comparison should always be done with an internationally agreed timetable for the whole train run.

Punctuality is calculated as the percentage of punctual trains out of the total number of trains.

The calculation is done for two thresholds: 30 minutes and 15 minutes.

The codified reasons for delay, in accordance with UIC leaflet 450-2, is used for continuous and systematic monitoring. The monthly punctuality reports are uploaded to the website of the Corridor.

Dwell time:

Besides punctuality, another factor requiring high attention is the dwell time of international freight trains at the borders and the reduction of this dwell time, with special regard to the critical border sections – facing both long dwell time and a high number of trains. In order to facilitate the objective of operational efficiency and seamless crossing of the borders, this particular factor needs continuous cooperation between both IMs and RUs in removing operational barriers.

Target:

* 120 minutes on average where currently above this target,
* further decrease annually where below 120 minutes.

Strengthening cross-border cooperation:

In order to facilitate the above objectives regarding punctuality and dwell time, the Corridor promotes cross-border cooperation groups comprising neighbouring IMs, RUs, and eventually terminals regarding the critical border sections. Further information about the continuous at the border sections concerned can be found in chapter 4.2 Measures for the further development of the Corridor.

More information about train performance management can be found in Chapter 6 of the CID and in the TPM Handbook published on the website of the Corridor.

In general, the Corridor uses regular performance reports, analyses them, and the results are used as basis for potential improvement actions. In particular, more detailed monitoring, specifically needed at the border sections on which cross-border cooperation groups have been set up, is done as well.

Capacity:

The C‐OSS handles exclusively the capacity products on the Corridor (Pre-arranged Paths (hereinafter referred to as PaPs), Reserve Capacity etc.). PaPs for the annual timetable are provided by the IMs/AB to the C-OSS. The PaPs are based on standard parameters for rail freight and previously coordinated between the IMs/AB at the borders so to enable for attractive running times. The path catalogue of PaPs is published by the C‐OSS by the 2nd Monday of January of each year for the next timetable period. Reserve Capacity on the Corridor is available from October of each year on, to allow for ad‐hoc path applications. The offer of the C-OSS is displayed in the IT‐application PCS (Path Coordination System) provided by RNE. According to the Regulation, the aim is to offer capacity via the C-OSS is to have “one face to the customer” for international path requests along the Corridor and at the end harmonized path offers across at least one border. Furthermore, the decision on the PaP pre-allocation is done by the C-OSS by the end of April for the entire international PaP segment on basis of one harmonized allocation rule. As a result, the RUs will get an earlier information about the PaP pre-allocation.

KPIs:

To measure the fulfillment of the above objectives and steer performance, the MB has adapted the following KPIs, which are commonly applicable to all other Corridors.

| **Name of KPI** | **Calculation formula** | **Source of data** | **Timing of calculation** | **Target** |
| --- | --- | --- | --- | --- |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Volume of requested capacity (PaPs)** | Km\*days requested | PAMT report in PCS | At X-8 | Increase four-year moving average by 4.5% each year |
| **Volume of pre-booked capacity (PaPs)** | Km\*days (pre-booking phase) | PAMT report in PCS | At X-7.5 | Increase four-year moving average by 4.5% each year |
| **Ratio of pre-booked capacity – PaPs (to the volume of capacity offered at x-11)** | Km\*days offered | PAMT report in PCS | At X-7.5 | increase ratio each year |
| **Average planned speed of PaPs** | Average of the planned commercial speed of the PaPs on the O/D pair concerned per direction | PAMT report in PCS | At X-11 | when classified into four categories (divided by 30, 40 and 50 km/h), at least one category step-up each year |
| **Punctuality at origin** | The share of all RFC-related trains at RFC entry with a delay less than, or equal to, the threshold compared to all RFC-related trains at RFC entry. | TIS | At the end of January after the timetable year concerned | difference of the two not exceeding 10% |
| **Punctuality at destination** | The share of all RFC-related trains at RFC exit with a delay less than, or equal to, the threshold compared to all RFC-related trains at RFC exit. | TIS | At the end of January after the timetable year concerned |
| **Number of Trains crossing a border along the RFC** | Total number of train runs having a RA on selected pairs of border points | TIS | At the end of January after the timetable year concerned | annual increase of 4.5% |
| **Train kilometres of Trains crossing a Border along the RFC** | Sum of O/D distances of all trains crossing a border along the RFC | TIS | At the end of January after the timetable year concerned | annual increase of 4.5% |
| **Dwell times in border sections – planned dwell** | Average planned dwell time of all international freight trains crossing the RFC border in the main measuring points, where border crossing related procedures usually occurs | TIS | At the end of January after the timetable year concerned | - 120 minutes on average where currently above this target,  - further decrease annually where below 120 minutes. |
| **Dwell times in border sections – real dwell** | Average real dwell time of all international freight trains crossing the border along the RFC in the main measuring points, where border crossing related procedures usually occurs | TIS | At the end of January after the timetable year concerned | - 120 minutes on average where currently above this target,  - further decrease annually where below 120 minutes. |

Upon the request of the RU Advisory Group, the Corridor will investigate the feasibility of the following proposed KPI in 2024: real commercial speed of the trains which later use the PaPs and RC during the active timetable year.

Besides the above KPIs, the Corridor measures the quality of services and monitors the achievement of the objectives via the annual user satisfaction survey, too, the results of which are published on its website and in the CIP.

On the one hand, the above KPIs will be published in the yearly performance monitoring reports published on the website of the Corridor. On the other hand, a yearly customer satisfaction survey is conducted. The reports are published on the website of the Corridor and in the CIP.

# 6 Investment Plan

## 6.1 Capacity Management Plan

The Corridor’s Capacity Management Plan can be found in Annex 6.1.a.

## 6.2. List of Projects

The members of the Infrastructure Working Group have elaborated a list of projects, which is composed of all projects foreseen for development, modernisation, upgrade, and renewal of the railway infrastructure along the whole the Corridor.

The list of planned infrastructure development projects along the Corridor can be found in Annex 6.2.

This latest update of the projects allows us to follow-up the realization of the Corridor-related investments run in our Member States. The projects have different categoric types, there are renewal of tracks, signalling system, bridges, and other elements. Each project will achieve benefits in the following area:

* Maintenance, modernization of the track → ensure better infra parameters
* Electrification → ensure TEN-T parameter
* Safety and Security (ETCS implementation) → ensure interoperability
* Bridge renewal → ensure better connection
* Switches renewal

Thanks to these investments we are able to cease bottlenecks and make better quality of our infrastructure services, increase the commercial speed, and develop our performance.

We also monitor and follow up analyzes and outcomes made in connection with the CNC Work Plan, what are the main developments and focuses on the investment planning.

Last but not least, we give a regular update for our customers about the planned Corridor-related investments at our TAG/RAG meetings.

## 6.3 Deployment Plan

The ERTMS Deployment Plan of the Corridor can be found in Annex 6.3.

## 6.4 Reference to Union Contribution

The Corridor has benefited from EU co-financing for several years.

Currently, the Corridor is granted with CEF Technical Assistance for the period of July 2022 – December 2024. The grant agreement includes a specific list of deliverables which are listed in chapter 4 of this document.

# 7 Cooperation with Other Corridors and RNE

## 7.1 Cooperation with the RFC Network and RNE

To ensure coordination of the main processes and achieve harmonisation to the extent possible, the Corridor will continue actively participating on the following common platforms:

* RFC Network
* C-OSS Community

In addition, the Corridor will continue contributing to the work of the joint high level and working groups comprising all 11 RFCs, aiming at further harmonising processes and documents to the extent possible:

* RNE Network Statement and Corridor Information Document Working Group
* RNE Performance Management Working Group
* RNE/RFC High Level Group
* RFC KPI Coordination Group
* RFC User Satisfaction Survey Group

Furthermore, the Corridor will continue participating in the following common projects, too, both of which are coordinated by RNE:

* Transport Market Study
* Rail Collaborative Decision-Making
* Revision of the Handbook for International Contingency Management

## 7.2 Cooperation with OEM Corridor

Due to the big geographical overlap with the OEM Corridor, the MBs and the Executive Boards of the two Corridors decided to establish closer co-operation between them. The following steps have been implemented so far:

* the C-OSS closely cooperates with the C-OSS of the OEM Corridor to collect, analyse, and harmonise the capacity wishes of all existing and potential applicants,
* the C-OSS provides joint capacity offers with the C-OSS of the OEM Corridor,
* the C-OSS cooperates with the C-OSS of the OEM Corridor for the publication of the joint and harmonized draft and final PaP offer,
* arranging joint meetings of the working groups, the Advisory Groups, and the Executive Boards,
* jointly working in cross-border cooperation groups, as a first step on the common border section Lőkösháza – Curtici,
* coordinating updates of the implementation plans including a common bottleneck analysis on the overlapping sections,
* setting common objectives for both Corridors,
* harmonising the more frequent updating schedules of the TCRs published by both Corridor,
* introducing common sessions of the meetings of the MBs of the two Corridors, which are dedicated to the commonly prepared matters.

Further common activities to be implemented:

* promoting the compatibility of the performance schemes,
* due to the alignment of the Corridor with the OEM Corridor foreseen in the draft Regulation about the European Transport Corridors, the common activities will expectedly be further enhanced.

# Annexes

|  |  |
| --- | --- |
| No. | Title |
| 6.1.a | Capacity Management Plan |
| 6.1.b | List of Congested Lines |
| 6.2 | List of Projects |
| 6.3 | Deployment Plan |

**Germany**

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| **IM** | **Section** | | **Bottleneck** | **Reasons** | **Suggestions How to Remove Bottlenecks** | | | |
| **From** | **To** | **Project Name and Description** | **End Date** | **Costs in mil. of Euro** | **Financial Sources** |
| DB InfraGO | Kehl | Appenweier | Travel time | Agreement between DE/FR to reduce travel time | ABS Kehl - Appenweier | 2028 | 79 | State budget |
| DB InfraGO | Wendlingen | Ulm | Capacity | More capacity for passenger and freight trains is needed in this relation | NBS Wendlingen - Ulm | 2025 | 3959 | State budget |
| DB InfraGO | Ulm | Augsburg | Capacity | More capacity for passenger and freight trains is needed in this relation | ABS/NBS Ulm - Augsburg | Beyond 2030 | 1907 | State budget |
| DB InfraGO | Nürnberg | Schirnding | No electrification | Not electrified | ABS Nürnberg - Marktredwitz - Border DE/CZ (- Cheb) | on hold | 1195 | State budget |
| DB InfraGO | Markt Schwaben | Freilassing | Capacity | Not electrified and more capacity for freight trains is needed between Munich and AT | ABS Müchen - Mühldorf - Freilassing | Beyond 2030 | 2323 | State budget |

**Austria**

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| **IM** | **Section** | | **Bottleneck** | **Reasons** | **Suggestions How to Remove Bottlenecks** | | | |
| **From** | **To** | **Project Name and Description** | **End Date** | **Costs in mil. of Euro** | **Financial Sources** |
| ÖBB Infrastruktur | Salzburg | Attnang-P. | Track length | Capacity optimization requiered | Attnang - Salzburg upgrade; 740m sidings in some stations | 2029 | 160 | State budget |
| ÖBB Infrastruktur | Salzburg | Steindorf bei Strasswalchen | 2 track section on a predominant 4 track route | Timetable based capacity overload | 4 track upgrade | Beyond 2030 | 154  (planning only) | State budget |
| ÖBB Infrastruktur | Wels | Linz | 2 track section on a predominant 4 track route | Timetable based capacity overload | 4 track upgrade | 2030 | 1303 | State budget |
| ÖBB Infrastruktur | Linz | Enns | Only a short 2 track section between Linz Hbf and Linz Kleinmünchen on a predominant 4 track route | Timetable based capacity overload | 4 track upgrade | 2032 | 402 | State budget |
| ÖBB Infrastruktur | Wien | Bruck a. d. Leitha | Track length | Capacity optimization requiered | Gramatneusiedl; 740m sidings and quicker station entering/leaving | 2024 | 86 | State budget |
| ÖBB Infrastruktur | Wien | Bruck a. d. Leitha | Track length | Capacity optimization requiered | Himberg; 740m sidings | 2027 | 53 | State budget |
| ÖBB Infrastruktur | Parndorf | Kittsee | Single track line | Capacity optimization requiered | 2 track upgrade | 2038 | 215 | State budget |
| ÖBB Infrastruktur | Wien | Ebenfurth | Handling capacity increase required | Less capacity | Wien Süd Terminal, Stage 2; handling capacity increase ITE | 2025 | 21 | State budget |
| ÖBB Infrastruktur | Wien | Ebenfurth | Train movements in Ebenfurth necessary to reach GYSEV line | Missing connection link between Vienna and Sopron | Junction Ebenfurth | 2029 | 229 | State budget |

