

The logo for VUAD (Výskumný ústav dopravný) is displayed in a large, stylized blue font. Below the logo, the text "Výskumný ústav dopravný" is written in a smaller, blue, sans-serif font. The background features a green-to-blue gradient with faint line drawings of a high-speed train, an airplane, and a truck.

The results of measuring travel accessibility in Slovakia, comparison in terms of efficient use motorways and expressways

Ing. Michal Trnka, Ing. Katarína Kilianová, PhD.

Connection of PL and SR

Connection between Poland and Slovakia is ensured by:

- ✓ Road transport
- ✓ Railway transport

Currently the connection between PL and SR is ensured by:



**Žilina- Čadca-
Skalité- border
with Poland**



**Ružomberok -
Dolný Kubín -
Trstená- border
with Poland**



**Prešov- Lipníky-
Svidník- border
with Poland**

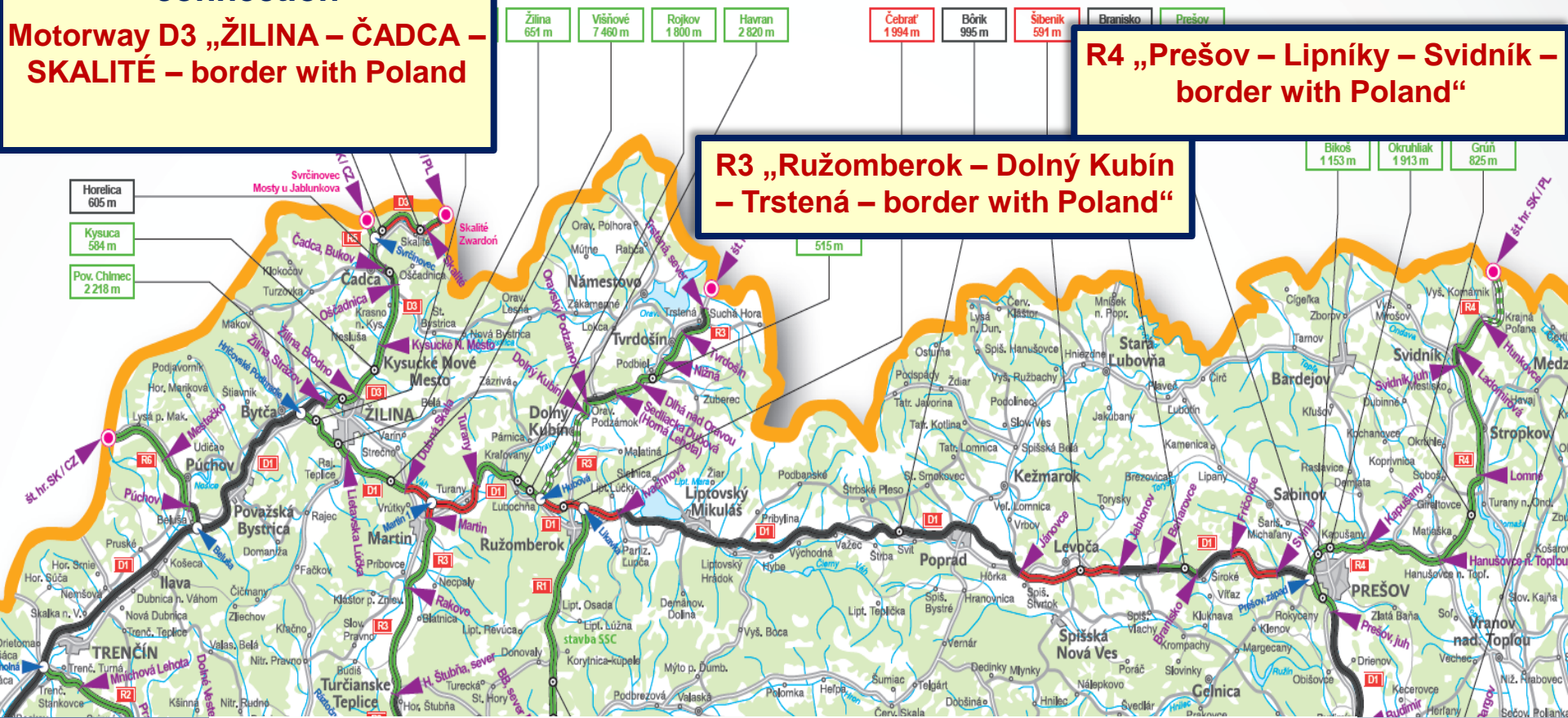
The current state of preparedness motorways and expressways in North Slovakia

