Modernization of railway corridors after 2015

03/12/2015

Peter Šišolák

ŽSR network - the part of corridors

- Rail network of ŽSR belongs to RFC, TEN- T network and Cretan corridors ,AGC / AGTC

Koridor IV

Drážďany – Praha – Bratislava/Viedeň – Budapešť – Arad
Vetva: Norimberg – Praha
Vetva: Arad – Bukurešť – Konstanca
Vetva: Arad – Sofia – Istanbul
Vetva: Sofia – Solún

Koridor V

Benátky – Terst/Koper – Ľubľana – Budapešť – Užhorod – Ľvov
Vetva: Rijeka – Záhreb – Budapešť
Vetva: Ploče – Sarajevo – Budapešť
Vetva: Bratislava – Žilina – Užhorod

Koridor VI

Gdaňsk – Grudziadz/Varšava – Katovice – Žilina
Vetva: Grudziadz – Poznaň
Vetva: Katovice – Ostrava – Břeclav/Brno

Technical requirements for rail corridors and other network

AGC/AGTC 1989

EUROPEAN AGREEMENT ON MAIN INTERNATIONAL RAILWAY LINES (AGC)
DONE AT GENEVA ON 31 MAY 1985

INFRASTRUCTURE PARAMETERS FOR MAIN INTERNATIONAL RAILWAY LINES

	A Existing lines which meet the infrastructure requirements and lines to be improved or reconstructed	B New lines	
		B1 For passenger traffic only	B2 For passenger and goods traffic
1. Number of tracks	-	2	2
2. Vehicle loading gauge	UIC* B	UIC C1	UIC C1
3. Minimum distance between track centres	4.0 m	4.2 m	4.2 m
4. Nominal minimum speed	160 km/h	300 km/h	250 km/h
5. Authorized mass per axle:	22.5 t	-	22.5 t
Locomotives (≤200 km/h)			
Rail cars and rail motor sets (≤300 km/h)	17 t	17 t	17 t
Carriages	16 t	-	16 t
Wagons ≤100 km/h	20 t	-	22.5 t
120 km/h	20 t	-	20 t
140 km/h	18 t	-	18 t
6. Authorized mass per linear metre	8 t	-	8 t
7. Test train (bridge design)	UIC 71	-	UIC 71
8. Maximum gradient	-	35 mm/m	12.5 mm/m
9. Minimum platform length in principal stations	400 m	400 m	400 m
10. Minimum useful siding length	750 m	-	750 m
11. Level crossings	None	None	None

* UIC: International Union of Railways.

TSI INF 2011

COMMISSION DECISION
of 26 April 2011
concerning a technical specification for interoperability relating to the 'infrastructure' subsystem of the trans-European conventional rail system

Performance parameters for TSI categories of line

ies of line			Gauge	Axle load (t)	Line speed (km/h)	Train length (m)
core	IV-P	new	GC	22,5	200	400
	IV-F		GC	25	140	750
	IV-M		GC	25	200	750
	V-P	exist	GB	22,5	160	300
	V-F		GB	22,5	100	600
	V-M		GB	22,5	160	600

COMMISSION REGULATION (EU) No 1299/2014
of 18 November 2014
on the technical specifications for interoperability relating to the 'infrastructure' subsystem of the rail system in the European Union

TSI INF 2015

Performance parameters for passenger traffic

Traffic code	Gauge	Axle load [t]	Line speed [km/h]	Usable length of platform [m]
P4	GB	22,5 (**)	120-200	200-400
P5	GA	20 (**)	80-120	50-200
P6	G1	12 (**)	n.a.	n.a.
P1520	S	22,5 (**)	80-160	35-400
P1600	IRL1	22,5 (**)	80-160	75-240

TSI INF 2015

Performance parameters for freight traffic

Traffic code	Gauge	Axle load [t]	Line speed [km/h]	Train length [m]
F1	GC	22,5 (*)	100-120	740-1050
F2	GB	22,5 (*)	100-120	600-1050
F3	GA	20 (*)	60-100	500-1050
F4	G1	18 (*)	n.a.	n.a.
F1520	S	25 (*)	50-120	1050
F1600	IRL1	22,5 (*)	50-100	150-450