**Czech Republic**

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| **IM** | **Section** | | **Bottleneck** | **Reasons** | **Suggestions How to Remove Bottlenecks** | | | |
| **From** | **To** | **Project Name and Description** | **End Date** | **Costs in mil. of Euro** | **Financial Sources** |
| SZCZ | Praha | Česká Třebová | Line capacity consumption | 5:00-20:00 capacity over 100 % | Modernisation of the line Velký Osek Kanín - Hradec Králové - Choceň, HSL project | 2030 | n/a | n/a |
| SZCZ | Velký Osek | Choceň | Capacity,  max. speed 80 km/h between Újezd u Chocně – Choceň,  Axle load C3 (20t) between Hradec Králové – Týniště nad Orlicí | Single track, level-crossings | Modernisation of the line Velký Osek Kanín - Hradec Králové - Choceň, HSL project | 2030 | n/a | n/a |
| SZCZ | Brodek u Přerova | Přerov | Capacity | Mutual interference of oncoming trains in the direction Olomouc - Hranice na Moravě with trains Přerov - Olomouc | Reconstruction of railway station Přerov | 2027 | n/a | n/a |
| SZCZ | Choceň | Uhersko | Unsatisfactory current state of the infrastructure | Unsatisfactory current state of the infrastructure | Removing selected bottlenecks on pre-identified sections on the Core Network Corridors | 2031 | n/a | Co-financed by the EIB |
| SZCZ | Lipník nad Bečvou | Drahotuše | Unsatisfactory current state of the infrastructure | Unsatisfactory current state of the infrastructure | Removing selected bottlenecks on pre-identified sections on the Core Network Corridors | 2027 | n/a | Co-financed by the EIB |
| SZCZ | Polom | Suchdol nad Odrou | Unsatisfactory current state of the infrastructure | Unsatisfactory current state of the infrastructure | Removing selected bottlenecks on pre-identified sections on the Core Network Corridors | 2029 | n/a | Co-financed by the EIB |
| SZCZ | Plzeň-Jižní Předm. | Furth im Wald/Česká Kubice | Axle load C3 (20t), not electrified, max.speed 80 km/h between Česká Kubice – st.border | n/a | Modernisation of the line Plzeň - Domažlice - Česká Kubice - st.border | 2030 | n/a | Co-financed by the EU |
| SZCZ | Poříčany | Nymburk st.3 | Axle load C3 (20t), Max. speed 70 km/h between Nymburk město – Nymburk st. 3 | n/a | Modernisation and double track in line Poříčany - Nymburk (under HSR Praha-Běchovice - Poříčany project) | 2031 | n/a | n/a |
| SZCZ | Kolín | Pardubice | P/C 72/391 | n/a | n/a | n/a | n/a | n/a |
| **IM** | **Section** | | | | **Suggestions How to Remove Bottlenecks** | | | |
| **From** | **To** | **Bottleneck** | **Reasons** | **Project Name and Description** | **End Date** | **Costs in mil. of Euro** | **Financial Sources** |
| SZCZ | Hranice na Moravě | Horní Lideč/Lúky pod Makytou | P/C 67/391, max.speed <100 km/h in some segments | n/a | n/a | n/a | n/a | n/a |
| SZCZ | Schirnding/Cheb | Cheb | Not electrified | n/a | n/a | n/a | n/a | n/a |
| SZCZ | Odb Závodiště | Praha-Libeň/Praha-Běchovice | Max. speed 75-80 km/h, capacity | n/a | Doubling of the line Branický bridge - Praha-Krč - Spořilov, Doubling of the line odb. Spořilov - Praha-Zahradní Město, Modernisation of the line Praha-Libeň - Praha-Malešice | 2028 | n/a | n/a |
| SZCZ | Výh Polanka n.Odrou/Ostrava-Svinov | Ostrava-Kunčice | Max. speed 80 km/h | n/a | Optimization of line Ostrava-Svinov - Ostrava-Kunčice | 2029 | n/a | n/a |

**Slovakia**

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| **IM** | **Section** | | **Bottleneck** | **Reasons** | **Suggestions How to Remove Bottlenecks** | | | |
| **From** | **To** | **Project Name and Description** | **End Date** | **Costs in mil. of Euro** | **Financial Sources** |
| ŽSR | Žilina zr.st | Žilina | Reduced speed | Tracks | Modernisation of railway node Žilina | 2024 | n/a | CEF |
| ŽSR | Liptovský Mikuláš | Štrba | Reduced weight of the train, additional loco is required | Geological character of the landscape | Modernisation of railway line Žilina – Košice | 2030 | n/a | CEF |
| ŽSR | Štrba | Poprad-Tatry | Reduced weight of the train, additional loco is required | Geological character of the landscape | Modernisation of railway line Žilina – Košice, implementation phase Poprad-Tatry – Lučivná | 2024 | n/a | CEF |
| ŽSR | Košice | Košice nákl.st. | Reduced length of the trains | Character of the Košice nákl. st. station | n/a | Beyond 2030 | n/a | n/a |
| ŽSR | Nižná Myšľa | Ruskov | Reduced weight of the train, additional loco is required | Geological character of the landscape | n/a | Beyond 2030 | n/a | n/a |
| ŽSR | Ruskov | Kuzmice | Reduced weight of the train, additional loco is required | Geological character of the landscape | n/a | Beyond 2030 | n/a | n/a |
| ŽSR | Čierna nad Tisou | Čop (UA) | Reduced Capacity | Customs inspections on the wide gauge track | Out of competence | Beyond 2030 | n/a | n/a |

**Hungary**

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| **IM** | **Section** | | **Bottleneck** | **Reasons** | **Suggestions How to Remove Bottlenecks** | | | |
| **From** | **To** | **Project Name and Description** | **End Date** | **Costs in mil. of Euro** | **Financial Sources** |
| MÁV | Kelenföld | Ferencváros | Lack of capacity | Reconstruction, modernization of the track | Southern circle railway. In order to develop a railway connection between Kelenföld and Ferencváros stations, construction of three-tracks connection and new suburban stops | 2025 | n/a | Cohesion fund/IKOP |
| MÁV | Békéscsaba | Lőkösháza | Lack of capacity | Reconstruction, modernization of the track | Preparation of the construction of 2nd track between Békéscsaba and Lőkösháza | 2025 | 5,23 | CEF |
| GYSEV | Rajka | Hegyeshalom | Capacity, speed, axle load | Single track; max. 100 km/h track speed; max. 21 t axle load; track conditions deteriorating | Reconstruction, modernization of the track Preparation finished in Q4 2019, to be tendered | 2028 | n/a | EU (CEF, Coh. Found) |
| GYSEV | Sopron | Győr | Capacity, speed, axle load | Single track line; max. 100 km/h track speed; max. 21 t axle load; at least hourly regular interval commuter trains; every two hours Intercity trains; no ETCS/ERTMS | Reconstruction, modernization of the track Phase 0: Sopron - Harka 2nd track 2023 -2025, Phase 2B: Sopron - Harka 3rd track 2028 -2033 | 2027 | n/a | EU (CEF, Coh. Found) |
| GYSEV | Sopron | Győr | Capacity, speed, axle load | Single track line; max. 100 km/h track speed; max. 21 t axle load; at least hourly regular interval commuter trains; every two hours Intercity trains; no ETCS/ERTMS | Reconstruction, modernization of the track Phase 2B: Sopron - Harka - Fertőboz new double track alignment | Beyond 2030 | n/a | EU (CEF, Coh. Found) |
| GYSEV | Sopron | Győr | Capacity, speed, axle load | single track line; max. 120 km/h track speed; max. 21 t axle load; at least hourly regular interval commuter trains; every two hours nterCity trains; no ETCS/ERTMS | Reconstruction, modernization of the track Phase 2A: (Fertőboz) - Pinnye - Csorna partially double track | Beyond 2030 | n/a | EU (CEF, Coh. Found) |
| GYSEV | Sopron | Győr | Capacity, speed, axle load | Single track line; max. 100 km/h track speed; max. 21 t axle load; at least hourly regular interval commuter trains; every two hours Intercity trains; no ETCS/ERTMS | Reconstruction, modernization of the track Phase 2A: (Fertőboz) - Pinnye - Csorna partially double track | Beyond 2030 | n/a | EU (CEF, Coh. Found) |
| GYSEV | Sopron | Győr | Capacity, speed, axle load | Single track line; max. 100 km/h track speed; max. 21 t axle load; at least hourly regular interval commuter trains; every two hours Intercity trains; no ETCS/ERTMS | Reconstruction, modernization of the track Phase 2A: (Fertőboz) - Pinnye - Csorna partially double track | Beyond 2030 | n/a | EU (CEF, Coh. Found) |
| GYSEV | Sopron | Győr | Capacity, speed, axle load | Single track line; max. 120 km/h track speed; max. 21 t axle load; high density of passenger trains at least hourly regular interval commuter trains; every hours Intercity trains; no ETCS/ERTMS | Reconstruction, modernization of the track Phase 1 of Győr - Sopron upgrade: prioirity project: single track, capacity problems, new 2nd track | Beyond 2030 | n/a | EU (CEF, Coh. Found) |

**Romania**

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| **IM** | **Section** | | **Bottleneck** | **Reasons** | **Suggestions How to Remove Bottlenecks** | | | |
| **From** | **To** | **Project Name and Description** | **End Date** | **Costs in mil. of Euro** | **Financial Sources** |
| CFR | Border HU/RO | Curtici | - Rehabilitated corridor section equipped with ERTMS-ETCS Level 2/GSM-R, which is not in operation;  - Long waiting time in Curtici station.  - The double track open line does not continue in Hungary. | - Trains are not handed over on trust (ATTI);  - The Curtici station is not fully equipped with electronic interlocking system;  - The Curtici station is not equipped with an electronic gauge control gate;  - The border crossing operational rules between CFR and MAV are not harmonized (e.g. the buffer wagons);  - The Intergovernmental Railway Agreement Romania-Hungary is not updated (harmonization of the control performed by the state authorities);  - Commissioning of ERTMS/GSM-R is under preparation. | Equipping of Curtici station with an electronic gauge control gate | Proposals | Proposals | Proposals |
| CFR | Border HU/RO | Curtici | - Rehabilitated corridor section equipped with ERTMS-ETCS Level 2/GSM-R, which is not in operation;  - Long waiting time in Curtici station.  - The double track open line does not continue in Hungary. | - Trains are not handed over on trust (ATTI);  - The Curtici station is not fully equipped with electronic interlocking system;  - The Curtici station is not equipped with an electronic gauge control gate;  - The border crossing operational rules between CFR and MAV are not harmonized (e.g. the buffer wagons);  - The Intergovernmental Railway Agreement Romania-Hungary is not updated (harmonization of the control performed by the state authorities);  - Commissioning of ERTMS/GSM-R is under preparation. | Harmonization of the border crossing operational rules between CFR and MÁV | Proposals | Proposals | Proposals |
| CFR | Border HU/RO | Curtici | - Rehabilitated corridor section equipped with ERTMS-ETCS Level 2/GSM-R, which is not in operation;  - Long waiting time in Curtici station.  - The double track open line does not continue in Hungary. | - Trains are not handed over on trust (ATTI);  - The Curtici station is not fully equipped with electronic interlocking system;  - The Curtici station is not equipped with an electronic gauge control gate;  - The border crossing operational rules between CFR and MAV are not harmonized (e.g. the buffer wagons);  - The Intergovernmental Railway Agreement Romania-Hungary is not updated (harmonization of the control performed by the state authorities);  - Commissioning of ERTMS/GSM-R is under preparation. | Updating of the Intergovernmental Railway Agreement between Romania and Hungary | Proposals | Proposals | Proposals |
| CFR | Km 614 (Radna) | Simeria | Corridor section under rehabilitation, with ERTMS-ETCS Level 2/GSM-R under construction. | Rehabilitation of the railway line Border – Curtici – Simeria, component part of the IV European corridor for the trains circulation with a maximum speed of 160 km/h: Section 2: km 614 - Gurasada and Section 3: Gurasada - Simeria  - The rehabilitation works are under execution;  - Maximum train length (632 m - Deva station). | Rehabilitation of Km 614 (Radna) - Simeria line section at corridor level | 2025 | 1965,12 (Eligible costs are only for works) | LIOP 2014-2020 (Cohesion Funds) + State Budget |
| CFR | Sighișoara | Brașov | Corridor section not rehabilitated and without ERTMS-ETCS Level 2/GSM-R. | Rehabilitation of the railway line Brașov – Simeria, component part of the IV European corridor for the trains circulation with a maximum speed of 160 km/h, Section Sighișoara - Brașov  - The rehabilitation works are in the tendering/awarding stage;  - Maximum train length (600 m);  - Speed restrictions. | Rehabilitation of Sighișoara - Brașov line section at corridor level | 2025 | 1285,81 (Eligible costs are only for works) | CEF (Cohesion Funds) + State Budget |
| **IM** | **Section** | | **Bottleneck** | **Reasons** | **Suggestions How to Remove Bottlenecks** | | | |
| **From** | **To** | **Project Name and Description** | **End Date** | **Costs in mil. of Euro** | **Financial Sources** |
| CFR | Brașov | Predeal | Corridor section not rehabilitated and without ERTMS-ETCS Level 2/GSM-R. | Feasibility Study for the modernization of the railway infrastructure Predeal - Brașov  - Maximum train length (640 m);  - Maximum tonnage permitted on the line section;  - Traffic restrictions for oversized transports due to existing tunnels. | Rehabilitation of Brașov - Predeal line section at corridor level | 2024 | 1046 (Eligible costs are estimated for works. The FS cost is 25,8 mil euro) | CEF (Cohesion Funds) + State Budget - for the feasibility study TP 2021-2027 (Cohesion Funds) + State Budget - for works |
| CFR | Predeal | Constanța | Rehabilitated corridor section equipped with ERTMS-ETCS Level 1/GSM-R, which is not in operation. | Implementation of the measures necessary for the operation of the ERTMS system on the Predeal-Bucuresti-Constanța railway section and the extension of the GSM-R system on the primary railway transport network" - Feasibility study - The Feasibility Study for solution of commissioning ERTMS/GSM-R on Predeal-București-Constanța line section is on going;  - Scarce capacity on Ploiești Triaj - Brazi line section;  - Tonnage restrictions on Fetești - Saligny (2.200 t). | Commissioning the ERTMS/GSM-R (ETCS Level 1 or possible migration to ETCS Level 2) on Predeal - București - Constanța line section | 2028 | 200 (Costs are estimated for works. The FS cost is 0,89 mil euro) | LIOP 2014-2020 (Cohesion Funds) + State Budget - for the feasibility study Unidentified financing source for works |
| CFR | Arad | Timișoara | Corridor section not rehabilitated and without ERTMS-ETCS Level 2/GSM-R. | Modernization of the railway line section Arad - Caransebeș  - Detailed designs for works for the line rehabilitation (Lot Arad - Ronaț and Lot Ronaț - Timișoara Est) are ongoing  - Single track line;  - Speed restrictions. | Rehabilitation of Arad - Timișoara line section at corridor level | 2026 | 681,85 | NRRP + State Budget |
| CFR | Timișoara | Caransebeș | Corridor section not rehabilitated and without ERTMS-ETCS Level 2/GSM-R. | Modernization of the railway line section Arad - Caransebeș  - Detailed design works for the line rehabilitation (lot Timisoara Est - Lugoj) is on going and 1 lot Lugoj - Caransebeș is in procurement phase;  - Single-track line;  - Speed restrictions. | Rehabilitation of Timișoara - Caransebeș line section at corridor level | 2026 | 736,87 | NRRP + State Budget |
| CFR | Caransebeș | Craiova | Corridor section not rehabilitated and without ERTMS-ETCS Level 2/GSM-R. | Rehabilitation of the railway line section Caransebeș - Craiova  - Works are in procurement phase  - Single track line (Caransebeș - Strehaia);   - Speed restrictions;  - Tonnage restrictions (Balota 1.000 t). | Rehabilitation of Caransebeș - Craiova line section at corridor level | 2026 | 2188,36 | TP + State Budget |
| CFR | Craiova | București (Pajura Hm) (Pajura Hm) | Corridor section not rehabilitated and without ERTMS-ETCS Level 2/GSM-R. | - The works contracts for removal of speed restrictions in punctual sections are on going;  - Speed restrictions;  - Track I closed on Malu Mare - Banu Mărăcine line section for rehabilitation works. | Removal of the speed restrictions on Craiova - București (Pajura Hm) line section | 2026 | 85,48682563 | NRPP |
| CFR | Craiova | București (Pajura Hm) (Pajura Hm) | Corridor section not rehabilitated and without ERTMS-ETCS Level 2/GSM-R. | - The Feasibility Stady for rehabilitation is under elaboration;  - Speed restrictions. | Rehabilitation of Craiova - București (Hm Pajura) line section at corridor level | 2025 | 836 (Is an estimated cost for works) | CEF + State Budget |
| CFR | Ploiești Triaj | Buzău | Line section not rehabilitated and without ERTMS-ETCS Level 2/GSM-R. | - The contract for the Feasibility study of the railway line Ploiesti - Buzău - Focșani is ongoing. Project preparation on going  - Maximum train length permitted on the line section (Valea Călugărească - Buzău 650 m). | Rehabilitation of Ploiești Triaj - Buzău - Focșani line section | 2023 | 1612,55 | Cohesion funds + State Budget |
| **IM** | **Section** | | **Bottleneck** | **Reasons** | **Suggestions How to Remove Bottlenecks** | | | |
| **From** | **To** | **Project Name and Description** | **End Date** | **Costs in mil. of Euro** | **Financial Sources** |
| CFR | Buzău | Fetești | Line section not rehabilitated and without ERTMS-ETCS Level 2/GSM-R. | - The project for rehabilitation has not been promoted yet;  - Speed limitations and restrictions;  - Maximum train length permitted on the line section (540 m). | Rehabilitation of Buzău - Fetești line section | 2029 | 516 | n/a |
| CFR | Simeria | Filiași | Line section not rehabilitated and without ERTMS-ETCS Level 2/GSM-R. | - The works contracts for removal of speed restrictions in punctual sections are on going;  - Single track line (Livezeni - Tg. Jiu);  - Maximum train length permitted on the line section (600 m);  - Tonnage restrictions (Tg, Cărbunești 2.000 t). | Rehabilitation of Simeria - Petroșani - Filiași line section | 2026 | 11,3563969 | NRPP |
| CFR | Coșlariu/Pod Mureș | Cluj | Line section not rehabilitated and without ERTMS-ETCS Level 2/GSM-R. | - The Feasibility Stady for rehabilitation is under elaboration. | Rehabilitation of Coșlariu/Pod Mureș - Teiuș - Cluj line section | 2029 | 562 (Costs are estimated for works. The FS cost is 22,93 mil euro) | CEF (Cohesion Funds) + State Budget - for the feasibility study unidentified financing sources - for works |
| CFR | Cluj | Border RO/HU | - Line section not rehabilitated and without ERTMS-ETCS Level 2/GSM-R. | - Detailed design for works for the line rehabilitation are in the tenders evaluation stage;  - Single track line (Poieni - Aleșd);  - Diesel traction (non-electrified line);  - Stations equipped with SBW systems;  - Lack of Automatic Block System in the open line. | Rehabilitation of Cluj - Episcopia Bihor - Border RO/HU line section | 2026 | 1561,47 (costs are only for works) | NRRP + State Budget |

