

**Support for Implementing Measures for the South East
Core Regional Transport Network Multi Annual Plan
(EuropeAid/125783/C/SER/MULTI)**

**ACCESS TO RAILWAY INFRASTRUCTURE IN
SEETO PARTICIPANTS:
SELECTED APPROACHES OF ACCESS CHARGES
AND THEIR IMPLEMENTATION
CAPACITY ALLOCATION AND INTEREST FOR
ACCESS BY LOCAL AND FOREIGN OPERATORS**

prepared by

Tatjana Jankovic
Junior Regional Railway Expert

RWR/RSA Consultant: WVG – TRADEMCO – VIENNA CONSULT – TRL



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1. Introduction, sources of information, reference to meetings

- Objective: to demonstrate alignment of Access to railway infrastructure in SEETO Participants with EC RW Directives and particularly 2001/14
- The Consultant reviewed all available studies concerning access charges in Participants and discussed them in meetings with officials in Ministries and railway companies during the missions carried out in October, November and December 2008
- We prepared criteria according to which Access to railway infrastructure in Participants is evaluated at regional level concerning the implementation of EU Directives and the access to infrastructure in a fair and non-discriminatory manner

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1. Introduction, sources of information, reference to meetings

- Railway Laws in Participants
- Charging principles and subsidy in Albania, report from the consultant Kees van Krieken
- Network statement of the republic of Albania 2010, valid from 16 December 2009
- Network statement 2009, HZ infrastructure
- Network Statement 2009, Montenegro Railways Infrastructure
- Draft network statement of Kosovo 2010
- Studies for access charges in Participants

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2. Access to railway infrastructure (TAC, capacity allocation, path allocation)

Directive 2001/14/EC

- Describe the allocation of railway infrastructure capacity and the levying of charges for the use of railway infrastructure
- Encourages the establishment of fair and efficient charging systems for the use of infrastructure.
- Introduce the incentives to encourage both the optimal use of existing infrastructure and the necessary investment in new infrastructure
- Fair competition between different transport modes

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2. Access to railway infrastructure (TAC, capacity allocation, path allocation)

- The Directive defines the minimum access package and the mandatory access to services to which railway undertakings are entitled
- Charges:
 - Must be paid to the infrastructure managers and used to fund their business.
 - Should cover the cost directly incurred as a result of operating trains
 - May include a sum reflecting the scarcity of capacity
 - May be adjusted to take account of the cost of the environmental impact of operating the trains if similar costs are considered in competing modes too

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2. Access to railway infrastructure (TAC, capacity allocation, path allocation)

Directive allows IM to:

- levy mark-ups, if the market can bear this, on the basis of efficient, transparent and non-discriminatory principles, while guaranteeing optimum competitiveness, especially of international rail freight
- Subject to certain conditions, railway undertakings may be granted discounts on charges
- a performance scheme
- capacity reservation charges (for capacity booked but not used)



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2. Access to railway infrastructure (TAC, capacity allocation, path allocation)

- Capacity is allocated by an independent body, which may be the infrastructure manager provided it is totally independent of the railway undertakings.
- To ensure close collaboration, the Directive provides, inter alia, for **the cooperation of IMs to enable efficient creation and allocation of infrastructure capacity which crosses more than one network**. They shall organize international train paths.



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2. Access to railway infrastructure (TAC, capacity allocation, path allocation)

- Framework agreement between RU and IM
- Schedule for the capacity allocation process with description how railway undertakings should apply to use infrastructure
- For congested sections, IM carry out capacity analysis to determine the restrictions on capacity and propose alternatives
- Within six months of the completion of a capacity analysis, the IM must produce a capacity enhancement plan



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2. Access to railway infrastructure (TAC, capacity allocation, path allocation)

Criteria for evaluation of the present situation:

1. Is there available or ongoing study for TAC
2. Is there Methodology for TAC and who is responsible to adopt it?
3. What is the charging principle?
4. Who takes decision on the level of TAC?
5. Is there a contract between the State and IM?
6. Is there a Framework agreement between IM and RU?
7. Is there document for path allocation request?
8. Is there Network Statement document? (draft or on power)