The most important connection

Motorway D3 „ŽILINA – ČADCA – SKALITÉ – border with Poland“

R4 „Prešov – Lipníky – Svidník – border with Poland“

R3 „Ružomberok – Dolný Kubín – Trstená – border with Poland“





- Horelica 605 m
- Kysuca 584 m
- Pov. Chlmec 2 218 m

- Žilina 651 m
- Višňové 7 460 m
- Rojkov 1 800 m
- Havran 2 820 m

- Čebrat' 1 994 m
- Bôrik 995 m
- Šibeník 591 m
- Branisko
- Prešov

- Bikoš 1 153 m
- Okrúhliak 1 913 m
- Grün 825 m

 **diaľnica / rýchlostná cesta v príprave**
motorway / expressway under preparation

 **neukončený Proces EIA**
unfinished EIA process

 **diaľnica / rýchlostná cesta v prevádzke**
motorway / expressway in operation

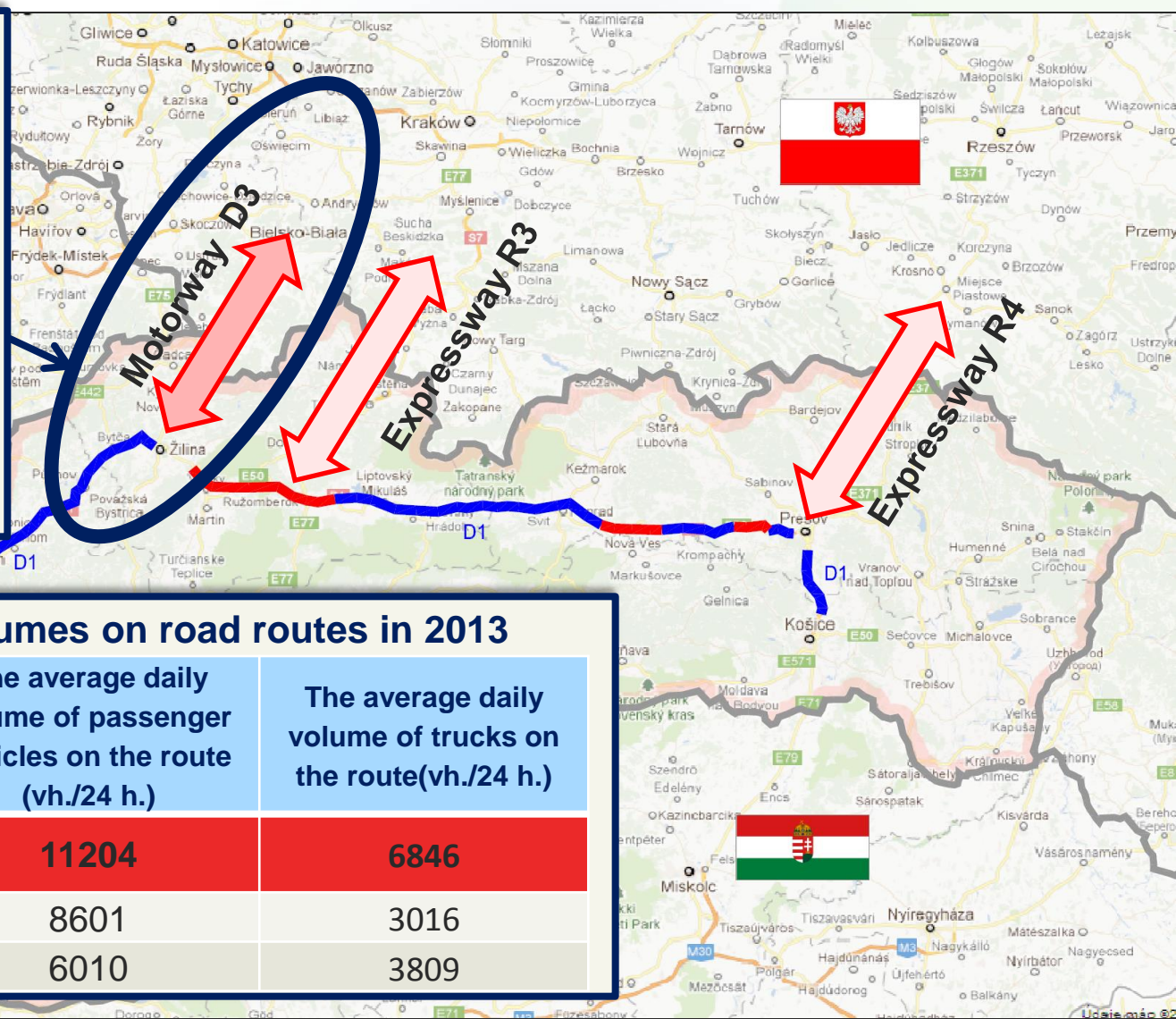
 **diaľnica / rýchlostná cesta vo výstavbe**
motorway / expressway under construction

The main road connection Poland and the Slovak Republic

The most important connection

MOTORWAY D3 „ŽILINA – ČADCA – SKALITÉ – border with Poland

Nowadays the connection is ensured by road I/11 and I/12



Averages of daily volumes on road routes in 2013

Road	The average daily volume of passenger vehicles on the route (vh./24 h.)	The average daily volume of trucks on the route(vh./24 h.)
D3 „Žilina – Svrčinovec border“	11204	6846
R3 „Ružomberok – Trstená“	8601	3016
R4 „Prešov – Vyšný Komárnik“	6010	3809

The current road infrastructure routes D3, R3, R4

D3 „Svrčinovec – PL“

- TFC = 740 v./h.
- FHATFV 2013 = 162 v./h
- Limited transport 7,5 t



- D3 „Žilina – Čadca - Svrčinovec“
- TFC = 667 v./h.
- FHATFV 2013 = 806 v./h
- **Capacity is overload**
- Critical place – crossroads KNM, urban communities Svrčinovec, crossroad Čadca