**Congested Lines: Romania**

|  |  |  |
| --- | --- | --- |
| **IM** | **Section From** | **Section To** |
| CFR | Vinţu de Jos | Coşlariu |
| CFR | Micăsasa | Coşlariu |
| CFR | Vinţu de Jos | Simeria |
| CFR | Simeria | Glogovăţ |
| CFR | Braşov | Sighişoara |

Congested lines have not been declared by the IMs in the other countries along the Corridor.

**Germany**

| **Status** | **IM** | **Section** | | **Category** | **Project name** | **Specification** | **Note** | **Start** | |  | **Reached parameters** | | | | | | | | | |
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| **End** | | **Estimated Financial Requirements [mil. of EUR]** | **Financial Sources** | **Maximum speed [km\*h-1]** | **Axle load [t] / Line category** | **Maximum Train Length [m]** | **Traction power** | **ETCS Level** | **Track clearance** | **Interm. Code** |
| **From** | **To** | **Month** | **Year** | **Month** | **Year** |
| Planned | DB InfraGO | Kehl | Appenweier | Principal line | ABS Kehl - Appenweier | ETCS Implementation | Speed increase | n/a | n/a | n/a | 2028 | 79 | state budget | 160 | 22,5 | 740 | Electrified | Level 2 | 1435 mm | P/C 410/80 |
| Under Construction | DB InfraGO | Karlsruhe | Offenburg | Principal line | Line upgrade / new line Karlsruhe – Basel (StA 1) | Other | Construction of a new tunnel near Rastatt incl. ETCS | n/a | n/a | n/a | 2025 | 1332 | state budget | 200 | 22,5 | 740 | Electrified | Level 2 | 1435 mm | P/C 410/80 |
| Planned | DB InfraGO | Mannheim | Karlsruhe | Principal line | New line / Line upgrade Mannheim – Karlsruhe | Other | New construction of 2 new tracks | n/a | n/a | n/a | Beyond 2030 | open | state budget | 300 | 22,5 | 740 | Electrified | Level 2 | 1435 mm | P/C 410/80 |
| Planned | DB InfraGO | Frankfurt | Mannheim | Diversionary line | New line Frankfurt - Mannheim | Other | New line | n/a | n/a | n/a | Beyond 2030 | 2183 | state budget | 250 | 22,5 | 740 | Electrified | Level 2 | 1435 mm | P/C 410/80 |
| Under Construction | DB InfraGO | Wendlingen | Ulm | Principal line | NBS Wendlingen - Ulm | Other | New construction of this line increases capacity on the existing freight traffic line between Stuttgart and Ulm | n/a | n/a | n/a | 2026 | 3959 | state budget | 250 | 22,5 | 740 | Electrified | Level 2 | 1435 mm | P/C 410/80 |
| Planned | DB InfraGO | Ulm | Augsburg | Principal line | ABS/NBS Ulm - Augsburg | Other | Partly new construction | n/a | n/a | n/a | Beyond 2030 | 1907 | state budget | 250 | 22,5 | 740 | Electrified | Level 2 | 1435 mm | P/C 410/80 |
| Planned | DB InfraGO | Nürnberg | Schirnding | Principal line | ABS Nürnberg - Marktredwitz - Border DE/CZ (- Cheb) | Electrification | n/a | n/a | n/a | n/a | on hold | 1195 | state budget | 160 | 22,5 | 740 | Electrified | Level 2 | 1435 mm | P/C 410/80 |
| Planned | DB InfraGO | Markt Schwaben | Freilassing | Diversionary line | ABS Müchen - Mühldorf - Freilassing | Electrification | Double tracks | n/a | n/a | n/a | Beyond 2030 | 2323 | state budget | 160 | 22,5 | 740 | Electrified | Level 2 | 1435 mm | P/C 410/80 |
| Planned | DB InfraGO | München - Trudering | Rosenheim | Principal line | München - Rosenheim (- Kiefersfelden - Border DE/AT) | Other | Partly 2 new tracks | n/a | n/a | n/a | Beyond 2030 | open | state budget | 250 | 22,5 | 740 | Electrified | Level 2 | 1435 mm | P/C 410/80 |
| Under Construction | DB InfraGO | dto. | dto. | Principal line | 740 m-program | Other | Single projects to increase capacity on the Corridor | n/a | n/a | n/a | Should be mainly completed until 2030 | 839 | state budget | n/a | n/a | 740 | n/a | n/a | n/a | n/a |
| Planned | DB InfraGO | Siegelsdorf | Fürth | Principal line | ABS Burgsinn – Gemünden – Würzburg – Nürnberg | Other | Third track between Siegeldorf - Fürth | n/a | n/a | n/a | Beyond 2030 | 223 | BVWP | n/a | 22,5 | 740 | n/a | Level 2 | 1435 mm | P/C 410/80 |
| Planned | DB InfraGO | Regensburg | Grenze D/CZ | Principal line | ABS Nürnberg – Schwandorf/München – Regensburg – Furth im Wald – Grenze D/CZ | Electrification | Speed increase | n/a | n/a | n/a | Beyond 2030 | 706 | BVWP | 160 | 22,5 | 740 | n/a | Level 2 | 1435 mm | P/C 410/80 |

**Austria**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| **Status** | **IM** | **Section** | | **Category** | **Project name** | **Specification** | **Note** | **Start** | |  | **Reached parameters** | | | | | | | | | |
| **End** | | **Estimated Financial Requirements [mil. of EUR]** | **Financial Sources** | **Maximum speed [km\*h-1]** | **Axle load [t] / Line category** | **Maximum Train Length [m]** | **Traction power** | **ETCS Level** | **Track clearance** | **Interm. Code** |
| **From** | **To** | **Month** | **Year** | **Month** | **Year** |
| Under construction | ÖBB Infrastruktur | Salzburg | Steindorf bei Strasswalchen | Principal line | Attnang-P. - Salzburg; upgrade | 740m sidings in some stations | Capacity raise | n/a | n/a | n/a | 2029 | 160 | State budget | 160 | 22,5 / D4 | 740 | 15 kV AC | Level 2 | GA, G1, G2 | P/C 80/410 |
| planned | ÖBB Infrastruktur | Steindorf bei Strasswalchen | Attnang-P. | Principal line | Neumarkt K. - Salzburg; 4 track upgrade; (planning only) | reconstruction, modernization of the track | Speed raise, capacity raise | n/a | n/a | n/a | Beyond 2030 | 154 (planning only) | State budget | 250 | 22,5 / D4 | 740 | 15 kV AC | Level 2 | GA, G1, G2 | P/C 80/410 |
| Under construction | ÖBB Infrastruktur | Wels | Linz | Principal line | Wels Terminal | Train formation yard redesign | n/a | n/a | n/a | n/a | 2027 | 47 | State budget | n/a | n/a | n/a | n/a | n/a | GA, G1, G2 | n/a |
| Under construction | ÖBB Infrastruktur | Wels | Linz | Principal line | Linz - Wels; 4 track upgrade | reconstruction, modernization of the track | Speed raise, capacity raise | n/a | n/a | n/a | 2030 | 1303 | State budget | 230 | 22,5 / D4 | 740 | 15 kV AC | Level 2 | GA, G1, G2 | P/C 80/410 |
| Under construction | ÖBB Infrastruktur | Linz | Enns | Principal line | Linz Kleinmünchen - Linz Hbf; 4 track upgrade | reconstruction, modernization of the track | Capacity raise | n/a | n/a | n/a | 2032 | 402 | State budget | 160 | 22,5 / D4 | 740 | 15 kV AC | Level 2 | GA, G1, G2 | P/C 80/410 |
| Under construction | ÖBB Infrastruktur | Wien | Bruck a. d. Leitha | Principal line | Gramatneusiedl; station upgrade | 740m sidings, station entering and leaving faster | Capacity raise | n/a | n/a | n/a | 2024 | 86 | State budget | 140 | 22,5 / D4 | 740 | 15 kV AC | Level 2 | GA, G1, G2 | P/C 80/410 |
| Under construction | ÖBB Infrastruktur | Wien | Bruck a. d. Leitha | Principal line | Himberg; station upgrade | 740m sidings | Capacity raise | n/a | n/a | n/a | 2027 | 53 | State budget | 140 | 22,5 / D4 | 740 | 15 kV AC | Level 2 | GA, G1, G2 | P/C 80/410 |
| planned | ÖBB Infrastruktur | Parndorf | Kittsee | Principal line | 2 track upgrade | Double track upgrade | Capacity raise | n/a | n/a | n/a | 2038 | 215 | State budget | 160 | 22,5 / D4 | 740 | 15 kV AC | Level 2 | GA, G1, G2 | P/C 80/410 |
| planned | ÖBB Infrastruktur | Wien | Ebenfurth | Principal line | Junction Ebenfurth | Bypass | Connection optimization | n/a | n/a | n/a | 2029 | 229 | State budget | 100 | 22,5 / D4 | 740 | 15 kV AC | Level 2 | n/a | P/C 80/410 |