The funding of the modernization

Prioritoes from Cohesion Fund:

- modernization of the corridors (TEN-T CORE),
- Imlementation of the interoperability (ERTMS),
- building of the highways – road infrastructure (TEN-T CORE),
- Intelligence traffic systems and traffic telematics,
- support of urban mobility (construction and modernization of the infrastructure for integrated traffic systems, new rolling stock for rail traffic, building of the passenger transfer terminals),
- modernization of the water transport (Danube water road, TEN-T ports).

Priorities from ERDF:

- modernization of the rail corridors (outside TEN-T CORE),
- electrification of the tracks,
- building and modernization of the technical basement for repairing a maintainance of the rolling stock,
- building of the highways – road infrastructure (outside TEN-T CORE),
- building and modernization of the first-class roads.

Financial Framework of operational programs	OP Transport 2007-2014	OPII 2014-2020
CF		
Rail	920 878 680	853 928 431
Road	1 198 921 733	1 344 117 648
ERDF		
Rail	VOD	282 037 915
Road	816 523 484	570 302 622
CEF		
Rail	-	786 890 673
Road	-	87 432 297

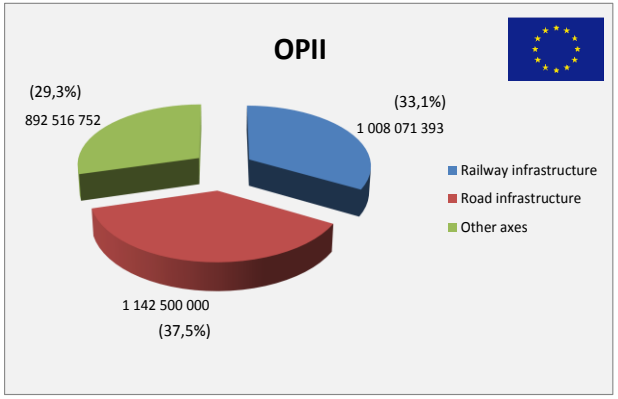
Proposal for the Financial Framework OPII

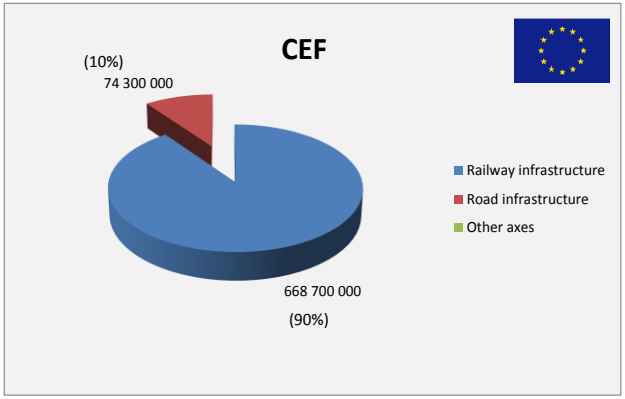
	Total	EU source	State Budget	% from Fund	% from OPII
Cohesion Fund					
PA 1 – Rail inf. TEN-T CORE	**853 928 431**	**725 839 166**	**128 089 265**	**31,5%**	**18,3%**
PA 2 – Road inf. TEN-T CORE	1 344 117 648	1 142 500 000	201 617 648	49,5%	28,8%
PA 3 – Urban	379 235 295	322 350 000	56 885 295	14%	8,1%
PA 4 – Water	137 000 000	116 450 000	20 550 000	5,0%	2,9%
Cohesion Fund Σ	**2 714 281 374**	**1 868 339 166**	**329 706 913**	**100,0%**	**58,2%**
ERDF					
PA 5 – Rail inf. (outside TEN-T CORE)	**332 037 915**	**282 232 227**	**49 805 688**	**17%**	**7,1%**
PA 6 – Road inf.	570 302 622	484 757 228	85 545 394	29,2%	12,2%
PA 7 – Information society	947 666 768	805 516 752	142 150 016	48,5%	20,3%
PA 8 – Technical Assistance	102 352 942	87 000 000	15 352 942	5,2%	2,2%
ERDF Σ	**1 952 360 247**	**892 516 752**	**243 048 352**	**100,0%**	**41,8%**
OPII Σ	**4 666 641 621**	**2 760 855 918**	**572 755 265**	**-**	**100,00 %**

