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# Capacity strategy of ŽSR for the annual timetable 2028

Železnice Slovenskej republiky



December 2024

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## 0. History of changes

Version	Edited by	Date	Description of change
4.0a	Bc. Jakub Kuna	30.5.2024	Creation of document structure
4.1a	Bc. Jakub Kuna	9.8.2024	chap. 3.3, table 11.
4.1b	Bc. Jakub Kuna	12.11.2024	tab. 5 / pic. 3 - from PDO 2030
4.1c	Bc. Jakub Kuna	15.11.2024	additional description to 0.2 and update of chap. 2.3

## 0.1 Introduction and scope of this document

### **Directive 2012/34/EU, in particular:**

- Article 26, according to which EU Member States shall ensure that rail infrastructure capacity allocation schemes follow the principles set out in EU legislation, thus allowing MI to make optimal and efficient use of available infrastructure capacity.
- Article 8, according to which EU Member States (taking into account the need to cooperate with neighbouring IMs) shall draw up five-year rail infrastructure development strategies as well as business plans for IMs to ensure optimal and efficient use, provision and development by ensuring a financial balance and providing the means to achieve these objectives.
- Article 30 and Annex V, which describes the basic principles and parameters of multi-year (minimum 5 years) contractual agreements between the competent authorities and infrastructure managers, including all aspects of infrastructure management: maintenance and renewal of infrastructure already in operation and construction of new infrastructure.

## 0.2 List of abbreviations and terminology description

Skratka	Význam
AC	Alternating current
AD HOC	Paths off trains ordered by the applicant that were constructed outside the annual TT development process
AT	Austria
CEF	Connecting Europe Facility – nástroj financovania z fondov EÚ na prepájanie Európy
CZ	Czech Republic
DC	Direct current
ETC	European Train Corridor
ERTMS	European Rail Traffic Management System
ETCS	European Train Control System
EU	European Union
HU	Hungary
IA	Investment action
IS	Information system
IT	Information Technology
CSt	Capacity strategy
IM	Infrastructure manager
N/a	Not available
NPIM	National Project Implementation Manager
PDO	Transport Service Plan
PIS	Operational Information System
PL	Poland
POTR	Temporary line speed restriction
RNE	RailNetEurope
SR	Slovak republic
SROV	Collection of track closure orders

SŽ	Správa Železnic CZ – Czech IM
ŠR	State budget
TCR	Temporary Capacity Restrictions
TTP	Book of track conditions
TTR	TimeTabling and Capacity Redesign
ŽSR	Železnice Slovenskej republiky

Vysvetlivka	Popis
Applicant	A railway undertaking or an international grouping of railway undertakings or other persons or legal entities as well as the competent authorities pursuant to Regulation (EC) No 1370/2007 and consignors, freight forwarders and combined transport operators having a public service or commercial interest in the procurement of infrastructure capacity
IM	Infrastructure Manager, who is responsible for the Capacity Strategy development process. Several IMs may develop a common Capacity Strategy
Terminal	The installation which has been specially arranged to allow the loading and/or the unloading of goods onto/from freight trains, and the integration of rail freight services with road, maritime, river and air services and either the forming or the modification of the composition of freight trains, and, where necessary, performing border operations and procedures with European third countries.
Service facility	is the installation , including ground area, buildings and equipment, which has been specially arranged as a whole or in part to allow the supply of one or more of services listed in Act of the National Council of the Slovak Republic No.513/2009 Coll. on railways and on amendment of certain acts, as amended, in § 54 Conditions of access to services in Annex 13, Part B, second to fourth points.

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## 0.4 List of contacts

List of IMs concerned and contact information of National TTR Implementation Managers (NPIMs):

Name of IM	Position	Name	Phone number	Email
Železnice Slovenskej republiky	NPIM	Marek Brna	+421 2 2029 3020	brna.marek@zsr.sk
Správa železnic, státní organizace	NPIM	Richard Těhník	+420 972 244 641	tehnikr@spravazeleznic.cz
Österreichische Bundesbahnen INFRA	NPIM	Jean-Marc Hillenberg	+436 648 217 242	jean-marc.hillenberg@oebb.at
Magyar Államvasutak Zrt.	NPIM	Zoltán Imre Kovács	+36 30 565 5613	kovacs.zoltan.imre@mav.hu
Polskie Linie Kolejowe S.A.	NPIM	N/a	N/a	N/a
VAS Ukrzaliznyca	NPIM	N/a	N/a	N/a



## 0.5 Border sections of selected lines

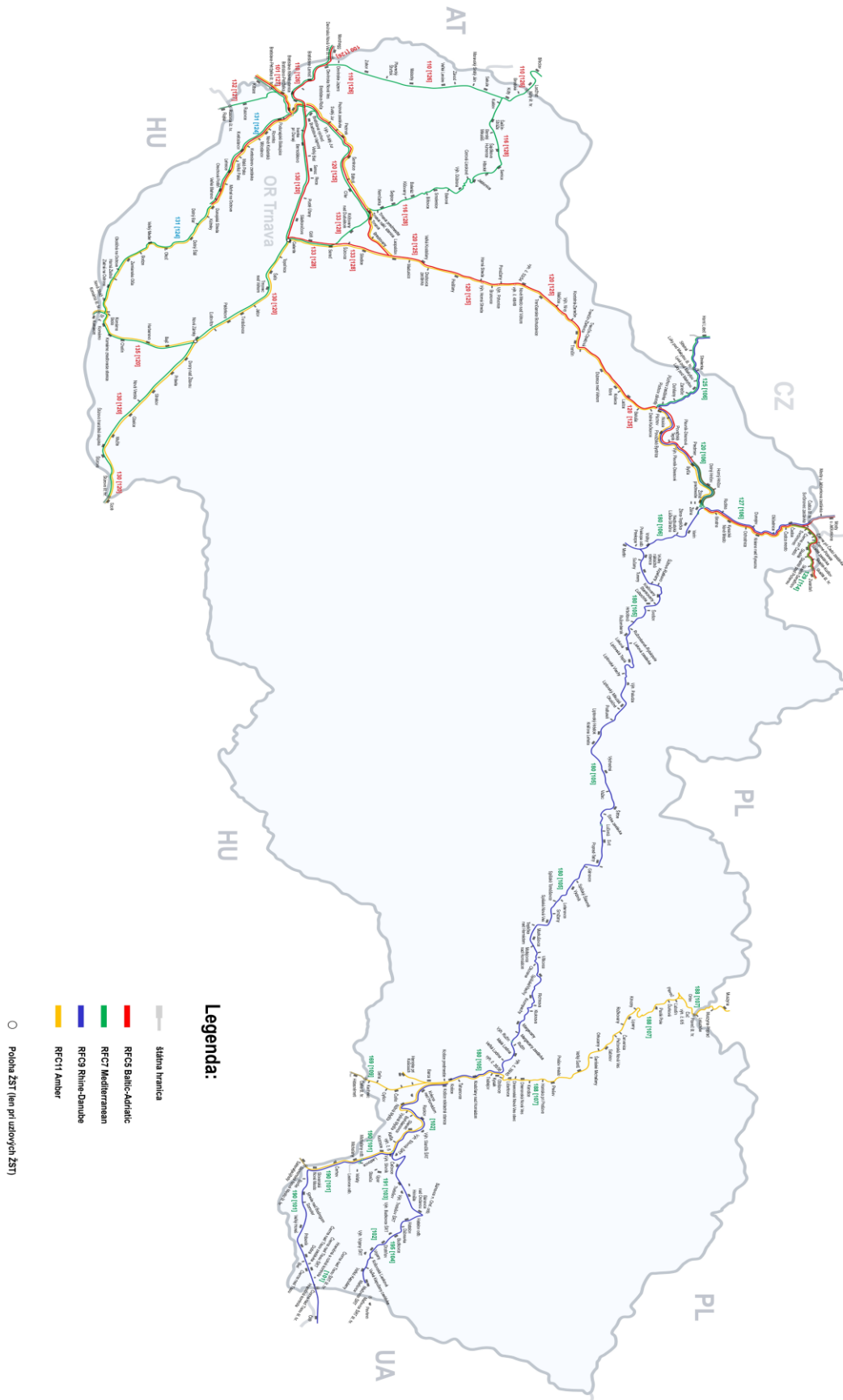
List of selected border crossings of ŽSR with neighbouring countries:

Name of border section	Neighbouring country	Type of transport operated
Kúty - Lanžhot	Czech Republic	Passenger, Freight
Devínska Nová Ves - Marchegg	Republic of Austria	Passenger, Freight
Bratislava-Petržalka - Kittsee	Republic of Austria	Passenger, Freight
Rusovce - Rajka	Republic of Hungary	Passenger, Freight
Štúrovo - Szob	Republic of Hungary	Passenger, Freight
Komárno - Komárom	Republic of Hungary	Passenger, Freight
Čadca – Mosty u Jablunkova	Czech Republic	Passenger, Freight
Skalité – Zwardoń	Republic of Poland	Passenger, Freight
Čaňa - Hidasnémeti	Republic of Hungary	Passenger, Freight
Plaveč - Muszyna	Republic of Poland	Passenger, Freight
Maťovce ŠRT - Užgorod	Ukraine	Freight
Lúky pod Makytou - Horní Lideč	Czech Republic	Passenger, Freight
Čierna nad Tisou - Čop	Ukraine	Passenger, Freight

## 0.6 Geographical area of ŽSR CSt for TT 2028

ŽSR has developed this Capacity Strategy in the scope of ETC lines (former RFC corridors) including alternative (outbound) and connecting (feeder) lines as an important railway connection running in the axis on which a significant volume of international railway traffic is realized.

Figure 1: Visualization of the geographical area of the lines included in the ŽSR CSt for TT 2028



## 0.7 Specifications of geographical area for TT 2028

In terms of the territorial division of the Slovak Republic, the lines in the scope of the Capacity Strategy of ŽSR for TT 2028 are located mainly from the south-western through north-western and northern to the south-eastern part of the Slovak Republic, in the territories of Bratislava, Trnava, Nitra, Trenčín, Žilina, Prešov and Košice regions.