**Czech Republic**

| **Status** | **IM** | **Section** | | **Category** | **Project name** | **Specification** | **Note** | **Start** | |  | **Reached parameters** | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **End** | | **Estimated Financial Requirements [mil. of EUR]** | **Financial Sources** | **Maximum speed [km\*h-1]** | **Axle load [t] / Line category** | **Maximum Train Length [m]** | **Traction power** | **ETCS Level** | **Track clearance** | **Interm. Code** |
| **From** | **To** | **Month** | **Year** | **Month** | **Year** |
| Planned | SZCZ | Praha-Libeň | Praha-Hostivař | Principal line | Modernisation of the line Praha-Libeň - Praha-Malešice, Doubling of track Praha-Malešice – Praha-Hostivař | Reconstruction, modernization of the track | Line modernisation, construction of a 2nd track and of a new tunnel, which will allow a higher capacity. | n/a | 2025 | n/a | 2028 | n/a | n/a | 61-80 | D3 | 695 | 3 kV DC | - | GC | P/C 80/410 |
| Under construction | SZCZ | Odb Tunel (Praha-Radotín) | Beroun | Principal line | New double-track line Praha-Smíchov - Beroun | Reconstruction, modernization of the track | Construction of a new double-track line and a 24,7km long tunnel that will also be connected to HSL in the future. | n/a | 2028 | n/a | 2035 | n/a | n/a | 61-80 | D3 | 680 | 3 kV DC | - | GC | P/C 78/402 |
| Planned | SZCZ | Ejpovice | Plzeň | Principal line | Higher speed in line Ejpovice (except) - Plzeň (except) | Reconstruction, modernization of the track | Modification of traction and interlocking equipment, higher max.speed. | n/a | 2027 | n/a | 2027 | n/a | n/a | >120 | D4 | 700 | 25 kV AC | - | GC | P/C 78/402 |
| Planned | SZCZ | Plzeň | Česká Kubice - st.border | Principal line | Modernisation of the line Plzeň - Domažlice - Česká Kubice - st.border | Reconstruction, modernization of the track | The existing line will be optimized and electrified. The current lines Stod - Holýšov and Blížejov - Domažlice will be replaced by a new double-track line counting with max. speed 200 km/h. | n/a | 2024 | n/a | 2030 | n/a | Co-financed by the EU | 61-80 | C3 | 660 | - | - | GC | P/C 78/402 |
| Under construction | SZCZ | Praha Vysočany | Čelákovice | Diversionary line | Optimization of line Praha Vysočany – Mstětice – Čelákovice | Reconstruction, modernization of the track | The project will improve technologic state of the line and therefor max. speed. | n/a | 2020 | n/a | 2025 | n/a | Co-financed by the EU | 81-100 | D3 | 729 | 3 kV DC | - | GC | P/C 80/410 |
| Planned | SZCZ | Lysá nad Labem | Kolín | Diversionary line | Modernisation of the line Kolín - Všetaty - Děčín (Kolín - Nymburk hl.n. - Lysá nad Labem - Mělník) | Reconstruction, modernization of the track | Complex line reconstruction will include a construction of 3rd track between Libice nad Cidlinou and Odb. Babín, Nymburk hl.n. and Lysá nad Labem, and Všetaty and Mělník, a prolongation of tracks for freight trains of 740m in some stations, and a construction of direct connection to Hradec Králové. | n/a | 2025 | n/a | 2033 | n/a | n/a | 101-120 | D4 | 680 | 3 kV DC | - | GC | P/C 80/410 |
| Planned | SZCZ | Poříčany | Nymburk | Diversionary line | Modernisation and double track in line Poříčany - Nymburk (under HSR Praha-Běchovice - Poříčany project) | Reconstruction, modernization of the track | 2nd track will be constructed between Poříčany and Nymburk. | n/a | 2026 | n/a | 2031 | n/a | n/a | 81-100 | C3 | 689 | 3 kV DC | - | GC | P/C 80/410 |
| Planned | SZCZ | Velký Osek-Kanín | Choceň | Diversionary line | Modernisation of the line Kanín - Chlumec nad Cidlinou - Hradec Králové - Týniště nad Orlicí - Choceň | Reconstruction, modernization of the track | Diversionary line between Velký Osek and Choceň is a single-track line. A second track will be constructed, 5 level-crossings will be replaced by alternatives. This will allow higher capacity and higher max. speed. | n/a | 2026 | n/a | 2030 | n/a | n/a | 61-80 | C3 | 680 | 3 kV DC | Level 2 | GC | P/C 80/410 |
| Planned | SZCZ | Choceň | Ústí nad Orlicí | Principal line | Construction of a new line Choceň - Ústí nad Orlicí | Reconstruction, modernization of the track | Construction of a new line between Choceň and Ústí nad Orlicí parallel to the existing line in order to increase capacity. The line will be shorter and counts with max. speed 200 km/h. | n/a | 2030 | n/a | 2034 | n/a | n/a | >120 | D4 | 700 | 3 kV DC | Level 2 | GC | P/C 80/410 |
| Under construction | SZCZ | Pardubice | Pardubice | Principal line | Modernisation of the Pardubice railway junction | Reconstruction, modernization of the track | The project's scope is mainly an increase of max. speed up to 160 km/h and an improvement of conditions for passage of  740 m long trains. Traction, signalling and interlocking equipment will be modernized. | n/a | 2020 | n/a | 2024 | n/a | Co-financed by the EU | >120 | D4 | 700 | 3 kV DC | - | GC | P/C 80/410 |
| Under construction | SZCZ | Pardubice | Choceň | Principal line | Reconstruction of the line Pardubice - Uhersko - Choceň | Reconstruction, modernization of the track | Max. speed will increase up to 200 km/h. | n/a | 2029 | n/a | 2034 | n/a | n/a | >120 | D4 | 700 | 3 kV DC | Level 2 | GC | P/C 80/410 |
| Planned | SZCZ | Česká Třebová | Česká Třebová | Principal line | Modernisation of the Česká Třebová railway junction | Reconstruction, modernization of the track | The project will allow an increase of the max. speed, traction and signalling and interlocking equipment will be reconstructed. | n/a | 2024 | n/a | 2031 | n/a | n/a | <=60 | D4 | 678 | 3 kV DC | Level 2 | GC | P/C 80/410 |
| Planned | SZCZ | Brodek u Přerova | Výh. Dluhonice | Principal line | Reconstruction of railway station Přerov | Reconstruction, modernization of the track | An off-grade crossing will eliminate mutual interference of oncoming trains in the direction Olomouc - Hranice na Moravě with trains Přerov - Olomouc. | n/a | 2025 | n/a | 2027 | n/a | n/a | >120 | D4 | 700 | 3 kV DC | Level 2 | GC | P/C 80/410 |
| Planned | SZCZ | Ostrava-Svinov | Ostrava-Kunčice | Principal line | Optimization of line Ostrava-Svinov - Ostrava-Kunčice | Reconstruction, modernization of the track | Max. speed will increase up to 120 km/h. | n/a | 2026 | n/a | 2029 | n/a | n/a | 120 | D4 | 700 | 3 kV DC | - | GB,GC | P/C 80/410 |
| Planned | SZCZ | Ostrava-hl.n. | Ostrava-Svinov | Principal line | Modernization of the Ostrava railway junction | Reconstruction, modernization of the track | Complex line reconstruction, 3rd track between Ostrava hl.n. and Ostrava-Svinov, a new crossing → higher capacity. | n/a | 2028 | n/a | 2034 | n/a | n/a | >120 | D4 | 700 | 3 kV DC | Level 2 | GC | P/C 80/410 |
| Planned | SZCZ | Havířov | Český Těšín | Principal line | Optimization of line Havířov -Albrechtice u Českého Těšína - Český Těšín | Reconstruction, modernization of the track | Complex line modernisation, max. speed will increase up to 140 km/h between Albrechtice u Českého Těšína and Český Těšín. | n/a | 2023 | n/a | 2030 | n/a | n/a | 140 | D4 | 700 | 3 kV DC | - | GB | P/C 80/410 |
| Planned | SZCZ | Praha-Vysočany | Lysá nad Labem | Diversionary line | ETCS Milovice - Praha hl.n. | ETCS Implementation | ETCS deployment in line Milovice - Lysá nad Labem - Praha-Vysočany - Praha hl.n. | n/a | 2024 | n/a | 2026 | n/a | Co-financed by the EU | 81-100 | D3 | 729 | 3 kV DC | - | GC | P/C 80/410 |

**Slovakia**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Status** | **IM** | **Section** | | **Category** | **Project name** | **Specification** | **Note** | **Start** | |  | **Reached parameters** | | | | | | | | | |
| **End** | | **Estimated Financial Requirements [mil. of EUR]** | **Financial Sources** | **Maximum speed [km\*h-1]** | **Axle load [t] / Line category** | **Maximum Train Length [m]** | **Traction power** | **ETCS Level** | **Track clearance** | **Interm. Code** |
| **From** | **To** | **Month** | **Year** | **Month** | **Year** |
| Planned | ŽSR | Čadca | Krásno nad Kysucou (outside) | Principal line | Modernisation of railway corridor State border CZ/SK – Čadca – Krásno nad Kysucou, section Čadca - Krásno nad Kysucou (outside) | Modernization - project documentation phase | n/a | 1 | 2022 | 3 | 2025 | n/a | n/a | 140 | 22,5 | 740 | 25 kV AC | Level 2 | n/a | P/C 70/400 |
| Planned | ŽSR | Bratislava | Bratislava | Principal line | Rail Node Bratislava - Works | Reconstruction, modernization of the track | Complex solution for rail node Bratislava | 1 | 2026 | 12 | Beyond 2030 | TBD | n/a | n/a | n/a | n/a | n/a | n/a | n/a | P/C 70/400 |
| Partly completed | ŽSR | Púchov | Lúky pod Makytou (CZ) | Principal line | Complex reconstruction of tracks | Reconstruction, modernization of the track | n/a | n/a | 2020 | 12 | 2025 | n/a | State budget | 90 | 22,5 | 740 | 25 kV AC | n/a | n/a | P/C 70/400 |

**Hungary**

| **Status** | **IM** | **Section** | | **Category** | **Project name** | **Specification** | **Note** | **Start** | |  | **Reached parameters** | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **End** | | **Estimated Financial Requirements [mil. of EUR]** | **Financial Sources** | **Maximum speed [km\*h-1]** | **Axle load [t] / Line category** | **Maximum Train Length [m]** | **Traction power** | **ETCS Level** | **Track clearance** | **Interm. Code** |
| **From** | **To** | **Month** | **Year** | **Month** | **Year** |
| Under Construction | MÁV | Almásfűzítő | Komárom | Principal line | Preparing for elimination of bottlenecks on the MÁV network. Almásfüzitő - Komárom railway line section. Preparatory project. | 160 km/h speed and 225 kN axle load on the whole line section (including curve correction at Szőny). Upgrading of passenger service facilities. Upgrading of catenary, power and interlocking system. | Completed | 7 | 2020 | 12 | 2022 | N.A | Cohesion fund/IKOP | 160 | 22,5 | 750 | 25 kV, 50 Hz | Level 1 | GC | P/C 80/410 |
| Under Construction | MÁV | Kelenföld | Budaörs | Principal line | Preparing for elimination of bottlenecks on the MÁV network. Kelenföld - Budaörs railway line section. Preparatory project. | Construction of tracks 3 and 4 between Kelenföld and Törökbálint stations, reconstruction and modernisation of passenger service facilities, construction of new platforms at Kelenföld station, design of a new connecting track to the railway line to Kelenföld station - Déli pu., construction of a new stop: Budaörs-Szilvás (IMCS) | preparation is in progress | 2 | 2020 | 12 | 2024 | N.A | Cohesion fund/IKOP | 120/140 | 22,5 | 750 | 25 kV, 50 Hz | Level 1 | GC | P/C 80/410 |
| Under Construction | MÁV | Szajol | Debrecen | Principal line | ETCS 2 installation between Szajol and Debrecen. Implementing project. | Implementation of ETCS L2 system. | Ongoing | 10 | 2019 | 12 | 2024 | N.A | Cohesion fund/IKOP | 160 | 22,5 | 750 | 25 kV, 50 Hz | Level 2 | GC | P/C 80/410 |
| Under Construction | MÁV | Kelenföld | Ferencváros | Principal line | Southern Circular Railway project. Construction of a third track, safety equipment and overhead line upgrades. Implementation project. | Construction of a third track between Kelenföld and Ferencváros stations. Design of the Közvágóhíd and Nádorkert stations, design of a four-track section on the Buda side (one section length), covering all kind of profesional works. | Ongoing | 12 | 2021 | 12 | 2027 | N.A | CEF | 80 | 22,5 | 750 | 25 kV, 50 Hz | Level 2 | GC | P/C 80/410 |
| Under Construction | MÁV | Püspöladány | Biharkeresztes border | Diversionary line | Elimination of bottlenecks and electrification. Implementing project. | Electrification, new signallng and KÖFI system. Track construction on the section Püspökladány (incl.) - Berettyóújfalu (exl.) (additional section rebuilt by MÁV) | Ongoing | 9 | 2020 | 12 | 2023 | 185,4 | Cohesion fund/IKOP | 160 | 22,5 | 750 | 25 kV, 50 Hz | N.A | GC | P/C 80/410 |
| Under Construction | MÁV | Nagykáta | Újszász | Principal line | Nagykáta - Újszász railway track section. Preparatory project. | Reconstruction, modernization of the track. 120 km/h speed, axle load increase, sub- and superstructure renewal, catenary and power supply system upgrades; | Completed | 7 | 2020 | 6 | 2023 | N.A | Cohesion fund/IKOP | 120 | 22,5 | 750 | 25 kV, 50 Hz | N.A | GC | P/C 80/410 |
| Under Construction | MÁV | Gyoma | Békéscsaba | Principal line | Gyoma (excl.) - Békéscsaba (incl.) railway line section, signaling and telecommunication works and installation of ETCS system. Implementing project. | Modernisation of signaling system between Gyoma and Békéscsaba and Békéscsaba railway station, installation of Ferencváros - Lőkösháza ETCS L2 - phased project | under construction | 10 | 2013 | 12 | 2023 | 51,4 | Cohesion fund/IKOP | 120 | 22,5 | 750 | 25 kV, 50 Hz | Level 2 | GC | P/C 80/410 |
| Under Construction | MÁV | Békéscsaba | Lökösháza | Principal line | Contruction of 2nd track between Békéscsaba and Lőkösháza, upgrading the signaling and catenary system. Implementing project. | 225 kN axle load, speed of 160 km/h, upgrading of the entire catenary and power supply system, two stations renewal with barrier-free access, ETCS L2 deployment. | preparation is in progress | 9 | 2021 | 6 | 2025 | 5,23 | CEF | 160 | 22,5 | 750 | 25 kV, 50 Hz | Level 2 | GC | P/C 80/410 |
| planned | GYSEV | Rajka s.b. | Hegyeshalom | Principal line | Modernization, upgrade of railway infrastructure | Reconstruction, modernization of the track | CEF 2 proposal under evaluation | n/a | 2026 | n/a | 2028 | n/a | EU (CEF, Coh. Found) | 100/120 | 22,5 | 750 | 25 kV AC | Level 1 | n/a | P/C 70/400 |
| planned | GYSEV | Sopron-Rendező | Harka | Principal line | Modernization, upgrade of railway infrastructure | Reconstruction, modernization of the track | Phase 0: Sopron - Harka 2nd track 2025 -2027 | n/a | n/a | n/a | n/a | n/a | EU (CEF, Coh. Found) | 80/100 | 22,5 | 750 | 25 kV AC | n/a | n/a | P/C 70/400 |
| planned | GYSEV | Harka | Pinnye | Principal line | Modernization, upgrade of railway infrastructure | Reconstruction, modernization of the track | Phase 2B: Sopron - Harka - Fertőboz new double track alignment | n/a | n/a | n/a | Beyond 2030 | n/a | EU (CEF, Coh. Found) | 160 | 22,5 | 750 | 25 kV AC | Level 2 | n/a | P/C 70/400 |
| planned | GYSEV | Pinnye | Fertőszentmiklós | Principal line | Modernization, upgrade of railway infrastructure | Reconstruction, modernization of the track | Phase 2A: (Fertőboz) - Pinnye - Csorna partially double track | n/a | n/a | n/a | Beyond 2030 | n/a | EU (CEF, Coh. Found) | 160 | 22,5 | 750 | 25 kV AC | Level 2 | n/a | P/C 70/400 |
| planned | GYSEV | Fertőszentmiklós | Petőháza | Principal line | Modernization, upgrade of railway infrastructure | Reconstruction, modernization of the track | Phase 2A: (Fertőboz) - Pinnye - Csorna partially double track | n/a | n/a | n/a | Beyond 2030 | n/a | EU (CEF, Coh. Found) | 160 | 22,5 | 750 | 25 kV AC | Level 2 | n/a | P/C 70/400 |
| planned | GYSEV | Petőháza | Csorna | Principal line | Modernization, upgrade of railway infrastructure | Reconstruction, modernization of the track | Phase 2A: (Fertőboz) - Pinnye - Csorna partially double track | n/a | n/a | n/a | Beyond 2030 | n/a | EU (CEF, Coh. Found) | 160 | 22,5 | 750 | 25 kV AC | Level 2 | n/a | P/C 70/400 |
| planned | GYSEV | Csorna | Győr | Principal line | Modernization, upgrade of railway infrastructure | Reconstruction, modernization of the track | Phase 1 of Győr - Sopron upgrade: prioirity project: single track, capacity problems, new 2nd track | n/a | n/a | n/a | Beyond 2030 | n/a | EU (CEF, Coh. Found) | 160 | 22,5 | 750 | 25 kV AC | Level 2 | n/a | P/C 70/400 |
| Under construction | GYSEV | Sopron | Győr | Principal line | Modernization, upgrade of railway infrastructure | GSM-R implementation | Phase II of Hungarian GSM-R network | n/a | n/a | n/a | n/a | n/a | EU | n/a | n/a | n/a | n/a | n/a | n/a | n/a |