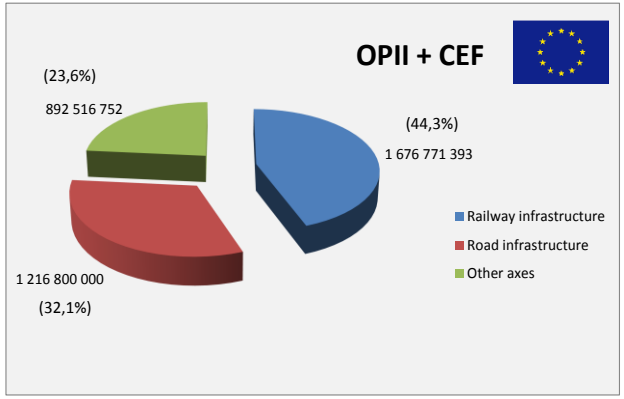
Proposed division of allocation of OPII and CEF between transport areas

Transport area	OPII			CEF			OPII + CEF		
	Budget	EU source	%	Budget	EU source	%	Budget	EU source	%
Rail infrastructure (PA 1 + PA 5)	**1 185 966 346**	**1 008 071 393**	**33,1**	**786 890 673**	**668 857 072**	**90**	**1 972 857 019**	**1 676 928 465**	**44,3**
Road infrastructure (PA 2 + PA 6)	1 914 420 270	1 142 500 000	37,5	87 432 297	74 317 452	10	2 001 852 567	1 216 817 452	32,1
Other axes	1 566 255 005	892 516 752	29,3	-	-	-	1 566 255 005	892 516 752	23,6
TOTAL	**4 666 641 621**	**3 043 088 145**	**100**	**874 322 970**	**743 174 525**	**100**	**5 540 964 591**	**3 786 088 145**	**100**

Considering the current division of allocations within OPII and the proposed ratio of division of funds from CEF between railway and road transport (90:10), the division of allocations between these two modes will be moderately in favour of the road transport, which however reflects the actual needs of the SR.







Modernization of the infrastructure

OPII 2014-2020
PA 1 – Rail infrastructure (TEN-T CORE)

OPII 2014-2020 PA 1	FS, PD		Realization	
	km	%	km	%
TEN-T CORE	112	16	197	28
ŽSR network	112	3	197	5

The item Realization includes kilometrical part of the projects „Traffic junction Bratislava" + "Implementation of ERTMS on the track Kúty – Bratislava" + „Marshalling yard Žilina – Teplička", because of the projection and realization are planned within OPII together.

„big" 2022
VI. corridor
ČR/SR border - Čadca – Krásno nad Kysucou
Cost of investments: 300 mil. EUR
Length: 11 km

„big" 2020
Marshalling yard Žilina – Teplička (and following infrastructure)
Cost of investments: 318 mil. EUR
Length: 16 km

„national" 2016
Marshalling yard Žilina – Teplička (and following infrastructure)
Project documentation
Cost of investments: 5,2 mil. EUR
Length: 16 km

„national" 2016
V. corridor
Púchov – Žilina
(the part Dolný Hričov – Žilina)
Cost of investments: 67 mil. EUR
Length: 9 km

„big" 2022
V. corridor
Spišská Nová Ves – Poprad-Tatry
Cost of investments: 323 mil. EUR
Length: 26 km

