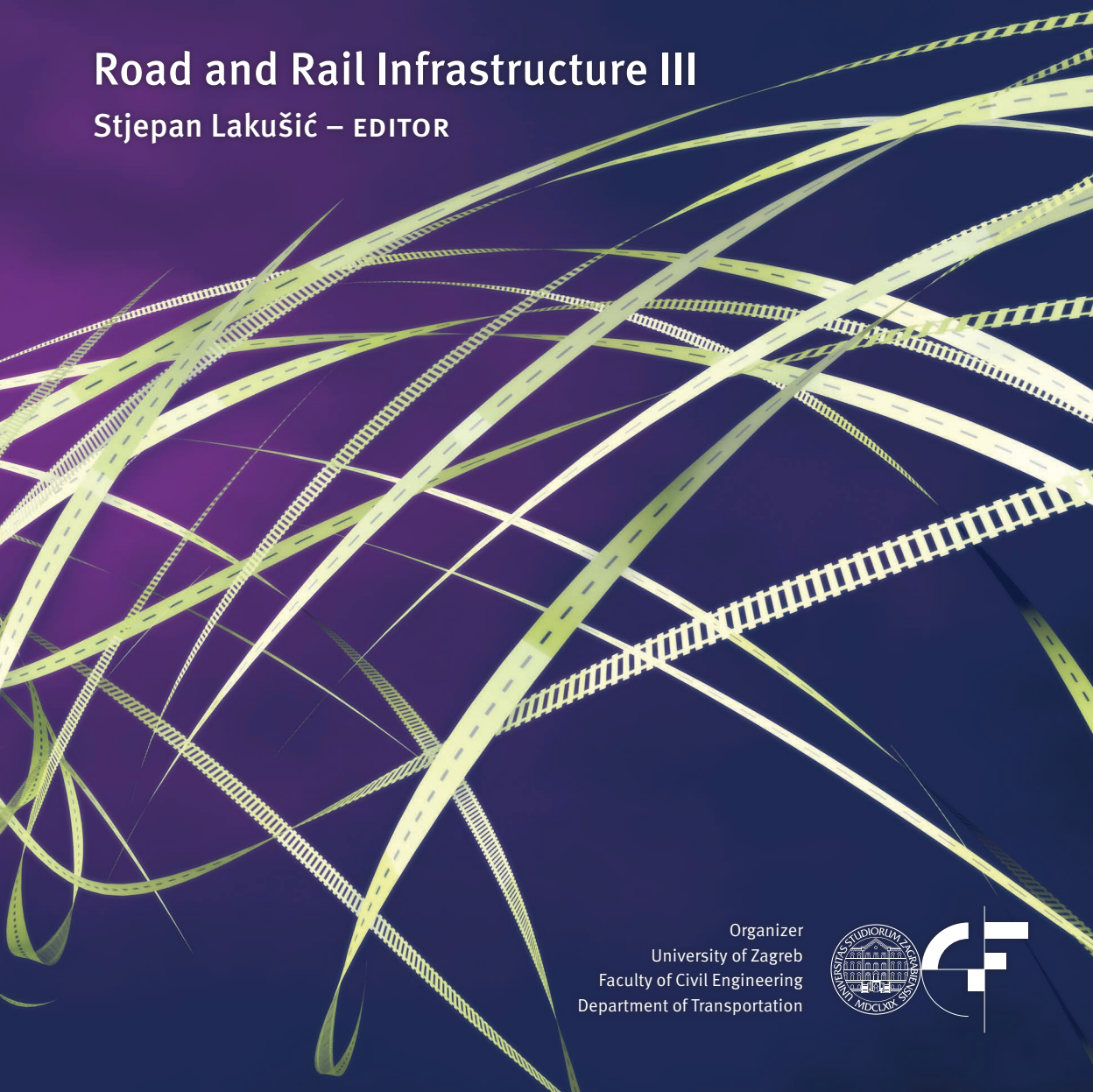
CETRA 2014

3rd International Conference on Road and Rail Infrastructure
28–30 April 2014, Split, Croatia

Road and Rail Infrastructure III

Stjepan Lakušić – EDITOR



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Road and Rail Infrastructure III