R3 „Ružomberok – Dolný Kubín – Trstená – border with PL“

- TFC = 506 v./h.
- FHATFV 2013 = 513 v./h
- **Capacity is overload**
- Bypasses R3 Oravský Podzámok and Trstená
- Critical place – roundabout DK, many crossings through the urban communities (Dlhá nad Oravou, Sedliacka Dubová, Nižná, Tvrdošín)

R4 „Lipníky – Svidník – border (I/73)“

- TFC = 641 v./h.
- FHATFV 2013 = 247 v./h
- Critical place – urban communities, high proportion of trucks



R4 „Prešov – Lipníky (I/18)“

- TFC = 1472 v./h.
- FHATFV 2013 = 894 v./h
- Critical place – urban community Prešov, high proportion of trucks

Comparison of the current state with the future state

Current state

route „Bielsko Biala – Žilina“

route length:

109 km

travel time:

102 min/168 min

fuel consumption:

Average for HGRV = 35,7 l/100 km

Average for PC = 8,3 l/100 km

Status after completion of D3 route „Bielsko Biala – Žilina“

Route length: **110 km**

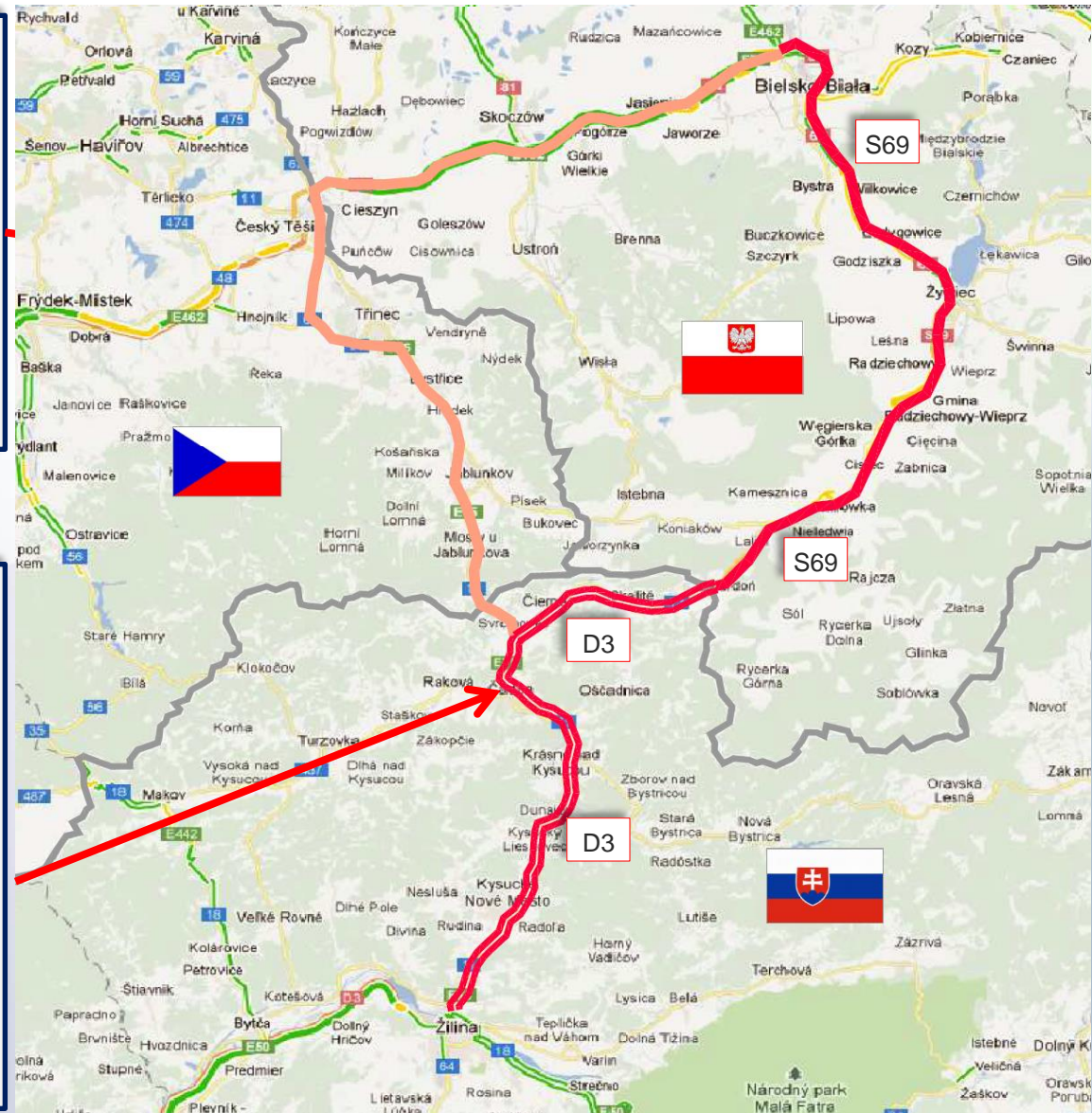
Travel time truck: **131 min**

Travel time passenger car: **84 min**

fuel consumption:

Average for HGRV = 31,4 l/100 km

Average for PC = 7,4 l/100 km



Savings time accessibility after completion D3, R3, R4 from regional cities in Slovakia to:

- **Silesian Voivodeship - (Bielsko Biala)**
- **Lesser Poland Voivodeship (Krakow)**
- **Subcarpathian Voivodeship (Rzeszów)**



No higher resolution available



Savings time accessibility after completion D3, R3, R4 (passenger transport)

Saving (min)	Bielsko-Biala	Krakow	Rzeszów
Bratislava	21,42	35,97	26,89
Trnava	21,61	36,22	26,84
Nitra	22,48	27,63	18,60
Trenčín	19,17	30,16	21,00
Žilina	15,13	21,80	15,63
Banská Bystrica	15,48	23,60	26,14
Prešov	11,44	4,27	22,26
Košice	10,99	6,23	21,66

Increase the average speed after completion D3, R3, R4 (PT)

Increase rate(km/h)	Bielsko-Biala	Krakow	Rzeszów
Bratislava	7,08	13,74	7,60
Trnava	8,21	14,98	8,00
Nitra	8,35	18,12	10,32
Trenčín	7,15	13,45	6,80
Žilina	5,49	11,85	6,28
Banská Bystrica	2,67	9,07	8,92
Prešov	7,63	3,95	14,60
Košice	6,60	3,19	12,03

Savings time accessibility after completion D3, R3, R4(road goods transport)

Saving (min)	Bielsko-Biala	Krakow	Rzeszów
Bratislava	33,27	19,79	22,58
Trnava	38,90	15,31	20,07
Nitra	38,07	13,76	25,00
Trenčín	36,00	15,50	17,46
Žilina	30,12	12,78	17,55
Banská Bystrica	36,99	33,76	37,34
Prešov	27,70	10,41	46,33
Košice	27,15	6,63	46,13

Increase the average speed after completion D3, R3, R4 (RGT)

Increase rate (km/h)	Bielsko-Biala	Krakow	Rzeszów
Bratislava	5,65	1,55	1,82
Trnava	8,11	0,57	1,58
Nitra	7,20	1,03	2,43
Trenčín	8,31	0,51	1,14
Žilina	8,14	0,28	2,05
Banská Bystrica	6,56	3,83	5,29
Prešov	3,34	3,39	14,91
Košice	2,21	1,91	10,61

Selected benefits of D3, R3, R 4

R3 „ Ružomberok – border with PL“



Reduction of traffic accidents
reduction of 18 accidents / year



Annual fuel savings
4,52 mil. l/year



Benefits from reducing travel time and the time circulation of goods

40,13 mil. Eur/rok

D3 „ Svrčinovec – border with PL“



Reduction of traffic accidents
reduction of 16 accidents / year



Annual fuel savings
214 tis. l/year



Benefits from reducing travel time and the time circulation of goods

2,96 mil. Eur/rok

R4 „ Prešov – border with PL“



Reduction of traffic accidents
reduction of 105 accidents / year



Annual fuel savings
5,17 mil. l/year



Benefits from reducing travel time and the time circulation of goods

48,86 mil. Eur/rok

D3 „ Žilina – Svrčinovec“



Reduction of traffic accidents
reduction of 69 accidents / year



Annual fuel savings
5,23 mil. li/year



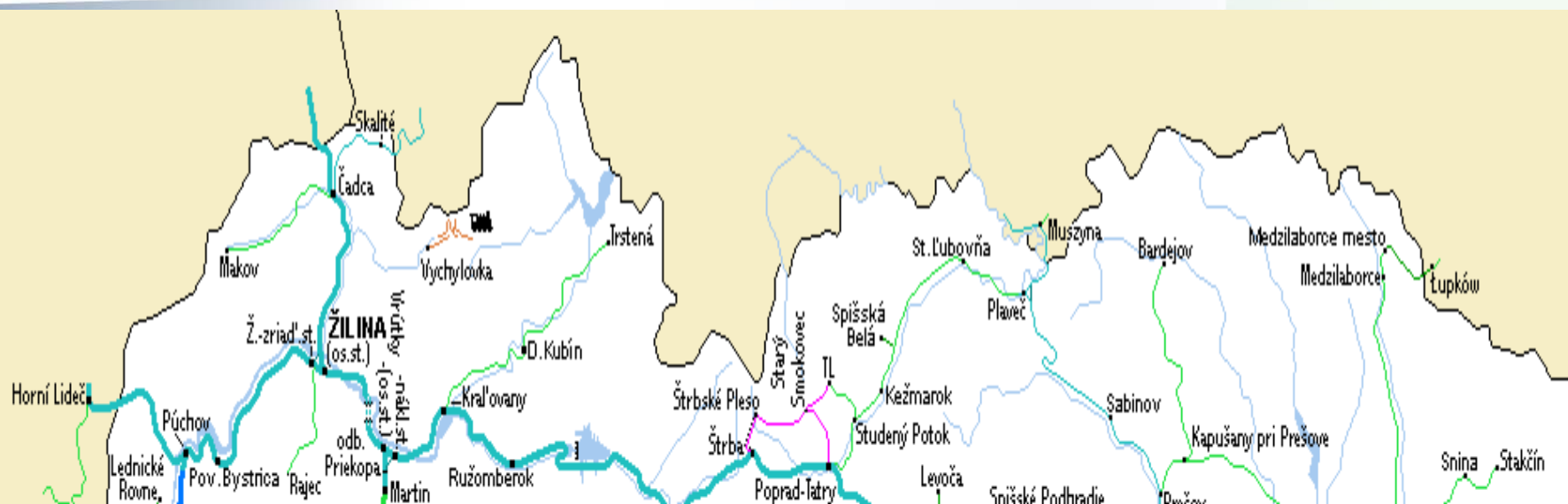
Benefits from reducing travel time and the time circulation of goods