### 0.7.1 Basic line section data

Line	TTP	No. of tracks	Length in km	Vertical load category	P/C Profile	Traction system	Maximum line speed in km/h	Corridor
Devínska Nová Ves - Devínska Nová Ves št.hr.	<a href="#">(TTP 126B)</a>	2	3.62	D4	70/400	25kV, 50Hz	80	RFC 5 RFC 7 alt
Devínska Nová Ves - Bratislava hlavná stanica	<a href="#">(TTP 126A)</a>	2	12.841	D3/D4	70/400	25kV, 50Hz	140	RFC 5 RFC 7 alt
Bratislava hlavná stanica - Bratislava-Nové Mesto	<a href="#">(TTP 127G)</a>	1	5.11	D4	70/400	25kV, 50Hz	80	RFC 5 RFC 7
Bratislava-Nové Mesto - Bratislava-Petržalka - Kitsee (AT)	<a href="#">(TTP 127C)</a>	2	14.98	D4	80/400	25kV AC, 50Hz; Zhľavie BA-Petržalka-Kitsee (AT) 15kV, 16,7 Hz	60	RFC 5 RFC 7
Bratislava hl.st. - Bratislava-Rača	<a href="#">(TTP 125A)</a>	2	7.4	D4	70/400	25kV AC, 50Hz	160	RFC 5 RFC 7
Bratislava-Rača - Púchov	<a href="#">(TTP 125A)</a>	2	150	D4	99/429	25kV AC, 50Hz	160	RFC 5
Púchov - Žilina	<a href="#">(TTP 106A)</a>	2	43	D4	70/400	25kV AC, 50Hz 3Kv	160 Žilina zr.st. - Žilina 40	RFC 5

Line	TTP	No. of tracks	Length in km	Vertical load category	P/C Profile	Traction system	Maximum line speed in km/h	Corridor
Žilina - Čadca - Mosty u Jablunkova (CZ)	<a href="#">(TTP 106D)</a>	2	41	D4	70/400	3Kv	140 Krásno - Čadca 100; Čadca – Čadca št. hr. 80	RFC 5
Žilina zr.stanica - Budatín odb.	<a href="#">(TTP 106E)</a>	1	0.58	D4	70/400	3Kv	40	RFC 5
Čadca - Skalité Zwardoň	<a href="#">(TTP 114B)</a>	1	20	D4	70/400	3Kv	100 Skalité – Skalité št. hr. 70	RFC 5
Bratislava hlavná stanica - Galanta	<a href="#">(TTP 120A)</a>	2	48,69	D4	70/400	25 kV, 50Hz	140	RFC 5 alt. RFC 7
Galanta - Sereď	<a href="#">(TTP 128A)</a>	2	12	D4	80/400	25kV, 50Hz	100	RFC 5 alt. RFC 7 alt.
Sereď - Leopoldov	<a href="#">(TTP 128A)</a>	2	16.9	D4	80/400	25 kV, 50Hz	100	RFC 5 alt.
Bratislava- Nové Mesto - Dunajská Streda	<a href="#">(TTP 124A)</a>	1	37.31	C4/D4	70/400	BA-Nové Mesto, km 3,520= 25kV, 50 Hz jednofázovo; Komárno, km 2,500= 25kV, 50 Hz jednofázovo	80	RFC 5 alt. RFC7 alt.
Szob (HU) – Štúrovo – Bratislava hlavná stanica	<a href="#">(TTP 120A)</a>	2	149	D4	70/400	25 kV, 50Hz	140	RFC 7

Line	TTP	No. of tracks	Length in km	Vertical load category	P/C Profile	Traction system	Maximum line speed in km/h	Corridor
Bratislava hlavná stanica – Kúty – Lanžhot (CZ)	<a href="#">(TTP 126A)</a>	2	74	D3/D4	70/400	25 kV , 50Hz	140	RFC 7
Devínska Nová Ves - Devínska Nová Ves št.hr.	<a href="#">(TTP 126B)</a>	1	3.62	C3	70/400	25 kV, 50Hz	80	RFC 7
Bratislava-Nové Mesto - Bratislava-Petržalka - Rusovce - Rajka (HU)	<a href="#">(TTP 127C)</a>	2; Petržalka – Rusovce1	27	D4	70/400	25 kV, 50 Hz	80	RFC 7
Komárom (HU) – Komárno – Nové Zámky	<a href="#">(TTP 120B)</a>	1	33	D4	70/400	25 kV, 50Hz	100	RFC 7
Trnava – Bratislava hlavná stanica	<a href="#">(TTP 125A)</a>	2	46	D4	99/429 Svätý Jur – Bratislava hlavná stanica = 70/400	25 kV, 50Hz	160	RFC 7
Trnava – Kúty	<a href="#">(TTP 128C)</a>	1	69	D4	70/400	25kV, 50Hz	90	RFC 7
Trnava - Sered'	<a href="#">(TTP 128B)</a>	1	46	D4	70/400	25kV, 50Hz	80	RFC 7
Sered' - Galanta	<a href="#">(TTP 128A)</a>	2	12	D4	80/400	25kV, 50Hz	100	RFC 7

Line	TTP	No. of tracks	Length in km	Vertical load category	P/C Profile	Traction system	Maximum line speed in km/h	Corridor
Bratislava hlavná stanica – Bratislava-Nové Mesto	<a href="#">(TTP 127G)</a>	1	5,11	D4	70/400	25kV, 50Hz	80	RFC 7
Komárom (HU) – Komárno – Nové Zámky	<a href="#">(TTP 120B)</a>	1	33	D4	70/400	25 kV, 50Hz	100	RFC 7
Trnava – Bratislava hlavná stanica	<a href="#">(TTP 125A)</a>	2	46	D4	99/429 Svätý Jur – Bratislava hl. stanica = 70/400	25 kV, 50Hz	160	RFC 7
Trnava – Kúty	<a href="#">(TTP 128C)</a>	1	69	D4	70/400	25kV, 50Hz	90	RFC 7
Trnava – Sered'	<a href="#">(TTP 128B)</a>	1	46	D4	70/400	25kV, 50Hz	80	RFC 7
Sered' – Galanta	<a href="#">(TTP 128A)</a>	2	12	D4	80/400	25kV, 50Hz	100	RFC 7
Bratislava hlavná stanica – Bratislava-Nové Mesto	<a href="#">(TTP 127G)</a>	1	5,11	D4	70/400	25kV, 50Hz	80	RFC 7
Bratislava-Nové Mesto – Bratislava-Petržalka – Kitsee (AT)	<a href="#">(TTP 127C)</a>	2	14.98	D4	80/400	25kV, 50Hz; Zhlavie BA-Petržalka - Kitsee (AT) 15kV, 16,7 Hz	60	RFC 7

Line	TTP	No. of tracks	Length in km	Vertical load category	P/C Profile	Traction system	Maximum line speed in km/h	Corridor
Čierna n/Tisou št.hr-Košice	<a href="#">(TTP 101A)</a>	2	94,539	D4	70/400	3 kV	100 (SNM - Michaľany - 120)	RFC9
Košice - Kraľovany	<a href="#">(TTP 105A)</a>	2	209,488	D4	70/400	3 kV	120	RFC9
Kraľovany - Púchov	<a href="#">(TTP 106A)</a>	2	81,95	D4	70/400	3 kV	120 (Žilina zr.st - Púchov - 160)	RFC9
Žilina - Čadca št.hr.	<a href="#">(TTP 106D)</a>	2	32,056	D4	70/400	3 kV	140	RFC9
Púchov - Lúky p/Makytou	<a href="#">(TTP 106F)</a>	2	21,031	D4	70/400	3 kV (ŽST Púchov = 25 kV, 50 Hz)	90	RFC9
Maťovce - Bánovce n/Ondavou	<a href="#">(TTP 104A)</a>	1	28,959	D4	70/400	3 kV	80	RFC9alt
Bánovce n/Ondavou - Trebišov	<a href="#">(TTP 103A)</a>	1	10,764	D4	70/400	3 kV	100	RFC9alt
Trebišov - Výh. Slivník	<a href="#">(TTP 103B)</a>	1	15,3	D4	70/400	3 kV	80	RFC9alt
Slovenské Nové Mesto - Barca St. 1	<a href="#">(TTP 101A)</a>	2	94,539	D4	70/400	3 kV	100 (SNM - Michaľany - 120)	RFC11
Haniská pri Košiciach -	<a href="#">(TTP 109A)</a>	2	6,14	D4	70/400	3 kV	100	RFC11

Line	TTP	No. of tracks	Length in km	Vertical load category	P/C Profile	Traction system	Maximum line speed in km/h	Corridor
Hidasnémeti - Barca	<a href="#">(TTP 109B)</a>	1	18,211	D4	70/400	3 kV	100	RFC11
Barca - Barca St. 1	<a href="#">(TTP 101A)</a>	1	1,121	D4	70/400	3 kV	100	RFC11
Barca St. 1 - Košice	<a href="#">(TTP 101A)</a>	2	3,814	D4	70/400	3 kV	100	RFC11
Košice - Kysak	<a href="#">(TTP 105A)</a>	2	15,738	D4	70/400	3 kV	100	RFC11
Kysak výh. č. 39/40 - Plaveč št.hr	<a href="#">(TTP 107A)</a>	1	75,932	D4	70/400	3 kV	Plaveč št. hr.- Lipany 60 km/h; Lipany – Prešov 100 km/h; Prešov – Kysak 80 km/h	RFC11
Kysak - Kysak výh. č. 39/40 = „Kysacká spojka“	<a href="#">(TTP 107C)</a>	1	0,851	D4	70/400	3 kV	80	RFC11
Slovenské Nové Mesto - Barca st. 1	<a href="#">(TTP 101A)</a>	2	94,539	D4	70/400	3 kV	100 (SNM - Michal'any - 120)	RFC11 alt
Sátoraljaújhegy (HU) – Slovenské Nové Mesto	<a href="#">(TTP 101C)</a>	1	2,0	D4	70/400	neelektrifikovaná	40	RFC11 alt



# 1 Expected capacity for TT 2028

## 1.1 Additional available capacity for TT 2028

This chapter contains information on ŽSR Investment Actions (IA) that are **implemented or planned to be implemented by the time of validity of TT 2028 with a positive impact on the capacity of railway lines** under ŽSR management. In the overview table below, a description of the positive impact on the capacity of the railway is also provided..