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FINANCING OF RAILWAY CORRIDOR INFRASTRUCTURE IN TRANSIT COUNTRIES

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Abstract

The paper deals with the problems of fulfilment of the new TEN-T infrastructure guidelines in Slovenia on one hand and the financing of upgrading and construction works for the new infrastructure on the other hand. The specific of our network is that the majority of our freight traffic is in transit that means this freight has no origin or destination in Slovenia and serves mainly to the foreign economy. The fact that the origin and/or destination of most of the freight traveling on our tracks are not in Slovenia is not the problem for itself, the real problem is that the railway undertakers are not fully charged for the costs they produced to the infrastructure as well as to the environment. This is the main reason why no major railway project in Slovenia is financially proved although the traffic volume forecast are enormous. With other words the Cost Benefits Analyses can not be positive enough because the costs are Slovenian and benefits are from the countries which transported goods through our country. New railway infrastructure can even not be proved by calculating of benefits by lowering of environmental costs with shifting the freight from the road to the rail. This is why because these environmental costs produced by the road traffic are actually also not ours, they are forced to use since also the road freight transport is on our roads mainly in transit. The solution for countries like Slovenia lies in infrastructure fees which will cover full infrastructure and environmental costs or the totally different scheme of co-financing on the European level.

Keywords: railway infrastructure, TEN-T network and guidelines, financing, transport

1 Introduction

It seems that the transport today is more and more an independent branch of economy, rather than it´s support arm. You could say that it is becoming practically an end in itself, thereby fatally affect the daily lives of people and policy, which is responsible for the development of transport, energy, environment. Transportation is constantly increasing in spite of aging and reducing the number of people in our part of the world. There are demands and the "need" for new and new infrastructure. It is needed to put an end to the myth that continued growth will never stop.

If you want to return transportation to the place it deserves in the transport chain, it is high time to start charge the transport the full costs of the construction, maintenance and management of infrastructure and management of traffic on it, as well as all costs incurred to the space and environment.

2 TEN-T infrastructure guidelines and financial consequences

The standards for the core TEN-T railway network as adopted by the Regulation (EU) No 1315/2013[1] and which should be implemented by the year 2030 are for the railway infrastructure for freight trains determined as follows:

1 full electrification of the line tracks and, as far as necessary for electric train operations, sidings;
2 freight lines of the core network as indicated in Annex I: at least 22,5 t axle load, 100 km/h line speed and the possibility of running trains with a length of 740 m;
3 full deployment of ERTMS;
4 nominal track gauge for new railway lines: 1 435 mm except in cases where the new line is an extension on a network the track gauge of which is different and detached from the main rail lines in the Union.

If we compare the aforementioned requirements for the railway infrastructure with the existing condition of the TEN-T network lines in Slovenia, we may draw the following conclusions, presented in the Table 1.
The total TEN-T network of railway lines in Slovenia is 567.1 km long, 323.2 of them are double track lines and 243.9 km are single track lines. All together 890.3 km of tracks perform the TEN-T Slovenian railway core network.
206.9 km of double track lines (64.0 %) respectively 110.2 km of single track lines (45.2 %) does not meet the requirement for the minimum speed of ≥100 km/h. Or with other words, 317.1 km of lines respectively 56.0 % of all Slovenian TEN-T network will need to be reconstructed or completely new build for achieving the desired speed of at least 100 km/h.
The first demand of TEN-T requirements, that is electrification, will be fulfilled till the year 2015, since the electrification works are in progress on the last yet not electrified line Pragersko–Hodoš on the Slovenian-Hungarian connection of the new Mediterranean railway corridor.
The Slovenian TEN-T network and plans for the future development are shown at the Figure 1 below. For the time being this development plans are not yet confirmed by the government and the Parliament, while the National Development Plan is still in the preparation phase and will be published probably in autumn this year. It is the great possibility that the development plan of the lines will stay the same but the final realisation will be postponed.

Table 1 TEN-T lines in Slovenia

Line section	Double track line [km]	Single track line [km]	V≥100km/h (2) [km]	V≥100km/h (1) [km]	V≥100km/h (2) [%]	V≥100km/h (1) [%]
Dobova–Zidani Most	50,8		33,7		66,3	
Zidani Most-Ljubljana	63,7		24,9		39,1	
Zidani Most-Maribor	91,9		38,2		41,6	
Maribor-Šentilj-s.b.		16,5		3		18,2
Pragersko-Ormož		41,2		38,4		93,2
Ormož-Hodoš		69,2		59,2		85,5
Ljubljana-Sežana-s.b.	116,8		19,5		16,7	
Divača-Koper freight st.		45,5		0		0
Ljubljana-Jesenice-s.b.		71,5		33,1		46,3
Total V≥100km/h	**323,2**	**243,9**	**116,3**	**133,7**	**36,0**	**54,8**
Total V<100km/h	**567,1**		**206,9**	**110,2**	**64,0**	**45,2**

