NATIONAL IMPLEMENTATION PLAN

the technical specification for interoperability relating to the subsystems 'control-command and signalling' of the rail system in the European Union (CCS TSI National Implementation Plan)

MINISTERSTURE
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CONTENTS

1. VŠEOBECNÁ STRATÉGIA PRECHODU – ÚVOD _2

2. VŠEOBECNÝ OPIS SÚVISLOSTÍ AKTUÁLNEHO STAVU 12

2.1. Opis súvislostí systémov triedy A a časti detekcia vlakov 12

2.1.1. Aktuálny stav zavádzania systémov triedy A a časti detekcia vlakov 12

2.1.2. Prínos vzhľadom na kapacitu, bezpečnosť, spoľahlivosť a výkonnosť 20

2.1.3. Aktuálne povinné požiadavky na vozidlové zariadenia 21

2.1.4. Aktuálny stav zavádzania subsystémov „vozidlové zariadenia CCS“ 22

2.1.5. Informácie o type ESC/RSC v súvislosti s traťami a činnosťami traťovej/vozidlovej integrácie 23

2.1.6. Informácie o cezhraničnýchtratiach 24

2.1.7. Informácie o uzloch 25

2.2. Opis súvislostí systémov triedy B 25

2.2.1. Aktuálny stav systémov triedy B 25

3. TECHNICKÁ STRATÉGIA PRECHODU A PLÁNOVANIE 30

3.1. Technická stratégia prechodu a plán zavádzania ETCS a RMR 30

Dodatok 1: Vybrané východiskové strategické dokumenty národnej úrovne 43

Dodatok 2: Začlenenie tratí existujúcej železničnej siete do TEN-T 43

1. GENERAL TRANSIT STRATEGY – INTRODUCTION

The railway regulatory framework at European Union level has defined the essential requirements relating to the interoperability of railway networks and vehicles operating in different Member States, covered by that framework within the common rail system of the Union. In order to rationalise the technical or operational conditions critical to the interoperability of the

Union rail system, namely its ability to allow the safe and uninterrupted movement of trains which achieve the required level of performance, the system has been structurally and functionally subdivided into several subsystems with a clear description.

Common technical or operational standards for the fulfilment of the essential requirements safety, reliability and availability, health, environmental protection, technical compatibility and accessibility with regard to the railway subsystems as well as the constituents and interfaces between them are determined by a set of **technical specifications for interoperability (TSIs)** established by binding and directly applicable regulations of the European Union. The development of TSIs and their periodic reviews by the European Union Agency for Railways largely eliminates the need to apply national rules analogous in content to the Union rail system. Compliance with the relevant TSIs shall be verified and certified by standardised common procedures. TSIs relating to the Union rail system are currently applicable to the Union rail system.

- the structural subsystem 'infrastructure',
- the structural energy subsystem,
- **Structural Control-Command and Signalling Subsystems (CCS – Control-Command and Signalling),**
- the structural subsystem 'rolling stock — locomotives and passenger rolling stock',
- the structural subsystem 'rolling stock — freight wagons',
- the structural subsystem 'rolling stock — noise',
- the functional subsystem 'operation and traffic management',
- the functional subsystem Telematics Applications for Freight,
- the functional subsystem 'telematics applications for passenger services',
- accessibility of the Union rail system for persons with disabilities and persons with reduced mobility,
- Safety in railway tunnels.

In accordance with the relevant provisions of the original Regulation (EU) 2016/9191 on the CCS subsystems TSI, the Slovak Republic has drawn up and updated its national implementation plan for this TSI, in its latest version of June 2020. With the entry into force of the new Regulation (EU) 2023/16952, which substantially revises and adapts the content of the TSI on CCS subsystems to technical progress, in September 2023 Member States were obliged to prepare and notify national implementation plans in accordance with the revised TSI (hereinafter referred to as 'CCS TSI').

Commission1 Regulation (EU) 2016/919 of 27 May 2016 on the technical specification for interoperability relating to the 'control-command and signalling' subsystems of the rail system in the European Union.
Commission2 Implementing Regulation (EU) 2023/1695 of 10 August 2023 on the technical specification for interoperability relating to the 'control-command and signalling' subsystems of the rail system in the European Union and repealing Regulation (EU) 2016/919.

The present national implementation plan for the CCS TSI is based on the current framework of requirements, options, objectives, targets and deadlines set by legally binding acts as set out below and a set of underlying strategic documents at national level in relation to the operation, development and modernisation of railway infrastructure3. It is therefore to be considered as a summary overview of the implementation of the CCS TSI in relation to the content of these documents, without identifying additional strategic decisions. The detail of the data contained in the CCS TSI National Implementation Plan depends on the state of strategic planning by the State, the Infrastructure Manager as well as the Railway Undertakings at the time of processing. Additions and changes resulting from future decisions regarding the timing or financing of the preparation and implementation of projects involving the implementation of the CCS TSI will be taken into account in subsequent updates.

The CCS subsystems are the fixed structural Control-Command and Signalling Trackside Subsystem and the mobile structural Control-Command and Signalling On-board Subsystem, which, within the meaning of Directive (EU) 2016/7974 on the interoperability of the rail system, constitute the set of all trackside or on-board equipment necessary to ensure safety and to command and control the movement of trains authorised to travel on the rail network. These facilities can be further broken down into:

- equipment train protection,
- equipment voice radio communication,
- equipment data radio communication,
- equipment train detection,
- equipment automated train operation.

The CCS TSI specifies only those requirements which are necessary to ensure the interoperability of the Union rail system and to fulfil those of the essential requirements mentioned in the introduction which are in relation to the basic parameters characterising the CCS subsystems (all except accessibility). In terms of compliance of CCS equipment with the TSI, a distinction is made between Class A target equipment and, as a general rule, legacy Class B equipment specific to the railway networks and vehicles used in each Member State and intended to be progressively replaced by Class A equipment.

Class A facilities are those **of the European Rail Traffic Management System (ERTMS - European Railway Traffic Management System)**, consisting of

- the train protection system — **European Train Control System (ETCS — European Train Control System)**,
- **railway mobile radio system (RMR - Railway Mobile Radio)**,

3 A list of selected national level underlying strategy papers is provided in Appendix 1.

4 Directive (EU) 2016/797 of the European Parliament and of the Council of 11 May 2016 on the interoperability of the rail system within the European Union (recast).

- A utomatic Train Operation (ATO).

The railway mobile radio system incorporates the existing **Global System of Mobile Communications for Railways (GSM-R - Global System for Mobile Communications - Rail)**, whose future prospects are limited by technological obsolescence , as well as **a new solution in the form of a future railway mobile communication system (FRMCS - Future Railway Mobile Communication System)**. Automated train operation is one of the new ERTMS functionalities included in the CCS TSI as part of the 2023 revision. Due to the lack of clarity of intentions for the first deployment of automated train operation in the Slovak Republic, this function is not further addressed in the present CCS TSI National Implementation Plan.

ETCS deployment on the rail network is possible at different **application levels (i.e.** Levels) expressing the possibilities for interaction between the trackside and on-board parts of the system. The levels are defined in relation to the track-side equipment used, the method of data transmission between the track-side and on-board parts of the system and the implemented functions such as

- level 0 (L0) / NTC level (LNTC) — level using vehicles equipped with an ETCS on-board part on a line not equipped with an ETCS on-board part in operation or, alternatively, on a line equipped with a Class B (NTC – National Train Control) trackside part of a train protection system allowing interaction with the ETCS on-board part via a specific transmission module5,
- Level 1 (L1) — level with ETCS equipment overlaying the line with conventional trackside interlocking and enabling point-to-point transmission of the authorisation to travel from the trackside to the on-board part of the system via Eurobalises, Euroloops or radio infill, implementing train detection methods and train integrity via train detection devices;
- Level 2 (L2) — level with ETCS trackside equipment enabling lineside transmission of the authorisation to run from the trackside to the on-board part of the system through RMR (original designation as level 2), with possible implementation of train positioning and integrity methods through dedicated on-board facilities and RMR (original designation as level 3).

The description of the equipment of the ERTMS railway networks and vehicles shall also refer to the implemented basic specifications (i.e. Baselines) ETCS and RMR, characterising the development stage of the systems, which can be further distinguished by the releases of the baseline specifications, respectively the implemented versions of the System Requirements Specifications (SRS) and, for RMR, the Functional Requirements Specifications (FRS).

Class B equipment in the Slovak Republic is the equipment of the LS train protection

5 Also referred to as 'STMlevel' (Specific Transmission Module).

system in several versions with line-side inductive code transmission from the trackside to the on-board part of the system, in the case of on-board equipment also the equipment of the newer train protection system MIREL, and in particular several voice radio communication systems, as listed below in the relevant part of the CCS TSI national implementation plan.

- In the context of the CCS TSI, specially earmarked train detection equipment means trackside equipment detecting the presence or absence of vehicles (track circuits, axle counters, loops or other), without downstream elements of systems such as station or level crossing interlocking. The deployment of TSI compliant train detection equipment may take place independently of the deployment of ERTMS.

The relevant TSI requirements for the Control-Command and Signalling Trackside Subsystem are set in relation to the Class A radio communication system, Class A train protection and the interface requirements for train detection systems to ensure their compatibility with rolling stock. The relevant TSI requirements for the Control-Command and Signalling On-board Subsystem are specified in relation to Class A radio communication system and train protection.

The present national implementation plan for the CCS TSI is intended to provide a comprehensive overview of the deployment of ERTMS as regards the railway network in the territory of the Slovak Republic falling within the geographical scope of this TSI – currently all railway lines with 1435 mm and 1520 mm track gauges6 – and vehicles used on this network. In addition to the requirements of the TSI itself, it relies crucially on the mandatory requirements for the deployment of ERTMS and the decommissioning of Class B facilities under **the Union guidelines for the development of the trans-European transport network (TEN-T – Trans-European Network – Transport)** as laid down in the original Regulation (EU) No 1315/20137 and the new Regulation (EU) 2024/16798 (hereafter referred to as the 'new TEN-T Regulation'). The adoption of the new TEN-T Regulation integrates some additional lines into the trans-European transport network and introduces a revised sequencing of its development along three levels of strategic importance – core, extended core and comprehensive – with completion dates, including ERTMS deployment in 2030, 2040 and 2050.

The operation and management of the rail network falling within the geographical scope of the CCS TSI shall be ensured on the territory of the Slovak Republic by a single infrastructure manager in the form of an organisation set up by a special act – Železnice Slovenskej republiky

6 Excluding a short cross-border line connected to a third country network *(Чоп/UA –)* Čierna nad Tisou SRT hr. – Čierna nad Tisou SRT.

7 Regulation (EU) No 1315/2013 of the European Parliament and of the Council of 11 December 2013 on Union guidelines for the development of the trans-European transport network and repealing Decision No 661/2010/EU *(in force until 17 July 2024)*.

8 Regulation (EU) 2024/1679 of the European Parliament and of the Council of 13 June 2024 on Union guidelines for the development of the trans-European transport network, amending Regulation (EU) 2021/1153 and Regulation (EU) No 913/2010 and repealing Regulation (EU) No 1315/2013 *(in force from 18 July 2024)*.

(ŽSR). At the time of drafting the CCS TSI national implementation plan , **this network comprised a total of 3 595,2 km of conventional rail lines**, of which

- 3 507.7 km of main and secondary railway lines with 1435 mm track gauge (including 48.5 km of suspended lines),
- 87,5 km of main railway lines with 1520 mm track gauge.

In addition, ŽSR operated and managed a further 3,2 km of main railway lines with a track gauge of 1 520 mm (short cross-border line connected to the network of a third country) and 45,1 km of railway lines and special tracks with different track gauges. As these are lines outside the geographical scope of the CCS TSI, they are not shown on the indicative diagrams9 provided in the national implementation plan.