*Table 1: List of IAs with positive impact on RU capacity*

IA number	Line section	Description	Impact	Benefit	Project approved by IM	Financing allocated
A18064	105A, 106A, 120A, 125A	Check-Points	More real infrastructure use data	upgrade of infrastructure	yes	yes
N/a	N/a	N/a	N/a	N/a	N/a	N/a

## 1.2 Reduction of available capacity for TT 2028

*Table 2: Projected reduction in available RU capacity in TT 2028*

Line section	Reason	Period	Week day	Description (whole section /one track /POTR)	Projekt approved by IM	Financing allocated
N/a	N/a	N/a	N/a	N/a	N/a	N/a

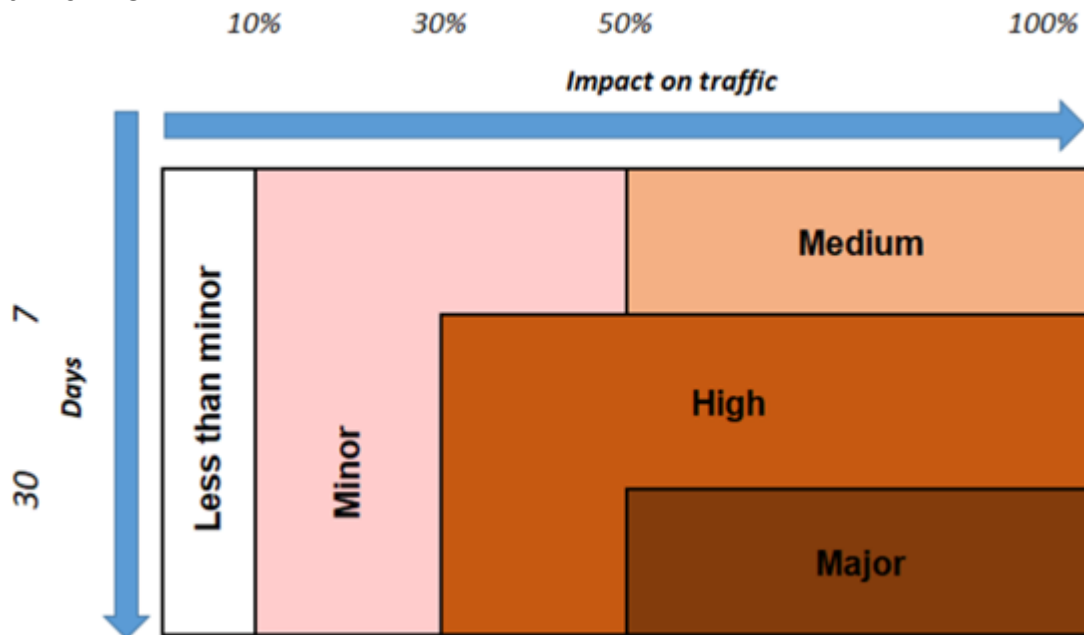
## 2 Planned Temporary Capacity Restrictions (TCR)

Infrastructure Managers are required to follow the [Commission Delegated Decision \(EU\) 2017/2075](#) replacing Annex VII to the Directive 2012/34/EU when planning TCRs. This sets out the overall framework of conditions for capacity planning, including TCRs, with a preference for robust advanced planning, international coordination of TCRs between IMs and transparency of consultation and publication of TCR information to applicants. **The publication of TCRs is intended to make upcoming restrictions more transparent and thus help to plan the competitiveness of rail services.**

Table 3: Categorisation of TCRs according to Annex VII of Directive 2012/34/EU

<i>TCR category</i>	<i>Days of duration</i>	<i>Impact on transport (estimated cancellation, rerouting or alternative mode of transport)</i>
<b><i>TCR with major impact (major)</i></b>	<i>More than 30 consecutive days</i>	<i>More than 50% of the traffic volume on a given section per day</i>
<b><i>TCR with high impact (high)</i></b>	<i>More than 7 consecutive days</i>	<i>More than 30% of the traffic volume on a given section per day</i>
<b><i>TCR with medium impact (medium)</i></b>	<i>7 consecutive days or less</i>	<i>More than 50% of the traffic volume on a given section per day</i>
<b><i>TCR with minor impact (minor)</i></b>	<i>Undefined</i>	<i>More than 10% of the traffic volume on a given section per day</i>

Figure 2: Graphical view of the TCR category breakdown according to Annex VII. of Directive 2012/34/EU



## 2.1 Principles of TCR planning in ŽSR

This chapter presents the principles for planning TCRs as well as the list of TCRs foreseen for the TT 2028. The TCR development processes are directly related to the development of the ŽSR CSt, but **they are independent of** the processes for the development of the ŽSR CSt.

### **General principles of TCR planning in ŽSR:**

There is a process of planning, consultation and coordination of **long-term** and **continuous** planning of temporary capacity restrictions (TCR):

#### A) "long-term" TCR planning activity, which includes the development of multi-year, three-year, two-year, and annual TCR plans and activities:

- regular production, updating and publication of long-term TCR plans,
- coordination of TCR within the ŽSR internal units,
- coordination with neighbouring IMs and members on the relevant rail freight corridors (RFC) within the framework of international activities of ŽSR,
- coordination meetings with the parties concerned;

#### B) "continuous" TCR planning activity, the so-called "late" TCR:

- elaboration, updating of four-monthly/monthly TCR plans on the basis of the long-term TCR plan and the current requirements of the relevant Regional Directorate for capacity restrictions,
- internal negotiation of late TCRs with respect to the lockouts,
- coordination meetings with the participation of affected applicants and carriers,
- communication and mutual information/approval of TCRs with neighbouring IMs;

**Minor Maintenance works** resulting from immediate or preventive maintenance and requiring a certain "smaller time space" should not have a significant impact on the railway capacity restriction and should be solved in the so-called "**Railway Maintenance Windows**", which **ŽSR determine in advance and announce** in the form of allocation of the necessary part of

the railway line capacity for the relevant period in the form of **SROV's** (collection of track/line closure orders) before the validity of the relevant ATT in accordance with the regulation of ŽSR DP 4 "Track/Line Closure Activity of ŽSR".

The general list of SROVs for the ETC lines is annexed to this CSt of ŽSR.

## **2.2 Description of the TCR planning process, including escalation process**

**TCR coordination:** means the active exchange of information on the TCR plan between neighbouring IMs through formal communication channels. These formal communication channels include:

- open meetings, e.g. stakeholders are invited to attend an open meeting or several meetings;
- written information to interested parties with an opportunity to submit comments.

The IM planning the TCR shall actively initiate communication with the neighbouring IMs to inform about the TCR. TCR coordination is required when TCRs impact a neighbouring IM. This means that the TCR takes place on one line section, possibly also on a subsequent line section if its impact affects traffic at a neighbouring IM. In the case of continuous TCR, the objective is to carry out the maximum amount of work simultaneously. TCR coordination includes the expected coordination of train management on alternative line sections within reroutings. TCR coordination is also required for harmonization of line closures with neighbouring IM if the same track sections are expected to be used for reroutings.

**TCR Consultation:** means an active process of exchange of information on TCRs between ŽSR, applicants and the main operators of the service facilities concerned through formal communication channels. These formal communication channels include:

- open meetings, e.g. stakeholders are invited to attend an open meeting or several meetings
- written information to interested parties with an opportunity to submit comments. ŽSR actively initiates communication with applicants for information on TCRs.

Following the coordination process and prior to the TCR plan approval process, ŽSR shall ask the applicants/RU's/main operators of the service facilities concerned for their opinion on the planned measures to be implemented in relation to the planned temporary capacity restrictions (TCRs) for the defined thresholds (affected traffic volumes as defined in Commission Delegated Decision (EU) 2017/2075 replacing Annex VII of the Directive 2012/34/EU).

**TCRs require the disclosure of information at the time and to the extent according to a specified categories and criteria.**

Table 4: Required timetable for coordination, consultation and publication of TCR information

TCR with minor impact	TCR with medium impact	TCR with high impact	TCRs with major impact	Months before the TT period starting date - (X)		
Preliminary consultation and coordination	Consultation and coordination	Preliminary consultation with applicants Coordination with neighbouring IMs Applicants' requirements		Before X-24		
		<b>First publication of TCR</b>		X-24		
		Consultation and coordination	Consultation and coordination	Final decision options, consultation and coordination		X-23
						X-22
						X-21
						X-20
						X-19
				<b>Completion of coordination</b>		X-18
						X-17
						X-16
						X-15
						X-14
		<b>Coordination completed</b>			X-13	
		Final consultation				
		<b>Publication</b>		<b>Second TCR publication</b>		X-12
						X-11
						X-10
						X-9
				X-8		
				X-7		
First information				X-6		
Consultation and coordination				X-5		
<b>Publication</b>				X-4		

## 2.3 Expected TCRs for TT 2028

This chapter lists the expected TCRs for the ATT 2028. **The information on the TCRs listed is compiled from currently available information (that is more than 740 days before the start date of the TCR), should be considered as a forecast, and this **may change over time**.** The TCRs listed in Table 5 have met the criteria for inclusion in the 'major' and 'high' categories. These TCRs are expected to have a significant impact on international traffic and will significantly affect the capacity of the railway line concerned.

*Table 5: List of expected TCRs for TT 2028*

TCR		Draft of IA defined	IA approved by ŽSR	Financing allocated
IA code	IA name			
A06048.5	Line modernization Žilina – Košice, section Liptovský Mikuláš – Poprad Tatry (mimo) 5. stage, section Paludza - Liptovský Hrádok	yes	yes	CEF + ŠR
A06099.2	Line modernization Žilina – Košice, section Poprad Tatry (mimo) – Krompachy, 1.stage A2 (Poprad – Spišská Nová Ves), project preparation and realisation (I. stage + DOZZ, ETCS)	yes	yes	CEF + ŠR
A10044.1	ŽSR, Corridor modernization, border ČR/SR - Čadca - Krásno nad Kysucou (mimo), line (1. a 2. stage)	yes	yes	ŠR
A12018	Bratislava ÚNS-Petržalka, complex reconstruction DŽM	Property-legal settlement	no	ŠR
A14062	Reconstruction of ESTW AŽD-Siemens in station Bratislava - Petržalka	yes	no	ŽSR
A19158	Line modernization Devínska Nová Ves – state border SR/ČR, úsek Malacky - Kúty (PD), real.	construction	Yes	CEF + ŽSR