„big" 2021
V. corridor
Kysak – Košice
Cost of investments: 348,45 mil. EUR
Length: 16 km

2016 „national" 2019
IV. corridor
(implementation of ERTMS on the track Kúty – ČR/SR border – Bratislava junction)
Cost of investments for PD: 3,5 mil. EUR
Cost of investments for R: 116,28 mil. EUR
Length: 64 km

„big" 2018
V. corridor
Púchov – Považská Teplá
Cost of investments: 300 mil. EUR
Length: 17 km

„national" 2019
Electrification of the track Devínska Nová Ves – SR/A border
Cost of investments: 5 mil. EUR
Length: 6 km

2019 „big" 2019
Modernization of the junction Čierna nad Tisou
Cost of investments: 120 mil. EUR

2018 „big" 2021
Bratislava traffic junction
Cost of investments for PD: 25 mil. EUR
Cost of investments for R: 900 mil. EUR
Length: 32 km

„national"
Implementation of TSI to ŽSR

„national"
ETCS sytem (25 pieces) EMU (electric multiple units)

„national"
Diagnostic vehicles ŽSR

Legend

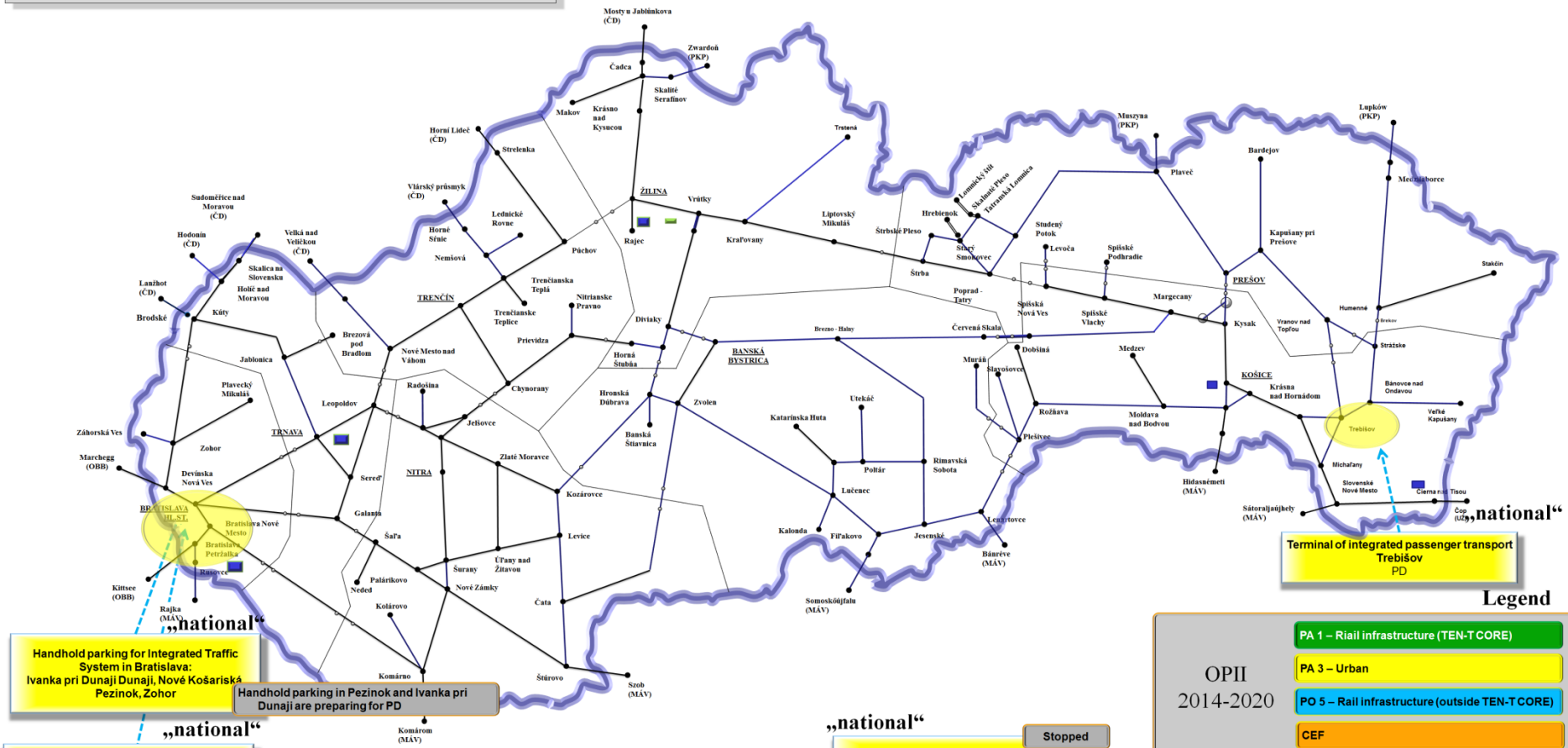
OPII 2014-2020
- PA 1 – Riail infrastructure (TEN-T CORE)
- PA 3 – Urban
- PO 5 – Rail infrastructure (outside TEN-T CORE)
- CEF