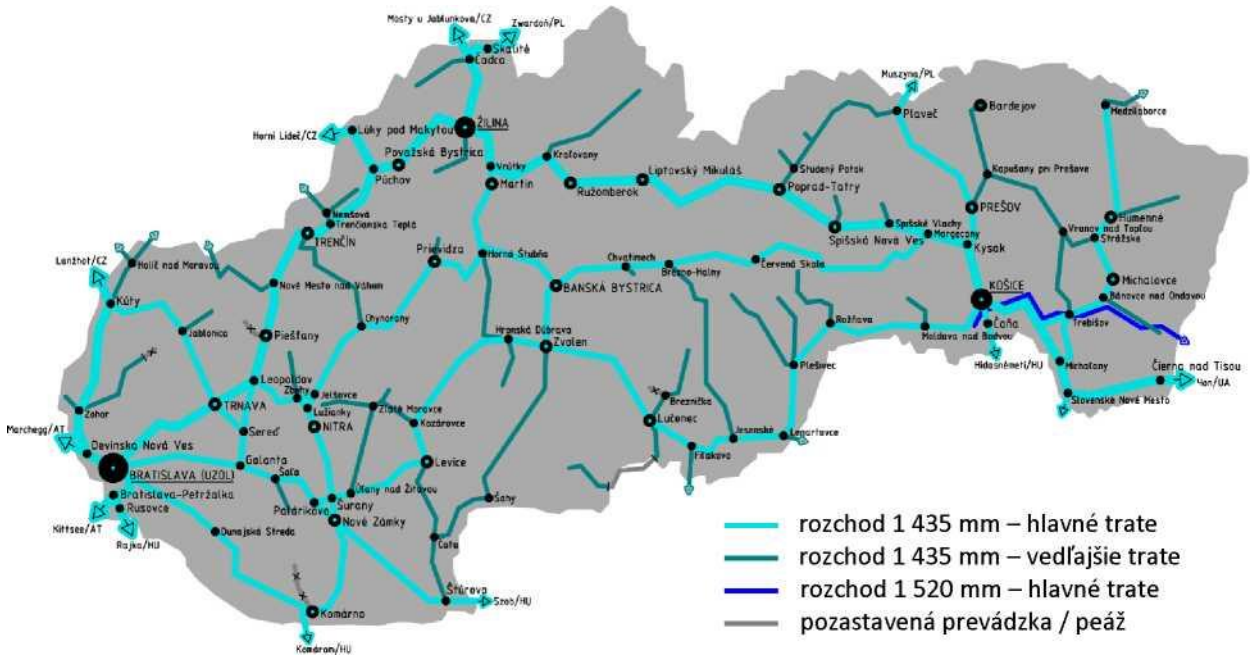

Figure 1: *Indicative diagram of the lines of the existing rail network falling within the geographical scope of the CCS TSI*

A total of **1 635.9 km of lines on the existing 1435 mm rail network are included in the core, extended core or comprehensive network**under10 the new TEN-T Regulation in the

9 A detailed diagram with the numbering of all lines and the representation of nodes is made available as an annex to the Railway Infrastructure Terms of Use on the infrastructure manager's website.

10 The list of railway lines included in the core, extended core or comprehensive network under the new TEN-T Regulation, including their numbering, is provided in Appendix 2. The list does not include possible connections

territory of the Slovak Republic.

corresponding to the definition in Article 14(1)(d) of the new TEN-T Regulation which are not at the same time State-owned railway lines operated and managed by ŽSR.

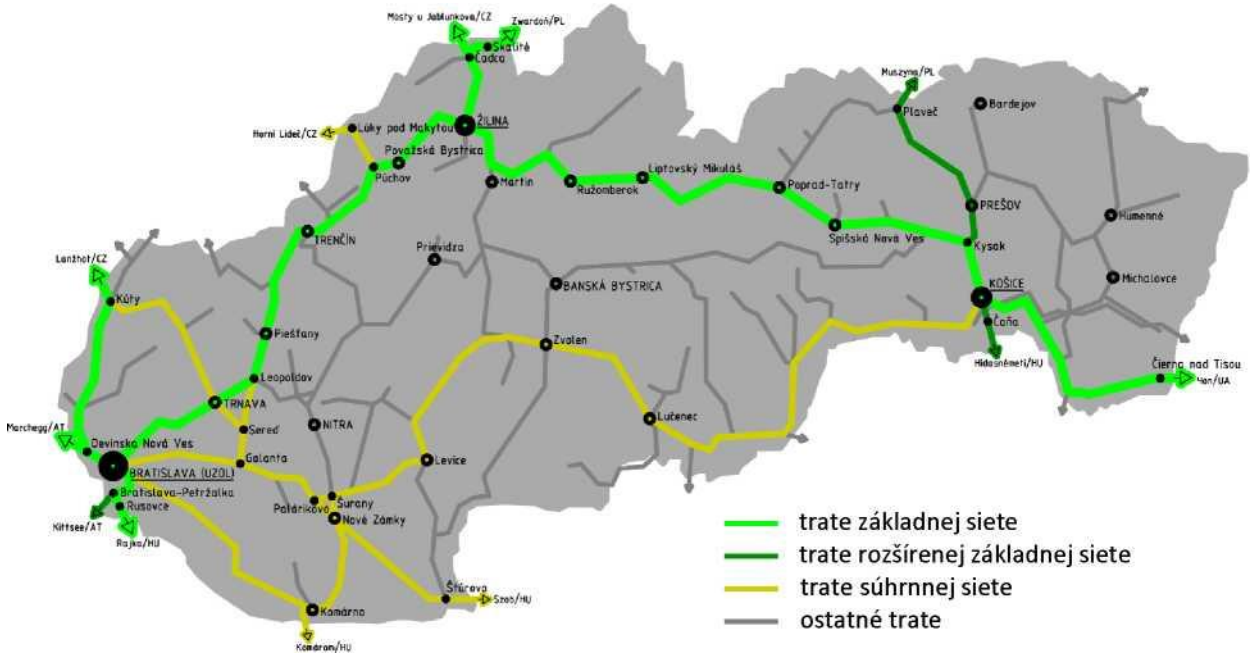

Figure 2: *Inclusion of lines of the existing rail network in the core, extended core or comprehensive network under the new TEN-T Regulation – passenger transport*

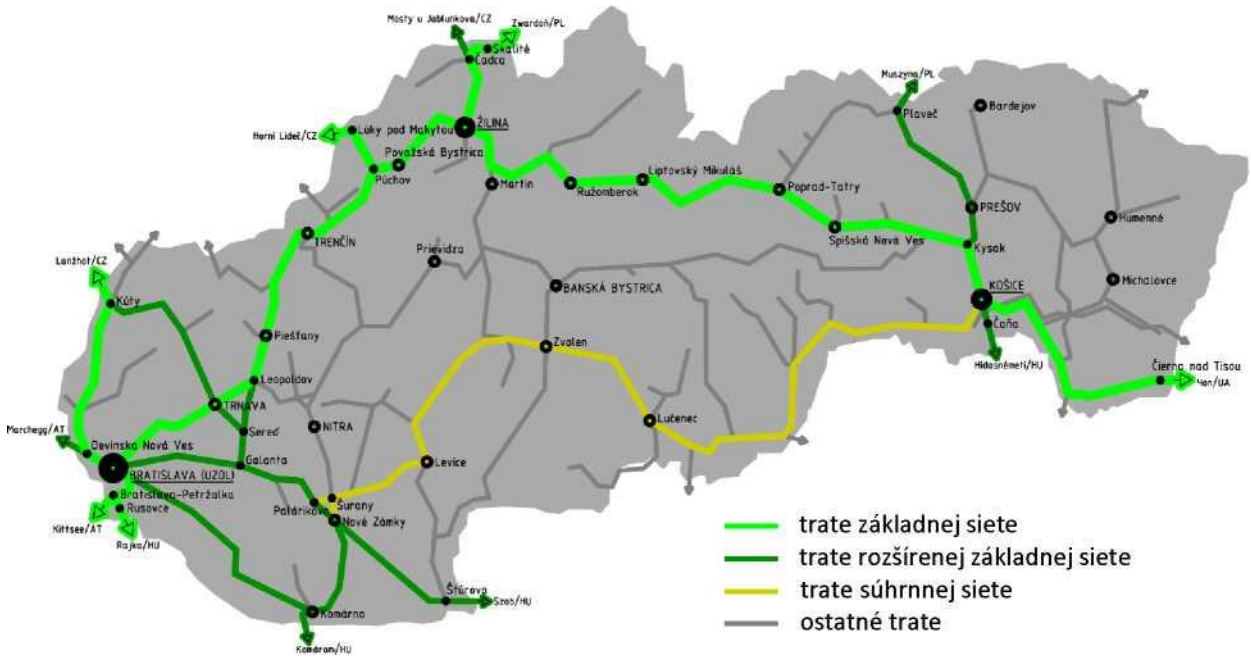

Figure 3: *Inclusion of lines of the existing rail network in the core, extended core or comprehensive network under the new TEN-T Regulation – freight*

The ERTMS trackside deployment plan for the individual sections of the lines of the existing **TEN-T core network corridors (CNC-C ore Network Corridor/-s)** was established by

Regulation (EU) 2017/611 as the ERTMS European Deployment Plan (EDP-E uropean Deployment Plan), in its up-to-date version, distinguishing projects with a deadline of completion by the end of 2023 and other projects whose timetable will only be specified in the following period. An additional legislative basis for the coordinated deployment of ERTMS is Regulation (EU) No 913/201012 on **rail freight corridors (RFC-R ail Freight Corridor/-s)**. The new TEN-T Regulation will integrate CNC and RFC into the new network **of European Transport Corridors (ETC – European Transport Corridor/-s)**, implying the extension of the existing TEN-T to include railway lines serving as diversion or interconnection lines for RFCs.

Selected lines of the Slovak railway network have been integrated into the existing CNC corridors

- Baltic-Adriatic,
- Orient/Eastern Mediterranean,
- Rhine-Danube.

Selected lines of the Slovak rail network have been integrated into the existing RFCs

- Baltic-Adriatic,
- Orient/Eastern Mediterranean,
- Rhine-Danube,
- Amber.

Once the CNC and RFC are integrated into the new ETC network, these will be the railway lines of the ETC corridors.

- Baltic Sea – Adriatic Sea;
- Rhine-Danube;
- Baltic Sea – Black Sea – Aegean Sea.

The inclusion of specific lines of the Slovak rail network in the TEN-T core, extended core or comprehensive network, and thus the binding deadlines for the latest ERTMS deployment on these lines, must be taken into account in the national planning system for the preparation and implementation of railway infrastructure renewal and development projects. In line with national strategic objectives in the field of rail transport, in particular by strengthening its role as the backbone of the public passenger transport system and increasing its share of freight

Commission11 Implementing Regulation (EU) 2017/6 of 5 January 2017 on the European Rail Traffic Management System European deployment plan.

12 Regulation (EU) No 913/2010 of the European Parliament and of the Council of 22 September 2010 concerning a European rail network for competitive freight.

transport13, it is desirable to achieve the benefits of an interoperable Union rail system as soon as possible and to the greatest extent possible, including through the deployment of ERTMS, which is part of the long- and medium-term plans for upgrading the existing rail network and rolling stock of state-owned railway undertakings.

ERTMS trackside equipment is generally deployed on corridor lines for comprehensive upgrades in multi-funded projects according to updated strategic plans, but the deployment of GSM-R as a voice radio communication system also occurs independently of projects involving upgrades of other fixed subsystems. In the case of rolling stock, only rolling stock intended to perform a public service contract within the meaning of Regulation (EC) No 1370/2007 of the European Parliament and of the Council on public passenger transport services by rail and by road is included in the strategic plans and the associated financial plans and state subsidies in the light of the State aid rules laid down in the Communication from the Commission — Community guidelines on State aid for railway undertakings (2008/C 184/07). Other market players can apply for grants under calls launched by the European Climate, Infrastructure and Environment Executive Agency (CINEA).14 For the time being, strategic and financial planning at State level does not pursue the possibility of applying specific State aid schemes beyond the existing European Union guidelines.

In general, the CCS TSI established by Regulation (EU) 2023/1695 applies to new CCS subsystems and, under specified conditions, also to existing CCS subsystems when they are subject to renewal or upgrading or when the area of use of the vehicle is extended, as well as to changes to an existing Control-Command and Signalling On-board Subsystem or maintenance of specifications (error correction). While the Control-Command and Signalling Trackside Subsystem falls within the technical scope of the CCS TSI Railway Network defined by its geographical scope (see description on pages 7 and 8), the Control-Command and Signalling On-board Subsystem refers to the equipment of vehicles operating or intended to operate on this network, namely traction units or units, driving coaches or special vehicles (e.g. OTMs) equipped with a driver's cab and intended to be used in own wheel mode. This implies, inter alia, the obligation to equip any line of the existing rail network within the geographical scope of the CCS TSI with Class A equipment, irrespective of its inclusion in the TEN-T, when it is first equipped with train protection and/or radio communication system equipment or when such equipment is subject to renewal or upgrading. An analogous rule applies to the installations of the abovementioned types of vehicles operating on the existing rail network.

According to the guidelines set out in Article 18 of the new TEN-T Regulation, it is necessary to ensure that railway infrastructure is equipped15 with ERTMS equipment on the core

13 Specific objectives set out in the Strategic Plan for the Development of Transport of the Slovak Republic up to 2030 – Phase II.

14 In the past, also under the TEN-T programme.

15 Term introduced for the purposes of the Union guidelines for the development of the TEN-T, not corresponding to the definition of the infrastructure subsystem for the interoperability of the Union rail system.

network by the end of 2030, on the extended core network by the end of 2040 and on the comprehensive network by the end of 2050, in a 'synchronised and harmonised' manner with vehicle equipment. The future ETCS application is to be exclusively level 2 (L2), at the latest after 2030 for the construction of new lines and after 2040 for the upgrade of the train protection system to ensure the deployment of ETCS level 2 (L2) on all TEN-T lines by the end of 2050. For the remaining class B facilities, the new TEN-T Regulation provides for the need to ensure their decommissioning (except in certain cases) by the end of 2040 on the core network, by the end of 2045 on the extended core network and by the end of 2050 on the comprehensive network, provided that an adequate level of safety is guaranteed and all parties concerned are informed in a timely manner.