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2. Access to railway infrastructure (TAC, capacity allocation, path allocation)

Evaluation of the present situation in Albania:

1. Individual consultant
2. Yes, prepared by the consultant / no Government decision
3. The method is based on marginal cost plus a mark-up
4. State (MoT and MoF) / Suggested 5 Euro/train-km for freight trains and 1 Euro/train-km for passenger trains
5. NO
6. NO
7. NO (regulation prepared by Consultant)
8. Draft NS



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2. Access to railway infrastructure (TAC, capacity allocation, path allocation)

Evaluation of the present situation in Bosnia and Herzegovina:

1. Studies: SIDA study, (1999), APRI study, (2007), Railway Twinning project with France and Estonia, (2008)
2. Yes, prepared by the APRI consultant / no Government decision
3. The method is based on nonlinear tariff
4. BIHPR Corporation/Suggested 4,39 and 3,66 mark/train-km for freight trains and 3,78 and 3,15 mark/train-km for passenger trains
5. YES
6. NO (draft)
7. NO (draft)
8. Draft NS



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2. Access to railway infrastructure (TAC, capacity allocation, path allocation)

Evaluation of the present situation in Croatia:

1. TAC study by Institute for Traffic, (2006)
2. Formula for calculation of TAC, but unit price is not decided for 2009
3. The method is based on MC+
4. IM
5. YES, for 5 years period (from 2008)
6. YES, annual contract for fixed amount: 40 million KUNA, same for HZ Cargo and HZ Passenger in 2008 (8M Kuna for 2007)
7. YES, available on the HZ Infrastructure website
8. On power, available on the HZ Infra website

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2. Access to railway infrastructure (TAC, capacity allocation, path allocation)

Evaluation of the present situation in the former Yugoslav Republic of Macedonia:

1. Studies: SYSTRA project, (2008)
2. Yes, prepared by the consultant / no Government decision
3. The method is based on: there are four proposals: three using MC+ and one using FC-IM and State
4. IM and State
5. YES
6. YES, annual fixed contract: 40% of RU revenue in 2008 (50% in 2007)
7. NO (draft prepared by Consultant)
8. Draft NS

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2. Access to railway infrastructure (TAC, capacity allocation, path allocation)

Evaluation of the present situation in Montenegro:

1. Studies:
 - TA of BCEOM, SYSTRA, Deloitte, (2008)
 - BCEOM-SAFEGE-IRD study, (2007)
2. Yes, prepared by the consultant / Government decision
3. The method is based on MC+
4. IM and State / Consultant suggested 4 Euro/train-km for freight trains and 1 Euro/train-km for passenger trains. Decision is 3 euro/trainkm
5. NO, draft in procedure for adoption
6. YES, annual fixed contract: 200.000Euro per month. As of 01.01.2009 TAC will be implemented
7. NO (in preparation)
8. NS on power, since January 2009

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2. Access to railway infrastructure (TAC, capacity allocation, path allocation)

Evaluation of the present situation in Serbia:

1. Studies: World Bank project by Booz Allen Hamilton, (2007)
2. Yes, prepared by the consultant/ No Government decision
3. The method is based on MC+
4. IM
5. NO
6. NO
7. NO
8. Draft NS

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2. Access to railway infrastructure (TAC, capacity allocation, path allocation)

Evaluation of the present situation in Kosovo (under UNSCR 1244/1999):

1. Individual consultant
2. Yes, prepared by the consultant
3. The method is based on MC+
4. MoF and MoE
5. NO
6. NO
7. NO
8. Draft NS

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3. Comparative presentation of the selected approaches of access charges and their implementation Case - Albania

Railway code of the Republic of Albania (2004) has foreseen access charges

Proposal from the Consultant Kees Van Krieken (2008)

- The charging system is based on the following principles:
 - Simplicity of calculation
 - Clearness
 - Fairness
 - Cost dependence and
 - Charges dependence for the public transport infrastructure in road transport

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3. Comparative presentation of the selected approaches of access charges and their implementation Case - Albania