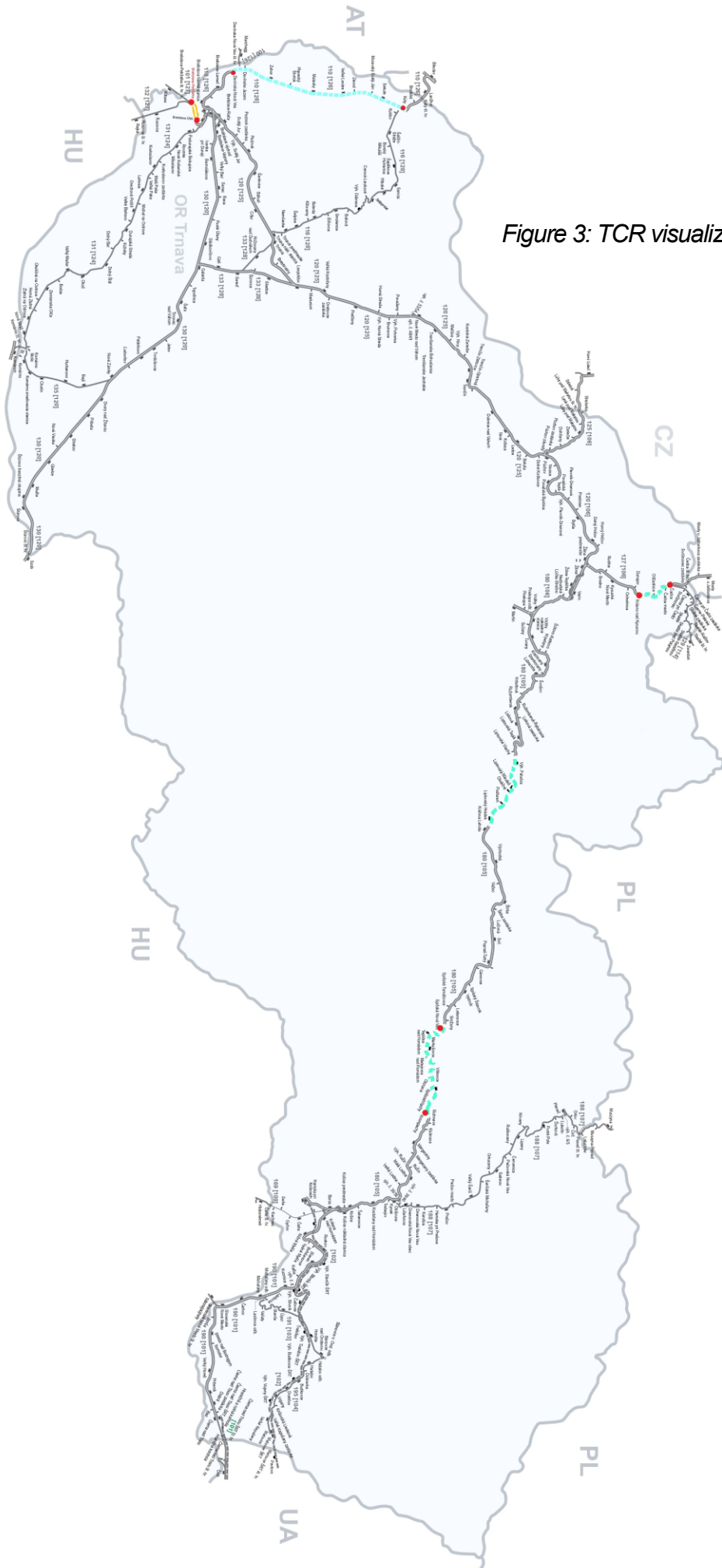
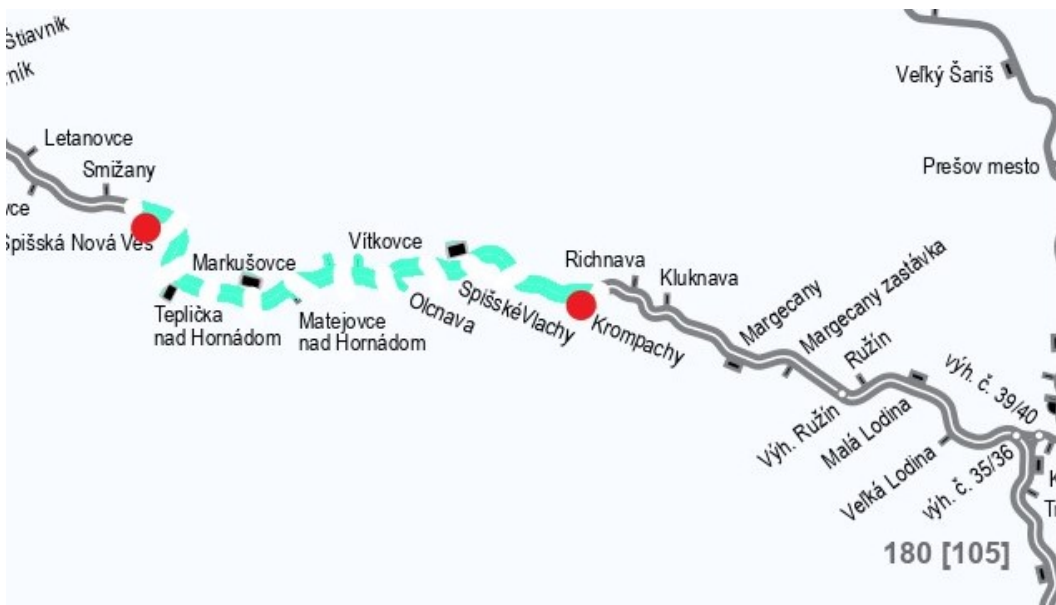


Figure 3: TCR visualization for TT 2028

Line modernization Žilina – Košice, section Liptovský Mikuláš – Poprad Tatry (except) 5. stage, section Paludza - Liptovský Hrádok



Line modernisation Žilina – Košice, section Poprad Tatry (mimo) – Krompachy, 1.stage A2 (Poprad – Spišská Nová Ves), project preparation and realisation. (I. stage + DOZZ, ETCS)





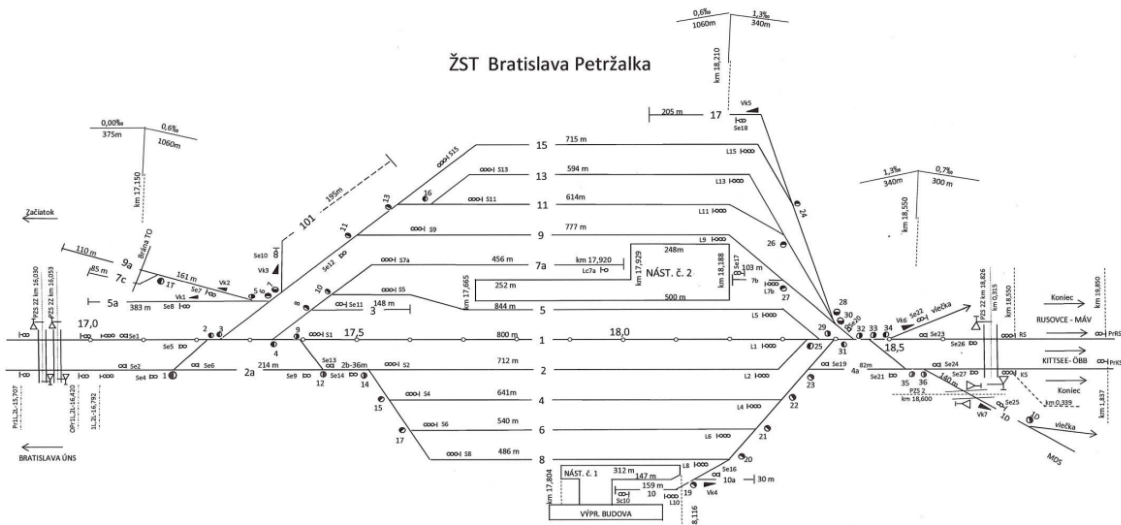
ŽSR, corridor modernization, state border ČR/SR - Čadca - Krásno nad Kysucou (except), line (1. and 2. stage)



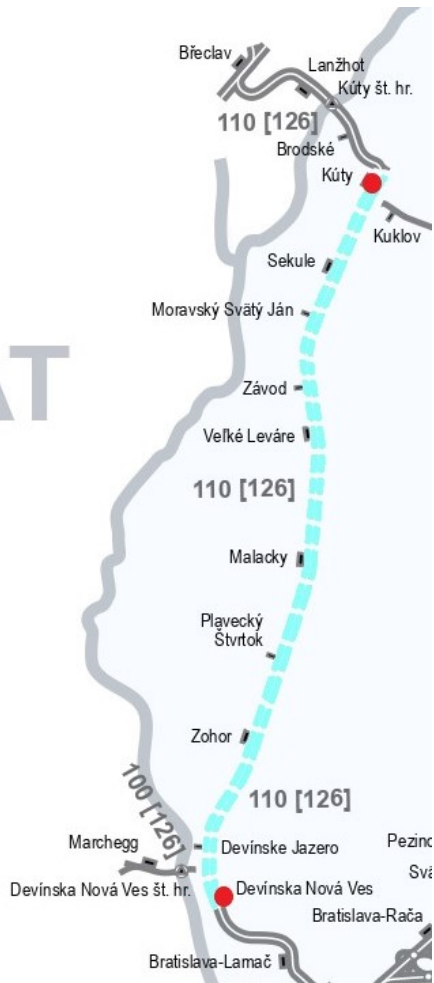
Bratislava ÚNS-Petržalka, complex reconstruction DŽM



## Reconstruction of ESTW AŽD-Siemens v ŽST Bratislava - Petržalka



## Line modernization Devínska Nová Ves – state border SR/ČR, section Malacky - Kúty (PD)



## 3 Principles of traffic planning and traffic volumes

### 3.1 Transport traffic principles

This chapter describes the main principles of train path construction for the line sections managed by ŽSR included in this CSt (ETC range of lines - former RFC 5, RFC 7, RFC 9 and RFC 11), which will be used in the planning of the individual elements in the Capacity Models. The Railway infrastructure (railway line, service facility) **has its maximum capacity limits**. This is the capability of the facility, how many trains (train paths) of different categories and different types can pass through the facility in different time windows. It is expressed by the number of train paths that can be constructed on a given line section for a given time interval (e.g. 24 hours). The capacity of multi-track sections shall be determined for each track separately. ŽSR allocates railway capacity in accordance with Act No 513/2009 Coll. Act on Railways and on Amendments to Certain Acts, as amended (hereinafter referred to as "Act 513/2009 Z.z") under the following conditions:

- IM is, in addition to the basic obligations of the infrastructure manager according to § 30 of Act No. 513/2009 Coll., obliged to allocate capacity in a fair and non-discriminatory manner to railway undertakings until the entire capacity of the railway infrastructure is allocated (§ 34);
- ŽSR allocates the capacity of railway infrastructure in the form of a train path from the origin station to the destination station (§ 34);
- the capacity of railway infrastructure in the form of a train path may be allocated to an applicant for a maximum period of validity of one timetable of the railway network, i.e. an 'annual timetable' (§ 40).

**The conditions for requests for the capacity allocation** are specified in the relevant Network Statement of the TT concerned in the subchapter. 3.2.1.

**The process for allocating of capacity** in the form of a train path is set out in the relevant Network Statement of the TT concerned in chapter 4.5.