49,1 mil. Eur/rok

Conclusion (1)

- **D3, R3, R4 will ensure the connection of SR and PL**
- **D3 motorway - part of the TEN-T network and R4 additive part of the TEN-T**
- **The current road network providing road connection Poland and Slovakia is rather limited and in some cases poor.**
- **Importance D3, R3, R4 highlight the development of industry, trade and tourism between the Slovak Republic and Poland**
- **Mentioned contributions support the construction of D3, R3, R4**

Map of the railways in Slovakia



LEGEND

Two tracks
or more

Single
track

Electrified with 25 kV 50 Hz :			freight only
Electrified with 15 kV 16,7 Hz :			
Electrified with 3000 V DC :			freight only
Non-electrified :			freight only
			without traffic
Electrified with 3000 V DC: (gauge - 1520 mm)			
1520 mm non-electrified :			freight only
Unfinished :			freight only
Narrow gauge :			electrified
			non-electrified
Rack :			

Correction:
Addams
www.rail.sk

Author:



Praha - CZ

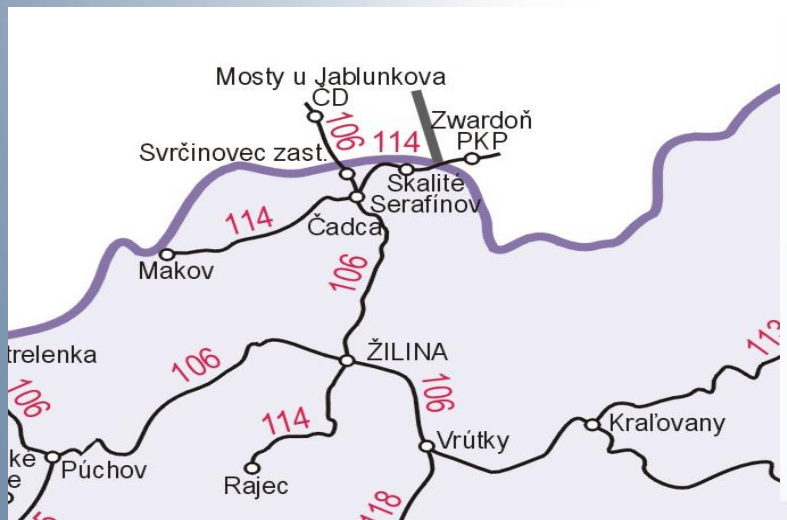
Two-coloured lines : track plait (1435 & 1520 mm gauges)

Tourist lines :

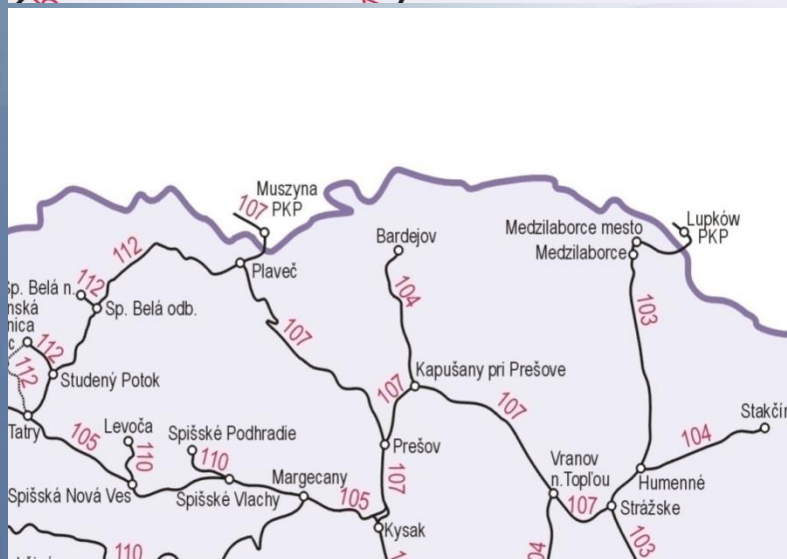
Short tunnels and all industrial railways are not included

Latest versions and conditions of use are
available at <http://www.bueker.net/trainspotting>