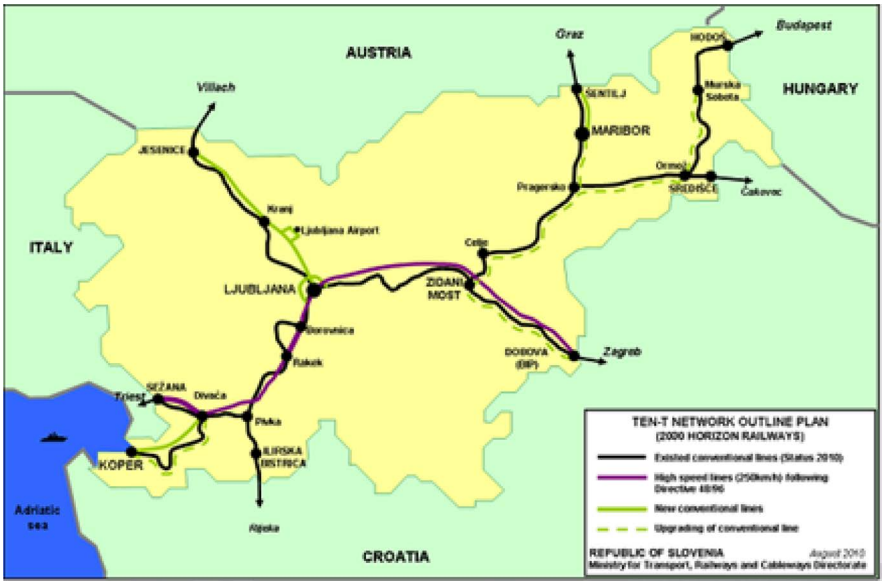

Figure 1 Slovenian TEN-T network

2.1 Needed investment money for realisation of TEN-T requirements

The question is how much money do we need for the fulfilment of TEN-T standards? The biggest problems are the minimum speed of 100 km/h and the useable length of station tracks of 750 m. With a rough estimation the investment costs would be between 5.5 and 7.5 billion EUR depending on the designing speed for open tracks (from 100 km/h to 160 km/h). Before beginning of construction works the National Spatial Plan (NSP) must be prepared and adopted by the government. These procedures take in average at least three years. This means that before the beginning of the year 2017 no major project can start although the NSPs for the Maribor-Šentilj and Ljubljana-Jesenice lines as well for the Pragersko station are already in progress. 14 years would be available as the realisation time. Regarding the needed finances and available time, between 390 and 530 million EUR per year should be invested into the Public Railway Infrastructure (PRI) of Slovenia to upgrade the Slovenian TEN-T network to the desired level.

3 Slovenia as a transit transport land

More than half, exactly 57.2 % of railway freight in tonnage in realised in transit transport on the Slovenian railway network in the last year, what is shown in this Section 3. The statistics is even more favourable for the transit if we take into account the NTKM. In later case the percentage is even 72.2 % (All together 4,289.8 million NTKM and in the transit together 3,095.7 million NTKM were realised).

3.1 Past freight railway traffic flows

Slovenia is a typical freight transit transport land what means that more than half of all forwarded freight is realised as a land or a port transit. Figures related to the past, by railway transported goods, are shown in the following Table 2. The figures present the total amount of all three freight Railway Undertakers (RU) operated in Slovenia.

Table 2 Transported goods by railway (in `ooo tonnes)

Year	2007	2008	2009	2010	2011	2012	2013
Dom. transport	**1,853**	**1,915**	**1,634**	**1,870**	**1,474**	**1,369**	**1,550**
- import	5,198	5,343	4,064	4,333	4,962	4,194	4,259
- export	2,260	2,089	1,861	1,994	2,018	2,063	2,391
- land transit	4,187	3,773	2,817	3,377	3,314	2,690	2,858
- port transit	5,751	5,894	5,051	6,433	6,817	7,215	8,129
Transit together	**9,938**	**9,667**	**7,868**	**9,810**	**10,131**	**9,864**	**10,987**
Int. transport	**17,396**	**17,099**	**13,857**	**16,138**	**17,111**	**16,094**	**17,638**
All together	**19,249**	**19,014**	**15,491**	**18,008**	**18,585**	**17,463**	**19,188**

From the Table 2 it is obvious that the domestic railway transport, i.e. the origin and destination of goods are in Slovenia, represents approximately 10 % of total transported goods till the year 2010 and fell even to 8 % in the years 2011 to 2013. The reason for such result lies probably in short transport distances in our country and the decline of the Slovenian industry which input raw material and the output products were dedicated for the railway transport.
It is evident that the Port of Koper is the most important O/D source for the railway freight transport on our railway network. Approximately 55 % of all loaded and unloaded freight comes to and leaves the Port by the rail. In average 30 % of the total throughput in the port has the Slovenian origin or destination and from this 30 % of Slovenian port freight about 66 % were transported by the rail in the last three years. Just for the information the data regarding the port throughput, this was in the last three years as follows: 18.0 million tonnes in the year 2013, 17.9 in the year 2012 respectively 17.0 million tonnes in the year 2011.