**Romania**

| **Status** | **IM** | **Section** | | **Category** | **Project name** | **Specification** | **Note** | **Start** | |  | **Reached parameters** | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **End** | | **Estimated Financial Requirements [mil. of EUR]** | **Financial Sources** | **Maximum speed [km\*h-1]** | **Axle load [t] / Line category** | **Maximum Train Length [m]** | **Traction power** | **ETCS Level** | **Track clearance** | **Interm. Code** |
| **From** | **To** | **Month** | **Year** | **Month** | **Year** |
| Under construction | CFR | Km 614 (Radna) | Bârzava | Principal line | Rehabilitation of the railway line Border – Curtici – Simeria, component part of the IV European corridor for the trains circulation with a maximum speed of 160 km/h: Section 2: km 614 - Gurasada and Section 3: Gurasada - Simeria | Modernization of the existing conventional electrified double track for increased speed; Implementation of electronic interlocking, ETCS-Level 2 and GSM-R | Works for infrastructure and suprastructure | 7 | 2017 | 4 | 2024 | 434,45 | LIOP 2014-2020 (Cohesion Funds) + State Budget | 120 km/h for freight trains and 160 km/h for passenger trains | 22,5 / C4 | 750 | 25 kV AC | Level 2 | GC | P/C 45/375 |
| Under construction | CFR | Bârzava | Ilteu | Principal line | Rehabilitation of the railway line Border – Curtici – Simeria, component part of the IV European corridor for the trains circulation with a maximum speed of 160 km/h: Section 2: km 614 - Gurasada and Section 3: Gurasada - Simeria | Modernization of the existing conventional electrified double track for increased speed; Implementation of electronic interlocking, ETCS-Level 2 and GSM-R | Works for infrastructure and suprastructure | 7 | 2017 | 5 | 2025 | 453,35 | LIOP 2014-2020 (Cohesion Funds) + State Budget | 120 km/h for freight trains and 160 km/h for passenger trains | 22,5 / C4 | 750 | 25 kV AC | Level 2 | GC | P/C 45/375 |
| Under construction | CFR | Ilteu | Gurasada | Principal line | Rehabilitation of the railway line Border – Curtici – Simeria, component part of the IV European corridor for the trains circulation with a maximum speed of 160 km/h: Section 2: km 614 - Gurasada and Section 3: Gurasada - Simeria | Modernization of the existing conventional electrified double track for increased speed; Implementation of electronic interlocking, ETCS-Level 2 and GSM-R | Works for infrastructure and suprastructure | 12 | 2017 | 9 | 2025 | 403,20 | LIOP 2014-2020 (Cohesion Funds) + State Budget | 120 km/h for freight trains and 160 km/h for passenger trains | 22,5 / C4 | 750 | 25 kV AC | Level 2 | GC | P/C 45/375 |
| Under construction | CFR | Gurasada | Simeria | Principal line | Rehabilitation of the railway line Border – Curtici – Simeria, component part of the IV European corridor for the trains circulation with a maximum speed of 160 km/h: Section 2: km 614 - Gurasada and Section 3: Gurasada - Simeria | Modernization of the existing conventional electrified double track for increased speed; Implementation of electronic interlocking, ETCS-Level 2 and GSM-R | Works for infrastructure and suprastructure | 9 | 2017 | 1 | 2024 | 674,13 | LIOP 2014-2020 (Cohesion Funds) + State Budget | 120 km/h for freight trains and 160 km/h for passenger trains | 22,5 / C4 | 750 | 25 kV AC | Level 2 | GC | P/C 45/375 |
| Under construction | CFR | Sighișoara | Cața | Principal line | Rehabilitation of the railway line Brașov – Simeria, component part of the IV European corridor for the trains circulation with a maximum speed of 160 km/h, Section Sighișoara - Brașov | Modernization of the existing conventional electrified double track for increased speed; Implementation of electronic interlocking, ETCS-Level 2 and GSM-R | Works for infrastructure and suprastructure | 4 | 2020 | 12 | 2025 | 676,62 | CEF (Cohesion Funds)+ State Budget | 120 km/h for freight trains and 160 km/h for passenger trains | 22,5 / C4 | 750 | 25 kV AC | Level 2 | GC | P/C 45/375 |
| Under construction | CFR | Apața | Brașov | Principal line |
| Under construction | CFR | Cața | Apața | Principal line | Rehabilitation of the railway line Brașov – Simeria, component part of the IV European corridor for the trains circulation with a maximum speed of 160 km/h, Section Sighișoara - Brașov | Modernization of the existing conventional electrified double track for increased speed; Implementation of electronic interlocking, ETCS-Level 2 and GSM-R | Works for infrastructure and suprastructure | 11 | 2020 | 12 | 2025 | 609,19 | CEF (Cohesion Funds)+ State Budget | 120 km/h for freight trains and 160 km/h for passenger trains | 22,5 / C4 | 750 | 25 kV AC | Level 2 | GC | P/C 45/375 |
| Under tendering | CFR | Constanța | Constanța Port | Principal line | Modernization of the railway infrastructure in Constanța Port - stage I, Valu lui Traian | Modernization of the railway infrastructure in Valu lui Traian Marshalling Yard and in the related railway station, including infrastructure modernization, electrification, introducing the centralized electronic signalization and other auxiliary works | The works are in procurement phase. | n/a | n/a | n/a | n/a | 86,97 | CEF (Cohesion Funds)+ State Budget | 100 km/h for freight trains | 22,5 / C4 | 750 | 25 kV AC | Level 2 | GC | P/C 45/375 |
| Under construction | CFR | Constanța | Constanța Port | Principal line | Modernization of the railway infrastructure in Constanța Port - stage II | Improving the local railway connections of the Port of Constanta, consisting of: o Valu lui Traian - Palas connection line, including crossing bridge; o Doubling the access line to Constanta Port Ferry Boat; o Modernization of the railway station related to Agigea Lock on Danube-Black Sea Channel. | The application for financing investment is under evaluation phase at CINEA. | n/a | n/a | n/a | n/a | 189,52 | CEF + State Budget (proposal under evaluation) | 100 km/h for freight trains | 22,5 / C4 | 750 | 25 kV AC | Level 2 | GC | P/C 45/376 |
| Under construction | CFR | Constanța | Constanța Port | Principal line | Modernization of the railway infrastructure in Constanța Port - stage III | Modernization of the line device in the Constanța Port Zone A, Constanța Port Zone B, Constanța Port Mol V, Constanța Port Ferry Boat stations, access line to Constanța Port Ferry Boat, Agigea Sud station | Is under preparation the application for financing the investment | n/a | n/a | n/a | n/a | 695,00 | CEF (Cohesion Funds) + State Budget (to be proposed) | 100 km/h for freight trains | 22,5 / C4 | 750 | 25 kV AC | Level 2 | GC | P/C 45/377 |
| Under construction | CFR | Arad | Rontaț Marshalling Yard | Principal line | Modernization of the railway line section Arad - Caransebeș | Modernization of the existing conventional electrified single/double track for increased speed; Implementation of electronic interlocking, ETCS-Level 2 and GSM-R | Detailed design under preparation. After its approval works will start | 12 | 2022 | 12 | 2026 | 292,29 | NRRP+State Budget | 120 km/h for freight trains and 160 km/h for passenger trains | 22,5 / C4 | 750 | 25 kV AC | Level 2 | GC | P/C 45/375 |
| Under construction | CFR | Rontaț Marshalling Yard | Timișoara Est | Principal line | Modernization of the railway line section Arad - Caransebeș | Modernization of the existing conventional electrified single/double track for increased speed; Implementation of electronic interlocking, ETCS-Level 2 and GSM-R | Detailed design under preparation. After its approval works will start | 12 | 2022 | 12 | 2026 | 389,56 | NRRP+State Budget | 120 km/h for freight trains and 160 km/h for passenger trains | 22,5 / C4 | 750 | 25 kV AC | Level 2 | GC | P/C 45/375 |
| Under construction | CFR | Timișoara Est | Lugoj | Principal line | Modernization of the railway line section Arad - Caransebeș | Modernization of the existing conventional electrified single/double track for increased speed; Implementation of electronic interlocking, ETCS-Level 2 and GSM-R | Detailed design under preparation. After its approval works will start | 12 | 2022 | 12 | 2026 | 292,84 | NRRP+State Budget | 120 km/h for freight trains and 160 km/h for passenger trains | 22,5 / C4 | 750 | 25 kV AC | Level 2 | GC | P/C 45/375 |
| Under tendering | CFR | Lugoj | Caransebeș | Principal line | Modernization of the railway line section Arad - Caransebeș | Modernization of the existing conventional electrified single/double track for increased speed; Implementation of electronic interlocking, ETCS-Level 2 and GSM-R | The contract for design and works execution is under re-evaluation phase (the procurement procedure was contested) | n/a | n/a | 12 | 2026 | 444,04 | NRRP+State Budget | 120 km/h for freight trains and 160 km/h for passenger trains | 22,5 / C4 | 750 | 25 kV AC | Level 2 | GC | P/C 45/375 |
| In procurement | CFR | Caransebeș | Craiova | Principal line | Rehabilitation of the railway line section Caransebeș - Craiova | Modernization of the existing conventional electrified single/double track for increased speed; Implementation of electronic interlocking, ETCS-Level 2 and GSM-R | The tender documentation for the acquisition of works are in preparation. | 12 | 2023 | 12 | 2030 | 2188,36 | TP 2021-2027 (Cohesion Funds) + State Budget | 120 km/h for freight trains and 160 km/h for passenger trains | 22,5 / C4 | 750 | 25 kV AC | Level 2 | GB + GC | P/C 45/375 |
| Under construction | CFR | Cluj-Napoca | Aghireș | Diversionary line | Electrification and rehabilitation of the railway line section Cluj - Oradea - Episcopia Bihor - Border RO/HU | Modernization of the existing conventional electrified single/double track for increased speed; Implementation of electronic interlocking, ETCS-Level 2 and GSM-R | Detailed design under preparation. After its approval works will start | 1 | 2023 | 12 | 2026 | 327,61 | NRRP + State Budget | 80 km/h for freight trains and 120 km/h for passenger trains | 22,5 / C4 | 750 | 25 kV AC | Level 2 | GC | P/C 45/375 |
| Under construction | CFR | Aghireș | Poieni | Diversionary line | Electrification and rehabilitation of the railway line section Cluj - Oradea - Episcopia Bihor - Border RO/HU | Modernization of the existing conventional electrified single/double track for increased speed; Implementation of electronic interlocking, ETCS-Level 2 and GSM-R | Detailed design under preparation. After its approval works will start | 1 | 2023 | 12 | 2026 | 312,10 | NRRP + State Budget | 80 km/h for freight trains and 120 km/h for passenger trains | 22,5 / C4 | 750 | 25 kV AC | Level 2 | GC | P/C 45/375 |
| Under construction | CFR | Poieni | Aleşd | Diversionary line | Electrification and rehabilitation of the railway line section Cluj - Oradea - Episcopia Bihor - Border RO/HU | Modernization of the existing conventional electrified single/double track for increased speed; Implementation of electronic interlocking, ETCS-Level 2 and GSM-R | Detailed design under preparation. After its approval works will start | 1 | 2023 | 12 | 2026 | 430,41 | NRRP + State Budget | 80 km/h for freight trains and 120 km/h for passenger trains | 22,5 / C4 | 750 | 25 kV AC | Level 2 | GC | P/C 45/375 |
| Under construction | CFR | Aleşd | Border RO/HU | Diversionary line | Electrification and rehabilitation of the railway line section Cluj - Oradea - Episcopia Bihor - Border RO/HU | Modernization of the existing conventional electrified single/double track for increased speed; Implementation of electronic interlocking, ETCS-Level 2 and GSM-R | Detailed design under preparation. After its approval works will start | 1 | 2023 | 12 | 2026 | 491,34 | NRRP + State Budget | 80 km/h for freight trains and 120 km/h for passenger trains | 22,5 / C4 | 750 | 25 kV AC | Level 2 | GC | P/C 45/375 |
| Under construction | CFR | Simeria | Filiași | Diversionary line | Speed restrictions removal (quick wins) on Livezeni - Simeria line section | Removal of speed restrictions | Works for bottllenecks elimination (quick-wins) | 11 | 2022 | 11 | 2024 | 11,49 | NRRP + State Budget | 100 km/h for freight trains | 22,5 / C4 | 750 | 25 kV AC | - | n/a | n/a |