Railway connection with Poland

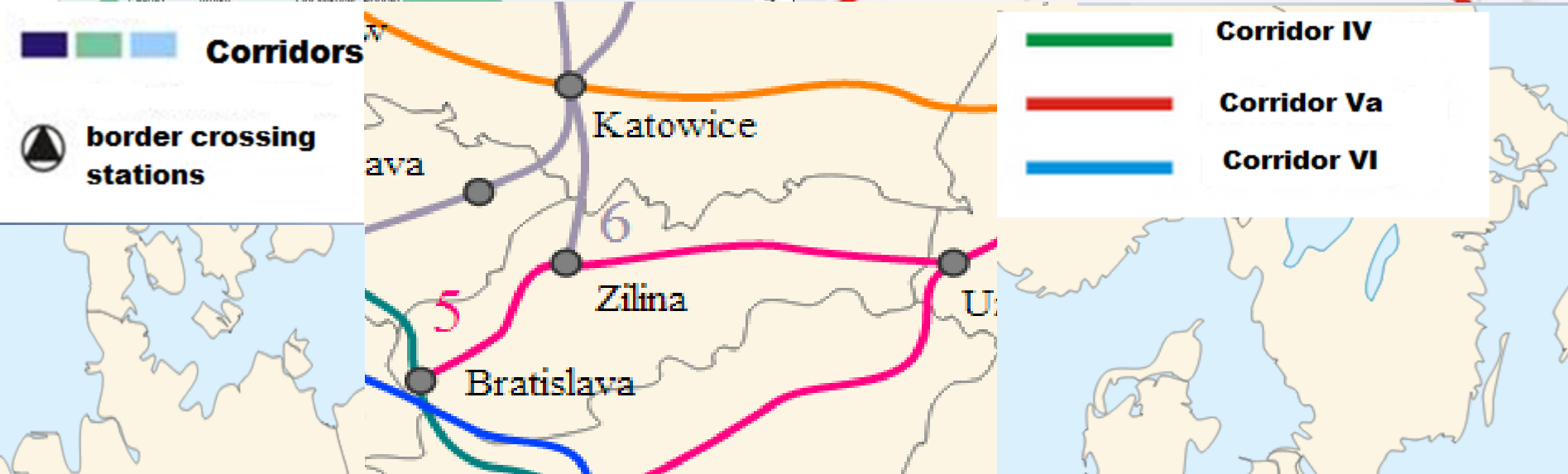


- Track č. 114 – Čadca – Zwardoň PL

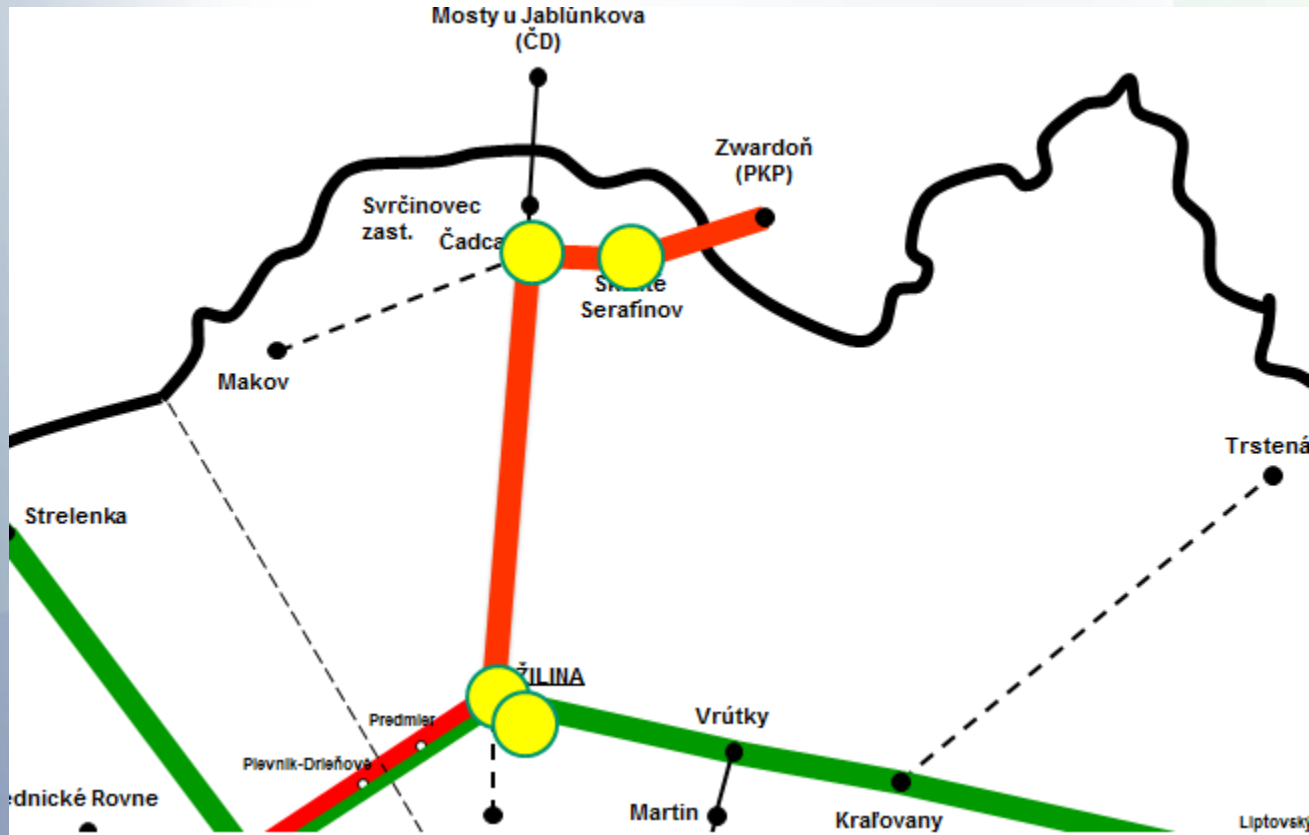


- Track č. 103 – Lupków PL - Michaľany
- Track č. 107 – Muzsyna PL – Plaveč – Kysak

Corridor VI.