Part of the TTR project is the development of a capacity model, which creates an assumption about the possible use of the capacity of the railway by individual transport segments with the respective capacity products. In addition to the pre-arranged train paths, serving primarily to meet the transport needs of applicants within predictable time and technical parameters, the relevant part of the capacity will be kept to satisfy AD HOC requests for capacity submitted during the relevant period of validity of the ATT of ŽSR. In accordance with subchapter 4.5 of the Network Statement, ŽSR has the right to **keep a capacity reserve of at least 10 % of the capacity of the relevant railway line** for the purpose of allocating infrastructure capacity to additional train path requests **for the TT 2028**. The capacity of the railway line to carry out planned maintenance and renewal is taken into account when allocating railway infrastructure capacity to applicants.

Within the implementation of the TTR project, a **new capacity product Rolling Planning** is considered, where the applicant will be allowed to submit one application for capacity for the period of validity of several timetables (max. for three TTs). **The legislative framework for this activity is not yet in place.**

ŽSR shall attempt to resolve any conflict in the allocation of capacity through negotiation with the applicants concerned. In the case that the ŽSR is **unable to resolve the conflicts by negotiation** with the applicants, **it shall resolve them through coordination**. The conditions for the coordination process for the allocation of capacity are set out in the relevant Network Statement of the TT concerned in subchapter 4.5.4.

**For the allocation of capacity on cross-border line sections** where is the Network interconnection of two IMs, one of IM is **designated according to** the Railway Infrastructure Interconnection Agreement, that is responsible for the capacity planning on the given line section. This division of responsibilities between the individual IMs on the cross-border sections is also valid for the development of the relevant capacity Models and capacity Supply.

**Congested infrastructure** means a section of the rail network on which, even after negotiation with applicants and coordination, it is not possible to adequately satisfy the demand for railway capacity at a particular time or part of the day (§ 46).

If the coordination has not achieved a satisfactory result and the railway infrastructure has been declared congested for a given period or a given section of the day, IM shall apply the following **priorities** when allocating railway infrastructure capacity on the congested infrastructure:

- a) on the main railway lines in the following order:
  1. transport services in the public interest implemented by system or tact paths distribution,
  2. agreed international train paths for passenger services operated in the public interest,
  3. other agreed international train paths for passenger services,
  4. agreed international train paths for freight,
  5. transport services in the public interest not covered by the first and second points,
  6. other international passenger transport services,
  7. other international freight transport services,
  8. other transport services.
- b) on secondary railway lines in the following order:
  1. transport services in the public interest,
  2. passenger transport services,
  3. freight transport services,
  4. other transport services.

It follows from the above that the division and allocation of railway capacity described in the TTR rules cannot be used in the case of a declaration of congested infrastructure until a legislative change in this area is made.

### **3.1.1 Principles of cooperation with service facilities as well as other strategic components for future TT design**

Service facilities of other entities, which are connected to the railway network managed by ŽSR, have signed contract with ŽSR on the interconnection of railways (for service facility “TIP Žilina” there is a signed concession contract).

In the field of timetable development (TT), the operator/manager of service facilities communicates with ŽSR in a standard way through applicants (RUs) by requesting train paths. List of freight terminals (combined transport terminals) and service equipment of other entities is available on the ŽSR website in the section:

["Carriers/Other Services/Service Facilities".](#)

### **3.1.2 Basic principles of train service planning for individual line sections**

When planning train traffic for individual railway lines, several qualitative and quantitative indicators must be taken into account, such as technical parameters of the railway line, the use of practical throughput, the uneven distribution of trains during the day, the development potential of the railway line for passenger and freight transport, respectively for international and national transport.

In different parts of the assessed capacity of the railway there is a different range of train traffic (intensities). The railway lines considered in this CSt TT 2028 are divided into individual line sections, which have different parameters, from the point of view of train traffic planning. These are line sections between important railway junctions (train stations). In these junctions there are important service facilities such as railway depots or wagon repair depots (Kúty, Bratislava hl. st., Trnava, Bratislava East, Bratislava Nové Mesto, Nové Zámky, Štúrovo, Komárno, Žilina, Žilina Teplička, Poprad, Košice, Čierna nad Tisou, Prešov, Maťovce) and combined transport terminals (Bratislava ÚNS, Dunajská Streda, Žilina, Košice, TDK, Haniska (by Košice), Čierna n/Tisou).

The capacity allocated for AD HOC train path planning will be published in the form of a timetable supply of average train paths or bands. Bands for medium-term capacity planning (TT changes) will not be published. Maintenance windows in the form of SROVs are also not published, these are published in the monthly/weekly closure plans of the individual Regional Directorates. The residual capacity after all requested train paths have been allocated can then be prioritized for medium-term RU capacity planning.

Table 6: Distribution of railway lines according to the level of capacity utilisation of RU and the categories of trains operated

MI	Track section	Description of the level of capacity utilization and train categories of trains operated
SŽCZ - ŽSR	Lanžhot - Kúty	Track section used by international traffic with n.a.level of ŽI capacity utilisation. The following categories of trains are operated on this line section: <ul style="list-style-type: none"> <li>• International long-distance passenger trains;</li> <li>• International regional passenger trains;</li> <li>• Regional passenger trains;</li> <li>• International freight transport (combined transport trains, integrated trains, long-distance regional trains);</li> </ul>
ŽSR	Kúty – Devínska Nová Ves	<i>Line section used by international traffic with n.a. level of capacity utilization I. The following categories of trains are operated on this line section:</i> <ul style="list-style-type: none"> <li>- International long-distance passenger trains;</li> <li>- International regional passenger trains;</li> <li>- Regional passenger trains;</li> <li>- International freight transport (combined transport trains, block trains, long-distance single-wagon trains);</li> <li>- National freight transport (block trains, single-wagon trains).</li> </ul>
ŽSR	Devínska Nová Ves - Bratislava hl. st.	Track section used by international traffic with n.a.level of ŽI capacity utilisation. The following categories of trains are operated on this line section: <ul style="list-style-type: none"> <li>• International regional passenger trains;</li> <li>• Regional passenger trains;;</li> <li>• International freight transport (combined transport trains, integrated trains, long-distance regional trains);</li> <li>• National freight transport (block trains, single-wagon trains).</li> </ul>
ŽSR	Kúty - Trnava	<i>In passenger transport, this is a line section with regional trains, and in freight transport, a line section with international transport with n.a.level of capacity utilisation. The following categories of trains are operated on this line section:</i> <ul style="list-style-type: none"> <li>• Regional passenger trains;</li> <li>• International freight transport (integrated trains);</li> <li>• Domestic freight transport (local trains).</li> </ul>
ŽSR	Bratislava hl. st. - Nové Zámky	<i>Line section used by international traffic with n.a. level of capacity utilization I. The following categories of trains are operated on this line section:</i> <ul style="list-style-type: none"> <li>- International long-distance passenger trains;</li> <li>- National long distance passenger trains;</li> <li>- Regional passenger trains;</li> <li>- International freight transport (combined transport trains, block trains, long-distance single-wagon trains);</li> <li>- National freight transport (block trains, single-wagon trains).</li> </ul>

MI	Track section	Description of the level of capacity utilization and train categories of trains operated
ŽSR	Nové Zámky - Komárno	<p>In passenger transport, this is a line section with regional trains, and in freight transport, a line section with international transport with n.a.level of capacity utilisation. The following categories of trains are operated on this line section:</p> <ul style="list-style-type: none"> <li>• Regional passenger trains;</li> <li>• International freight transport (integrated trains);</li> <li>• Domestic freight transport (local trains).</li> </ul>
ŽSR	Nové Zámky - Štúrovo	<p><i>Line section used by international traffic with n.a. level of capacity utilization I. The following categories of trains are operated on this line section:</i></p> <ul style="list-style-type: none"> <li>- <i>International long-distance passenger trains;</i></li> <li>- <i>National long distance passenger trains;</i></li> <li>- <i>Regional passenger trains;</i></li> <li>- <i>International freight transport (combined transport trains, block trains, long-distance single-wagon trains);</i></li> <li>- <i>National freight transport (block trains, single-wagon trains).</i></li> </ul>
ŽSR – MÁV Zrt. (HU)	Komárno - Komárom	<p>Track section used by international traffic with n.a.level of ŽI capacity utilisation. The following categories of trains are operated on this line section:</p> <ul style="list-style-type: none"> <li>• Regional passenger trains;common section Komárno – Dunajská Streda</li> <li>• <i>International freight transport (combined transport trains, block trains, long-distance single-wagon trains);</i></li> </ul>
ŽSR – MÁV Zrt. (HU)	Štúrovo - Szob	<p>Track section used by international traffic with n.a.level of ŽI capacity utilisation. The following categories of trains are operated on this line section:</p> <ul style="list-style-type: none"> <li>• <i>International long-distance passenger trains;</i></li> <li>• <i>International freight transport (combined transport trains, block trains, long-distance single-wagon trains);</i></li> </ul>
ŽSR	Trnava - Galanta	<p>In passenger transport, this is a line section with regional trains, and in freight transport, a line section with international transport with n.a.level of capacity utilisation. The following categories of trains are operated on this line section:</p> <ul style="list-style-type: none"> <li>• Regional passenger trains;</li> <li>• International freight transport (integrated trains);</li> <li>• Domestic freight transport (integrated trains, blocked trains).</li> </ul>
ŽSR	Bratislava hl. st. - Bratislava Nové Mesto	<p>Track section used by international traffic with n.a.level of ŽI capacity utilisation. The following categories of trains are operated on this line section:</p> <ul style="list-style-type: none"> <li>• <i>International long-distance passenger trains;</i></li> <li>• International regional passenger trains;</li> <li>• Regional passenger trains;</li> <li>• <i>International freight transport (combined transport trains, block trains, long-distance single-wagon trains);</i></li> <li>• <i>National freight transport (block trains, single-wagon trains).</i></li> </ul>