**France**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Line (current situation)** | | | | | | | **GSM-R** | | **Status of GSM-R** | | | | **ETCS** | | | **Status of ETCS** | | | |
| No. | **From** | **To** | **Type** | **Length of line (km)** | **Number of tracks** | **Current train control system** | **Yes** | **No** | **Under realization** | | **Planned** | | **L1** | **L2** | **L3** | **Under realization** | | **Planned** | |
| **Start** | **Finalization** | **Start** | **Finalization** | **Start** | **Finalization** | **Start** | **Finalization** |
| 1. | Strasbourg | Kehl (DE border) | Principal | 5 | 2 | NS + GSM-R | x |  | In operation | | | | - | - | - | - | - | - | - |

**Germany**

| **Line** (current situation) | | | | | | | | | | **GSM-R** | | **Status of GSM-R** | | | | **ETCS** | | | **Status of ETCS** | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **No.** | **From** | **To** | **Type** | **From km** | **To km** | **Length of line** (km) | **Number of tracks** | **VZG** | **Current train control system** | **Yes** | **No** | **Under realization** | | **Planned** | | **L1** | **L2** | **L3** | **Under realization** | |  | **Planned** | |
| **Start** | **Finalization** | **Start** | **Finalization** | **Start** | **Finalization** | **note** | **Start** | **Finalization** |
| 1 | Kehl Grenze DE/FR | Appenweier | Principal | 0 | 14,2 | 14,2 | 2 | 4260 | PZB | x |  |  |  |  |  |  | x |  | 2026 | 2028 |  |  |  |
| 2 | Appenweier | Rastatt-Süd (via 4000) | Principal | 138 | 102 | 36 | 2 | 4000 | PZB | x |  |  |  |  |  |  | x |  |  | 2025 |  |  |  |
| 3 | Appenweier | Rastatt-Süd (via 4280) | Diversionary | 138 | 102 | 36 | 2 | 4280 | PZB; LZB | x |  |  |  |  |  |  | x |  |  | 2025 |  |  |  |
| 4 | Rastatt-Süd | Rastatt | Principal | 102 | 97 | 5 | 2 | 4000 | PZB | x |  |  |  |  |  |  | x |  |  | 2025 |  |  |  |
| 5 | Rastatt | Durmersheim (via 4020) | Principal | 82,93 | 74,143 | 9 | 2 | 4020 | PZB | x |  |  |  |  |  |  | x |  |  | 2025 |  |  |  |
| 6 | Durmersheim | Karlsruhe | Principal | 74,143 | 60,659 | 13 | 2 | 4020 | PZB; LZB | x |  |  |  |  |  |  | x |  |  | 2025 |  | n.a. | n.a. |
| 7 | Rastatt | Ettlingen West (via 4000) | Diversionary | 96,501 | 79,649 | 17 | 2 | 4000 | PZB | x |  |  |  |  |  |  | x |  |  | 2025 |  |  |  |
| 8 | Ettlingen West | Karlsruhe | Diversionary | 79,649 | 72,898 | 6 | 2 | 4000 | PZB | x |  |  |  |  |  |  | x |  |  | 2025 |  |  |  |
| 9 | Karlsruhe | Bruchsal | Diversionary | 72,898 | 51,633 | 22 | 2 | 4000 | PZB | x |  |  |  |  |  |  |  |  |  |  |  |  | after 2030 |
| 10 | Bruchsal | Heidelberg | Diversionary | 51,633 | 19,103 | 33 | 2 | 4000 | PZB | x |  |  |  |  |  |  |  |  |  |  |  |  | after 2030 |
| 11 | Heidelberg | Mannheim | Diversionary | 19,103 | 0 | 18 | 2 | 4000 | PZB | x |  |  |  |  |  |  |  |  |  |  |  | tbd | after 2030 |
| 12 | Karlsruhe | Hockenheim | Principal | 60,659 | 21,65 | 39 | 2 | 4020 | PZB | x |  |  |  |  |  |  | x |  |  | 2030 |  |  |  |
| 13 | Hockenheim | Mannheim | Principal | 21,65 | 0 | 22 | 2 | 4020 | PZB | x |  |  |  |  |  |  | x |  |  | 2030 |  |  |  |
| 14 | Mannheim | Darmstadt | Principal |  |  | 58 | 2 | 3601 | PZB | x |  |  |  |  |  |  | x |  | 2023 | 2027 |  |  |  |
| 15 | Darmstadt | Aschaffenburg | Principal | 33,36 | 77,7 | 44 |  | 3540 | PZB | x |  |  |  |  |  |  |  |  |  |  |  |  | after 2030 |
| 16 | Darmstadt | Frankfurt am Main | Diversionary | 27,727 | 0 | 28 | 2 | 3601 | PZB | x |  |  |  |  |  |  | x |  |  | 2027 |  | tbd |  |
| 17 | Mannheim | Groß Gerau | Diversionary | 0 | 56 | 54 | 2 | 4010 | PZB; LZB | x |  |  |  |  |  |  | x |  | 2024 | 2024 |  |  |  |
| 18 | Groß Gerau | Frankfurt am Main | Diversionary | 56 | 80 | 25 | 2 | 4010 | PZB | x |  |  |  |  |  |  | x |  | 2024 | 2024 |  |  |  |
| 19 | Frankfurt am Main | Hanau | Diversionary | 0 | 22 | 23 | 2 | 3660 | PZB | x |  |  |  |  |  |  |  |  |  |  |  |  | after 2030 |
| 20 | Hanau | Aschaffenburg | Diversionary | 22 | 43,2 | 21 | 2 | 3660 | PZB | x |  |  |  |  |  |  |  |  |  |  |  |  | after 2030 |
| 21 | Aschaffenburg | Gemünden | Principal | 89,326 | 37,797 | 51 | 2 | 5200 | PZB | x |  |  |  |  |  |  |  |  |  |  |  |  | after 2030 |
| 22 | Gemünden | Waigolshausen | Principal | 39,435 | 0 | 40 | 2 | 5230 | PZB | x |  |  |  |  |  |  |  |  |  |  |  |  | after 2030 |
| 23 | Waigolshausen | Bamberg | Principal | 68,223 | 0 | 68 | 2 | 5102 | PZB | x |  |  |  |  |  |  | x |  |  | 2030 | some parts Bamberg - Ebelsbach-Eltmann |  |  |
| 24 | Bamberg | Nürnberg | Principal | 62,4 | 0 | 62 | 2 | 5900 | PZB | x |  |  |  |  |  |  | x |  |  | 2030 |  |  |  |
| 25 | Gemünden | Würzburg | Diversionary | 291 | 327,362 | 38 | 2 | 1733 | LZB; PZB | x |  |  |  |  |  |  |  |  |  |  |  |  | after 2030 |
| 26 | Würzburg | Nürnberg | Diversionary |  |  | 102 | 2 | 5910/5900 | PZB; LZB | x |  |  |  |  |  |  | x |  | 2028 | 2030 |  |  |  |
| 27 | Nürnberg | Regensburg | Principal | 100,57 | 0 | 101 | 2 | 5850 | PZB | x |  |  |  |  |  |  | x |  | 2028 | 2030 |  |  |  |
| 28 | München | Marzling | Principal | 0,017 | 45,47 | 44 | 2 | 5500 | PZB | x |  |  |  |  |  |  | x |  | 2030 | 2033 |  |  |  |
| 29 | Marzling | Hagelstadt | Principal | 45,47 | 121,283 | 77 | 2 | 5500 | PZB | x |  |  |  |  |  |  |  |  |  |  |  | tbd | after 2030 |
| 30 | Hagelstadt | Regensburg | Principal | 121,28 | 138,131 | 17 | 2 | 5500 | PZB | x |  |  |  |  |  |  | x |  |  | 2030 |  |  |  |
| 31 | Regensburg | Passau | Principal |  |  | 118 | 2/2 | 5500/5830 | PZB | x |  |  |  |  |  |  | x |  |  | 2030 |  | 2019 | 2030 |
| 32 | Karlsruhe | Pforzheim | Principal | −4,625 | 26,262 | 31 | 2 | 4200 | PZB | x |  |  |  |  |  |  |  |  |  |  |  | tbd | after 2030 |
| 33 | Pforzheim | Mühlacker | Principal | 26,262 | 38,903 | 13 | 2 | 4200 | PZB | x |  |  |  |  |  |  |  |  |  |  |  | tbd | after 2030 |
| 34 | Bruchsal | Mühlacker | Diversionary |  |  | 33 | 2/2 | 4130/4800 | PZB | x |  |  |  |  |  |  |  |  |  |  |  | tbd | after 2030 |
| 35 | Mühlacker | Ludwigsburg | Principal |  |  | 33 | 2 | 4800 | PZB | x |  |  |  |  |  |  | x |  |  | 2030 |  |  |  |
| 36 | Ludwigsburg | Stuttgart | Principal |  |  | 14 | 2 | 4800 | PZB | x |  |  |  |  |  |  | x |  |  | 2030 |  |  |  |
| 37 | Stuttgart | Ulm | Principal | 0 | 86 | 86 | 2 | 4813 (SFS) | ETCS only | x |  |  |  |  |  |  | x |  |  | 2025 |  |  |  |
| 38 | Ulm | Augsburg | Principal | 85,8 | 0 | 86 | 2 | 5302 | PZB;LZB | x |  |  |  |  |  |  | x |  | 2030 | 2033 |  |  |  |
| 39 | Augsburg | München | Principal | 0,017 | 61,885 | 62 | 2 | 5503 | PZB;LZB | x |  |  |  |  |  |  | x |  | 2030 | 2033 |  |  |  |
| 40 | München | Mühldorf am Inn | Diversionary |  |  | 85 | 2/2(1 on 43km) | 5510/5600 | PZB | x |  |  |  |  |  |  | x |  | 2027 | 2033 |  |  |  |
| 41 | Mühldorf am Inn | Freilassing | Diversionary | 0 | 65,578 | 65 | 1 | 5723 | PZB | x |  |  |  |  |  |  | x |  | 2030 | 2031 |  |  |  |
| 42 | München | Rosenheim | Principal | 0,016 | 64,874 | 65 | 2 | 5510 | PZB | x |  |  |  |  |  |  |  |  | 2027 | 2030 |  |  |  |
| 43 | Rosenheim | Freilassing | Principal | 0 | 81,711 | 82 | 2 | 5703 | PZB | x |  |  |  |  |  |  | x |  | 2027 | 2030 |  |  |  |
| 44 | Freilassing | Salzburg | Principal | 81,711 | 88,551 | 3 | 2 | 5703 | PZB | x |  |  |  |  |  |  | x |  | 2027 | 2030 |  |  |  |
| 45 | Nürnberg | Marktredwitz | Principal | 0,002 | 124,206 | 124 | 2 | 5903 | PZB | x |  |  |  |  |  |  | x |  | 2030 | 2033 |  |  |  |
| 46 | Marktredwitz | Schirnding | Principal | 124,21 | 138,28 | 14 | 2 | 5903 | PZB | x |  |  |  |  |  |  | x |  | 2025 | 2031 |  |  |  |
| 47 | Schirnding | Cheb | Principal | 138,28 | 151,468 | 10 | 1 | 5903 | PZB | x |  |  |  |  |  |  | x |  | 2019 | 2025 |  |  |  |
| 48 | Regensburg | Schwandorf | Principal | 0 | 42,6 | 43 | 2 | 5860 | PZB | x |  |  |  |  |  |  |  |  |  |  |  | tbd | after 2030 |
| 49 | Schwandorf | Furth im Wald | Principal | 0 | 67,203 | 68 | 1 | 5800 | PZB | x |  |  |  |  |  |  |  |  |  |  |  | tbd | after 2030 |
| 50 | Furth im Wald Germany | Domažlice | Principal | 190,83 | 168,066 | 23 | 1 | 5801 | PZB | x |  |  |  |  |  |  |  |  |  |  |  | tbd | after 2030 |