In the ERTMS guidelines, the new TEN-T Regulation does not distinguish between the integration of lines into the core, extended core or comprehensive network in relation to passenger or freight traffic; in cases of different integration of individual lines in relation to passenger or freight traffic, the network of higher strategic importance and the earlier of the dates is therefore the determining network.

Although the above-mentioned requirements of the CCS TSI and the Union guidelines for the development of the TEN-T are laid down by binding and directly applicable European Union regulations, derogations from application may be requested in justified cases in accordance with the provisions of the relevant legislation16. When deploying ERTMS in the Slovak Republic, the possibility of derogation, e.g. due to threats to the economic viability of the project and/or to the compatibility of the rail system, has not yet been used and at the time of drafting the CCS TSI national implementation plan, no intentions to request derogation in relation to any of the ongoing or future projects were known.

16 Article 7 of Directive (EU) 2016/797 of the European Parliament and of the Council of 11 May 2016 on the interoperability of the rail system within the European Union (recast), transposed into the national legislative framework as Section 70(5) to (8) of Act No 513/2009 on railways and amending certain acts, as amended, or Article 39(3) of Regulation (EU) No 1315/2013 of the European Parliament and of the Council of 11 December 2013 on Union guidelines for the development of the trans-European transport network and repealing Decision No 661/2010/EU *(in force until 17 July 2024)* or Article 18(8) of Regulation (EU) 2024/1679 of the European Parliament and of the Council of 13 June 2024 on Union guidelines for the development of the trans-European transport network, amending Regulation (EU) 2021/1153 and Regulation (EU) No 913/2010 and repealing Regulation (EU) No 1315/2013 *(in force from 18 July 2024)*.

2. GENERAL DESCRIPTION OF ACTUAL STATUS RELATED

2.1. Description of the context of Class A systems and train detection part

2.1.1. *Current status of deployment of Class A systems and train detection part*

The current state **of deployment of the Class A train protection system (ETCS)** on the lines of the existing rail network is described in the indicative diagrams and tables below. At the time of elaboration of the CCS TSI national implementation plan, the ETCS trackside in operation was equipped with approximately17 212 km of lines or sections thereof integrated into the TEN-T core network, representing 5,9 % of the network length in the geographical scope of the CCS TSI or 28,0 % of the length of the TEN-T core network. Around 182 km of lines or sections thereof were equipped with ETCS at level 1 (L1) and around 30 km of lines or sections thereof were equipped with ETCS at level 2 (L2). ETCS installations at Level 2 (L2) were under construction on around 275 km of lines or sections thereof included in the TEN-T core network, representing 7.6% of the network length in the geographical scope of the CCS TSI or 36.3% of the length of the TEN-T core network, with a view to commissioning in 2025-2030.

Figure 4: *Indicative diagram of the current status of ETCS deployment – installations in operation*

17 Given the different ways of delimiting ETCS equipped sections, for example in cases of discrepancies between tracks within a single section or overlaps during phase-in, an integer value is given according to the data reported by the infrastructure manager.

Table 1: *Current status of ETCS deployment - installations in operation*

Route number	***Start and end of line/section***	***State of play of deployment***	***Deadline for mandatory deployment of ETCS***	***Length in km****	***Yieldof apli-kation***	***Basic specification and version***
125 A	*(Púchov –)* **transport DOT Cífer <==> Svätý Jur z** *(– Bratislava Central Station)*	**in operation** (from*01.07.2006)*	31.12.2030	28,667	L1	Baseline 2 SRS 2.2.2
125 A	*(Púchov –)* **DOT Cífer transport station** *(– Bratislava Central Station)*	**in operation** (from*23.05.2007)*	31.12.2030	1,304	L1	Baseline 2 SRS 2.2.2
125 A	*(Púchov –)* **DOT switch, from Brestovany <==> DOT Cífer transport station** *(– Bratislava Central Station)*	**in operation** (from*01.12.2005)*	31.12.2030	8,941	L1	Baseline 2 SRS 2.2.2
125 A	*(Púchov –)* **Leopoldov station <==> DOT switch, from Brestovany** *(- Bratislava Central Station)*	**in operation** (from*25.10.2007)*	31.12.2030	6,865	L1	Baseline 2 SRS 2.2.2
125 A	*(Púchov –)* **Leopoldov station** *(– Bratislava Central Station)*	**in operation** *(from 30.11.2006)*	31.12.2030	2,298	L1	Baseline 2 SRS 2.2.2
125 A	*(Púchov –)* **switch DOT Yield. Potvorice <==> Leopoldov station** *(– Bratislava Central Station)*	**in operation** *(from 01.12.2007)*	31.12.2030	28,506	L1	Baseline 2 SRS 2.2.2
125 A	*(Púchov –)* **Nové Mesto nad Váhom station <==> switch DOT Výh. Potvorice** *(– Bratislava Central Station*	**in operation** *(from 01.07.2009)*	31.12.2030	4,377	L1	Baseline 2 SRS 2.2.2
125 A	*(Púchov –)* **Nové Mesto nad Váhom station** *(– Bratislava Central Station)*	**in operation** *(from 05.11.2008)*	31.12.2030	2,780	L1	Baseline 2 SRS 2.3.0d
125 A	*(Púchov –)* **switch DOT Yield. Nivy <==> NST New Mesto nad Váhom** *(– Bratislava Central Station)*	**in operation** *(from 01.07.2009)*	31.12.2030	13,505	L1	Baseline 2 SRS 2.3.0d
125 A	*(Púchov –)* **Trenčín- Zlatovce station district <==> switch DOT Yield. Nivy** *(– Bratislava Central Station)*	**in operation** *(from 07.12.2015)*	31.12.2030	8,477	L1	Baseline 2 SRS 2.3.0d

125 A	*(Púchov –)* **Trenčín station <==> Trenčín-Zlatovce station district** *(- Bratislava Central Station)*	**in operation** *(from 04.12.2013)*	31.12.2030	0,725	L1	Baseline 2 SRS 2.3.0d
125 A	*(Púchov –)* **Trenčianska Teplá &lt station;==> Trenčín station** *(– Bratislava Central*	**in operation** *(from 01.12.2014)*	31.12.2030	7,262	L1	Baseline 2 SRS 2.3.0d
125 A	*(Púchov –)* **dopravňa DOT Dubnica nad Váhom <==> Trenčianska Teplá station** *(– Bratislava Central Station)*	**in operation** *(from 01.09.2011)*	31.12.2030	5,333	L1	Baseline 2 SRS 2.3.0d
125 A	*(Púchov –)* **DOT Ladce <==> DOT Dubnica nad Váhom** *(– Bratislava Central Station*	**in operation** *(from 01.01.2013)*	31.12.2030	12,770	L1	Baseline 2 SRS 2.3.0d
125 A	**Púchov &lt station;==> DOT Ladce transport station** *(- Bratislava Central Station)*	**in operation** *(from 01.01.2014)*	31.12.2030	10,252	L1	Baseline 2 SRS 2.3.0d
106 A	*(Kraľovany –)* **dopravňa DOT Považská Bystrica <==> Púchov station**	**in operation** (from*20.10.2020)*	31.12.2030	8,848	L1	Baseline 2 SRS 2.3.0d
106 A	*(Kraľovany –)* **dopravňa DOT Považská Bystrica** *(– Púchov)*	**in operation** *(from 22.06.2019)*	31.12.2030	2,057	L1	Baseline 2 SRS 2.3.0d
106 A	*(Royal –)* **DOT switch Prohibition. Plevník-Drieňová <==> transport station DOT Považská Bystrica** *(-*	**in operation** *(from 20.10.2020)*	31.12.2030	6,567	L1	Baseline 2 SRS 2.3.0d
106 A	*(Kraľovany –) Žilina* **station marshalling yard;==> switch DOT Výh. Plevník- Drienové** *(– Púchov)*	**in operation** *(from 01.07.2017)*	31.12.2030	14,022	L1	Baseline 2 SRS 2.3.0d
106 D	**Žilina station (off) <==> Čadca station** *(– Čadca št. hr. – Bridges at Jablunkova/CZ)*	**in operation** *(indicated 2009-2015)*	31.12.2030	30,606	L2	Baseline 2 SRS 2.3.0d

* *data recorded by the infrastructure manager in relation to placing in service on the relevant sections*

Komárom/HU

Figure 5: *Indicative diagram of the current status of ETCS deployment – installations under construction*

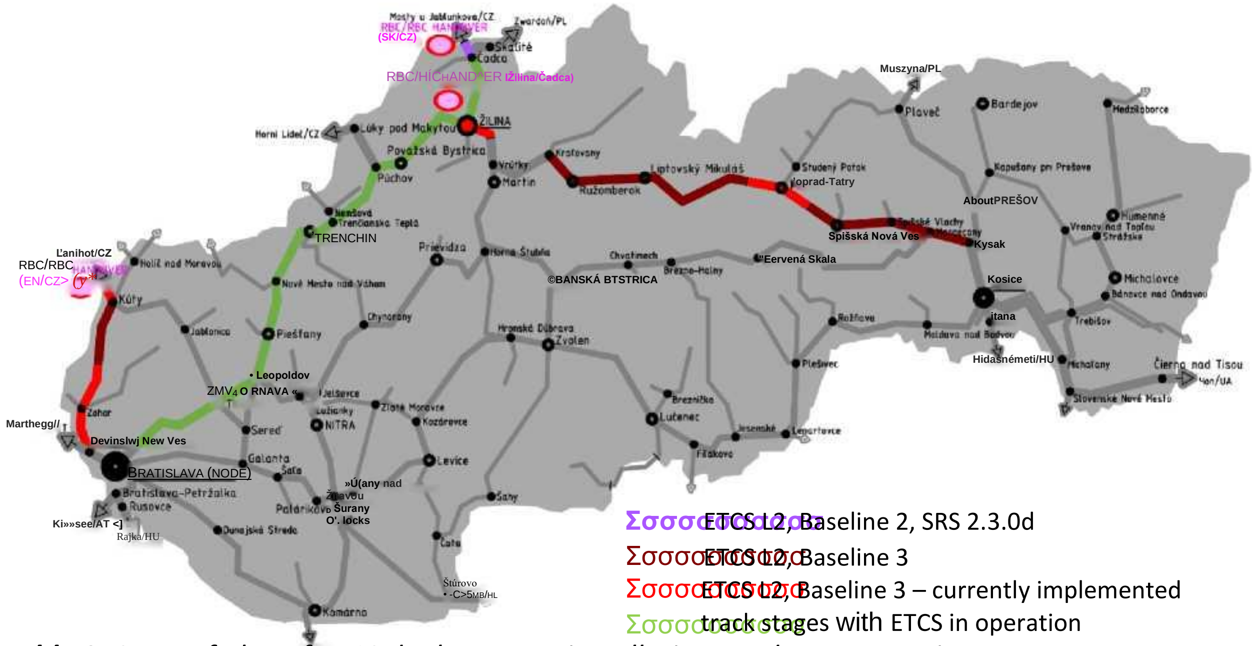

Table 2: *State of play of ETCS deployment - installations under construction*

Route number	***Start and end of line/section***	***State of play of deployment***	***Deadline for mandatory deployment of ETCS***	***Length in km****	***Yieldof apli-kation***	***Basic specification and version***
106 A	*(Kraľovany –)* **Varín station <==> Žilina** *station (– Púchov)*	**under construction** *(foreseen to-become operational in*	31.12.2030	8,258	L2	Baseline 3
106 B	**Cust. Potok <==> Cust. Libra**	**under construction** *(foreseen to-become operational in*	31.12.2030	6,869	L2	Baseline 3
106 C	**Varín <==> Section Váh**	**under construction** *(foreseen to-become operational in*	31.12.2030	3,384	L2	Baseline 3

106 D	*(Žilina –) Čadca* **station (outside) <==> Čadca št. hr.** *(- Mosty u Jablunkova/CZ)*	**Under construction** *(foreseen to-become operational in*	31.12.2030	6,734	L2	Baseline 2 SRS 2.3.0d
106 E	**Žilina railway station marshalling yard <==> Budatín cust. *(Budatínská clutch)***	**under construction** *(foreseen to-become operational in*	31.12.2030	0.585	L2	Baseline 3
106 G	**Žilina-Teplička <==> Žilina station (outside)**	**under construction** *(foreseen to-become operational in*	31.12.2030	7,632	L2	Baseline 3
126 A	*(Bratislava Central Station –)* **Devínska Nová Ves station (off) <==> Kúty station** *(– Kúty št. hr. – Lanžhot/CZ)*	**under construction** *(first stage of* ***Devínska RS Nová Ves (outside) <==> Malacky station,*** *expectedentry into operation of the whole section in 2026-*	31.12.2030	49,473	L2	Baseline 3
126 A	*(Bratislava Central Station –)* **Kúty (outside) <==> Kúty št. hr.** *(- Lanžhot/CZ)*	**under construction** *(foreseenentry into operation in 2026-2027)*	31.12.2030	7,447	L2	Baseline 3
105 A	*(Košice –)* **Kysak &lt station;==> Poprad station** *(– Kraľovany)*	**under construction** *(first stage of the* ***Vydrník station <==> RST Poprad (outside),*** *expected commissioning-of the whole*	31.12.2030	85,006	L2	Baseline 3

105 A	*(Košice –)* **Poprad station <==> Kraľovany station**	**under construction (first** *stage of* ***Poprad station (outside) <==> from Lučivná****, expected commissioning- of the whole section by*	31.12.2030	99,181	L2	Baseline 3

* *data recorded by the Project Management Section of the Ministry of Transport of the Slovak Republic in connection with construction on the relevant sections*

In addition to the construction of ETCS installations on the above-mentioned track sections, a number of projects have been carried out to manage the transitions between the Level 2 (L2) areas supervised by different Radio Block Centres (RBC/RBC handover; see Figure 5). Further projects were also being prepared with a focus on equipping the remaining TEN-T core network lines or sections thereof with ETCS level 2 (L2) and upgrading already installed ETCS level 1 (L1) equipment on line 125 A (increased throughput on the Bratislava-Rača-Leopoldov section or amendment of the basic specification and version from Baseline 2, SRS 2.2.2 to Baseline 2, SRS 2.3.0d to the Bratislava-Rača (outside)- Nové Mesto nad Váhom (outside) section).