MI	Track section	Description of the level of capacity utilization and train categories of trains operated
ŽSR	Bratislava Nové Mesto - Rusovce	Track section used by international traffic with n.a.level of ŽI capacity utilisation. The following categories of trains are operated on this line section: <ul style="list-style-type: none"> <li>• International regional passenger trains;</li> <li>• Regional passenger trains;</li> <li>• <i>International freight transport (combined transport trains, block trains, long-distance single-wagon trains);</i></li> <li>• <i>National freight transport (block trains, single-wagon trains).</i></li> </ul>
ŽSR – Gysev Zrt. (HU)	Rusovce - Rajka	Track section used by international traffic with n.a.level of ŽI capacity utilisation. The following categories of trains are operated on this line section: <ul style="list-style-type: none"> <li>• International long distance passenger trains;</li> <li>• International regional passenger trains;</li> <li>• <i>International freight transport (combined transport trains, block trains, long-distance single-wagon trains);</i></li> </ul>
ŽSR	Bratislava Nové Mesto - Komárno	In passenger transport, this is a line section with regional trains, and in freight transport, a line section with international transport with n.a.level of capacity utilisation. The following categories of trains are operated on this line section: <ul style="list-style-type: none"> <li>• Regional passenger trains;</li> <li>• International freight transport (<i>(combined transport trains);</i>);</li> <li>• Domestic freight transport (block trains, single-wagon trains).</li> </ul>
ŽSR	Trnava - Bratislava hl. st.	<i>Line section used by international traffic with n.a. level of capacity utilization I. The following categories of trains are operated on this line section:</i> <ul style="list-style-type: none"> <li>- <i>International long-distance passenger trains;</i></li> <li>- <i>National long distance passenger trains;</i></li> <li>- <i>Regional passenger trains;</i></li> <li>- <i>International freight transport (combined transport trains, block trains, long-distance single-wagon trains);</i></li> <li>- <i>National freight transport (combined transport trains, block trains, single-wagon trains).</i></li> </ul>
ŽSR – ÖBB Infra (AT)	Devínska Nová Ves - Marchegg	<i>Line section used by international traffic with n.a. level of capacity utilization I. The following categories of trains are operated on this line section:</i> <ul style="list-style-type: none"> <li>• <i>International long-distance passenger trains;</i></li> <li>• <i>International regional passenger trains;</i></li> <li>• <i>International freight transport (block trains)</i></li> </ul>
ŽSR – ÖBB Infra (AT)	Bratislava-Petržalka - Kittsee (AT)	<i>Line section used by international traffic with n.a. level of capacity utilization I. The following categories of trains are operated on this line section:</i> <ul style="list-style-type: none"> <li>- <i>International long-distance passenger trains;</i></li> <li>- <i>Regional passenger trains;</i></li> <li>- <i>International freight transport (combined transport trains, block trains, long-distance single-wagon trains);</i></li> <li>- <i>National freight transport (block trains, single-wagon trains).</i></li> </ul>



MI	Track section	Description of the level of capacity utilization and train categories of trains operated
ŽSR	Trnava – Nové Mesto nad Váhom	<p>Line section used by international traffic with n.a. level of capacity utilization I. The following categories of trains are operated on this line section:</p> <ul style="list-style-type: none"> <li>• International long-distance passenger trains;</li> <li>• National long distance passenger trains</li> <li>• Regional passenger trains</li> <li>• International freight transport (combined transport trains, block trains, long-distance single-wagon trains);</li> <li>• National freight transport (block trains, single-wagon trains)</li> </ul>
ŽSR	Nové Mesto nad Váhom - Púchov	<p>Line section used by international traffic with n.a. level of capacity utilization I. The following categories of trains are operated on this line section:</p> <ul style="list-style-type: none"> <li>• International long-distance passenger trains;</li> <li>• National long distance passenger trains</li> <li>• Regional passenger trains</li> <li>• International freight transport (combined transport trains, block trains, long-distance single-wagon trains);</li> <li>• National freight transport (block trains, single-wagon trains)</li> </ul>
ŽSR	Púchov - Žilina	<p>Line section used by international traffic with n.a. level of capacity utilization I. The following categories of trains are operated on this line section:</p> <ul style="list-style-type: none"> <li>• International long-distance passenger trains;</li> <li>• National long distance passenger trains</li> <li>• Regional passenger trains</li> <li>• International freight transport (combined transport trains, block trains, long-distance single-wagon trains);</li> <li>• National freight transport (block trains, single-wagon trains)</li> </ul>
ŽSR	Sereď - Leopoldov	<p>Line section used by international traffic with n.a. level of capacity utilization I. The following categories of trains are operated on this line section:</p> <ul style="list-style-type: none"> <li>• International freight transport (combined transport trains, block trains, long-distance single-wagon trains);</li> <li>• National freight transport (block trains, single-wagon trains)</li> </ul>
ŽSR	Žilina – Žilina-Teplička odchodová skupina	<p>Line section used by international traffic with n.a. level of capacity utilization I. The following categories of trains are operated on this line section:</p> <ul style="list-style-type: none"> <li>• International freight transport (combined transport trains, block trains, long-distance single-wagon trains);</li> <li>• National freight transport (combined transport trains, block trains, single-wagon trains)</li> </ul>
ŽSR	Žilina - Čadca	<p>Medzinárodnou dopravou využívaný traťový úsek s .... úrovňou  Line section used by international traffic with n.a. level of capacity utilization I. The following categories of trains are operated on this line section:</p> <ul style="list-style-type: none"> <li>• International long-distance passenger trains;</li> <li>• Regional passenger trains</li> <li>• International freight transport (combined transport trains, block trains, long-distance single-wagon trains);</li> <li>• National freight transport (block trains, single-wagon trains):</li> </ul>

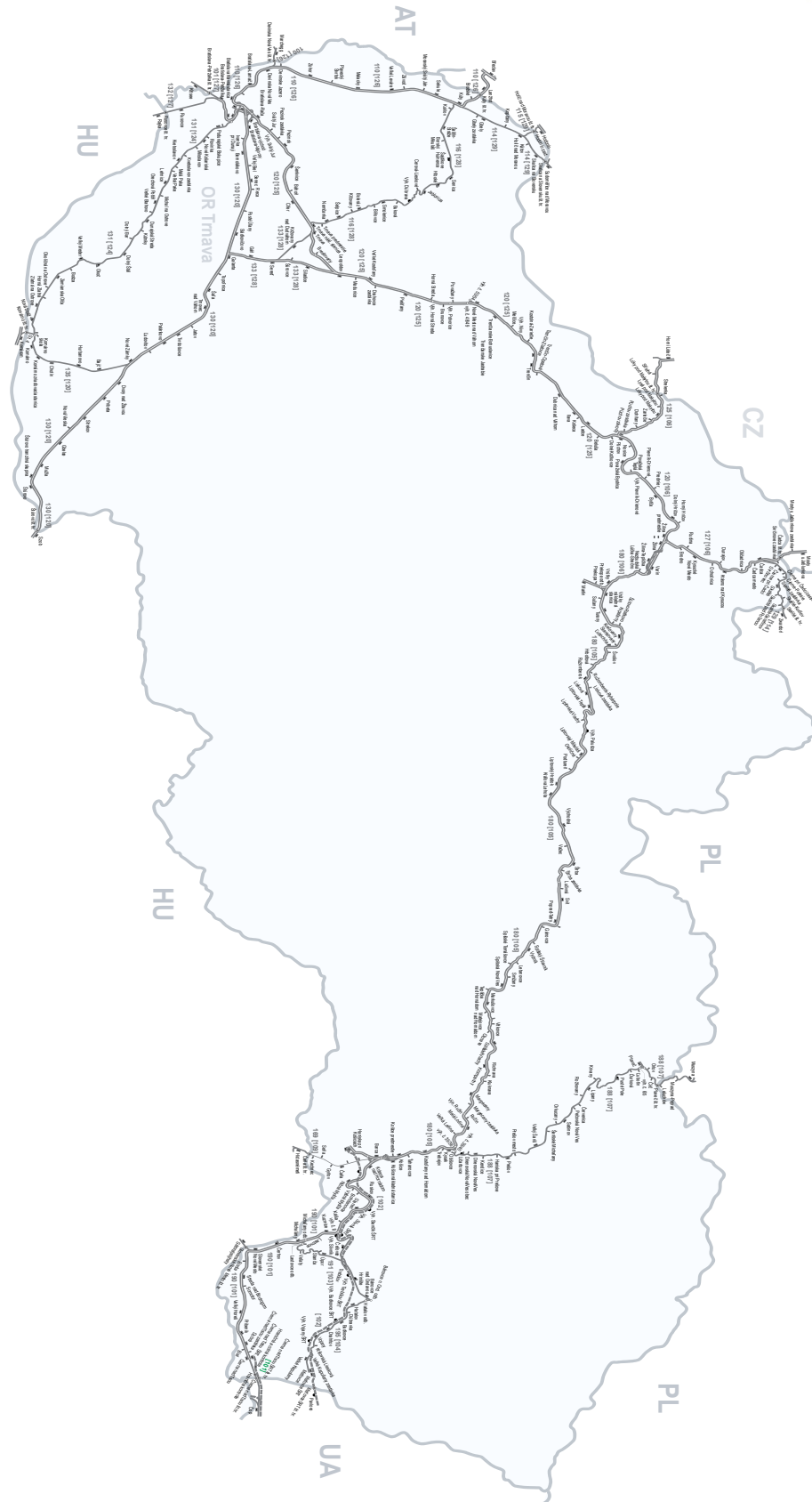
MI	Track section	Description of the level of capacity utilization and train categories of trains operated
ŽSR - SŽCZ (ČR)	Čadca – Čadca št.hr	<p>Line section used by international traffic with n.a. level of capacity utilization I. The following categories of trains are operated on this line section:</p> <ul style="list-style-type: none"> <li>• International long-distance passenger trains;</li> <li>• International passenger trains</li> <li>• Regional passenger trains</li> <li>• International freight transport (combined transport trains, block trains);</li> </ul>
ŽSR	Čadca - Skalité	<p>Line section used by international traffic with n.a. level of capacity utilization I. The following categories of trains are operated on this line section:</p> <ul style="list-style-type: none"> <li>• International passenger trains;</li> <li>• Regional passenger trains</li> <li>• National freight transport (single-wagon trains)</li> </ul>
ŽSR – PLK SA (PL)	Skalité – Skalité št.hr	<p>Line section used by international traffic with n.a. level of capacity utilization I. The following categories of trains are operated on this line section:</p> <ul style="list-style-type: none"> <li>• International passenger trains;</li> </ul>
ŽSR - UA	Čop - Čierna nad Tisou	<p>Line section used by international traffic with n.a. level of capacity utilization I. The following categories of trains are operated on this line section:</p> <ul style="list-style-type: none"> <li>• International long-distance passenger trains;</li> <li>• Regional passenger trains</li> <li>• International freight transport (block trains, long-distance single-wagon trains);</li> </ul>
ŽSR - UZ	Čierna n/Tisou št.hr- Košice	<p>Line section used by international traffic with n.a. level of capacity utilization I. The following categories of trains are operated on this line section:</p> <ul style="list-style-type: none"> <li>• International long-distance passenger trains;</li> <li>• Regional passenger trains</li> <li>• International freight transport (block trains, long-distance single-wagon trains);</li> <li>• National freight transport (combined trains, block trains, single-wagon trains)</li> </ul>
ŽSR	Košice - Kral'ovany	<p>Line section used by international traffic with n.a. level of capacity utilization I. The following categories of trains are operated on this line section:</p> <ul style="list-style-type: none"> <li>• International long-distance passenger trains;</li> <li>• Regional passenger trains</li> <li>• International freight transport (block trains, long-distance single-wagon trains);</li> <li>• National freight transport (combined transport trains, block trains, single-wagon trains)</li> </ul>