Freight corridors network ŽSR



5. corridor:

Gdynia - Varšava - Katowice - Ostrava/Žilina-Bratislava/Viedeň/ Klagenfurt –
Udine - Benátky/Terst/Bologna/Ravenna/Graz – Maribor - Ljubljana -
Koper/Terst

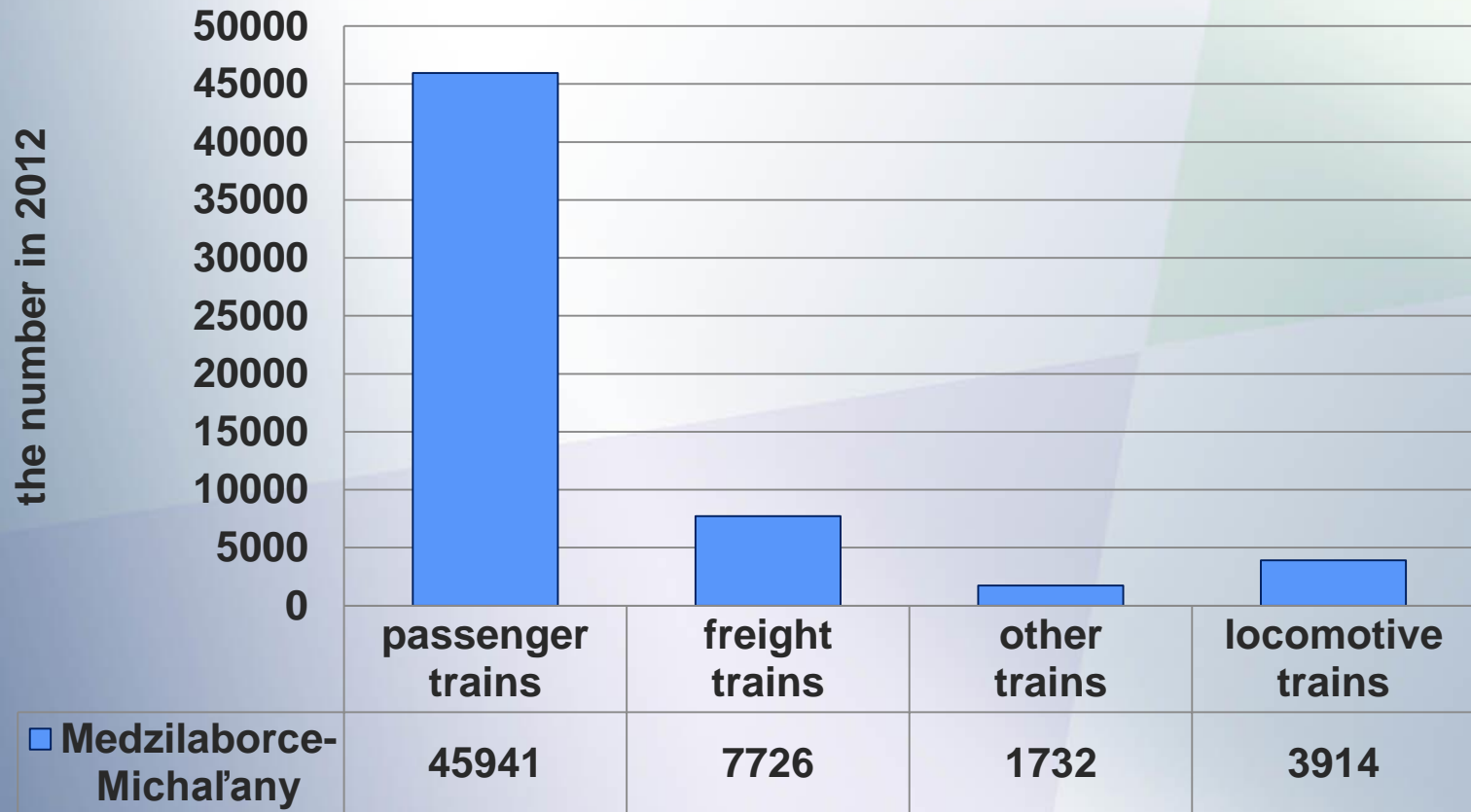
Track: Čadca – Skalité – Zwardoň (PL)