3.2 Future freight railway traffic flows

For the future traffic flows extensive analysis have been done in recent years. These analyses show that we can count with enormous growth of freight traffic till the year 2030. It is supposed that freight throughput in the Port of Koper will rise from about 18 million tonnes to the about 30 million tonnes. In general almost doubling of the existing railway freight transport is expected in the next 17 years in the "do minimum" scenario.
With extensive upgrading of the "Mediterranean corridor" (the speed of 100 km/h for freight trains and sufficient capacities of nodes and stations) the freight flow on the Divača–Ljubljana section could rise up to 35 million tonnes. In this case the capacity of existing double track lines would not be sufficient any more. Forecasted figures for the railway freight transport can be seen from the Table 3.

Table 3 Transported goods by railway (in `ooo tonnes)

Line sections	year 2013	"do-minimum" 2030
Koper-Divača	10,000	17,000
Divača-Ljubljana	12,000	21,000
Ljubljana-Zidani Most	8,000	21,000
Ljubljana-Jesenice	5,000	9,000

3.3 Infrastructure users fees

In the Table 4 the amount of paid infrastructure users' fee in the last three years are shown separated by users. At the moment four RU have Slovenian Safety Certificate and are active in the transport industry. Three of them are freight RU.

The coverage of the PRI costs for the maintenance and traffic control and command (TC&C) leis only between 8.5-9.5 %. The costs for renewals, upgrading and new construction of the PRI are even not considered in the stated percentages. In the Republic of Slovenia the infrastructure fee is obligated only for the freight trains and special passengers trains but not for the trains running under public service obligations contract.

Table 4 Infrastructure users' fees (in ooo EUR)

Railway Undertaker	2011	2012	2013
Rail Cargo Austria AG	447.748,13 €	628.657,26 €	685.983,61 €
Slovenian railways, Freight Transport, ltd.	8.515.154,64 €	7.604.156,50 €	8.117.812,12 €
Slovenian railways, Passengers Transport, ltd.	53.711,20 €	43.841,71 €	51.055,76 €
Adria Transport, ltd.	112.841,23 €	169.604,07 €	273.407,49 €
Without V.A.T.	**9.129.455,20 €**	**8.446.259,54 €**	**9.128.258,97 €**
With V.A.T.	**7.607.879,33 €**	**7.038.549,61 €**	**7.540.713,31 €**

From the above percentage it is obvious that we are far away from the full coverage of the costs which transport causes to the infrastructure and to the environment. It is also true that also road traffic is not paying the infrastructure costs caused to the Slovenian environment.
A simple comparison between EUR/NTKM paid by the freight railway transport and the road tax paid for yearly registration of passengers cars in Slovenia shows firstly how small railway fee actually is (3,781millionNTKM realized in the year 2013 and 9.128 million EUR infrastructure fee means 0.0024 EUR/NTKM) and secondly that even road tax for passengers cars are almost double as high as the infrastructure fee (road tax for average passengers car of 1350 cm^3 and weight of 1 tonne is 62 EUR; with in average 15,000 km/year it means 0.0041 EUR/NTKM).

Table 5 Maintenance and TC&C costs of PRI (in ooo EUR with V. A.T.)

Year	2007	2008	2009	2010	2011	2012	2013
Maint. of PRI	69.370	73.801	67.717	60.928	71.589	68.039	63.787
TC&C	41.722	36.864	37.849	35.916	34.500	33.000	33.000

4 New EU infrastructure financing policy

4.1 What can we expect in the new financial perspective from 2014 till 2020?

First of all the old financial instrument TEN-T is replaced with the new scheme called "Connecting Europe Facility" (CEF)[2], which will assure the financial means for the actual perspective in the period from 2014 till 2020.
In the most radical overhaul of EU infrastructure policy since its inception in the 1980s, the Commission has published new maps showing the nine major corridors which will act as a backbone for transportation in Europe's single market and revolutionise East–West connections. For realising of this ambition, EU financing for transport infrastructure will triple the finance to the 26 billion EUR from which about 11.3 billion EUR has been taken away from the Cohesion found and will be dedicated only for the Cohesion Countries upon the public tenders.
This new infrastructure policy will put in place a powerful European transport network across 28 Member States to promote growth and competitiveness. It will connect East with West and replace today's transport patchwork with a real European network.