The current status **of deployment of Class A radio system (GSM-R)** on the lines of the existing rail network is described in the indicative diagram and tables below. Around 394 km of lines or sections thereof included in the TEN-T core and extended core network, of which around 303 km of lines or sections thereof included in the TEN-T core network, representing 11,0 % of the network length in the geographical scope of the CCS TSI or 40,0 % of the network length of the TEN-T core network, were equipped with GSM-R for voice radio and around 249 km of lines or sections thereof were equipped with GSM-R for voice and data radio, were equipped with GSM-R. GSM-R facilities for voice and data radio communications were under construction on approximately 392 km of lines or sections thereof integrated into the TEN-T core network, representing 10.9% of the network length covered by the geographical scope of the CCS TSI or 51.8% of the length of the TEN-T core network, with a view to their entry into operation in 2025-2027.

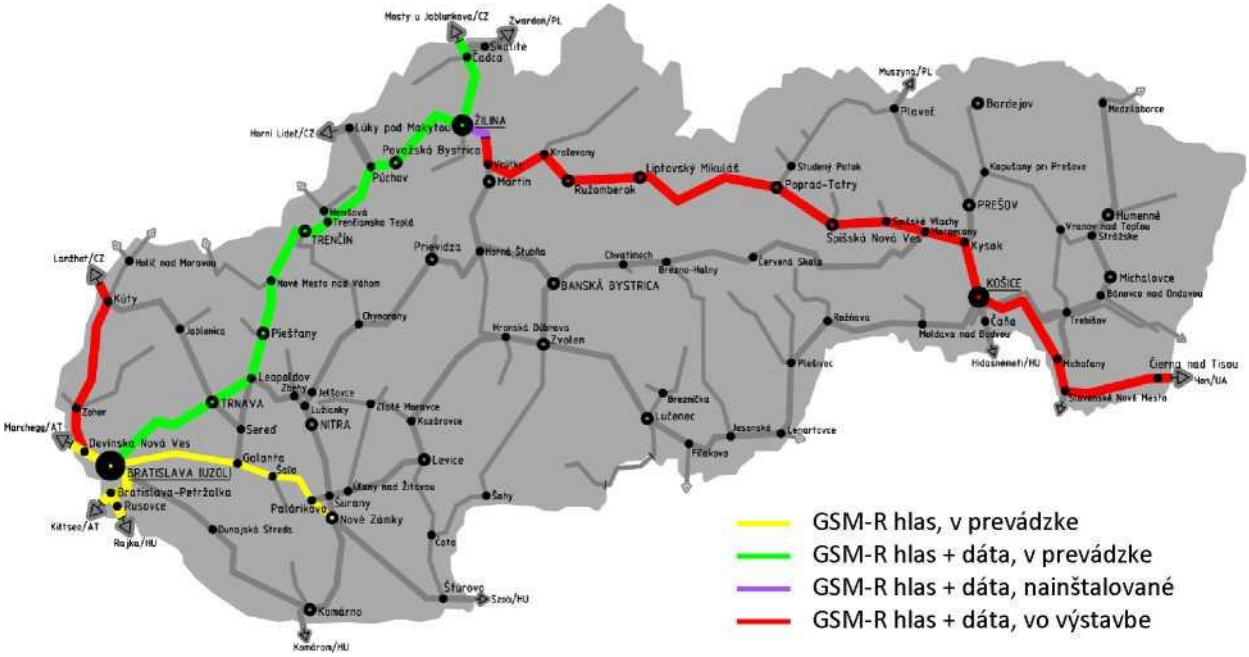

Figure 6: *Indicative diagram of the current state of deployment of GSM-R – equipment in operation and installed, equipment under construction*

Table 3: *Current status of GSM-R deployment – equipment in operation and installed*

Route number	***Start and end of line/section***	***State of play of deployment***	***Length in km****	***Voice / data radio-munication***	***Basic specification and version***
120 A	*(Szob/HU – Štúrovo št. hr. –)* **Senec <==> Bratislava Central Station**	**in operation** *(introduced in 2006 as a pilot section, Phase I)*	~ 25	vocal	Baseline 1 FRS 8.0.0 SRS 16.0.0
120 A	*(Szob/HU – Štúrovo št. hr. –)* **Nové Zámky <==> Senec** *(– Bratislava Central Station)*	**in operation** *(introduced in 2012 as a pilot section, phase II)*	~ 66	vocal	Baseline 1 FRS 8.0.0 SRS 16.0.0

126 A 126 B 127 C 127 D 127 G	**lines of the Bratislava node, including connections to the border points of Devínska Nová Ves št. hr.** *(– Marchegg/AT)*, **Rusovce št. hr.** *(– Rajka/HU)*, **and Bratislava- Petržalka št. hr.** *(-*	**operational** *(introduced in 2012)*	~ 54	vocal	Baseline 1 FRS 8.0.0 SRS 16.0.0
125 A	**Púchov <==> Bratislava Central Station**	**operational** *(introduced in 2016)*	~ 241	voice + data	Baseline 1 FRS 8.0.0 SRS 16.0.0
106 A	*(Kraľovany –)* **Žilina <==> Púchov**				
106 D	**Žilina <==> Čadca št. hr.** *(- Bridges at Jablunkova/CZ)*				
106 A	*(Kraľovany –)* **Varín <==> Žilina** *(– Púchov)*	**Installed,not yet in use** *(foreseen toenter into service in 2025)*	~ 8	voice + data	Baseline 1 FRS 8.0.0 SRS 16.0.0

* *data recorded by the infrastructure manager in relation to placing in service on the relevant sections*

Table 4: *State of play of GSM-R deployment – installations under construction*

Route number	***Start and end of line/section***	***State of play of deployment***	***Length in km****	***Voice / data radio-munication***	***Basic specification and version***
101 A	*(Чоп/UA –)* **Čierna nad Tisou št. hr. <==> Kosice**	**Under construction** *(foreseen to-become operational in 2025)*	~ 334	voice + data	Baseline 1 FRS 8.0.0 SRS 16.0.0
101 D	**Barca St. 1 <==> Košice**				
101 E	**Barca St. 1 <==> Košice**				
105 A	**Košice <==> Kraľovany**				
106 A	**Kraľovany <==> Varín (outside)** *(– Púchov)*				
126 A	*(Bratislava Central Station –)* **Devínska Nová Ves (outside) <==> Kúty št. hr.** *(- Lanžhot/CZ)*	**under construction** *(foreseenentry into operation in 2026-2027)*	~ 58	voice + data	Baseline 1 FRS 8.0.0 SRS 16.0.0

* *data recorded by the infrastructure manager in connection with construction on the relevant sections*

The current status of the deployment **of TSI compliant train detection system** on the lines of the existing rail network is described in the indicative scheme below. The relevant data – line number, start and end of line/section, current status of deployment and length in km – coincide with the description of the current status of ETCS deployment in Tables 1 and 2. Approximately 212 km of lines or sections thereof, representing 5,9 % of the network length in the geographical scope of the CCS TSI, were equipped with TSI compliant train detection equipment in service at the time of elaboration of the CCS TSI National Implementation Plan. The TSI compliant train detection system facilities were under construction on approximately 275 km of lines or sections thereof, representing 7,6 % of the network length in the geographical scope of the CCS TSI, with a view to their placing in service in 2025-2030.

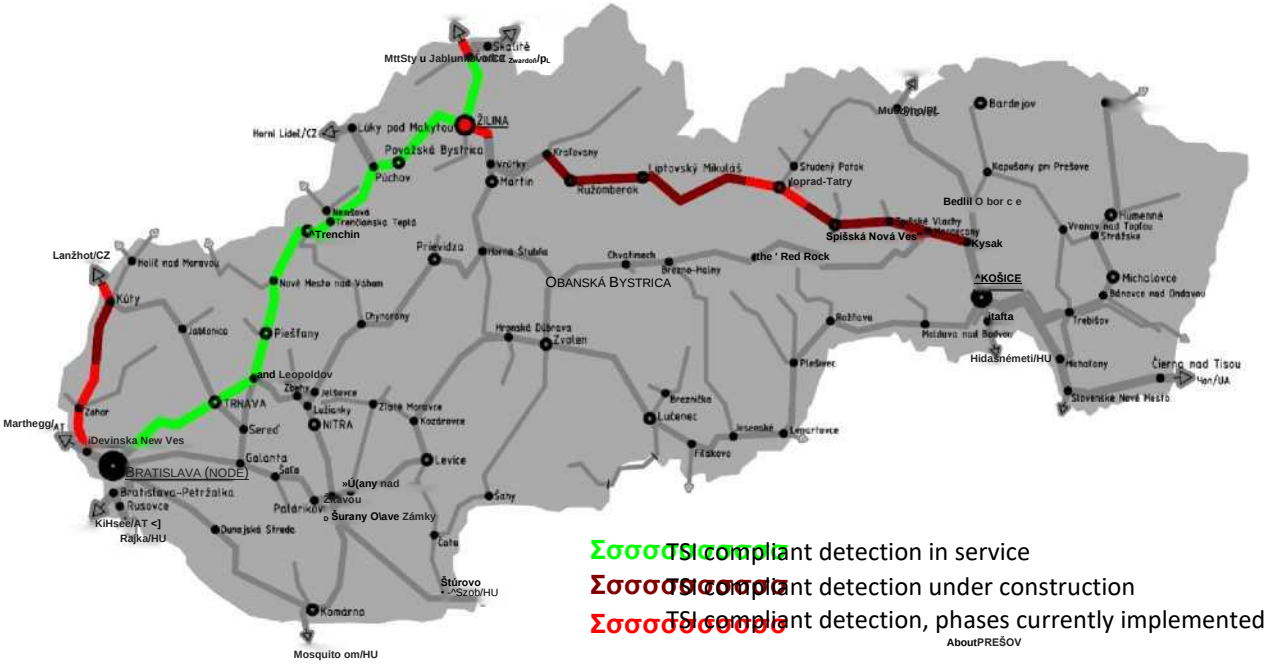

Figure 7: *Current status of TSI compliant train detection system deployment – installations in operation, installations under construction*

2.1.2. *Benefits in terms of capacity, safety, reliability and performance*

The assessment of the expected benefits for capacity, safety, reliability and performance in the deployment of Class A (ERTMS) and TSI compliant train detection equipment shall form part of the preparation of individual investment projects concerning fixed installations on the rail network, in particular in view of the economic assessment of planned public investments, which are generally investments in the overall renewal, upgrading or new construction of individual lines or sections thereof, going beyond the deployment of

train protection and radio communication equipment. The methods used to evaluate/estimate these benefits and their inputs are determined by the category and scope of the projects evaluated, as well as by the requirements of the authorities deciding on the provision of the necessary financial resources to the investor, at State level, formulated by the relevant legislation and strategic documents (see Appendix 1). A detailed overview of the results of the evaluations of all implemented and upcoming projects in the Slovak Republic, which include the deployment of Class A equipment (ERTMS) and TSI compliant train detection equipment, would go well beyond the national CCS TSI implementation plan. For this reason, reference should be made to the data contained in the project documentation made available to infrastructure managers and in the relevant strategic documents at national level.

2.1.3. *Current mandatory requirements for on-board equipment*

The infrastructure manager shall lay down a requirement for vehicles to be fitted with voice radio equipment on specified lines in the network statement, point 2.3.12. Communication systems. Mandatory equipping the driver's cab with GSM-R mobile radio terminals for communication with the signaller concerns the lines

- *(Marchegg/AT –)* Devínska Nová Ves št. hr. – Bratislava Central Station – Senec – Nové Zámky;
- other parts of the Bratislava node, including connections to the border points of Rusovce št. hr. *(– Rajka/HU)*, and Bratislava-Petržalka št. hr. *(- Kittsee/AT)*,
- Bratislava Central Station – Žilina – Čadca – Čadca št. hr. *(- Mosty u Jablunkova/CZ)*,
- Varín – Košice – Čierna nad Tisou.