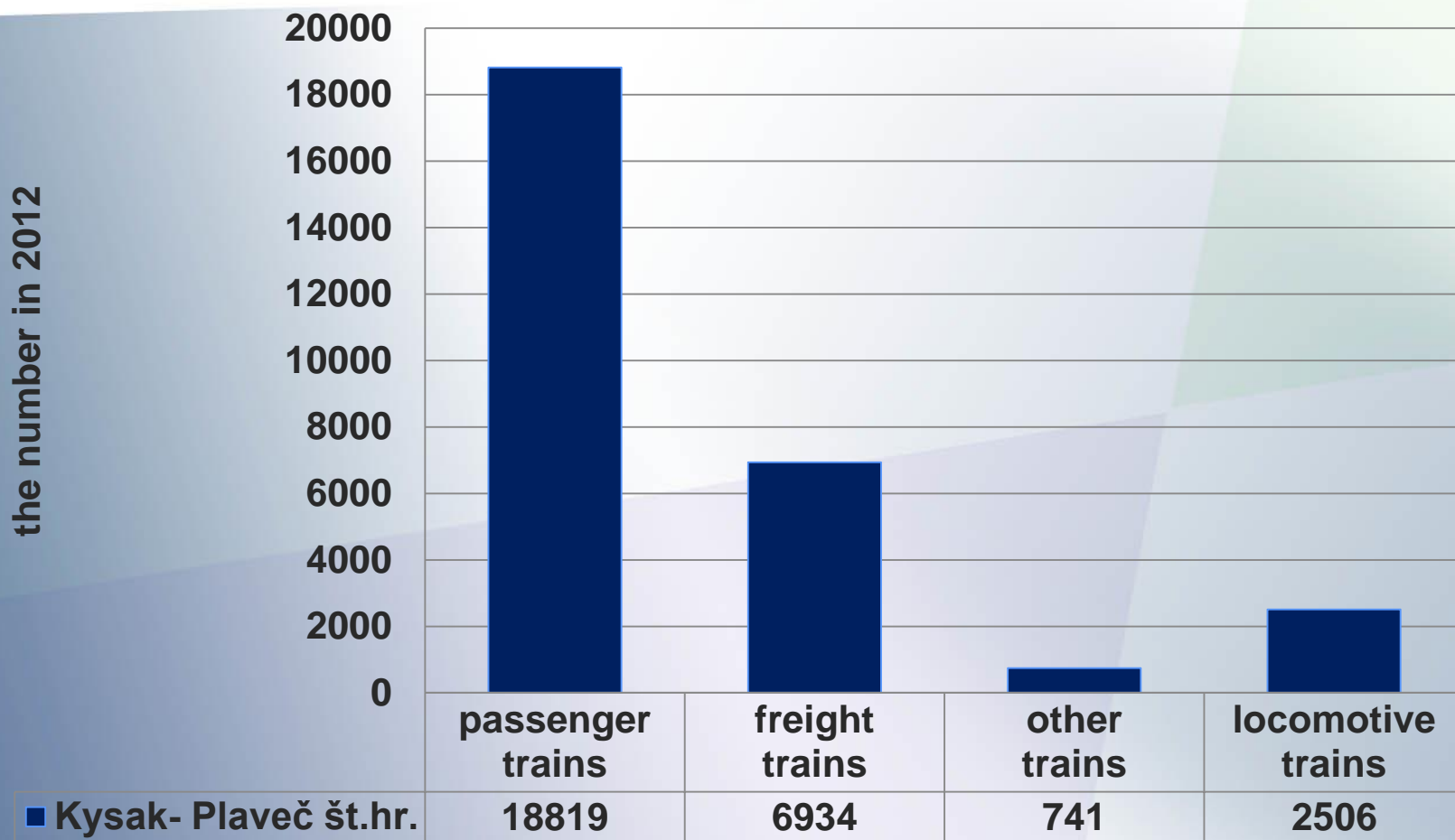
Čadca – Zwardoň PL

- The number of connections - 4 pairs of passenger trains
- The average length of travel time 43 min (9 intermediate stops)
- Average travel speed 31,6 km/h
- Modernization of railways will have no, or only minor impact on shortening the travel time of passenger trains.
- Time benefit will be only in case of modernization of the international fast trains

Track: Medzilaborce - Michal'any



Trat': Kysak- Plaveč bor. SR/PL



Lupków – Michaľany

Muzsyna - Plaveč

- The number of connections – 0
- Nowadays there is no direct connection for rail passenger transport in these directions
- Capacities are sufficient for potential future development

New transport connection of Tatry by railway transport

- Possible connection of tourist centers Tatranská Lomnica SR – Zakopane PL by railway transport
- Benefits of project:
 - Improving passenger transport
 - Suppression of IPT in the Tatras
 - Reducing the negative impacts of road transport on the environment of the High Tatras
 - Support for Economic Cooperation Slovak and Polish parties
 - Improving space and time accessibility and serviceability of region.
 - 2022 Olympic candidacy



Conclusion (2)

- Between Slovakia and Poland shall be mainly negotiated touring passenger transport
- In the case of construction motorway and expressways produce time savings
- Time saving will be defined after completion of motorway and expressways
- Regular rail connection exists only on the route Čadca - Skalité – Zwardoň
- Railways have sufficient capacity for the required demand in the case of development cooperation between Slovakia and Poland

Thank you for your attention

Ing. Katarína Kilianová, PhD.
Výskumný pracovník, VÚD a.s.

tel. 00421 41 5686 337
kilianova@vud. sk