MI	Track section	Description of the level of capacity utilization and train categories of trains operated
ŽSR	Kraľovany - Žilina-Teplička odchodová skupina	<p>Line section used by international traffic with n.a. level of capacity utilization I. The following categories of trains are operated on this line section:</p> <ul style="list-style-type: none"> <li>• International long-distance passenger trains;</li> <li>• Regional passenger trains</li> <li>• International freight transport (block trains, long-distance single-wagon trains);</li> </ul> <p>National freight transport (combined transport trains, block trains, single-wagon trains)</p>
ŽSR - SŽDC	Púchov - Lúky p/Makytou št.hr	<p>Line section used by international traffic with n.a. level of capacity utilization I. The following categories of trains are operated on this line section:</p> <ul style="list-style-type: none"> <li>• International long-distance passenger trains;</li> <li>• International passenger trains</li> <li>• International freight transport (block trains);</li> </ul>
ŽSR	Maťovce - Bánovce n/Ondavou	<p>Line section used by international traffic with n.a. level of capacity utilization I. The following categories of trains are operated on this line section:</p> <ul style="list-style-type: none"> <li>• International freight transport (block trains);</li> <li>• National freight transport ( block trains, single-wagon trains)</li> </ul>
ŽSR	Bánovce - n/Ondavou Trebišov	<p>Line section used by international traffic with n.a. level of capacity utilization I. The following categories of trains are operated on this line section:</p> <ul style="list-style-type: none"> <li>• International long-distance passenger trains;</li> <li>• National long distance passenger trains</li> <li>• International freight transport (block trains)</li> <li>• National freight transport (block trains, single-wagon trains):</li> </ul>
ŽSR	Trebišov - Vých. Slivník	<p>Line section used by international traffic with n.a. level of capacity utilization I. The following categories of trains are operated on this line section:</p> <ul style="list-style-type: none"> <li>• International long-distance passenger trains;</li> <li>• National long distance passenger trains</li> <li>• International freight transport (block trains)</li> <li>• National freight transport (block trains, single-wagon trains):</li> </ul>
ŽSR	Kysak - Košice	<p>Line section used by international traffic with n.a. level of capacity utilization I. The following categories of trains are operated on this line section:</p> <ul style="list-style-type: none"> <li>• Regional passenger trains;</li> <li>• International freight transport (block trains, long distance single-wagon trains)</li> <li>• National freight transport (block trains, single-wagon trains):</li> </ul>
ŽSR	Kysak - Prešov	<p>Line section used by international traffic with n.a. level of capacity utilization I. The following categories of trains are operated on this line section:</p> <ul style="list-style-type: none"> <li>• Regional passenger trains;</li> <li>• International freight transport (block trains, long distance single-wagon trains)</li> <li>• National freight transport (block trains, single-wagon trains):</li> </ul>

MI	Track section	Description of the level of capacity utilization and train categories of trains operated
ŽSR	Prešov - Plaveč	<p>Line section used by international traffic with n.a. level of capacity utilization I. The following categories of trains are operated on this line section:</p> <ul style="list-style-type: none"> <li>• International passenger trains;</li> <li>• International freight transport (block trains, single-wagon trains)</li> </ul>
ŽSR - PL	Plaveč - Muszyna	<p>Line section used by international traffic with n.a. level of capacity utilization I. The following categories of trains are operated on this line section:</p> <ul style="list-style-type: none"> <li>• International passenger trains;</li> <li>• Regional passenger trains</li> <li>• International freight transport (combined, block trains, long distance single-wagon trains)</li> <li>• National freight transport</li> </ul>
ŽSR-HU	Slovenské Nové Mesto - Sátoraljaújhely	<p>Line section used by international traffic with n.a. level of capacity utilization I. The following categories of trains are operated on this line section:</p> <ul style="list-style-type: none"> <li>• International passenger trains;</li> <li>• Regional passenger trains</li> <li>• International freight transport</li> </ul>
ŽSR - HU	Barca - Hidasnémeti	<p>Line section used by international traffic with n.a. level of capacity utilization I. The following categories of trains are operated on this line section:</p> <ul style="list-style-type: none"> <li>• International passenger trains;</li> <li>• International freight transport (block trains, single-wagon trains)</li> </ul>
ŽSR	Haniská pri Košiciach - Barca St. 1	<p>In passenger transport, this is a line section with regional trains, and in freight transport, a line section with international transport with n.a.level of capacity utilisation. The following categories of trains are operated on this line section:</p> <ul style="list-style-type: none"> <li>• Long distance passenger trains</li> <li>• Regional passenger trains;</li> <li>• International freight transport (combined, block, long distance single-wagon trains);</li> <li>• National freight train.</li> </ul>

Pre stanovenie aktuálnej úrovne naplnenia (využitia) kapacity ŽI sú použité údaje „Zošitu priepustnosti tratí ŽSR RCP (GVD) 2026/2027“. Vizualizáciu úrovne naplnenia kapacity ŽI v jednotlivých úsekoch príslušných tratí znázorňuje obrázok č. 4.

Figure 4: Visualization of the utilization level



In passenger transport, various concepts of transport service of the territory and the routing of long-distance lines based on **the Transport Service Plan of the Slovak Republic (PDO)**



## 3.2 General train categories on ETC lines passing through ŽSR infrastructure

### Passenger transport

#### International passenger trains

Budapešť - Brno - Praha - Hamburg  
Budapešť - Warszawa - Terespol  
Bratislava - Zürich  
Bratislava - Hegyeshalom  
Košice - Bratislava - Wien (Marchegg)  
Bratislava - Wien (Kittsee)  
Žilina - Púchov - Praha  
Žilina - Čadca - Ostrava  
Žilina - Čadca - Praha  
Žilina - Bratislava - Kúty - Praha  
Humenné - Košice - Ostrava - Praha  
Košice - Ostrava - Praha  
Košice - Prešov - Ostrava - Praha  
Prešov - Púchov - Praha  
Čadca - Ostrava  
Čadca - Zwardoń  
Košice - Hidasnémeti - Budapešť  
Plaveč - Muszyna  
Košice - Čierna nad Tisou - (Mukačevo)

- Long-distance passenger trains:
  - Nové Zámky - Galanta - Bratislava
  - Košice - Banská Bystrica - Palárikovo - Bratislava
  - Banská Bystrica - Palárikovo - Bratislava
  - Bratislava - Žilina
  - Bratislava - Žilina - Košice
  - Bratislava - Leopoldov - Prievidza
- Regional passenger trains:
  - Nové Zámky - Štúrovo
  - Nové Zámky - Galanta – Bratislava
  - Nové Zámky - Komárno
  - Trnava - Senica
  - Senica - Skalica na Slovensku
  - Trnava - Galanta
  - Trnava - Bratislava - Malacky - Kúty
  - Bratislava - Malacky
  - Pezinok - Bratislava-Petržalka
  - Senec - Bratislava-Nové Mesto
  - Bratislava - Dunajská Streda – Komárno

Bratislava - Kvetoslavov  
 Trnava - Leopoldov - Nitra  
 Nové Mesto nad Váhom - Trenčín  
 Trenčín - Zlatovce – Žilina  
 Trenčín - Bratislava  
 Čadca - Žilina  
 Čadca - Martin  
 Čadca - Liptovský Mikuláš  
 Čadca - Skalité  
 Skalité - Vrútky  
 Skalité - Liptovský Hrádok  
 Liptovský Mikuláš - Poprad-Tatry  
 Košice - Poprad-Tatry  
 Čierna nad Tisou - Košice - Prešov  
 Košice - Prešov  
 Košice - Lipany  
 Košice - Trebišov  
 (Moldava nad Bodvou mesto) - Haniska pri Košiciach – Košice  
 Košice - Čierna nad Tisou  
 Košice - Plaveč

*Table 7: Basic parameters of passenger trains*

Parameter code	Train length	Weight of the train	Length of the train set	Weight of the train set	Loco Type	Required speed	Min. Breaking . %
OZSR01	284	590	265	500	Vectron	140	148
OZSR02	79	233	-	-	671	160	182
OZSR03	156	330	137	250	ER20	120	106
OZSR04	80	197	-	-	661	120	120
OZSR05	137	284	120	200	263	100	122
OZSR06	369	720	350	630	Vectron	160	152
OZSR07	219	400	200	490	Vectron	160	152
OZSR08	219	300	200	390	350	160	160
OZSR09	127	264	110	180	263	120	133
OZSR10	42	81	-	-	648	100	120
OZSR11	50	51	-	-	5047	120	100
OZSR12	204	456	185	370	1116	160	197
OZSR13	28	39	-	-	813	90	45
OZSR14	106	202	-	-	660	160	111
OZSR15	197	440	180	350	350	160	57
OZSR16	256	536	240	450	361.1	160	43
OZSR17	185	378	-	-	680	140	37
OZSR18	418	720	400	630	Vectron	120	31



Parameter code	Train length	Weight of the train	Length of the train set	Weight of the train set	Loco Type	Required speed	Min. Breaking . %
OZSR19	191	382	175	300	151	140	31
OZSR20	156	320	-	-	561	160	160
OZSR21	59	120	-	-	861	140	156
OZSR22	142	334	125	250	163	120	123
OZSR23	149	299	132	215	162	140	67

### Freight transport:

- National freight trains
- International and national block freight trains
- International and national combined transport trains
- International and national freight trains

*Table 8: Basic parameters of freight trains*

Parameter code	Train length	Weight of the train	Length of the train set	Weight of the train set	Loco Type	Required speed	Min. Breaking . %
NZSR01	654	2084	635	2000	E186	100	80
NZSR02	620	2690	600	2600	E189	90	64
NZSR03	649	2090	630	2000	Vectron	100	80
NZSR04	594	2590	575	2500	Vectron	100	75
NZSR05	696	1585	680	1500	230	100	80
NZSR06	669	2084	650	2000	E186	90	72
NZSR07	627	1680	608	1600	ER20	100	72
NZSR08	433	1769	417	1685	242	100	84
NZSR09	416	1685	400	1600	240	100	70
NZSR10	594	1090	575	1000	240	100	70
NZSR11	594	1686	575	1600	1116	100	76
NZSR12	594	1486	575	1400	1116	100	72
NZSR13	590	1680	550	1600	230	100	70
NZSR14	590	1680	550	1600	ER20	100	71
NZSR15	740	1600	706	1428	363	90	52
NZSR16	650	1250	600	1100	363	90	60

Parameter code	Train length	Weight of the train	Length of the train set	Weight of the train set	Loco Type	Required speed	Min. Braking . %
NZSR17	595	2734	575	2500	Vectron	100	60
NZSR18	595	1090	575	1000	Vectron	100	60
NZSR19	514	1164	500	1100	742	60	26
NZSR20	634	2969	600	2800	131	90	23
NZSR21	634	1169	600	1000	131	90	43
NZSR22	618	890	600	800	Vectron	100	43
NZSR24	318	924	300	900	181	90	31
NZSR25	318	1824	300	1800	181	90	36
NZSR26	653	2090	635	2000	Vectron	100	49
NZSR27	600	1580	565	1500	ER20	90	54
NZSR28	600	2100	580	2000	363	90	59

Notes:

- P/C profile is used according to the maximum value from the track;
- Traction is expressed by the type of locomotive;
- The basic category of the train is determined by the required speed.