The obligation to use the GSM-R facilities as a priority, if both the vehicle and the track are equipped with them, also follows from the internal regulation of the infrastructure manager (Regulation ŽSR Z 14 – Operational communication rules) as well as from the GSM-R SK Radio Operating Rules.

At the time of drawing up the national implementation plan for the CCS TSI, the Ministry of Transport of the Slovak Republic was preparing the exemption of specified types of railway vehicles – special vehicles and shunting locomotives operating for more than 20 years – from the obligation to equip them with the equipment of specified ERTMS systems by applying points 7.4.3.2. and 7.4.3.3. of the revised CCS TSI, on the basis of an assessment of the effects of compliance with that obligation on the economic viability of operating the vehicles in question.

2.1.4. *State of play of the deployment of the CCS On-board Subsystems*

EU-funded projects co-financed the purchase of new rolling stock equipped with ERTMS or co-financed the additional implementation of ETCS for vehicles operated by the state-owned passenger railway company Železničná spoločnosť Slovensko (electric locomotives of series 350, 361 and electric units 670). Outside of this, locomotives equipped with ERTMS were leased to Železničná spoločnosť Slovensko and to the state-owned freight transport railway company Železničná spoločnosť Cargo Slovakia. At the same time, railway undertakings operating on the transport market (freight and passenger rail transport) operated locomotives and electric units equipped with ERTMS, but not all of which were registered in the Slovak Republic. The unit cost of implementing ERTMS per vehicle was on average around €566,000 for ETCS and around €47,000 for GSM-R.

According to the available information at the time of the elaboration of the CCS TSI National Implementation Plan, the situation in the ETCS vehicle equipment was as follows:

Railway Company Slovakia (ZSSK) had 72 vehicles equipped with ETCS (of which 21 vehicles equipped with ETCS L1 and 51 vehicles equipped with ETCS L2), namely

10 electric units of the 671 series (Something),
25 electric units of the 660/661 series (Skoda),
4 electric units of the 561 series (Stadler),
2 electric locomotives of the 381 series (Škoda),
12 electric locomotives of the 361 series (Škoda),
(Škoda),
9 electric locomotives of the 350 series (Siemens, rented).
10 electric locomotives of the 383 series

The implementation of ETCS in several other vehicles was in the process of authorisation, namely:

9 electric locomotives of the 361 series (Something).

In the procurement process, the implementation of ETCS was in at least 39 additional vehicles (installation and entry into service in 2025-2027), namely:

9 electric units of the 671 series 20 electric units of the 661/660 series (Damage), (Something),
10 steering wagons of the 951 series with 263 series locomotives). (Damage, part of push-pull kits

ZSSK also plans, in connection with the upgrade of ETCS L1 on the Bratislava-Zilina line and the start of operation of ETCS L2 on the Bratislava-Kúty line, to upgrade the on-board part of

ETCS to 10 electric units of the 671 series by 2030 with an upgrade to ETCS L2. If financial resources are secured, it also envisages equipping vehicles of additional families for which the prospect of operation is at least 10-15 years.

According to data from the Association of Railway Carriers of Slovakia (AROS), rail freight undertakings operating in the territory of the Slovak Republic had a total of 407 locomotives equipped with ETCS. By 2034, they planned to equip another 186 locomotives, progressing according to their age and the condition of equipment of the lines on which they are used.

Railway undertakings shall continuously increase the number of vehicles equipped with RMR devices (GSM-R) in accordance with the current TSI or IM mandatory equipment requirements. For ZSSK, around 85 per cent of locomotives, traction units or control wagons were equipped with GSM-R radio at the time of drafting the CCS TSI national implementation plan, with 100 per cent of equipment expected to be achieved by the end of 2026.

As the exclusive operator of ERTMS systems in the Slovak Republic, the infrastructure manager recorded up to 809 issued GSM-R SIM cards, of which 680 (609 RUs) for voice and 129 (128 RUs) for data radio communication.

2.1.5. *Information on ESC/RSC type related to lines and track-side/on-board integration activities*

Checks to demonstrate technical compatibility between on-board and trackside CCS subsystems — ETCS system compatibility (ESC-E TCS System Compatibility) and radio system compatibility (RSC-R adio System Compatibility) — shall be performed on a type-by-type basis, as listed in the relevant ERA technical document marked 'ESC/RSC Technical Document, TD/011REC1028'. For ESC checks, the types ESC-SK-01-L1 (Document: 'SCENARIOS for ETCS L1') and ESC- SK-01-L2 (Document: 'ETCS L2 compatibility tests applicable in ŽSR conditions'). For RSC checks, 'RSC-EU-0 type' is defined for the Slovak Republic (i.e. EC declarations of verification of subsystems are sufficient to demonstrate RSC).

2.1.6. *Information on cross-border lines*

At the time of elaboration of the CCS TSI national implementation plan, the ETCS trackside equipment was in solution on the following cross-border lines or sections thereof:

- **Kúty (SK) – Lanžhot (CZ):** The line forms a link with the network managed by the Czech infrastructure manager Railway Administration (SŽ). At the time of drafting the CCS TSI national implementation plan, the Slovak section was undergoing a comprehensive upgrade, including the equipment of ETCS level 2 (L2) and GSM-R equipment and the creation of a transition between the areas under the supervision of the radio block centres

ŽSR and SŽ (the so-called RBC/RBC handover). Entry into operation is foreseen by 2027. The Czech section is already equipped with ETCS level 2 (L2) and will be modified and functionally connected to ETCS on the Slovak section in accordance with the requirements of the CCS TSI.

- **Čadca (SK) – Mosty u Jablunkova (CZ):** The line forms a link with the network managed by the Czech infrastructure manager Railway Administration (SŽ). The Slovak section was undergoing a comprehensive upgrade at the time of drafting the CCS TSI National Implementation Plan, including the equipment of ETCS level 2 (L2) equipment and the creation of a transition between the areas under the supervision of the radio block centres ŽSR and SŽ (the so-called RBC/RBC handover). Entry into operation is foreseen by 2025. The Czech section is already equipped with ETCS level 2 (L2) and will be modified and functionally connected to ETCS on the Slovak section in accordance with the requirements of the CCS TSI. GSM-R is operational on the cross-border line.

- **Devínska Nová Ves (SK) – Marchegg (AT):** The line forms a network connection managed by the Austrian infrastructure manager ÖBB-Infrastruktur. The Austrian section is already equipped with ETCS installations in level 2 (L2) up to the AT/SK border, the Slovak section is planned to be equipped by 2030. GSM-R is in operation on the cross-border line (only voice radio communication on the Slovak section).

- **Bratislava-Petržalka (SK) – Kittsee (AT):** The line forms a network connection managed by the Austrian infrastructure manager ÖBB-Infrastruktur. The Austrian section is already equipped with ETCS installations in level 2 (L2) up to the AT/SK border, the Slovak section is planned to be equipped by 2030. GSM-R is in operation on the cross-border line (only voice radio communication on the Slovak section).

2.1.7. *Node information*

Important railway nodes where lines of the existing rail network falling within the geographical scope of the CCS TSI and integrated into the TEN-T are in contact are Bratislava, Žilina and Košice. The individual links within these nodes are identified as separate lines with corresponding numbering and integration into the TEN-T core, extended core or comprehensive network, as can be seen from the tables in this document. A detailed illustration of the nodes is made available as an annex to the Railway Infrastructure Use Conditions on the infrastructure manager's website.

The track part of GSM-R was equipped with Bratislava and Žilina nodes at the time when the CCS TSI national implementation plan was drawn up; GSM-R facilities at the Košice node were under construction, with a view to their entry into service in 2025. None of these nodes have yet been equipped with the trackside part of ETCS in operation, but ETCS (L2) facilities in the node Žilina were under construction, with a view to entry into operation in 2026.

2.2. Description of the context of Class B systems

2.2.1. *Current status of Class B systems*

The current status **of the Class B train protection system** on the lines of the existing rail network is described in the indicative diagram and table below. The Class B train protection system installed is exclusively the LS system (in multiple versions). The LS trackside in operation was equipped with approximately 452 km of lines or sections thereof included in the core and extended TEN-T core network at the time of the elaboration of the CCS TSI National Implementation Plan, representing 12,6 % of the network length in the geographical scope of the CCS TSI. The construction of new LS facilities is no longer ongoing, on lines or sections thereof where the LS system is kept in operation, but its components are renewed where necessary to maintain the required level of safety and reliability until forward-looking decommissioning and replacement by ETCS. The remaining economic lifetime of the LS system as a whole is currently not monitored by the infrastructure manager.

Figure 8: Class B train protection (LS) systems*installed*

Table 5: Class B train protection*systems installed*

Route number	*Start and end of line/section*	*State of play*	*Length in km**	*System installed*
106 F	**Púchov <==> Meadows below Makytou št. hr.** *(- Horní Lideč/CZ)*	**in operation**	20,261	LS
106 D	**Žilina station (outside) <==> Čadca št. hr.** *(- Bridges at Jablunkova/CZ)*	**in operation**	36,671	LS
105 A	**Košice &lt station;==> Kostoľany nad Hornádom station** *(– Kraľovany)*	**in operation**	13,546	LS
105 A 106 A	*(Košice –)* **Štrba &lt station;==> Kraľovany <==> Vrútky station freight station** *(–*	**in operation**	103,097	LS
125 A	*(Púchov –)* **Bratislava-Rača &lt station;==> Bratislava Central Station**	**in operation**	1,672	LS
127 B	*(Bratislava-Vajnory –)* **Bratislava East North station district <==> Bratislava-Rača station**	**in operation**	4,064	LS
126 A	**Bratislava Central Station <==> Kúty station** *(– Kúty št. hr. – Lanžhot/CZ)*	**in operation**	71,139	LS
120 A	*(Szob/HU –)* **Štúrovo št. hr. <==> Bratislava Central Station**	**in operation**	101,979	LS
101 A	*(Чоп/UA –)* **Čierna nad Tisou št. hr. <==> Košice station**	**in operation**	100,061	LS

* *data recorded by the infrastructure manager in relation to operations on the relevant sections*

The current status **of the Class B radio system** on the lines of the existing rail network is described in the indicative diagram and table below. Class B radio systems installed are several types of analogue radio networks, as shown in the table below. The trackside part of Class B radio system in operation or installed and not yet in use at the time of elaboration of the CCS National Implementation Plan has been equipped with approximately 988 km of lines or sections thereof, representing 27.5% of the network length in the geographical scope of the CCS TSI. In terms of continued operation and remaining economic lifetime of the installed analogue radio networks, the situation is the same as for the installed LS train protection system.