- Only operational costs are taken into consideration for charging:
 - Traffic control, train dispatching and time table preparation
 - Day to day maintenance of the tracks, stations, signaling system
 - Organization cost of the IM company
- For current situation with very low number of trains, simple tariff system shall be used. In future with more trains and train km there is a need for more sophisticated system

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3. Comparative presentation of the selected approaches of access charges and their implementation Case - Albania

Draft Network Statement 2010 for Albania

The formula to calculate TAC is:

$$U = (Q_{vlkm(reg)} \times P_{(reg)} + Q_{vlkm(g)} \times P_g) \times C_{vlkm} \times K \times F$$

U - usage charge for the allocated train path
 $Q_{vlkm(reg)}$ - number of train kilometers performed on regional rail line
 $Q_{vlkm(g)}$ - number of train kilometers performed on main rail line
 $P_{(reg)}$ - weighting coefficient for regional rail lines
 P_g - weighting coefficient for main rail lines
 C_{vlkm} - price for a train kilometer
 K - track wear coefficient
 F - factor, expressing carrier's demands regarding the timetable

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3. Comparative presentation of the selected approaches of access charges and their implementation Case - Albania

Weighting coefficient P:

- main rail lines: 1,00
- regional rail lines: 0,70

Track wear coefficient:

- Cargo trains (more than 1300 ton gross): 1,00
- Cargo trains (less than 1300 ton gross): 0,50
- Cargo trains (empty, less than 100 ton net): 0,30
- Cargo trains (circular, collecting, locomotive): 0,10

Factor for railway undertaking's demand regarding the timetable:

- Allocated train paths, requested prior to timetable enforcement: 1
- Allocated train paths on the basis of an ad hoc request: 1,2
- Price per train kilometer C_{vlkm} is 2,00 (excluding VAT)

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3. Comparative presentation of the selected approaches of access charges and their implementation Case – Bosnia and Herzegovina

- Law on Railways of Bosnia and Herzegovina (2005) foresees access charges in Article 23, Plea to Regulatory Board
- Law on Railways on Federation of Bosnia and Herzegovina (2001) has foreseen access charges in Article 11, Railway Infrastructure
- Law on Railways of Republic of Srpska (2001) does not foresee access charges.
- Law about changes and amendments to Law on Railways of Republic of Srpska (2008) has foreseen access charges in Article 3, Services of IM.

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3. Comparative presentation of the selected approaches of access charges and their implementation Case – Bosnia and Herzegovina

Draft Network Statement 2007 prepared by APRI study

- No data about the calculation of access charges

APRY study, Final Report (2007)

- Principle for calculation of access charge is based on nonlinear tariff
- Categorization according to type of train: passenger and freight
- Categorization according to type of line: I, II and III category
- Fixed and variable part of access charges
- Not based on variable cost
- Coverage of operating cost is considerable high
- Possibility to include investments in access charges
- Equal treatment for all operators

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3. Comparative presentation of the selected approaches of access charges and their implementation Case – Bosnia and Herzegovina

- Suggested methodology starts from the calculation of the railway infrastructure cost covering six types:
 - Cost of regulation of traffic
 - Regular maintenance
 - Irregular maintenance
 - Depreciation of investments
 - Cost of interest (for credits, hypothecs)
 - Return on capital
- Train km is parameter used for calculation to increase efficiency
- Cost recovery from access charge is estimated to 35%

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3. Comparative presentation of the selected approaches of access charges and their implementation

Case – Bosnia and Herzegovina

- Basic amount of access charge is defined to be 4 KM/trainkm according to following parameters:
 - Average speed of freight and passenger train
 - Average weight of freight and passenger train
 - Average number of stations for passenger and freight train
- Based on this parameters, difference in price between access charge for freight and passenger trains is defined to be 16%

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3. Comparative presentation of the selected approaches of access charges and their implementation

Case – Bosnia and Herzegovina

4.30 KM/trainkm - freight
3.71 KM/trainkm – passenger } Variable part of access charges

20% of allocated capacity which have to be paid in any case: } Fix part of access charges

- Reservation charge
- Utilization charge

Category of line

	I	II	III*
Teret	4.39	3.66	-
Putnici	3.78	3.15	-

Final access charge KM/trainkm

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3. Comparative presentation of the selected approaches of access charges and their implementation

Case - Croatia

Railway Act of the Republic of Croatia (2003) in Article 23, specify access charges with harmonization approach:

- Elements for specifying the amount of the fee for using railway infrastructure must be balanced in relation to infrastructure managers of the European Union states.
- The Infrastructure Manager may specify a common framework for determination of fees in the form of a contract signed with other infrastructure managers, respecting the independence of infrastructure management by the Manager.