**Table 9: Responsible IM for the construction of the TT, the Capacity Model and the Capacity Supply on the border line section**

Name of border section	Neighbouring country	Responsible IM for the construction of the TT
Kúty - Lanžhot	Česká republika	SŽDC
Devínska Nová Ves - Marchegg	Rakúska republika	ŽSR
Bratislava Petržalka - Kittsee	Rakúska republika	OBB infra (AT)
Rusovce - Rajka	Maďarská republika	ŽSR
Štúrovo – Szob	Maďarská republika	MAV Zrt. (HU)
Komárno - Komárom	Maďarská republika	ŽSR
Čadca – Mosty u Jablunkova	Česká republika	SŽDC
Skalité - Zwardoń	Poľská republika	ŽSR
Čierna n/Tisou - Čop	Ukrajina	VAS „Ukrzaliznycja“

### 3.3 Traffic intensities

In this chapter, an **analysis of the approximate forecast of the RU demand for capacity** is made on the basis of current traffic flows (intensities) and their known or possible future adjustments. The prospective traffic volumes are based on realized traffic volumes 2025 - 2026

Prospective traffic intensities (planned train paths) for TT 2028 were determined from average realized train volumes from the ŽSR PIS information system, from data cubes for prospective freight and AD HOC trains and data of planned passenger train volumes from IS KIS for the published TT 2025 (after the introduction of the Transport Service Plan of the Slovak Republic). The data are divided into three basic categories according to the direction of regular train running. The values indicate the projected volume of trains per 24-hour period and the regular direction. For single-track operation, the value is given in both directions.

*Table 10: Prospective traffic intensities expressed in num. of train per 24 hours:*

Track section	Prospective throughput		
	Even direction	Uneven direction	Even direction
Čop (UA) - Čierna nad Tisou	N/a	N/a	N/a
Čierna nad Tisou - Michalany	N/a	N/a	N/a
Michalany - Košice	N/a	N/a	N/a
Slov. Nové Mesto - Sátoraljaújhely (HU)	N/a	N/a	N/a
Bánovce nad Ondavou - Michalany	N/a	N/a	N/a
Trebišov - Výh. Slivník	N/a	N/a	N/a
Maťovce - Bánovce nad Ondavou	N/a	N/a	N/a
Košice - Kysak	N/a	N/a	N/a
Kysak - Spišská Nová Ves	N/a	N/a	N/a
Spišská Nová Ves - Štrba	N/a	N/a	N/a
Štrba - Liptovský Mikuláš	N/a	N/a	N/a
Liptovský Mikuláš - Kraľovany	N/a	N/a	N/a
Kraľovany - Vrútky	N/a	N/a	N/a
Vrútky - Žilina	N/a	N/a	N/a
Žilina - Púchov	N/a	N/a	N/a
Potok odb. - Výh. Váh	N/a	N/a	N/a
Výh. Váh - Varín	N/a	N/a	N/a
Žilina - Čadca	N/a	N/a	N/a
Čadca - Mosty u Jablunkova (CZ)	N/a	N/a	N/a

Track section	Prospective throughput		
	Even direction	Uneven direction	Even direction
Budatínska spojka	N/a	N/a	N/a
Púchov - Lúky pod Makytou	N/a	N/a	N/a
Lúky pod Makytou - Horní Lideč	N/a	N/a	N/a
Žilina-Teplička - Žilina	N/a	N/a	N/a
Muszyna (PL) - Plaveč	N/a	N/a	N/a
Plaveč - Prešov	N/a	N/a	N/a
Prešov - Kysak	N/a	N/a	N/a
Košice - Haniská pri Košiciach	N/a	N/a	N/a
Barca - Hidasnémeti	N/a	N/a	N/a
Krásna nad Hornádom - Barca St.4	N/a	N/a	N/a
Čadca - Skalité	N/a	N/a	N/a
Skalité - Zwardoň	N/a	N/a	N/a
Štúrovo - Szob (HU)	N/a	N/a	N/a
Štúrovo - Nové Zámky	N/a	N/a	N/a
Nové Zámky - Palárikovo	N/a	N/a	N/a
Palárikovo - Galanta	N/a	N/a	N/a
Galanta - Bratislava-Vajnory	N/a	N/a	N/a
Bratislava-Vajnory - Bratislava hl. st.	N/a	N/a	N/a
Komárom (HU) - Komárno	N/a	N/a	N/a
Komárno zr. st. - Komárno	N/a	N/a	N/a
Komárno zr. st. - Nové Zámky	N/a	N/a	N/a
Komárno - Dunajská Streda	N/a	N/a	N/a
Dunajská Streda - Bratislava-N. mesto	N/a	N/a	N/a
Púchov - Trenčianska Teplá	N/a	N/a	N/a
Trenčianska Teplá - Trenčín	N/a	N/a	N/a
Nové Mesto nad Váhom - Leopoldov	N/a	N/a	N/a
Leopoldov - Trnava	N/a	N/a	N/a
Trnava - Bratislava-Rača	N/a	N/a	N/a
Bratislava-Rača - Bratislava hl. st.	N/a	N/a	N/a
Bratislava hl. st. - Devínska Nová Ves	N/a	N/a	N/a

Track section	Prospective throughput		
	Even direction	Uneven direction	Even direction
Devínska Nová Ves - Zohor	N/a	N/a	N/a
Zohor - Kúty	N/a	N/a	N/a
Kúty - Lanžhot (CZ)	N/a	N/a	N/a
Devínska Nová Ves - Marchegg (AT)	N/a	N/a	N/a
Bratislava Vajnory - Ba vých. odch. sk. Juh	N/a	N/a	N/a
Bratislava vých. odch. sk. Juh - Odb. Vinohrady	N/a	N/a	N/a
Bratislava východ - Bratislava-Rača	N/a	N/a	N/a
Bratislava východ - Bratislava ÚNS	N/a	N/a	N/a
Bratislava ÚNS - Bratislava-Petržalka	N/a	N/a	N/a
Bratislava-Petržalka - Rusovce	N/a	N/a	N/a
Rusovce - Rajka (HU)	N/a	N/a	N/a
Bratislava-Petržalka - Kittsee (AT)	N/a	N/a	N/a
Odb.Močiar - Bratislava predmestie	N/a	N/a	N/a
Odb.Močiar - Odb.Vinohrady	N/a	N/a	N/a
Bratislava-N. Mesto - Bratislava hl. st.	N/a	N/a	N/a
Galanta - Leopoldov	N/a	N/a	N/a
Sereď - Trnava	N/a	N/a	N/a
Trnava - Kúty	N/a	N/a	N/a

### 3.4 Expected intensities at border sections for TT 2028

In Table 11 below, for the purpose of harmonizing the capacity of the railway lines at several border sections, an overview of the expected traffic volumes at the common border crossing points between Czech Republic and Slovak Republic in three sections, between Austria and Slovak Republic in two sections, between Hungary and Slovak Republic in four sections, between Poland and Slovak Republic in two sections and between Ukraine and Slovak Republic in one section is given. The **expected intensities on the border sections for the TT 2028 have been coordinated with the NPIMs of the neighbouring IMs**. The values in the table below are the volumes of trains per hour at both the entry and exit points.

Table 11: International traffic volumes at border sections

Border section	TT 2028			AD HOC
	Freight Trains	Long-distance Pax*	Regional Pax*	Freight Trains
Bratislava-Petržalka - Kittsee	N/a	N/a	N/a	N/a
Čadca - Mosty u Jablunkova*	2	0,5	Upon request	2
Čaňa - Hidasnémeti	N/a	N/a	N/a	N/a
Čierna n/Tisou - Čop	N/a	N/a	N/a	N/a
Devínska Nová Ves - Marchegg	N/a	N/a	N/a	N/a
Komárno - Komárom	N/a	N/a	N/a	N/a
Kúty - Lanžhot*	2	1	0,5	2
Lúky pod Makytou - Horní Lideč*	0,5	0,5	0,5	1
Plaveč - Muszyna	N/a	N/a	N/a	N/a
Rusovce - Rajka	N/a	N/a	N/a	N/a
Skalité - Zwardoń	N/a	N/a	N/a	N/a
Slovenské Nové Mesto - Sátoraljaújhely	N/a	N/a	N/a	N/a
Štúrovo - Szob	N/a	N/a	N/a	N/a

\* Weekday passenger traffic volume per hour, during daytime

## 4. Approval and publication of the CSt for TT 2028

The submitted version includes the forecast intensities at the border sections, which have been coordinated with all the IMs concerned.

The final version of the CSt for the TT 2028 is published for the needs of the concerned entities of the railway transport market of the Slovak Republic (applicants, railway undertakings, MoT SR, SA SR, concerned VUCs, terminals) and approved by the Director General of ŽSR.

The final version of the CSt for TT 2028 will be available on ŽSR website as well as on the RNE website in English.

### References used:

Directive 2012/34/EU of the European Parliament and of the Council of 21 November 2012 establishing a single European railway area, as amended;

Act No. 513/2009 Coll. on railways and on amendment of certain acts as amended;

RNE Handbook for Capacity Strategy (Procedures for Capacity Strategy ver. 3.0);

Directive for the development of the Capacity Strategy in the conditions of ŽSR ver. 2.3.1 ;

Transport Service Plan of the Slovak Republic;

Network Statement for ATT 2027/2028;

ŽSR Regulation DP 4 " Line closure activity of ŽSR"

Throughput of the ŽSR railway lines for ATT 2027/2028

Prospective throughput of the ŽSR lines for ATT 2027/2028