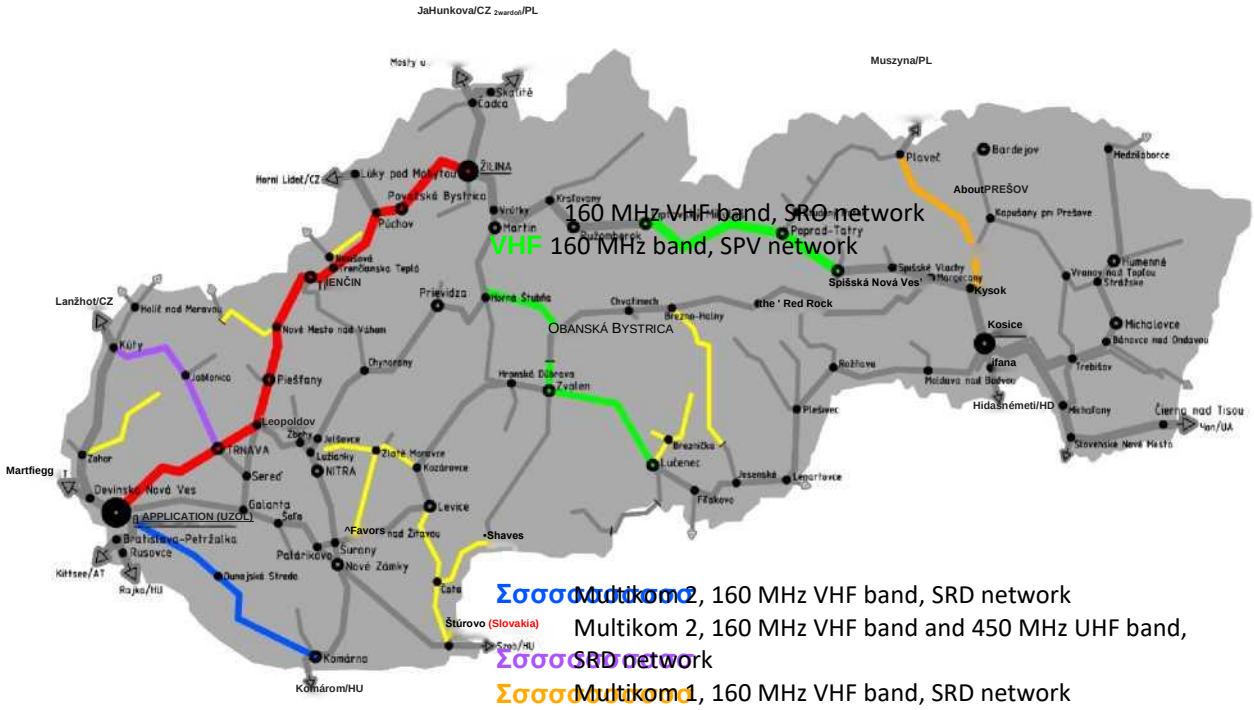

Figure 9: Class B radio systems*installed*

Table 6: Class B radio systems*installed*

Route number	***Start and end of line/section***	***State of play***	***Length in km****	***System installed***	***Note***
124 A	**Komárno <==> Bratislava-Nové Mesto**	**in operation**	~ 95	Multikom 2, 160 MHz VHF band, SRD radio network	*mandatory equipment for mobile radio station HKV u*
125 A 106 A	*(Kraľovany –)* **Žilina <==> Púchov <==> Bratislava-Rača (outside)** *(- Bratislava Central Station)*	**in operation**	~ 193	Multikom 2, 160 MHz VHF band and 450 MHz UHF band, SRD radio network	*mandatory equipment for mobile radio station HKV u*
128 C	**Trnava <==> Kúty**	**in operation**	~ 69	Multikom 1, 160 MHz VHF band, SRD radio network	*mandatory equipment for mobile radio station HKV u*
107 A	*(Muszyna/PL – Plaveč št. hr. –)* **Plaveč <==> Kysak**	**installed, currently unused**	~ 73	Kapsch UHF 450 MHz Duplex (UIC 751-3), SRD radio network	*mandatory equipment for mobile radio station HKV u*
129 A	**Nové Mesto nad Váhom <==> Myjava** *(– Vrbovce št. hr. – Velká nad Veličkou/CZ)*	**in operation**	~ 36	Bosch, VHV 160 MHz band, radio network SRO	*mandatory equipment for mobile radio station HKV u*
116 B	*(Autumn –)* **Rimavská Sobota <==> Brezno**	**in operation**	~ 71	160 MHz VHF band, SRO radio network	
117 A	**Runner <==> Lučenec**	**in operation**	~ 41	160 MHz VHF band, SRO radio network	
117 B	**Breznička <==> Katarínska Huta**	**in operation**	~ 10	160 MHz VHF band, SRO radio network	
119 B	**Shahy <==> Chalet**	**in operation**	~ 31	160 MHz VHF band, SRO radio network	
119 C	**Levice <==> Štúrovo**	**in operation**	~ 52	160 MHz VHF band, SRO radio network	

123 A	**Kozárovce <==> Dražovce ramp**	**in operation**	~ 51	160 MHz VHF band, SRO radio network	
123 B	*(Topoľčianky –)* **Zlaté Moravce <==> Úľany n/Žitavou**	**in operation**	~ 35	160 MHz VHF band, SRO radio network	
126 C	**Plavecký Mikuláš <==> Zohor** *(– Záhorská Ves)*	**in operation**	~ 35	160 MHz VHF band, SRO radio network	
130 C	**Nemšová <==> Lednické Rovne**	**in operation**	~ 17	160 MHz VHF band, SRO radio network	
105 A	*(Košice –)* **Spišská Nová Ves <==> Liptovský Mikuláš** *(– Kraľovany)*	**in operation**	~ 84	160 MHz VHF band, SPV radio network	*exclusively for radio-coupling of VHFs*
115 A	*(Plešivec –)* **Lučenec <==> node Zvolen passenger station**	**in operation**	~ 54	160 MHz VHF band, SPV radio network	*exclusively for radio-coupling of VHFs*
118 D	**Zvolen personal station <==> Sliač kúpele; Banská Bystrica <==> Branch office Dolná Štubňa**	**in operation**	~ 41	160 MHz VHF band, SPV radio network	*exclusively for radio-coupling of VHFs*

** data recorded by the infrastructure manager in relation to operations on the relevant sections*

3. TECHNICAL STRATEGY FOR TRANSIT AND PLANNING

3.1. Technical migration strategy and ETCS and RMR deployment plan

The deployment plan for the Class A train protection system (ETCS) and Class A radio system (RMR) on the lines of the existing rail network is described in the table below and by indicative diagrams. The deployment strategy is crucially based on the mandatory requirements and deadlines for ERTMS deployment set by the new TEN-T Regulation; in the case of RMR, it is envisaged to equip parts of the rail network not included in the TEN-T with voice radio equipment in addition to these requirements. The plan does not include projects to extend the existing rail network to new lines with the assumption of ERTMS equipment, as the stage of these projects at the time of the drafting of the CCS national implementation plan did not allow the indication of specific data (deadlines, length in km, etc.) It is expected that the deployment of TSI compliant train detection system on specific lines or sections thereof will (as with the previous deployment) coincide with the deployment of ETCS and therefore the ETCS deployment plan should also be considered as a TSI compliant train detection system deployment plan.

In terms of transition to Class A systems, there is currently no clear preference for some of the solutions for all affected parts of the network and there is a partial overlap of both on-board and track-side systems. At the same time, in order to avoid possible impacts on the economic viability of operating existing rolling stock not equipped with ETCS, a plan for the deployment of the exclusive operation of vehicles equipped with ETCS on lines equipped with a trackside part of the system, as well as a plan for the decommissioning of Class B systems, are not yet established. However, both the decommissioning of Class B systems and the upgrade to the ETCS application level are also subject to the mandatory deadlines set by the new TEN-T Regulation.

For modernisation projects involving the deployment of RMR, the implementation of the GSM-R system continues to be envisaged for the foreseeable future. The start of the implementation of FRMCS, which appears necessary by 2030 due to GSM-R obsolescence and increased data traffic requirements, will depend on the availability and readiness of individual technologies, as well as the availability of industrial support for the existing system. The revised CCS TSI sets out the relevant requirements for system interfaces and other rules to ensure future compatibility. Preparedness for the use of FRMCS is also ensured by the implementation of designated frequency bands through the national spectrum table.

As regards the equipment of the lines of the existing rail network with voice radio equipment, the national legislation does not currently lay down a general obligation, but the deployment of RMR is part of several plans to upgrade lines outside the TEN-T, as required by the infrastructure manager, generally within the framework of the deployment of long-distance traffic management (so-called dispatching).

Information on sources of funding for project implementation is also included in the table below. As required by the CCS TSI, the indicative schemes below provide an overview of the planned placing in service of ETCS and RMR in the next 20 years.

Table 7: ETCS and RMR deployment*plan*

Route number	***Start and end of line/section***	***ETCS Deployment Plan***	***RMR deployment plan (GSM-R / FRMCS)***	***Deadline for-mandatory introducti***	***Length in km****	***Sourcesof finance***
Kúty – Bratislava (outside)						
126 A	*(Bratislava Central Station –)* **Kúty &lt station;==> Kúty št. hr.** *(- Lanžhot/CZ)*	Under construction (L2), forging-operations until 2027	under construction, forging-operation 2027	2030	7,447	CEF, PSK, KT ŠR
126 A	*(Bratislava Central Station –)* **Devínska Nová Ves RS (off) <==> Malacky RS <==> Kúty RS** *(– Kúty št. hr. – Lanžhot/CZ)*	Under construction (L2), operating-fittings up to	under construction, forging-operation 2027	2030	49,473	CEF, PSK, KT ŠR
Node Bratislava						
126 B	**Devínska Nová Ves &lt RS;==> Devínska Nová Ves št. hr.** *(- Marchegg/AT)*	in plan (L2), forging-operations by 2030	in operation (voice)	2030	3,620	CEF, PSK, KT ŠR
126 A	**Bratislava Central Station <==> Devínska Nová Ves station** *(– Kúty št. hr. – Lanžhot/CZ)*	in plan (L2), forging-operations by 2030	in operation (voice)	2030	14,207	CEF, KT ŠR
127 G	**Bratislava-Nové Mesto &lt station;==> Bratislava Central Station station**	in plan (L2), forging-operations by 2030	in operation (voice)	2030	5,310	CEF, KT ŠR
127 C	*(Bratislava East Rs. South –)* **Bratislava-Nové Mesto station <==> Bratislava-Petržalka station** *(- Rusovce št. hr.*	in plan (L2), forging-operations by 2030	in operation (voice)	2030	12,589	CEF, KT ŠR

124 A	**Komárno <t station;==> Bratislava-Nové Mesto station**	in plan (L2), operation of-forging until 2040	In the plan, runforging until 2040	2040	94,865	KT ŠR
127 D	**Bratislava-Petržalka station <==> Bratislava-Petržalka št. hr.** *(- Kittsee/AT)*	in plan (L2), forging-operations by 2030	in operation (voice)	2030	2.396	CEF, KT ŠR
127 C	*(Bratislava East Rs. South –)* **Bratislava-Petržalka station <==> Rusovce št. hr.** *(- Rajka/HU)*	in plan (L2), forging-operations by 2030	in operation (voice)	2030	14,685	CEF, KT ŠR
127 C	*(Bratislava East Rs. South –)* **Bratislava station suburb <==> Bratislava-Nové Mesto station** *(- Rusovce št. hr. – Rajka/HU)*	in plan (L2), forging-operations by 2030	in operation (voice)	2030	2,066	CEF, KT ŠR
127 C	*(Bratislava East Rs. South —)* **Vineyards <==> Bratislava suburb** *(– Rajka/HU)*	in plan (L2), forging-operations by 2030	in operation (voice)	2030	1,528	CEF, KT ŠR
127 E	**Department of Swamp <==> Bratislava suburb station** *(– Bratislava branch)*	in plan (L2), forging-operations by 2030	in operation (voice)	2040	1,323	CEF, KT ŠR
125 A	*(Púchov –)* **Vineyards <==> Bratislava Central Station**	in plan (L2), forging-operations by 2030	in operation (voice + data)	2030	5,710	CEF, KT ŠR
120 A	*(Szob/HU – Štúrovo št. hr. –)* **Branch Swamp <==> Bratislava Central Station**	in plan (L2), forging-operations by 2030	in operation (voice)	2040	5,391	CEF, KT ŠR
127 C	**Bratislava East RS Bratislava East RS South <==> Vineyards** *(– Rusovce št. hr. – Rajka/HU)*	in plan (L2), forging-operations by 2030	in operation (voice)	2040	1,926	KT ŠR
127 B	*(Bratislava-Vajnory –) Bratislava East* **station Sever <==> Bratislava-Rača station**	in plan (L2), forging-operations by 2030	in operation (voice)	2040	1,970	KT ŠR

127 B	**Bratislava-Vajnory &lt RS;==> Bratislava East RS North** *(- Bratislava-Rača)*	in plan (L2), forging-operations by 2030	in operation (voice)	2040	2,898	KT ŠR
127 A	**Bratislava-Vajnory station <==> Vineyards**	in plan (L2), forging-operations by 2030	in operation (voice)	2040	1,874	KT ŠR
125 A	*(Púchov –)* **Bratislava-Rača &lt station;==> Department of Vinohrady** *(– Bratislava Central Station)*	in plan (L2), forging-operations by 2030	in operation (voice + data)	2030	1,703	CEF, KT ŠR
127 F	**Cust. Swamp <==> Cust. Vineyards**	in plan (L2), forging-operations by 2030	in operation (voice)	2040	1,316	KT ŠR
120 A	*(Szob/HU – Štúrovo št. hr. –)* **Bratislava-Vajnory station <==> Branch Swamp** *(- Bratislava Central Station)*	in plan (L2), forging-operations by 2030	in operation (voice)	2040	4,277	CEF, KT ŠR
Bratislava (outside) – Nové Zámky – Štúrovo/Komárno/Košice(outside)						
120 A	*(Szob/HU – Štúrovo št. hr. –)* **Galanta &lt station;==> Bratislava-Vajnory station** *(- Bratislava Central Station)*	in plan (L2), operation of-forging until 2040	in operation (voice)	2040	39,028	KT ŠR, CEF
120 A	*(Szob/HU – Štúrovo št. hr. –)* **Palárikovo &lt station;==> Galanta station** *(- Bratislava Central Station)*	in plan (L2), operation of-forging until 2040	in operation (voice)	2040	32,341	KT ŠR, CEF
120 A	*(Szob/HU – Štúrovo št. hr. –)* **Nové Zámky &lt station;==> Palárikovo station** *(– Bratislava Hlavná stanica)*	in plan (L2), operation of-forging until 2040	in operation (voice)	2040	9,984	KT ŠR, CEF
121 A	*(Hronská Dúbrava –)* **RS Šurany <==> Palárikovo station**	Roadmap (L2), Operation of-Fittings by 2050	in the plan, operatingthe fittings to 2040	2050	10,492	KT ŠR
121 A	**Hronská Dúbrava &lt station;==> Šurany station** *(– Palárikovo)*	Roadmap (L2), Operation of-Fittings by 2050	In the plan, runforging until 2040	2050	108.24 3	KT ŠR