Date: FS, Project documentation | Realization

Source: MDVRR SR, 11/2015
Author: Strategy and external relations department of ŽSR

Modernization of the infrastructure

OPII 2014-2020
PA 3 – Urban

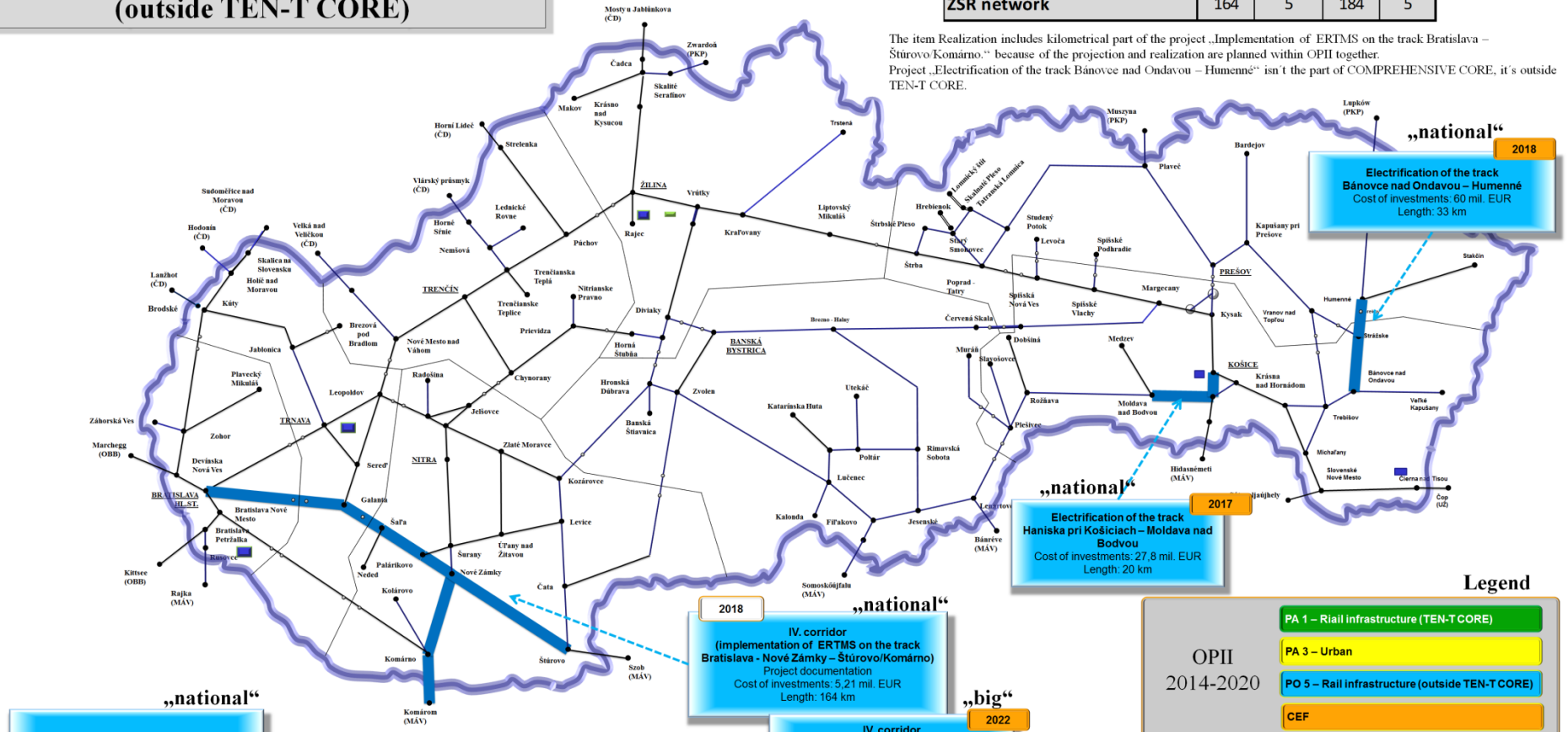


Modernization of the infrastructure

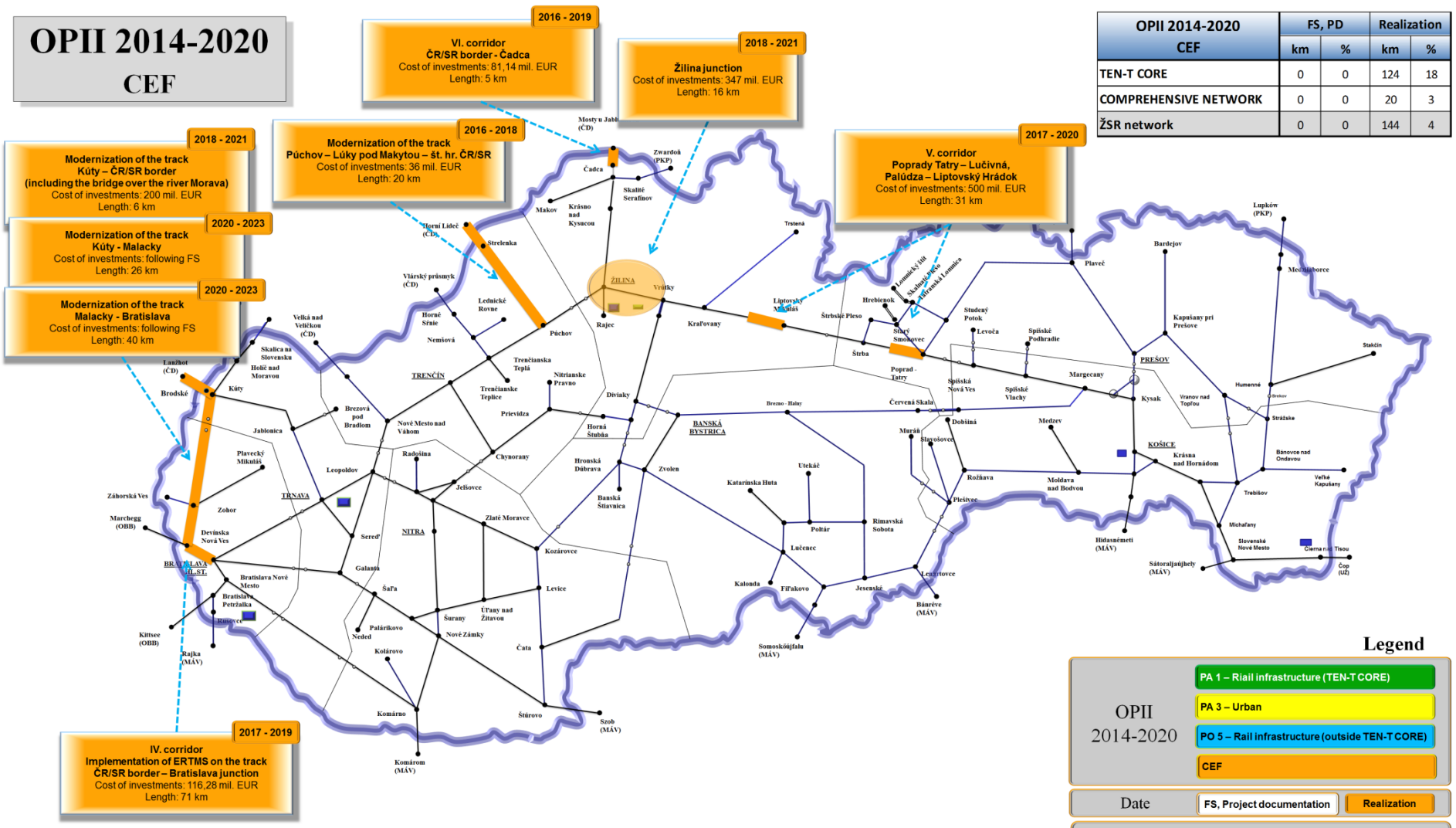
OPII 2014-2020
PA 5 – Rail infrastructure (outside TEN-T CORE)