**Czech Republic**

| **Line (current situation)** | | | | | | | **GSM-R** | | **Status of GSM-R** | | | | **ETCS** | | | **Status of ETCS** | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **No.** | **From** | **To** | **Type** | **Length of line (km)** | **Number of tracks** | **Current train control system** | **Yes** | **No** | **Under realization** | | **Planned** | | **L1** | **L2** | **L3** | **Under realization** | | **Planned** | |
| **Start** | **Finalization** | **Start** | **Finalization** | **Start** | **Finalization** | **Start** | **Finalization** |
| 1 | Česká Kubice st.hr. | Domažlice | Principal | 16 | 1 | - |  | x |  |  |  | after 2023 |  |  |  |  |  |  | after 2023 |
| 2 | Domažlice | Plzeň hl.n. | Principal | 60 | 1 | LS Plzeň - Stod |  | x |  |  |  | after 2023 |  |  |  |  |  |  | after 2023 |
| 3 | Cheb st.hr | Cheb | Principal | 12,1 | 1 | INDUSI/PZB | x |  | - | - | - | - |  |  |  |  |  | 01/2024 | 12/2024 |
| 4 | Cheb | Plzeň hl.n. | Principal | 105,9 | 1/2 | LS | x |  | - | - | - | - |  | x |  | 11/2019 | 10/2023 |  |  |
| 5 | Plzeň hl.n. | Beroun os.n. | Principal | 64 | 2 | LS | x |  | - | - | - | - |  | x |  | 12/2021 | 11/2023 |  |  |
| 6 | Beroun os.n. | Praha - Radotín | Principal | 29,2 | 2 | - | x |  | - | - | - | - |  |  |  |  |  |  | after 2023\* |
| 7 | Praha - Radotín | Praha Krč | Principal | 9,2 | 1/2 | - | x |  | - | - | - | - |  |  |  |  |  |  | after 2023\* |
| 8 | Praha Krč | Praha Zahr.město | Principal | 5,3 | 1 | - | x |  | - | - | - | - |  |  |  |  |  |  | after 2023\* |
| 9 | Praha Zahr.město | Praha Malešice | Principal | 4 | 1 | LS | x |  | - | - | - | - |  |  |  |  |  |  | after 2023\* |
| 10 | Praha Malešice | Praha-Libeň | Principal | 3,9 | 1 | - | x |  | - | - | - | - |  |  |  |  |  |  | after 2023\* |
| 11 | Praha Malešice | Praha - Běchovice | Principal | 4,3 | 2 | LS | x |  | - | - | - | - |  | x |  |  |  |  |  |
| 12 | Praha-Libeň | Český Brod | Principal | 27,47 | 3 | LS | x |  | - | - | - | - |  | x |  |  |  |  |  |
| 13 | Český Brod | Kolín | Principal | 29,27 | 3/2 |  | x |  | - | - | - | - |  |  |  | 06/2020 | 12/2023 |  |  |
| 14 | Kolín | Česká Třebová | Principal | 102 | 2 | LS | x |  |  |  |  |  |  | x |  |  |  |  |  |
| 15 | Poříčany | Nymburk hl.n. | Diversionary | 15,7 | 1 | - | x |  |  |  |  |  |  |  |  |  |  |  | after 2023\* |
| 16 | Praha-Libeň | Praha Vysočany | Diversionary | 1,23 | 1 | LS | x |  |  |  |  |  |  |  |  |  |  | 01/2024 | 11/2025 |
| 17 | Praha Vysočany | Lysá nad Labem | Diversionary | 29,1 | 2 | - | x |  |  |  |  |  |  |  |  |  |  | 01/2024 | 11/2025 |
| 18 | Lysá nad Labem | Nymburk hl.n. | Diversionary | 15,3 | 2 | LS | x |  |  |  |  |  |  |  |  |  |  |  | after 2023\* |
| 19 | Nymburk hl.n. | Velký Osek | Diversionary | 15 | 2 | LS | x |  |  |  |  |  |  |  |  |  |  |  | after 2023\* |
| 20 | Velký Osek | Kolín | Diversionary | 9 | 2 | LS | x |  |  |  |  |  |  |  |  |  |  |  | after 2023\* |
| 21 | Velký Osek | Hradec Králové | Diversionary | 51 | 1 | - |  | x |  |  |  | after 2023 |  |  |  |  |  |  | after 2023\* |
| 22 | Hradec Králové | Choceň | Diversionary | 45 | 1 | - |  | x |  |  |  | after 2023 |  |  |  |  |  |  | after 2023\* |
| 23 | Česká Třebová | Olomouc | Principal | 110 | 2 | LS | x |  |  |  |  |  |  | x |  |  |  |  |  |
| 24 | Olomouc | Dluhonice | Principal | 19 | 2 | LS | x |  |  |  |  |  |  |  |  | 08/2018 | 04/2023 |  |  |
| 25 | Dluhonice | Prosenice | Principal | 8,8 | 2 | LS | x |  |  |  |  |  |  |  |  | 08/2018 | 04/2023 |  |  |
| 26 | Prosenice | Hranice na Moravě | Principal | 20,4 | 2 | LS | x |  |  |  |  |  |  | x |  |  |  |  |  |
| 27 | Dluhonice | Přerov os.n. | Principal | 3,4 | 2 | LS | x |  |  |  |  |  |  |  |  | 08/2018 | 04/2023 |  |  |
| 28 | Přerov os.n. | Přerov přednádraží | Principal | 1,7 | 2 | LS | x |  |  |  |  |  |  | x |  |  |  |  |  |
| 29 | Přerov os.n. | Prosenice | Principal | 7,9 | 2 | LS | x |  |  |  |  |  |  | x |  |  |  |  |  |
| 30 | Hranice na Moravě | Horní Lideč | Principal | 63 | 2 | LS\*\* |  | x |  |  | 10/2024 | 02/2027 |  |  |  | 10/2024 | 02/2027 |  |  |
| 31 | Horní Lideč | Střelná st.hr. | Principal | 7 | 2 | LS |  | x |  |  | 10/2024 | 02/2027 |  |  |  | 10/2024 | 02/2027 |  |  |
| 32 | Hranice na Moravě | Ostrava hl.n. | Principal | 55,4 | 2 | LS | x |  |  |  |  |  |  | x |  |  |  |  |  |
| 33 | Ostrava hl.n. | Dětmarovice | Principal | 17,2 | 2 | LS | x |  |  |  |  |  |  | x |  |  |  |  |  |
| 34 | Dětmarovice | Český Těšín | Principal | 21,1 | 2 | LS | x |  |  |  |  |  |  |  |  | 05/2022 | 06/2023 |  |  |
| 35 | Český Těšín | Mosty u Jablunkova | Principal | 29,05 | 2 | LS | x |  |  |  |  |  |  |  |  | 05/2022 | 06/2023 |  |  |
| 36 | Mosty u Jablunkova | Mosty u Jabl. st. hr. | Principal | 3,69 | 2 | LS | x |  |  |  |  |  |  |  |  | 05/2022 | 06/2023 |  |  |
| 37 | Výhybna Polanka n/O | Odbočka Odra | Principal | 2,1 | 1 | LS | x |  |  |  |  |  |  |  |  |  |  |  | after 2023\* |
| 38 | Ostrava Svinov | Odbočka Odra | Principal | 3,64 | 1 | LS | x |  |  |  |  |  |  |  |  |  |  |  | after 2023\* |
| 39 | Odbočka Odra | Odbočka Chotěbuz | Principal | 32,03 | 2 | LS | x |  |  |  |  |  |  |  |  |  |  |  | after 2023\* |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| \* | to be precised in new Czech ERTMS National Implementation Plan conected to TSI CCS 2023 | | | | |
| \*\* | except section Hranice na Moravě - Hranice na Moravě město |  |  |  |  |

**Slovakia**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Line (current situation)** | | | | | | | **GSM-R** | | **Status of GSM-R** | | | | **ETCS** | | | **Status of ETCS** | | | |
| **No.** | **From** | **To** | **Type** | **Length of line (km)** | **Number of tracks** | **Current train control system** | **Yes** | **No** | **Under realization** | | **Planned** | | **L1** | **L2** | **L3** | **Under realization** | | **Planned** | |
| **Start** | **Finalization** | **Start** | **Finalization** | **Start** | **Finalization** | **Start** | **Finalization** |
| 1 | Čadca št.hr. | Žilina | Principal | 37 | 2 | ETCS L2 + GSM-R | x |  | In operation | | | |  | x |  | In operation | | | |
| 2 | Lúky pod Makytou | Púchov | Principal | 21 | 2 | NS |  | x | - | - | TBD | 2030 |  |  |  | - | - | - | 2030 |
| 3 | Púchov | Považská Teplá | Principal | 15 | 2 | ETCS L1 + GSM-R | x |  | In operation | | | | x |  |  | In operation | | | |
| 3 | Považská Teplá | Žilina | Principal | 27 | 2 | ETCS L1 + GSM-R |  |  | In operation | | | | x |  |  | In operation | | | |
| 4 | Žilina | Vrútky (Varín) | Principal | 21 | 2 | NS |  | x | 2022 | 2024 | - | - |  | x |  | 2022 | 2024 | - | - |
| 5 | Vrútky | Liptovský Mikuláš | Principal | 62 | 2 | NS |  | x | 2023 | 2024 | - | - |  | x |  |  | - | TBD | 2030 |
| 6 | Liptovský Mikuláš (Lučivná) | Poprad | Principal | 58 | 2 | NS |  | x | 2023 | 2024 | - | - |  | x |  | 2021 | 2024 |  |  |
| 7 | Poprad | Spišská Nová Ves | Principal | 26 | 2 | NS |  | x | 2023 | 2024 | - | - |  | x |  | - | - | TBD | 2030 |
| 8 | Spišská Nová Ves | Kysak | Principal | 58 | 2 | NS |  | x | 2023 | 2024 | - | - |  | x |  | - | - | TBD | 2030 |
| 9 | Kysak | Košice | Principal | 16 | 2 | NS |  | x | 2023 | 2024 | - | - |  | x |  | - | - | TBD | 2030 |
| 10 | Košice | Čierna nad Tisou | Principal | 94 | 2 | NS |  | x | 2023 | 2024 | - | - |  | x |  | - | - | TBD | 2030 |
| 11 | Čierna nad Tisou | Chop (SK-UA border) | Feeder | 8 | 1 | NS |  | x | - | - | TBD | TBD |  | x |  |  | - | TBD | TBD |
| 12 | Barca | Košice | Feeder | 5 | 2 | NS |  | x | - | - | TBD | 2023 |  | x |  | - | - | TBD | 2030 |
| 13 | Barca | Haniska pri Košiciach | Connecting | 6 | 2 | NS |  | x | - | - | TBD | 2050 |  | x |  | - |  | TBD | 2050 |
| 14 | Výh. Slivník | Maťovce | Diversionary | 55 | 1 | NS | PZB | x | - | - | TBD | TBD |  | x |  | - | - | TBD | TBD |
| 15 | AT-SK border | Bratislava Petržalka | Principal | 2 | 1 | NS + GSM-R | x |  | In operation | | | |  | x |  | - | - | TBD | 2030 |
| 16 | Bratislava Peržalka | Rusovce (SK-HU border) | Principal | 14 | 1 | NS + GSM-R | x |  | In operation | | | |  | x |  | - | - | TBD | 2030 |

**Austria**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Line (current situation)** | | | | | | | **GSM-R** | | **Status of GSM-R** | | | | **ETCS** | | | **Status of ETCS** | | | |
| **No.** | **From** | **To** | **Type** | **Length of line (km)** | **Number of tracks** | **Current train control system** | **Yes** | **No** | **Under realization** | | **Planned** | | **L1** | **L2** | **L3** | **Under realization** | | **Planned** | |
| **Start** | **Finalization** | **Start** | **Finalization** | **Start** | **Finalization** | **Start** | **Finalization** |
| 1 | Salzburg | Hallwang E. | Principal | 7,5 | 2 | NS | X |  | In operation | | | |  | X |  |  |  | 2025 | 2028 |
| 2 | Hallwang E. | Vöcklabruck | Principal | 57,5 | 2 | ETCS/NS | X |  | In operation | | | |  | X |  |  |  | 2025 | 2028 |
| 3 | Vöcklabruck | Wels | Principal | 35,2 | 2 | ETCS/NS | X |  | In operation | | | |  | X |  | 2021 | 2023 |  |  |
| 4 | Passau Germany | Wels | Principal | 79,6 | 2 | ETCS/NS | X |  | In operation | | | |  | X |  |  |  | 2024 | 2027 |
| 7 | Wels | Linz | Principal | 21,5 | 2 | NS | X |  | In operation | | | |  | X |  | 2021 | 2023 |  |  |
| 8 | Linz | St. Valentin | Principal | 74,5 | 4 | NS | X |  | In operation | | | |  | X |  |  |  | 2026 | 2029 |
| 9 | St. Valentin | Knoten Rohr | Principal | 175 | 4 | NS | X |  | In operation | | | |  | X |  |  |  | 2027 | 2030 |
| 10 | Knoten Rohr | St. Pölten | Principal | 13,3 | 3 | ETCS/NS | X |  | In operation | | | |  | X |  |  |  | 2023 | 2026 |
| 11 | St. Pölten | Wien | Principal | 66,4 | 2 | ETCS/NS | X |  | In operation | | | |  | X |  |  | x |  |  |
| 12 | Wien | Gramatneusiedl | Principal | 22,6 | 2 | NS | X |  | In operation | | | |  | X |  |  |  | 2023 | 2026 |
| 13 | Gramatneusiedl | Parndorf | Principal | 32 | 2 | NS | X |  | In operation | | | |  | X |  | 2021 | 2024 |  |  |
| 15 | Parndorf | Kittsee to border | Principal | 21 | 1 | NS | X |  | In operation | | | |  | X |  | 2021 | 2024 |  |  |
| 16 | Parndorf | Nickelsdorf to border | Principal | 17 | 2 | NS | X |  | In operation | | | |  | X |  | 2021 | 2024 |  |  |
| 17 | Wien | Ebenfurth | diversionary |  |  |  | X |  | In operation | | | |  |  |  |  |  |  |  |
| 18 | Ebenfurth | Sopron (HU) | diversionary |  |  |  |  |  |  | | | |  |  |  |  |  |  |  |

**Hungary – GYSEV**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Line (current situation)** | | | | | | | **GSM-R** | | **Status of GSM-R** | | | | **ETCS** | | | **Status of ETCS** | | | |
| **No.** | **From** | **To** | **Type** | **Length of line (km)** | **Number of tracks** | **Current train control system** | **Yes** | **No** | **Under realization** | | **Planned** | | **L1** | **L2** | **L3** | **Under realization** | | **Planned** | |
| **Start** | **Finalization** | **Start** | **Finalization** | **Start** | **Finalization** | **Start** | **Finalization** |
| 1 | Hegyeshalom | Rajka | Principal | 13 | 1 | ETCS L1 | x |  |  |  | n/a | n/a | x |  |  |  |  |  |  |
| 2 | Ebenfurth | Sopron | Principal | 30 | 1 | INDUSI/PZB |  | x |  |  | n/a | n/a |  |  |  |  |  | n/a | n/a |
| 3 | Sopron | Győr | Principal | 85 | 1 | EVM |  | x | 2019 | 2022 | n/a | n/a |  |  |  |  |  | n/a | n/a |