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3. Comparative presentation of the selected approaches of access charges and their implementation

Case - Croatia

Network Statement 2009, HZ Infrastrucure:

- The model of setting taxes and charges for the minimal access service package is based on the "matrix" principle, and when calculated we get the price for the taxes and charges for every train path on every railway line.
- Matrix columns contain railway lines, which are grouped in 6 lines, and rows contain train paths which have been ordered in 4 groups, according to the procedure.

Lin/Tr	Trasa 1	Trasa 2	Trasa 3	Trasa 4	Param (Lj)
Linija 1	T1*L1	T2*L1	T3*L1	T4*L1	L1=1.90
Linija 2	T1*L2	T2*L2	T3*L2	T4*L2	L2=1.40
Linija 3	T1*L3	T2*L3	T3*L3	T4*L3	L3=0.50
Linija 4	T1*L4	T2*L4	T3*L4	T4*L4	L4=0.70
Linija 5	T1*L5	T2*L5	T3*L5	T4*L5	L5=0.60
Linija 6	T1*L6	T2*L6	T3*L6	T4*L6	L6=0.90
Ekv. (Ti)	T1=1.40	T2=0.60	T3=1.2	T4=0.60	

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3. Comparative presentation of the selected approaches of access charges and their implementation

Case - Croatia

Formula for calculating access charges:

$$C_{ij} = T_i * \sum L_{lj} * C_{vlkm} * K_{ij}$$

Where:

- Ti = Equivalent of train path;
- Lj = line parameter;
- lj(km)= length of train path;
- Cvlkm (kn/trainkm) = unit price per train/kilometre
- Kij = Coefficient for price correction

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3. Comparative presentation of the selected approaches of access charges and their implementation

Case - Croatia

- Equivalent of train path (Ti)**- is calculated in a way that the planned real weight of the train is brought in report with the calculating weight of the train.
- Equivalent of train path in passenger transport is:
 - T1 – EuroCity, InterCity, express, fast 1.40
 - T2 - passenger, border trains, suburban trains 0.60
- Equivalent of train path in freight transport is:
 - T3- Express train, fast trains, section trains 1.20
 - T4- Combined trains 0.80

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3. Comparative presentation of the selected approaches of access charges and their implementation Case - Croatia

- Except for the trains mentioned above in four basic categories, in the time-schedule of trains there are also paths for trains not included in these categories. For this matter for trains with other special needs we have the following equivalents for train paths:
 - For passenger transport:

• T11 – Trains in slopes	1.10
• T12 – Trains for transportation of accompanied cars	0.90
• T13 – Agency trains	1.50
• T 14- Empty trains	0.50
 - For freight transport:

• T31 – Manoeuvring and industrial trains	0.60
• T32 – Military and empty trains	0.50
• T33 – Trains for the transport of special deliveries	1.60
• T34 – Trains with locomotive only	0.10

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3. Comparative presentation of the selected approaches of access charges and their implementation Case - Croatia

- Line parameters (Lj)** are set with the integration of three elements which have effect in defining the value, and they are as follows:
 - technical line parameters
 - equivalent of line works
 - equivalent of line costs
- Value of parameters for every line is:
 - Line L1 = 1.90
 - Line L2 = 1.40
 - Line L3 = 0.50
 - Line L4 = 0.70
 - Line L5 = 0.60
 - Line L6 = 0.90

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3. Comparative presentation of the selected approaches of access charges and their implementation Case - Croatia