118 A	**Zvolen station passenger station <==> Hronská Dúbrava station** *(- Vrútky)*	Roadmap (L2), Operation of-Fittings by 2050	In the plan, runforging until 2040	2050	11,057	KT ŠR
115 A	**Plešivec &lt station;==> Zvolen station passenger station**	Roadmap (L2), Operation of-Fittings by 2050	In the plan, runforging until 2040	2050	149.70 4	KT ŠR
109 A	**Barca &lt station;==> Plešivec station** *(- Košice)*	Roadmap (L2), Operation of-Fittings by 2050	In the plan, runforging until 2040	2050	80,110	KT ŠR
122 C	*(Nitrianske Pravno –)* **RS Šurany <==> Nové Zámky station**	Roadmap (L2), Operation of-Fittings by 2050	In the plan, runforging until 2040	2050	10,650	KT ŠR
120 B	*(Komárom/HU – Komárno št. hr. –)* **Komárno &lt station;==> Nové Zámky station**	in plan (L2), operation of-forging until 2040	In the plan, runforging by 2035	2040	28,782	CEF, KT ŠR
120 B	*(Komárom/HU –)* **Komárno št. hr. <==> Komárno station** *(– Nové Zámky)*	in plan (L2), operation of-forging until 2040	In the plan, runforging by 2035	2040	4,734	CEF, KT ŠR
120 A	*(Szob/HU – Štúrovo št. hr. –)* **Štúrovo &lt station;==> Nové Zámky station** *(– Bratislava main station)*	in plan (L2), operation of-forging until 2040	In the plan, runforging by 2035	2040	44,199	CEF, KT ŠR
120 A	*(Szob/HU –)* **Štúrovo št. hr. <==> Štúrovo station** *(- Bratislava Central Station)*	in plan (L2), operation of-forging until 2040	In the plan, runforging until 2040	2040	13,902	CEF, KT ŠR
115 B	**Prohibition. Urbanka <==> Fiľakovo St. 3**	Roadmap (L2), Operation of-Fittings by 2050	in the plan, operatingthe fittings to 2040	2050	1,872	KT ŠR
Bratislava (outside) – Žilina (outside), Leopoldov/Trnava – Galanta						
125 A	*(Púchov –)* **Exclusion. Svaty Jur (off) <==> Bratislava-Rača station** *(- Bratislava Central Station)*	in plan (L2), forging-operations by 2030	in operation (voice + data)	2030	6,225	OPD, KT ŠR

125 A	*(Púchov –) Trnava &lt* **station;==> Výh. Svätý Jur** *(– Bratislava Central Station)*	In service (L1)	in operation (voice + data)	2030	32,630	ISPA, KF, OPD, KT ŠR
128 C	**Trnava &lt station;==> Kúty station**	in plan (L2), operation of-forging until 2040	In the plan, runforging until 2040	2040	69,088	KT ŠR
128 B	**Sereď &lt station;==> Trnava station**	in plan (L2), operation of-forging until 2040	In the plan, runforging until 2040	2040	14,198	KT ŠR
125 A	*(Púchov –)* **Leopoldov station <==> Trnava station** *(- Bratislava Central Station)*	In service (L1)	in operation (voice + data)	2030	17,237	ISPA, KF, OPD, KT SF
128 A	**Leopoldov &lt station;==> Galanta station**	in plan (L2), operation of-forging until 2040	In the plan, runforging by 2035	2040	29,313	KT ŠR
125 A	**Púchov &lt station;==> Leopoldov station** *(- Bratislava Central Station)*	In service (L1)	in operation (voice + data)	2030	94,006	ISPA, KF, OPD, KT SF
106 F	**Púchov <==> Meadows below Makytou št. hr.** *(- Horní Lideč/CZ)*	in plan (L2), forging-operations by 2030	in the plan, the operation offorging by 2030	2030	21,062	KT ŠR
106 A	*(Kraľovany -)* **Žilina station <==> Púchov station**	In service (L1)	in operation (voice + data)	2030	44,883	OPD, OPII, KT ŠR
Node Žilina – Čadca – St. border SK/CZ/PL						
106 E	**Žilina railway station marshalling yard <==> Budatín cust.** ***(Budatínská clutch)***	Under construction (L2), forging-operation 2026	in operation (voice + data)	2030	0.585	OPD, OPII, CEF, PSK, KT ŠR
106 B	**Cust. Potok <==> Cust. Váh**	Under construction (L2), forging-operation 2026	installed-installed (voice + data), operating-fittings	2030	6,869	OPII, CEF, PSK, KT ŠR

106 C	**Varín &lt station;==> Section Váh**	Under construction (L2), forging-operation 2026	installed-installed (voice + data), operating-fittings	2030	3,384	OPII, CEF, PSK, KT ŠR
106 D	**Žilina &lt station;==> Čadca station** *(– Čadca št. hr. – Bridges at Jablunkova/CZ)*	in service (L2)	in operation (voice + data)	2030	29.551	OPD
114 B	**Čadca &lt station;==> Rocky St. hr.** *(- Zwardoń/PL)*	in plan (L2), forging-operations by 2030	in the plan, the operation offorging by 2030	2030	20,047	
106 D	*(Žilina –)* **Čadca &lt station;==> Cadca St. hr.** *(- Mosty u Jablunkova/CZ)*	Under construction (L2), forging-operation 2025	in operation (voice + data)	2030	6,734	OPII, CEF, PSK, KT ŠR
106 A	*(Kraľovany -)* **Varín station <==> Žilina station**	Under construction (L2), forging-operation 2026	installed-installed (voice + data), operating-fittings	2030	8,258	OPII, CEF, PSK, KT ŠR
106 G	**Žilina-Teplička RS <==> Žilina RS**	Under construction (L2), forging-operation 2026	installed-installed (voice + data), operating-fittings	2030	7,632	OPII, CEF, PSK, KT ŠR
Čierna nad Tisou Št. border SK/UA – Košice (outside)						
101 A	*(Чоп/UA –)* **Čierna nad Tisou št. hr. <==> Cierna nad Tisou station** *(- Košice)*	in plan (L2), operational by 2030	Under construction, commissioning 2025	2030	4,192	CEF, KT ŠR
101 A	*(Чоп/UA – Čierna nad Tisou št. hr. –)* **ŽST Čierna nad Tisou <==> ŽST Michaľany** *(- Košice)*	in plan (L2), forging-operations by 2030	Under construction, forging-operation 2025	2030	46,768	CEF, KT ŠR
103 A	*(Łupków/PL – Medzilaborce št. hr. –)* **Lastovce cust. <==> Michaľany**	not planned	In the plan, runforging by 2035	is not	1,358	POO, KT ŠR

103 C	**Lastovce cust. <==> Michaľany cust. *(Michalian clutch)***	not planned	In the plan, runforging by 2035	is not	0,719	POO, KT ŠR
103 A	*(Łupków/PL – Medzilaborce št. hr. –)* **Trebišov &lt station;==> Lastovce odb.** *(- Michaľany)*	not planned	In the plan, runforging by 2035	is not	18,816	POO, KT ŠR
101 A	*(Чоп/UA – Čierna nad Tisou št. hr. –)* **Michaľany station <==> Elevation. Slivník** *(– Košice)*	in plan (L2), forging-operations by 2030	Under construction, forging-operation 2025	2030	10,765	CEF, KT ŠR
103 B	**Trebišov <==> Hit. Plum tree**	not planned	In the plan, runforging by 2035	is not	15,405	POO, KT ŠR
101 A	*(Чоп/UA – Čierna nad Tisou št. hr. –)* **Prohibition. Slivník <==> Krásna nad Hornádom station** *(– Košice)*	in plan (L2), forging-operations by 2030	Under construction, forging-operation 2025	2030	30,365	CEF, KT ŠR
101 A	*(Чоп/UA – Čierna nad Tisou št. hr. –)* **Krásna nad Hornádom &lt station;==> Barca St. 1** *(- Košice)*	in plan (L2), forging-operations by 2030	Under construction, forging-operation 2025	2030	2,812	CEF, KT ŠR
Kosice node						
101 A	*(Чоп/UA – Čierna nad Tisou št. hr. –)* **Barca St. 1 <==> Košice station**	in plan (L2), forging-operations by 2030	Under construction, forging-operation 2025	2030	3,746	CEF, KT ŠR
109 B	*(Hidasnémeti/HU –)* **Čaňa št. hr. <==> Barca station**	in plan (L2), operation of-forging until 2040	in the plan, operatingthe fittings to 2035	2040	18,211	KT ŠR, POO
109 C	**Krásna nad Hornádom station <==> Barca St. 4**	Roadmap (L2), Operation of-Fittings by 2050	In the plan, runforging by 2035	2050	2,084	KT ŠR, POO
101 D	**Barca St. 1 <==> Košice station**	in plan (L2), forging-operations by 2030	In the plan, runforging by 2035	2030	3,859	KT ŠR, POO

101 E	**Barca St. 1 <==> Košice station**	in plan (L2), forging-operations by 2030	In the plan, runforging by 2035	2030	3,828	KT ŠR, POO
109 A	*(Košice –)* **Barca St. 1 <==> Barca station** *(- Plešivec)*	in plan (L2), operation of-forging until 2040	In the plan, runforging by 2035	2040	0,402	KT ŠR, POO
109 A	*(Košice –)* **Barca &lt station;==> Haniska station near Košice (-** *Plešivec)*	Roadmap (L2), Operation of-Fittings by 2050	In the plan, runforging by 2035	2050	6,015	KT ŠR, POO
Plaveč – Kysak – Košice						
105 A	**Košice &lt station;==> Kysak station** *(– Kraľovany)*	in plan (L2), forging-operations by 2030	Under construction, forging-operation 2025	2030	15,736	CEF, KT ŠR
107 A	*(Muszyna/PL – Plaveč št. hr.)* **Prešov &lt station;==> Kysak station**	in plan (L2), operation of-forging until 2040	In the plan, runforging by 2035	2040	16,808	POO, KT ŠR
107 A	*(Muszyna/PL – Plaveč št. hr.)* **Plaveč č. 5/6 <==> Prešov station** *(– Kysak)*	in plan (L2), operation of-forging until 2040	In the plan, runforging until 2040	2040	52,999	KT ŠR
107 A	*(Muszyna/PL – Plaveč št. hr.)* **Plaveč &lt station;==> Plaveč vh. 5/6** *(- Kysak)*	in plan (L2), operation of-forging until 2040	In the plan, runforging until 2040	2040	1,632	KT ŠR
107 A	*(Muszyna/PL – Plaveč št. hr.)* **Plaveč vh. no. 1/3 <==> Plaveč station** *(- Kysak)*	in plan (L2), operation of-forging until 2040	In the plan, runforging until 2040	2040	1.439	KT ŠR
107 A	*(Muszyna/PL –)* **Plaveč št. hr. <==> Sailboat No. 1/3** *(- Kysak)*	in plan (L2), operation of-forging until 2040	In the plan, runforging until 2040	2040	6,709	KT ŠR
107 B	**Sailboat No. 1/3 <==> Sailor haul No. 5/6** ***(Orlov clutch)***	in plan (L2), operation of-forging until 2040	In the plan, runforging until 2040	2040	1,174	KT ŠR

107 C	**Acid No. 39/40 <==> Sourdough coupling No 35/36 *(Sourdough coupling)***	in plan (L2), operation of-forging until 2040	In the plan, runforging by 2035	2040	0,900	POO, KT ŠR
Kysak - Varín						
105 A	*(Košice –)* **Kysak &lt station;==> Poprad station** *(– Kraľovany)*	Under construction first stage (L2), operating-fittings until	Under construction, forging-operation 2025	2030	85,006	CEF, KT ŠR, PSK
110 A	**Margecany &lt station;==> Gelnica station** *(- Red Rock)*	not planned	In the plan, runforging by 2035	is not	3,532	POO, KT ŠR
105 A	*(Košice –)* **Poprad &lt station;==> Kraľovany station**	Under construction first stage (L2), operating-fittings until	Under construction, forging-operation 2025	2030	99,181	CEF, KT ŠR, PSK
106 A	**Kraľovany &lt station;==> Vrútky** *station (– Púchov)*	in plan (L2), forging-operations by 2030	Under construction, forging-operation 2025	2030	18,108	CEF, KT ŠR
118 A	*(Passenger station chosen –)* **Martin &lt RS;==> RS Rifts**	not planned	in the plan, operatingthe fittings to 2035	is not	11,911	POO, KT ŠR
118 B	**Cluster trench <==> Rifts freight station *(Priekopská clutch)***	not planned	in the plan, operatingthe fittings to 2035	is not	1,254	POO, KT ŠR
106 A	*(Králľovany –)* **Vrútky station <==> Varín** *station (– Púchov)*	in plan (L2), forging-operations by 2030	Under construction, forging-operation 2025	2030	12,695	CEF, KT ŠR

* *data registered by the Ministry of Transport of the Slovak Republic in relation to projects on the relevant sections*

Explanatory notes on proposed or existing sources of funding for the implementation of projects:

State budget capital transfers, co-financing to EU funds and financing of ineligible expenditure
CEF Connecting Europe Facility

OP Transport Operational Programme (Programme period 2007-2013)

OPII Operational Programme Integrated Infrastructure (Programme period 2014-2020)

ISPA pre-accession fund (2000-2008)

PSK Programme Slovakia (Programme period 2021-2027)

RRP (2020-2026)

KFCohesion Fund (shortened programming period 2004-2006)

(For most projects, the timing of project implementation and the eligibility of expenditure mean that several sources of funding overlap.)