**Hungary – MÁV**

| **Line (current situation)** | | | | | | | **GSM-R** | | **Status of GSM-R** | | | | **ETCS** | | | **Status of ETCS** | | | | **Remark** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **No.** | **From** | **To** | **Type** | **Length of line (km)** | **Number of tracks** | **Current train control system** | **Yes** | **No** | **Under realization** | | **Planned** | | **L1** | **L2** | **L3** | **Under realization** | | **Planned** | |
| **Start** | **Finalization** | **Start** | **Finalization** | **Start** | **Finalization** | **Start** | **Finalization** |
| 1 | Hegyeshalom border AT/HU | Hegyeshalom | Principal | 4,7 | 2 | EVM | x | **-** | **-** | **-** | **-** | **-** | x | **-** | **-** | 2021 | 2024 | - | - | ETCS L1 2.2.2 version has been switched off because of the upgrade to 3.6.0 |
| 2 | Hegyeshalom | Győr | Principal | 46,5 | 2 | EVM | x | **-** | **-** | **-** | **-** | **-** | x | **-** | **-** | 2021 | 2024 | - | - | ETCS L1 2.2.2 version has been switched off because of the upgrade to 3.6.0 |
| 3 | Győr | Komárom | Principal | 37,4 | 2 | EVM | x | **-** | **-** | **-** | **-** | **-** | x | **-** | **-** | 2021 | 2024 | - | - | ETCS L1 2.2.2 version has been switched off because of the upgrade to 3.6.0 |
| 4 | Komárom | Tata | Principal | 20,1 | 2 | EVM | x | **-** | **-** | **-** | **-** | **-** | x | **-** | **-** | 2021 | 2024 | - | - | ETCS L1 2.2.2 version has been switched off because of the upgrade to 3.6.0 |
| 5 | Tata | Kelenföld | Principal | 68,5 | 2 | EVM | x | **-** | **-** | **-** | **-** | **-** | x | **-** | **-** | 2021 | 2024 | - | - | ETCS L1 2.2.2 version has been switched off because of the upgrade to 3.6.0 |
| 6 | Kelenföld | Ferencváros | Principal | 5,7 | 2 | EVM, ETCS L2 | x | **-** | **-** | **-** | **-** | **-** | **-** | x | **-** | - | - | **-** | **-** |  |
| 7 | Ferencváros | Kőbánya felső | Principal | 4,7 | 2 | EVM | x | **-** | **-** | **-** | **-** | **-** | **-** | x | **-** | **-** | **-** | **-** | 2030 |  |
| 8 | Kőbánya felső | Rákos | Principal | 3,3 | 2 | EVM | x | **-** | **-** | **-** | **-** | **-** | **-** | x | **-** | **-** | **-** | **-** | 2030 |  |
| 9 | Rákos | Újszász | Principal | 76,1 | 2 | EVM | **-** | x | 2018 | - | **-** | **-** | **-** | x | **-** | **-** | **-** | **-** | 2050 | GSM-R project is paused for an uncertain period of time |
| 10 | Újszász | Szolnok | Principal | 17,3 | 2 | EVM | **-** | x | 2018 | - | **-** | **-** | **-** | x | **-** | **-** | **-** | **-** | 2050 | GSM-R project is paused for an uncertain period of time |
| 11 | Szolnok | Szajol | Principal | 10,3 | 2 | EVM | x | **-** | **-** | **-** | **-** | **-** | **-** | x | **-** | 2014 | 2024 | **-** | **-** |  |
| 12 | Szajol | Békéscsaba | Principal | 85,3 | 2 | EVM | x | **-** | **-** | **-** | **-** | **-** | **-** | x | **-** | 2014 | 2024 | **-** | **-** |  |
| 13 | Békéscsaba | Lőkösháza | Principal | 29 | 1 | EVM | x | **-** | **-** | **-** | **-** | **-** | - | x | - | 2021 | 2025 | - | - |  |
| 14 | Lőkösháza | Lőkösháza border HU/RO | Principal | 2,7 | 1 | without | x | **-** | **-** | **-** | **-** | **-** | x |  | - | 2021 | 2025 | - | - |  |
| 15 | Szajol | Püspökladány | diversionary | 67 | 2 | EVM | x | - | - | - | - | - | - | x | - | 2019 | 2024 | - | - |  |
| 16 | Püspökladány | Biharkeresztes | diversionary | 50,1 | 1 | without | - | x | 2018 | - | - | - | - | x | - | - | - | - | 2050 | GSM-R project is paused for an uncertain period of time |
| 17 | Biharkeresztes | Biharkeresztes border HU/RO | diversionary | 6,7 | 1 | without | - | x | 2018 | - | - | - | - | x | - | - | - | - | 2050 | GSM-R project is paused for an uncertain period of time |
| 18 | Ferencváros | Soroksári út | diversionary | 1,8 | 2 | EVM | x | - | - | - | - | - | - | x | - | 2021 | 2025 | - | - |  |
| 19 | Soroksári út | Soroksár | diversionary | 7,1 | 1 | EVM | x | - | - | - | - | - | - | x | - | 2021 | 2025 | - | - |  |
| 20 | Soroksár | Soroksár-Terminál | diversionary | 3,5 | 1 | EVM | x | - | - | - | - | - | - | x | - | 2021 | 2025 | - | - |  |
| 21 | Ferencváros | Kőbánya-Kispest | diversionary | 5,1 | 2 | EVM | x | - | - | - | - | - | - | x | - | 2014 | 2024 | - | - |  |
| 22 | Kőbánya-Kispest | Szolnok | diversionary | 89,6 | 2 | EVM | x | - | - | - | - | - | - | x | - | 2014 | 2024 | - | - |  |

**Romania**

| **Line (current situation)** | | | | | | | **GSM-R** | | **Status of GSM-R** | | | | **ETCS** | | | **Status of ETCS** | | | | **Remark** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **No.** | **From** | **To** | **Type** | **Length of line (km)** | **Number of tracks** | **Current train control system** | **Yes** | **No** | **Under realization** | | **Planned** | | **L1** | **L2** | **L3** | **Under realization** | | **Planned** | |
| **Start** | **Finalization** | **Start** | **Finalization** | **Start** | **Finalization** | **Start** | **Finalization** |
| 1 | Border RO/HU | Km.614 | Principal | 41,185 | 2 | NS, ETCS L2 + GSM-R not in operation | x |  | 2012 | 2023 |  |  |  | x |  | 2012 | 2023 |  |  | In authorisation process to obtain putting in operation |
| 2 | Km.614 | Ilteu | Principal | 78,499 | 2 | NS | x |  | 2018 | 2024 |  |  |  | x |  | 2018 | 2024 |  |  |  |
| Ilteu | Gurasada | Principal | 24,531 | 2 | NS | x |  | 2018 | 2024 |  |  |  | x |  | 2018 | 2024 |  |  |  |
| Gurasada | Simeria | Principal | 38,546 | 2 | NS | x |  | 2014 | 2024 |  |  |  | x |  | 2014 | 2024 |  |  |  |
| 3 | Simeria | Coșlariu | Principal | 91,5 | 2 | NS | x |  | 2014 | 2024 |  |  |  | x |  | 2014 | 2024 |  |  |  |
| Coșlariu | Sighișooara | Principal | 72,5 | 2 | NS | x |  | 2014 | 2024 |  |  |  | x |  | 2014 | 2024 |  |  |  |
| 4 | Sighișoara | Cața | Principal | 45,061 | 2 | NS | x |  | 2022 | 2026 |  |  |  | x |  | 2022 | 2026 |  |  |  |
| Cața | Apața | Principal | 45,721 | 2 | NS | x |  | 2022 | 2026 |  |  |  | x |  | 2022 | 2026 |  |  |  |
| Apața | Brașov | Principal | 37,83 | 2 | NS | x |  | 2022 | 2026 |  |  |  | x |  | 2022 | 2026 |  |  |  |
| 5 | Brașov | Predeal | Principal | 26,236 | 2 | NS | x |  |  |  | 2025 | 2029 |  | x |  |  |  | 2025 | 2029 |  |
| 6 | Predeal | Câmpina | Principal | 50,273 | 2 | NS | x |  |  |  | 2024 | 2028 |  | x |  |  |  | 2024 | 2028 |  |
| Câmpina | Brazi | Principal | 41,898 | 2 | NS, ETCS L1 2.2.2 not in operation | x |  |  |  | 2024 | 2028 |  | x |  |  |  | 2024 | 2028 |  |
| Brazi | Buftea | Principal | 34,565 | 2 | NS, ETCS L2 + GSM-R in operation | x |  | 2011 | 2022 |  |  |  | x |  | 2011 | 2022 |  |  | ETCS L2 + GSM-R putting in operation in 2022 |
| 7 | Buftea | Chitila | Principal | 7,436 | 2 | NS, ETCS L1 2.2.2 not Commissioning | x |  |  |  | 2024 | 2028 |  | x |  |  |  | 2024 | 2028 |  |
| Chitila | Pajura | Principal | 3,86 | 2 | NS, ETCS L1 2.2.2 not Commissioning | x |  |  |  | 2024 | 2028 |  | x |  |  |  | 2024 | 2028 |  |
| Pajura | București Băneasa | Principal | 1,11 | 1 | NS, ETCS L1 2.3.0d not Commissioning | x |  |  |  | 2024 | 2028 |  | x |  |  |  | 2024 | 2028 |  |
| București Băneasa | Constanța | Principal | 218,225 | 2 | NS, ETCS L1 2.3.0d not in operation | x |  |  |  | 2024 | 2028 |  | x |  |  |  | 2024 | 2028 |  |
| 8 | Pajura | București Nord | Principal | 5,46 | 3 | NS, ETCS L1 2.3.0d not in operation | x |  |  |  | 2025 | 2029 |  | x |  |  |  |  |  |  |
| 8 | București Nord | București Băneasa | Principal | 6,608 | 1 | NS, ETCS L1 2.3.0d not in operation | x |  |  |  | 2025 | 2029 |  | x |  |  |  | 2025 | 2029 |  |
| 9 | Caransebeș | Lugoj | Principal | 39,38 | 1 | NS | x |  | 2023 | 2027 |  |  |  | x |  | 2023 | 2027 |  |  |  |
| Lugoj | Timișoara EST | Principal | 53,91 | 1 | NS | x |  | 2023 | 2027 |  |  |  | x |  | 2023 | 2027 |  |  |  |
| Timișoara EST | Ronat Triaj Gr. D | Principal | 13,86 | 1 | NS | x |  | 2023 | 2027 |  |  |  | x |  | 2023 | 2027 |  |  |  |
| Ronat Triaj Gr. D | Arad | Principal | 54,86 | 1 | NS | x |  | 2023 | 2027 |  |  |  | x |  | 2023 | 2027 |  |  |  |
| 10 | Caransebeș | Strehaia | Principal | 166,257 | 1 | NS | x |  |  |  | 2024 | 2028 |  | x |  |  |  | 2024 | 2028 |  |
| 11 | Strehaia | Craiova | Principal | 59,916 | 2 | NS | x |  |  |  | 2024 | 2028 |  | x |  |  |  | 2024 | 2028 |  |
| 12 | Craiova | Chitila | Principal | 202,862 | 2 | NS | x |  |  |  | no planned date | no planned date |  | x |  |  |  | no planned date | no planned date |  |
| 13 | Ploiești | Buzău | diversionary | 71,47 | 2 | NS | x |  |  |  | 2024 | 2028 |  | x |  |  |  | 2024 | 2028 |  |
| 14 | Buzău | Făurei | diversionary | 40,459 | 2 | NS | x |  |  |  | no planned date | no planned date | x | x |  |  |  | no planned date | no planned date | installation of ETCS level 1 or ETCS level 2 will be decided after feasibility study (according to NIP Romania) |
| 15 | Făurei | Fetești | diversionary | 89,07 | 2 | NS | x |  |  |  | no planned date | no planned date | x | x |  |  |  | no planned date | no planned date | installation of ETCS level 1 or ETCS level 2 will be decided after feasibility study (according to NIP Romania) |
| 16 | Simeria | Livezeni | diversionary | 84,306 | 2 | NS | x |  |  |  | no planned date | no planned date | x | x |  |  |  | no planned date | no planned date | installation of ETCS level 1 or ETCS level 2 will be decided after feasibility study (according to NIP Romania) |
| 17 | Livezeni | Târgu Jiu | diversionary | 48,058 | 1 | NS | x |  |  |  | no planned date | no planned date | x | x |  |  |  | no planned date | no planned date | installation of ETCS level 1 or ETCS level 2 will be decided after feasibility study (according to NIP Romania) |
| 18 | Târgu Jiu | Filiasi | diversionary | 70,287 | 1 | NS | x |  |  |  | no planned date | no planned date | x | x |  |  |  | no planned date | no planned date | installation of ETCS level 1 or ETCS level 2 will be decided after feasibility study (according to NIP Romania) |
| 19 | Coșlariu | Cluj | diversionary | 106,327 | 2 | NS | x |  |  |  | 2025 | 2029 |  | x |  |  |  | 2025 | 2029 |  |
| 20 | Cluj | Aghireș | diversionary | 30,41 | 2 | NS | x |  | 2023 | 2027 |  |  |  | x |  | 2023 | 2027 |  |  |  |
| Aghireș | Poieni | diversionary | 36,53 | 2 | NS | x |  | 2023 | 2027 |  |  |  | x |  | 2023 | 2027 |  |  |  |
| Poieni | Aleșd | diversionary | 52,74 | 1 | NS | x |  | 2023 | 2027 |  |  |  | x |  | 2023 | 2027 |  |  |  |
| Aleșd | Episcopie | diversionary | 39,55 | 2 | NS | x |  | 2023 | 2027 |  |  |  | x |  | 2023 | 2027 |  |  |  |
| Episcopie | Border RO/HU | diversionary | 7,08 | 1 | NS | x |  | 2023 | 2027 |  |  |  | x |  | 2023 | 2027 |  |  |  |