- Length of train path (Ij)** is calculated in a way of adding train path kilometres in every line according to the model.
- Unit price per train kilometre (Cv1km)** – is set based on real costs which are presented by the Infrastructure Manager in business reports according to the realization of train-kilometres. The price is presented separately for passenger trains, and for freight trains.
- Coefficient of price correction (Kij)** – According to data from report of increase of base services after depreciation, respectively renewal and development of railway infrastructure. This coefficient in agreement with the owner of Infrastructure is set by the Infrastructure Manager depending on the transport market conditions and levels of support by the State in subsidizing costs of infrastructure. If liabilities are calculated in the value of marginal costs then the correction coefficient shall be $K1=1$

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3. Comparative presentation of the selected approaches of access charges and their implementation Case - Croatia

- Coefficient of increasing marginal costs:**

• K1 – coefficient of marginal costs	1.00
• K2 – coefficient of marginal costs + renewal	1.15
• K3 – coefficient of marginal costs + renewal + modernization	1.25
- With the definition of all matrix elements: line parameters, path equivalent, length of train movement, unit price per train kilometre and the coefficient of price correction the matrix has been compiled in order to set taxes and charges for the use of Croatian's railway infrastructure for every path on every railway line
- Unit price per train kilometre Cv1km in passenger and freight transport for 2009 will be set after the approval of the National program for railway infrastructure in regard to funds budgeted for the maintenance and management of infrastructure.

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3. Comparative presentation of the selected approaches of access charges and their implementation Case – the former Yugoslav Republic of Macedonia

Law on Railways (2005, changes 2007) in Article 42, Compensation for using the railway infrastructure has foreseen access charges with regional approach:

- The infrastructure manager may by agreement with the infrastructure managers of other states define a common scheme for defining the compensation, complying with the independence in the infrastructure management

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3. Comparative presentation of the selected approaches of access charges and their implementation Case – the former Yugoslav Republic of Macedonia

Proposal from the SYSTRA project:

- There are four scenarios, 3 MC+ and 1 FC-, using train km and 100% of Variable cost:
 - 20% Fixed; 16% Marginal
 - 20% Fixed; 36% Marginal
 - 20% Fixed; 100% Marginal
 - 4 million euro from the State Budget and rest from TAC from operator.
- The most probable scenario is to cover 20% of Fixed and 36% of Marginal cost
- **Decision is on Government**

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3. Comparative presentation of the selected approaches of access charges and their implementation Case - Montenegro

→ Article 16 of Railway Law of Montenegro (2004) gives criteria for calculation of access charges:

1. Costs of infrastructure maintenance, organization and regulation of railway transport
2. Use of traffic infrastructure for other forms of transport, especially road transport
3. Length of infrastructure network used by Route User
4. Number of railway vehicles in the rolling stock used by Route User for transport
5. Type of railway vehicles in the rolling stock used by Route User for transport
6. Train composition
7. Train mileage
8. capacity passenger's coaches
9. freight wagon payload
10. Energy consumption
11. Time period of using infrastructure
12. Transport direction
13. Train speed
14. Train category
15. Quantity discounts and
16. Railway traffic development strategy

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3. Comparative presentation of the selected approaches of access charges and their implementation Case - Montenegro

Network Statement 2009, MR Infrastructure:

• **Formula for calculation of access charges:**

$$U = (Q_{vkm(reg)} \times P_{(reg)} + Q_{vkm(g)} \times P_g) \times C_{vkm} \times K \times F$$

- U user charge for allocation route
 $Q_{vkm(reg)}$ The number of trainkm realised at regional railway track
 $Q_{vkm(g)}$ The number of trainkm realised at main railway track
 $P_{(reg)}$ The coefficient for pondering at regional railway track (0.7)
 $P(g)$ The coefficient for pondering at main railway track (1)
 C_{vkm} The price for train km is **3 € train/km for 2009**.
 K The coefficient for track wear (0.10-1.50)
 F The factor which depends of timetable (regularly or additional request 1 – 1.2)

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3. Comparative presentation of the selected approaches of access charges and their implementation Case - Serbia

→ LAW ON RAILWAY (2005) in Article 27 gives elements for calculation of access charge:

1. cost of rail infrastructure maintenance, organization and regulation of rail transport
2. use of transport infrastructure in other transport sectors, primarily in road transport
3. length of the rail infrastructure network used by the line user
4. number of railway vehicles used by the line user in performing transport
5. type of railway vehicles used by the line user in performing transport
6. passenger mileage
7. gross tonnage mileage
8. train composition
9. energy consumption
10. time and duration of rail infrastructure use
11. direction of transport
12. train speed
13. train category and
14. scale discounts
15. rail transport development strategy

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3. Comparative presentation of the selected approaches of access charges and their implementation Case - Serbia

World Bank project by BAH (2007)

- The charging structure based on marginal costs includes three components:
 - charges based upon train-km and grosstonkm
 - charges for the use of facilities based on the number of trains "serviced" in the nodes
 - mark up

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3. Comparative presentation of the selected approaches of access charges and their implementation Case - Serbia

The total infrastructure access charge (TC) is calculated as follows:

$$TC = \text{Charge EU cat I} + \text{Charge EU cat II} + C$$

Charge EU cat I = charge for the minimum access package

Charge EU cat II = charge for the track access to service facilities and supply of services in service facilities

C = "mark-up"

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3. Comparative presentation of the selected approaches of access charges and their implementation Case - Serbia

Minimum access package charge is calculated as follows:

$$\text{Charge EU cat I} = (\sum \text{Train-km}_i * TI_i) \text{ track} + (\sum \text{Gross-tonne-km}_i * BI_i) \text{ track}$$

where:

Train-km_i – total number of train km on the network per category of track (1=main line, 2=regional, 3=local)

Gross-tonne-km_i – total number of gross tonne-km on the network per category of track

TI_i – charge per train-km per category of track and traction type.

BI_i – charge per gross tonne-km per category of track and traction type.

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3. Comparative presentation of the selected approaches of access charges and their implementation

Case – Kosovo (under UNSCR1244/1999)

- Law on Railways (2008) does not foresee access charges!
- Draft Network Statement 2010:
 - The model of setting taxes and charges for the minimal access service package is based on the "matrix" principle, and when calculated we get the price for the taxes and charges for every train path on every railway line.
 - Matrix columns contain railway lines, which are grouped in 4 lines, and rows contain train paths which have been ordered in 4 groups, according to the procedure.

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3. Comparative presentation of the selected approaches of access charges and their implementation

Case – Kosovo (under UNSCR1244/1999)

Formula for calculation of access charges (in draft NS):

$$Q_m = T_i * L_i * Q_{trkm} * K_{ij}$$

Where:

- T_i = Equivalent of train path;
 - L_i = line parameter;
 - $l(\text{km})$ = length of train path;
 - Q (tr/km) = unit price per train/kilometre
 - K_{ij} = Coefficient for price correction
- Unit price per train kilometre Q tr/km in passenger and freight transport for 2010 will be set after the approval of the national program for railway infrastructure in regard to funds budgeted for the maintenance and management of infrastructure.

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3. Comparative presentation of the selected approaches of access charges and their implementation

Case – Kosovo (under UNSCR1244/1999)

Line/ train	Path 1	Path 2	Path 3	Path 4	Line parameters L
Line 1	T1 * L1	T2 * L1	T3 * L1	T4 * L1	L1 = 2.10
Line 2	T1 * L2	T2 * L2	T3 * L2	T4 * L2	L2 = 1.60
Line 3	T1 * L3	T2 * L3	T3 * L3	T4 * L3	L3 = 0.80
Line 4	T1 * L4	T2 * L4	T3 * L4	T4 * L4	L4 = 1.20
Equivalent	T1= 1.40	T2= 0.60	T3= 1.2	T4=0.80	

- **Equivalent of train path (TI)**- is calculated in a way that the planned real weight of the train is brought in report with the calculating weight of the train.
- Equivalent of train path in passenger transport is:
 - T1 – Fast trains 1.50
 - T2 - Local passenger trains 0.80
- Equivalent of train path in freight transport is:
 - T3- Express train, fast trains, block-trains 1.50
 - T4- Combined trains 1.00

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3. Comparative presentation of the selected approaches of access charges and their implementation