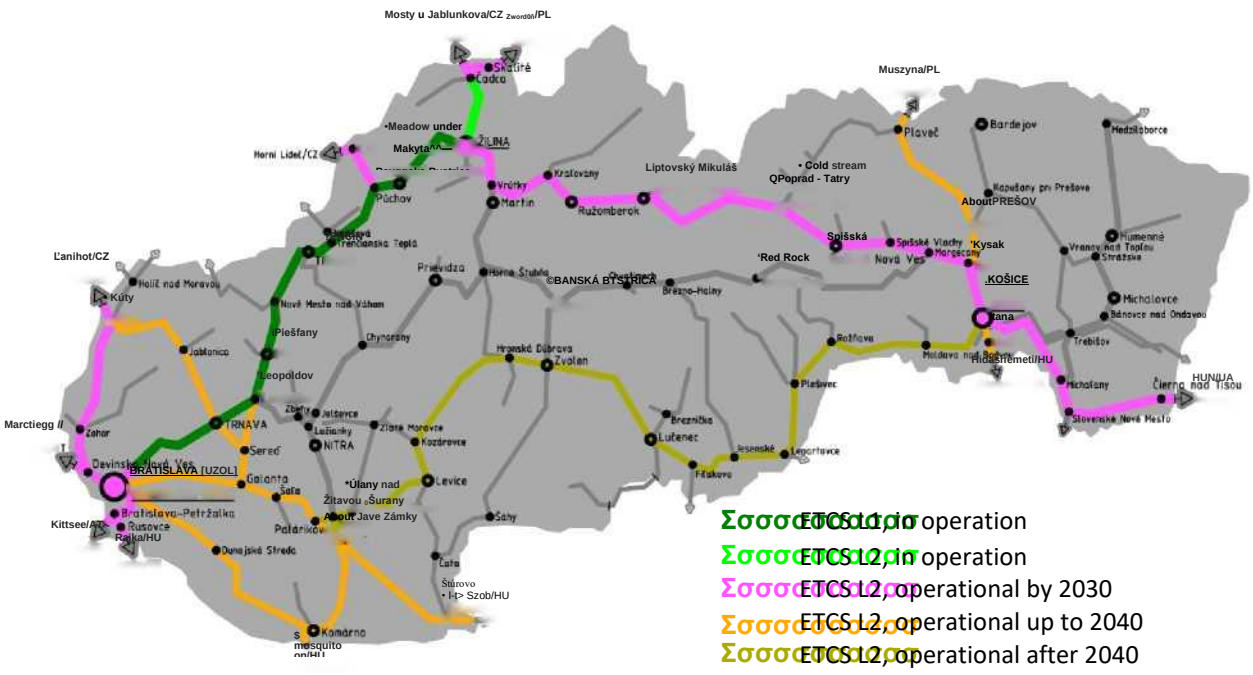

Figure 10: ETCS Deployment*Plan – overview of commissioning in the next 20 years*

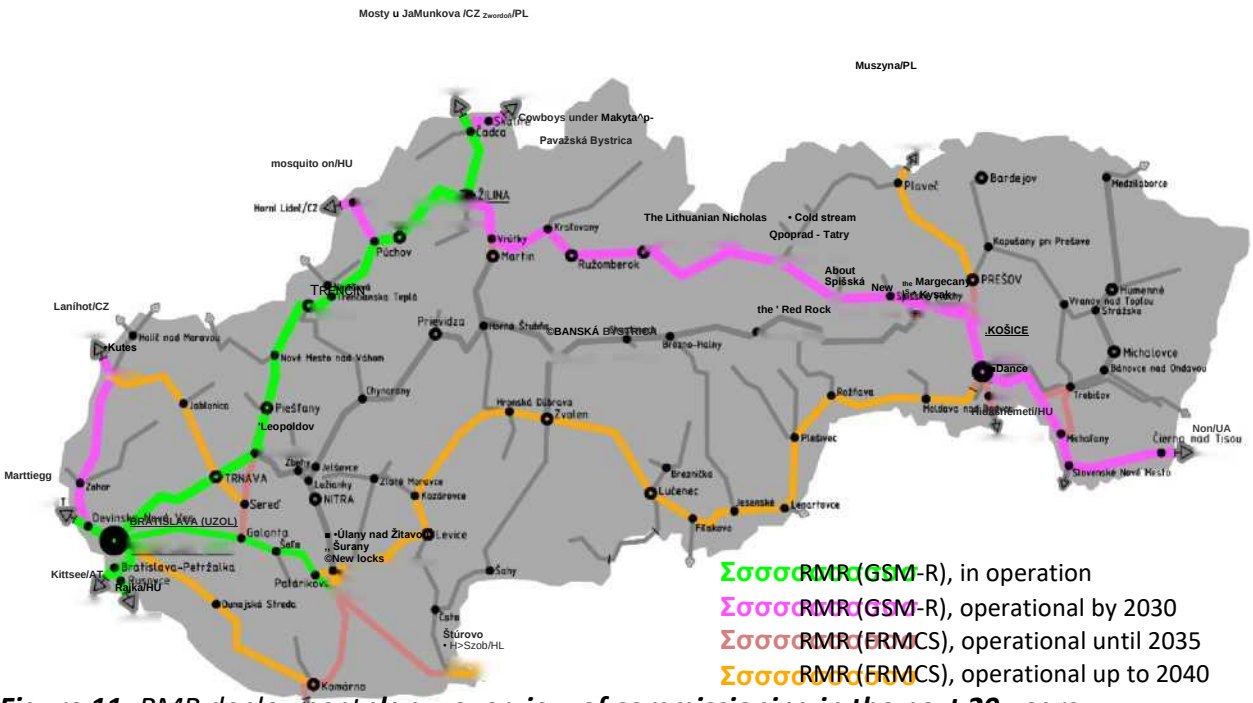

Figure 11: *RMR deployment****plan – overview of commissioning in the next 20 years***

processed

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Appendix 1: *Selected National Background Strategy Papers*

Title of document	***Period***
Strategic Plan for the Development of Transport of the Slovak Republic until	by 2030
Economic Policy Strategy of the Slovak Republic up to 2030	by 2030
National Investment Plan of the Slovak Republic for 2018-2030	by 2030
Priorities for the renewal and development of railway infrastructure *+ Timetable for the preparation and construction of railway infrastructure*	by 2030 *by 2027**
Partnership Agreement of the Slovak Republic 2021-2027	by 2027
Programme Slovakia 2021-2027	by 2027
Programme Statement of the Government of the Slovak Republic	by 2027
Slovak recovery and resilience plan	by 2026

* *is subject to regular update*

Appendix 2: *Inclusion of lines of the existing rail network in the TEN-T*

Route number	***Start and end of line/section***	***Networks TEN-T***	***Length in km***
101 A	*(Чоп/UA –)* **Čierna nad Tisou št. hr. – Čierna nad Tisou – Košice**	**CORE-P** **CORE-F**	98,730
101 D	**Barca St. 1 –*(track 101)*– Košice freight station – Košice**	COMP-P **CORE-F**	4,029
101 E	**Barca St. 1 –*(Rail 102)*– Košice**	COMP-P **CORE-F**	3,993
105 A	**Košice – Kysak – Kraľovany**	**CORE-P** **CORE-F**	203,406
106 A	**Kraľovany – Žilina – Púchov**	**CORE-P** **CORE-F**	81,957
106 B	**Odb. Potok –*(track A1)*– Žilina-Teplička –*(track C2)*– Odb. Váh**	COMP-P **CORE-F**	5,199
106 C	**Varín –*(track C1/D1)*– Žilina-Teplička –*(track D2)*– Odb. Váh**	COMP-P **CORE-F**	3,269
106 D	**Žilina – Čadca** *(– Čadca št. hr. – Bridges at Jablunkova/CZ)*	**CORE-P** **CORE-F**	30,206
106 D	*(Žilina –)* **Čadca – Čadca št. hr.** *(- Mosty u Jablunkova/CZ)*	**CORE-P** ECOR-F	6,734
106 E	**Žilina marshalling yard – Budatín cust. *(Budatínska Connection)***	**CORE-P** **CORE-F**	0.585
106 F	**Púchov – Lúky pod Makytou št. hr.** *(- Horní Lideč/CZ)*	COMP-P **CORE-F**	21,049

106 G	**Žilina-Teplička –*(track D22)*– Odb. Váh –*(track B2)*– Žilina-Teplička odch. sk. –*(Rail A2)*– Žilina**	COMP-P **CORE-F**	7,287
114 B	**Čadca – Skalité št. hr.** *(- Zwardoń/PL)*	**CORE-P** **CORE-F**	20,048
125 A	**Púchov – Leopoldov – Trnava – Bratislava Central Station**	**CORE-P** **CORE-F**	157,461
126 A	**Bratislava Central Station – Devínska Nová Ves – Kúty – Kúty št. hr.** *(- Lanžhot/CZ)*	**CORE-P** **CORE-F**	70,602
126 B	**Devínska Nová Ves – Devínska Nová Ves št. hr.** *(- Marchegg/AT)*	**CORE-P** ECOR-F	3,620
127 C	*(Bratislava East Rs. South – (track 113)–)* **Branch office Vinohrady – Bratislava suburb – Bratislava-Nové Mesto – Bratislava ÚNS – Bratislava-Petržalka – Rusovce št. hr.** *(– Rajka/HU)*	**CORE-P** **CORE-F**	30,878
127 D	**Bratislava-Petržalka – Bratislava-Petržalka št. hr.** *(- Kittsee/AT)*	ECOR-P **CORE-F**	2.396
127 G	**Bratislava-Nové Mesto - Bratislava Central Station**	**CORE-P** **CORE-F**	5,110
		Total Core	**756,559**
107 A	*(Muszyna/PL –)* **Plaveč št. hr. - Kysak**	**ECOR-P** **ECOR-F**	78,121
107 B	**Plaveč č. 1/3 – Plaveč č. 5/6 *(Orlovská clutch)***	**ECOR-P** **ECOR-F**	0,900
107 C	**Kysak ref. 39/40 – Kysak ref. 35/36 *(Kysac ref.)***	**ECOR-P** **ECOR-F**	0,900
109 B	*(Hidasnémeti/HU –)* **Čaňa št. hr. - Barca**	**ECOR-P** **ECOR-F**	18,199
120 A	*(Szob/HU –)* **Štúrovo št. hr. – Nové Zámky – Palárikovo – Galanta – Bratislava Hlavná stanica**	COMP-P **ECOR-F**	149,030
120 B	*(Komárom/HU –)* **Komárno št. hr. – Komárno – Nové Zámky**	COMP-P **ECOR-F**	33,516
124 A	**Komárno – Bratislava-Nové Mesto**	COMP-P **ECOR-F**	94,898
127 A	**Bratislava-Vajnory – Bratislava East South — Cust. Vineyards**	COMP-P **ECOR-F**	4,776
127 B	**Bratislava-Vajnory – Bratislava East North – Bratislava-Rača**	COMP-P **ECOR-F**	4,868
127 C	**Bratislava East Rs. South –*(track 113)*– Vinohrady Branch** *(– Bratislava suburb – Bratislava-Nové Mesto – Bratislava ÚNS – Bratislava-Petržalka – Rusovce – Rusovce št. hr. – Rajka/HU)*	COMP-P **ECOR-F**	3,267
127 E	**Odb. Močiar – Bratislava suburb** *(– Bratislava branch)*	COMP-P **ECOR-F**	1,323
127 F	**Odec. Swamp - Odec. Vinohrady**	COMP-P **ECOR-F**	1,316

128 A	**Leopoldov – Sereď – Galanta**	COMP-P **ECOR-F**	29,313
128 B	**Sereď - Trnava**	COMP-P **ECOR-F**	14,195
128 C	**Trnava - Kúty**	COMP-P **ECOR-F**	69,088
	Total Core (CORE) and Extended Core (ECOR)		**1260,269**
109 A	**Košice – Barca – Plešivec**	**COMP-P** **COMP-F**	83,910
109 C	**Krásna nad Hornádom - Barca St. 4**	**COMP-P** **COMP-F**	2,136
115 A	**Plešivec - Zvolen passenger station**	**COMP-P** **COMP-F**	149,187
115 B	**Prohibition. Urbánka – Fiľakovo St. 3**	**COMP-P** **COMP-F**	1,872
118 A	**Zvolen passenger station - Hronská Dúbrava** *(- Vrútky)*	**COMP-P** **COMP-F**	11,057
121 A	**Hronská Dúbrava – Šurany – Palárikovo**	**COMP-P** **COMP-F**	116,812
122 C	*(Nitrianske Pravno –)* **Šurany – Nové Zámky**	**COMP-P** **COMP-F**	10,650
	Total Core (CORE), Extended Core (ECOR) and Comprehensive (COMP)		**1635,893**

Explanatory

CORE-P	Core Network - Passenger Transport
CORE-F	Core Network - Freight
ECOR-P	Extended core network – passenger
ECOR-F	Extended Core Network - Freight
COMP-P	comprehensive network – passenger
COMP-F	comprehensive network - freight transport