The new policy establishes, for the first time, a core transport network built on nine major corridors: 2 North–South corridors, 3 East–West corridors; and 4 diagonal corridors. The core network will transform East–West connections, remove bottlenecks, upgrade infrastructure and streamline cross-border transport operations for passengers and businesses throughout the EU. It will improve connections between different modes of transport and contribute to the EU's climate change objectives. The core network is to be completed by 2030.
This EU funding will be tightly focused on the core transport network where there is most EU added value. To prioritise the East–West connections, almost half the total EC transport infrastructure funding (€11.3 billion from the "Connecting Europe Facility", or CEF) will be ring-fenced only for cohesion countries, [3].

5 EU co-financing of the PRI in the Republic of Slovenia

5.1 Last financial perspective 2007-2013

In the last financial perspective Slovenia has got about 450 million EUR from the Cohesion Found and some project design documentations co-financed from the TEN-T source. The total amounts of money spent for the investments into the PRI, from the year 2009 to the year 2012, are as follows (in 000): in the year 2009 – 100,115 EUR, in the year 2010 – 131,036 EUR, in the year 2011 – 105,728 EUR, in the year 2012 – 71,559 EUR, in the year 2013 – 133,462 EUR and for the year 2014 – 336,340 EUR is planned.
For the year 2015 approximately the average sum of last years will be needed to complete all foreseen projects in time. All above presented figures are the sum of European Cohesion founds and our own means.

5.2 New financial perspective 2014-2020 (railway sector)

Slovenia will probably get round 360 million EUR from the Cohesion envelope. From the special IPE quota for Cohesion countries Slovenia is entitled to an amount of 159 million EUR which must be tied up till the end of 2016.
As it was said before for the IPE instrument public tenders will be launched. How much Slovenia will be able to get from the IPE will depend on the quality of the proposed projects sent to the tenders launched by the EC.
At the moment no official figures regarding Slovenian forecast for the amount of money from the IPE instrument are available. The unofficial information said that for the next legislative period from 2014–2020 Slovenia plans to get from all European founds together (Cohesion found, ERDF, IPE) and for the whole Traffic infrastructure in total about 1,065 million EUR. Our own participation should be at least in the same value.
From the above money about 765 million EUR should be the investment money for the PRI. Together with our participation it presents about 1,530 million EURs investment money for the PRI.
From the above figure it is possible to calculate the average yearly capability of investment many in Slovenia which lies between 200 and 250 million of EURs, what is far away from the needed investment money calculated in the Section 2.1.

6 Conclusions

It is obvious that yearly paid infrastructure fees for using of the PRI in Slovenia are not high especially in the comparison with the costs of the maintenance of the PRI and of the TC&C on it, which are shown in the Table 5. The result of such low percentage of operator´s contribution to the basic cost on the PRI are probably due to not paying of environmental costs at all and in the too low infrastructure fees in the transport in general.

It is simply not possible with such infrastructure users' fees, for the countries like Slovenia, to finance the appropriate renewal, upgrading and adaptation of the capacity needs to the market demands anymore.
The transport charges and taxes must be restructured in the direction of wider application of the 'polluter-pays' and 'user-pays' principle (at least for the freight transport and to cover the real costs of the PRI and the TC&C on it). They should underpin the transport's role in promoting European competitiveness and cohesion objectives, while the overall burden for the sector should reflect the total costs of transport including infrastructure and external costs, [4].
Putting an end to the permanent changing of the European priority corridors, which are mostly determined on the political level as a compromise and not necessarily correspond to the real facts and needs. The infrastructure corridors should be developed on the European level upon the real wider economic needs and not on the basis of single member state priorities.
Financing of the projects should be released of the unnecessary administration and numerous controls, which take time and cost money. Project management should be involved instead of administrating. Appropriate amount of investment money from the EU funds must be dedicated to the single project upon the Feasibility Studies directly without the tendering. Totally different scheme of co-financing on the European level are needed.
Decisive measures on the EU level will be needed to restrict the long haul road freight transport, because the soft measures proven didn't bring the modal shift from road to rail. Although the rail is amongst the most efficient and climate-friendly type of transport it currently carries about only 10% of European cargo and 6% of passengers each year, [5].

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[1] 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.

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