Case – Kosovo (under UNSCR1244/1999)

- Except for the trains mentioned above in four basic categories, in the time-schedule of trains there are also paths for trains not included in these categories. For this matter for trains with other special needs we have the following equivalents for train paths:

- For passenger transport:
 - T11 – Trains in slopes 1.30
 - T14 – Empty trains 0.50
- For freight transport:
 - T31 – Manoeuvring and industrial trains 0.80
 - T32 – Military and empty trains 0.60
 - T33 – Trains for the transport of special deliveries 2.00
 - T34 – Trains with locomotive only 0.20

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3. Comparative presentation of the selected approaches of access charges and their implementation

Case – Kosovo (under UNSCR1244/1999)

- **Line parameters (L)** are set with the integration of elements which have effect in defining the value, and they are as follows:
 - technical line parameters;
 - equivalent of line works;
 - equivalent of line costs.
- Value of parameters for every line is:
 - Line L1 = 2.10
 - Line L2 = 1.60
 - Line L3 = 0.80
 - Line L4 = 1.20
- **Length of train path (I)** is calculated in a way of adding train path kilometres in every line according to the model.

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3. Comparative presentation of the selected approaches of access charges and their implementation

Case – Kosovo (under UNSCR1244/1999)

- **Unit price per train kilometre (Q tr/km)** – is set based on real costs which are presented by the Infrastructure Manager in business reports according to the realization of train-kilometres. The price is presented separately for passenger trains, and for freight trains.
- **Coefficient of price correction (KI)** – According to data from report of increase of base services after depreciation, respectively renewal and development of railway infrastructure. This coefficient in agreement with the owner of Infrastructure is set by the Infrastructure Manager depending on the transport market conditions and levels of support by the State in subsidizing costs of infrastructure. If liabilities are calculated in the value of marginal costs then the correction coefficient shall be $K1=1$
- **Coefficient of increasing marginal costs:**
 - K1 – coefficient of marginal costs 1.00
 - K2 – coefficient of marginal costs + renewal 1.15
 - K3 – coefficient of marginal costs + renewal + modernization 1.25

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3. Comparative presentation of the selected approaches of access charges and their implementation - Recapitulation

Participant	Albania	Bosnia and Herzegovina	Croatia	The former Yugoslav Republic of Macedonia	Montenegro	Serbia	KOSOVO (under UNSCR 1244/1999)
2008/2009 Is there TAC Study?	✓	✓	✓	✓	✓	✓	✓
Methodology for TAC?	✓	✓	✓	✓	✓	✓	✓
Charging principle?	MC +	NONLINEAR	MC +	MC + or FC -	MC +	MC +	MC +
Decision on level of TAC approved	NO	NO	NO	NO	YES from 1.1.2009	NO	NO
Contract between State and IM?	NO	YES	YES	YES	NO	NO	NO
Contract between IM and RU	NO	NO	YES	YES	YES	NO	NO

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3. Comparative presentation of the selected approaches of access charges and their implementation - Recapitulation

Participant	Formula for calculation of TAC
Albania	$U = (Q_{\text{domestic}} \times P_{\text{dom}} + Q_{\text{international}} \times P_{\text{int}}) \times C_{\text{train}} \times K \times F$
Bosnia and Herzegovina	No formula available
Croatia	$C_{ij} = T_i \times \Sigma L_{ij} \times C_{vklm} \times K_{ij}$
The former Yugoslav Republic of Macedonia	No formula available
Montenegro	$U = (Q_{\text{domestic}} \times P_{\text{dom}} + Q_{\text{international}} \times P_{\text{int}}) \times C_{\text{train}} \times K \times F$
Serbia	$\text{Charge EU cat } j = (\Sigma \text{Train-km}_j \times T_j) \text{ track} + (\Sigma \text{Gross-tonne-km}_j \times B_j) \text{ track}$
KOSOVO (under UNSCR 1244/1999)	$Q_m = T_i \times L_i \times Q_{trkm} \times kl$

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4. Implementation of capacity and path allocation (criteria: type of train, transit trains, priority)

Capacity allocation process is:

- decision tool for operating the network
- done through allocation of train slots and granting Track access agreement
- governed through Access regime under which Regulatory body oversees fair and efficient allocation of capacity
- requires the IM to develop and publish a NS covering the nature of the infrastructure, the charging principles, the capacity allocation and timetabling process, procedures and criteria for dealing with congested infrastructure and restrictions on the use of infrastructure

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4. Implementation of capacity and path allocation (criteria: type of train, transit trains, priority)

Criteria for evaluation of existing situation:

1. Is there a NS on power
2. Is there a path allocation request document?
3. Are there criteria for priority access level between RUs?
4. Who is responsible for checking the allocation process?