OPII 2014-2020 PA 5	FS, PD		Realization	
	km	%	km	%
COMPREHENSIVE NETWORK	164	23	184	26
ŽSR network	164	5	184	5

The item Realization includes kilometrical part of the project „Implementation of ERTMS on the track Bratislava – Štúrovo/Komárno.“ because of the projection and realization are planned within OPII together.
Project „Electrification of the track Bánovce nad Ondavou – Humenné“ isn´t the part of COMPREHENSIVE CORE, it´s outside TEN-T CORE.



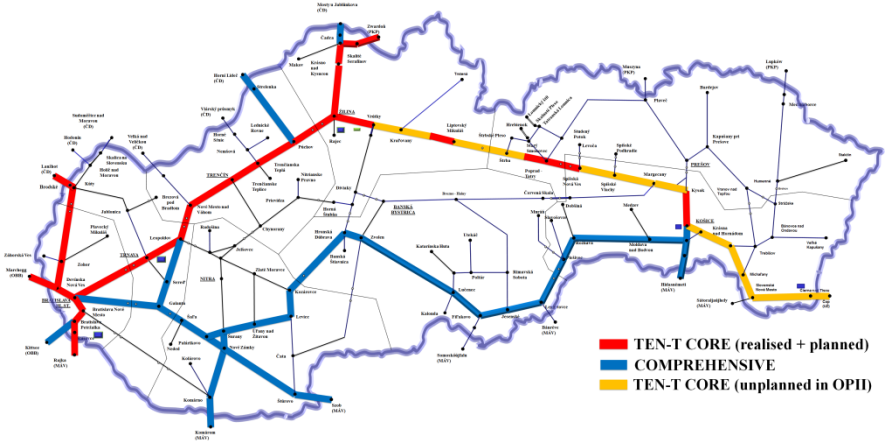
Modernization of the infrastructure



OPII 2014-2020 CEF	FS, PD		Realization	
	km	%	km	%
TEN-T CORE	0	0	124	18
COMPREHENSIVE NETWORK	0	0	20	3
ŽSR network	0	0	144	4

Modernization of ZSR network since 1993 till the end of OPII

Network	OP Transport	OPII	FS, PD		Realization	
			km	%	km	%
TEN-T CORE	PA 1, 4	PA 1, CEF	197	28	425	61
COMPREHENSIVE CORE	PA 4	PA 5, CEF	164	23	308	44
outside TEN-T CORE	-	PA 5	0	0	94	4
ŽSR network	-	-	361	10	827	23



Resting part of the TEN - T

- Core network (2030)
  - Žilina – ČNT 264 km
- Comprehensive network (2050)
  - In length 707 km

Thank you for your attention!