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4. Implementation of capacity and path allocation (criteria: type of train, transit trains, priority)

Participant	Albania	Bosnia and Herzegovina	Croatia	The former Yugoslav Republic of Macedonia	Montenegro	Serbia	KOSOVO (under UNSCR 1244/1999)
2008/2009 Is there NS on power?	NO	NO	YES	NO	YES	NO	NO
Is there a path request document?	NO	NO	YES	NO	NO	NO	NO
Criteria for priority access level between RUs	NO	YES	YES in NS	In future NS (according to RL)	YES in NS	YES in draft NS	YES in draft NS
Who is responsible for checking of allocation process?	-	Regulatory board	Future Agency for Railway Market	Future Regulatory body	ZICG and Traffic Directorate	ZS and Directorate for Railways	Future Railway Agency

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4. Implementation of capacity and path allocation (criteria: type of train, transit trains, priority)

Existing criteria for path allocation prioritization of RUs in SEETO Participants (source: Network Statements):

- **BiH**
 1. international passenger transport services
 2. international freight transport services
 3. public services of passenger transport financed by public institutions
 4. freight transport services for industrial companies
- **Croatia and Kosovo (under UNSCR 1244/1999):**
 1. public services of passenger transport
 2. combined transport services
 3. international freight transport services
 4. other freight transport services
- **Montenegro and Serbia:**
 1. Public transport of passengers (on state or regional needs)
 2. International transport
 3. Combined transport

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5. Interest for access by local and foreign operators

- There are no local or foreign operators on Participants railway network
- The market is closed
- There is some interest for access by local and foreign operators in: Serbia, Albania, Montenegro
- Already there are some private operators for industrial sites. In Serbia there are three industrial operators with safety certification.



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6. Conclusion

- Several infrastructure charging models exist in SEETO Participants, ranging from marginal cost pricing to near-full cost pricing including a return on capital. The following characteristics apply for their infrastructure charging systems:
 - All infrastructure charging systems are, in varying degrees, linked to the physical utilisation of the tracks
 - The approaches differ, although all contain elements of marginal cost pricing, with some also recovering elements of fixed costs
 - The approaches also differ in terms of the charging metric, the definition of the cost base and of defining marginality, the degree of differentiation by traffic type and service and the degree of differentiation by line section



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6. Conclusion

- Alternative approaches reflect differences in data availability, commercial choice and national context
- The demand is generally not sufficiently taken into account
- Levels of prices and structure of services differ significantly
- Cost coverage – how much State wants to subsidize IM
- Nobody knows the true cost of infrastructure
- Too complicated for small networks
- Most of the cost are calculated on past year basis which are revaluated to present or future market price



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6. Conclusion

- Same TAC formula as well as capacity allocation procedure are suggested in:
 - Albania and Montenegro
 - Croatia and Kosovo (under UNSCR 1244/1999)
- More complicated approaches are in:
 - Serbia (based on train km and gross ton km)
 - Bosnia and Herzegovina non linear approach with variable and fixed part
- Proposal in the former Yugoslav Republic of Macedonia should follow MC+ approach



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6. Conclusion

- TAC formula with so many coefficients and parameters is too complicated for the small network in Kosovo (under UNSCR 1244/1999)
- ➔ Currently TAC is adopted officially only in Montenegro!!!
- ➔ Regional cooperation of IM for specifying the elements and amount of the fee for using railway infrastructure: Existing articles in Croatian and the former Yugoslav Republic of Macedonia Railway Laws



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Thank you for your attention!



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