







*TRACK ACCESS STUDY
FOR THE MACEDONIAN NETWORK*

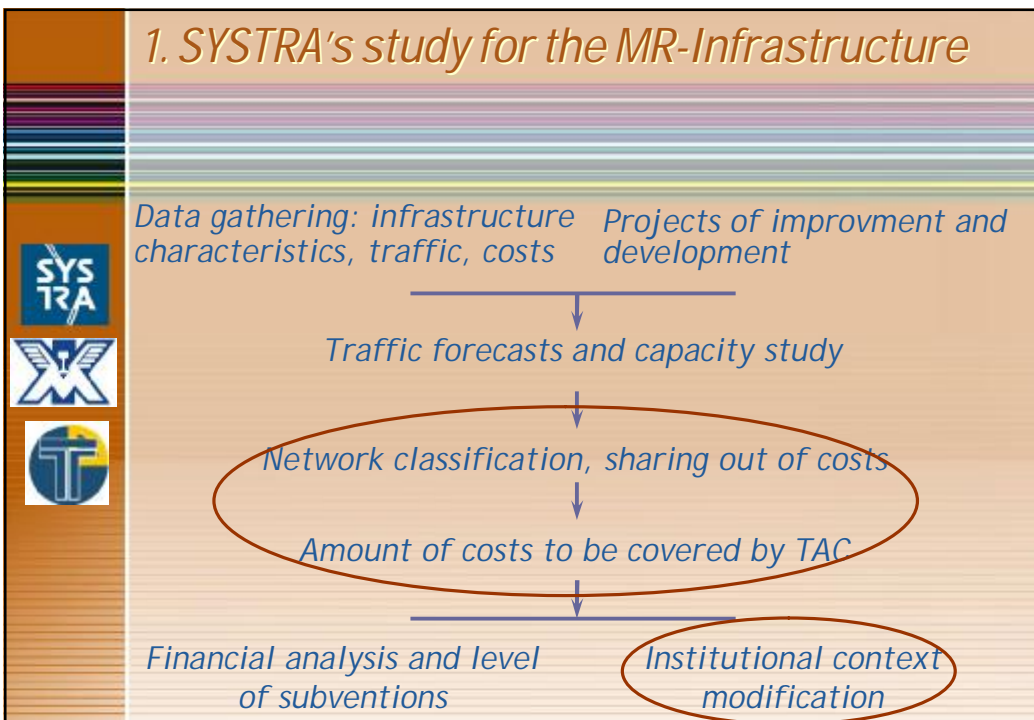
*Summary for SEETO Workshop on Sept 25, 2008
in Zagreb*






Agenda

- 1 - SYSTRA's study for the Macedonian Railways - Infrastructure*
- 2 - The European Directive's content*
- 3 - Methodology used to calculate track access charges and results*
- 4 - Conclusion: implementation steps and pitfalls*

	1 - SYSTRA's study for the Macedonian Railways - Infrastructure
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	4 - Conclusion: implementation steps and pitfalls



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	<i>2. The European Directive's content</i>
	<i><u>Directive 2001/14/EC</u></i>
	<i>Charges are collected by an independent charging body (infrastructure manager) to fund its business.</i>
	<i>Different levels of services can be charged.</i>

2. The European Directive's content



Additions / deductions can be made to reflect the objectives of Government and the Infrastructure Manager.

Elements possibly included in track access charges

<i>Scarcity</i>	<i>Investments</i>
<i>Environnemental</i>	<i>Mark-ups</i>
<i>Averaging</i>	<i>Reservation</i>
<i>Performance</i>	<i>Discounts</i>

...




2. The European Directive's content



à Charges have to be high enough to cover the infrastructure costs but low enough to be attractive to rail operators.

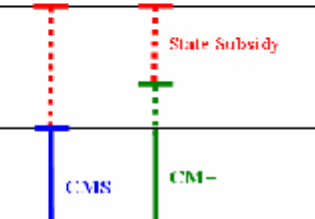
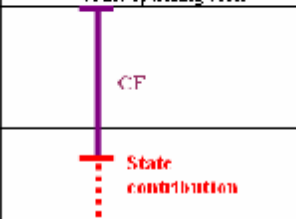


à Charges are usually function of:

- infrastructure characteristics per line section;*
- traffic volume per activity and per day and per year;*
- operation and maintenance costs for the Infrastructure Entity and their breakdown.*

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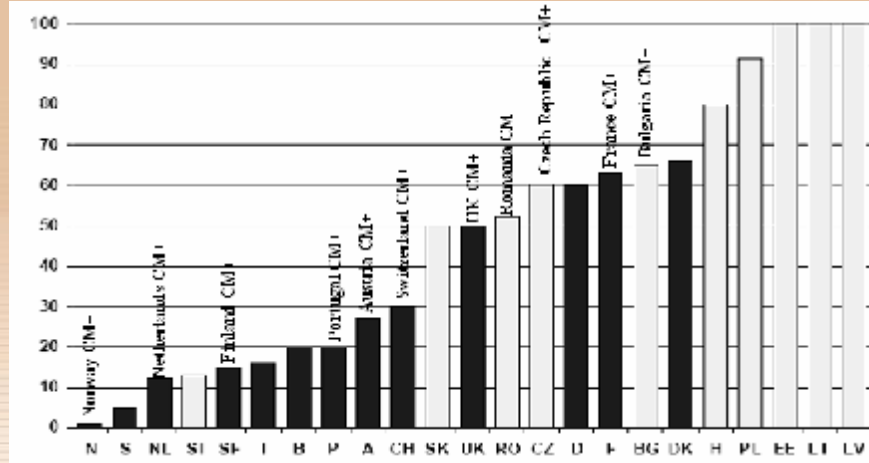
3. Methodology used to calculate TAC

Different possible approaches...

	Approach A	Approach B
	1) Determination of costs to be covered 2) Determination of State contribution	1) Determination of the State contribution 2) Determination of the track access charges that covers the rest of the operating costs
Remainder of operating costs		
Marginal Cost		

3. Methodology used to calculate TAC

... and different reserve ratios over countries



3. Methodology used to calculate TAC

A. Charges for minimum access package for the national network

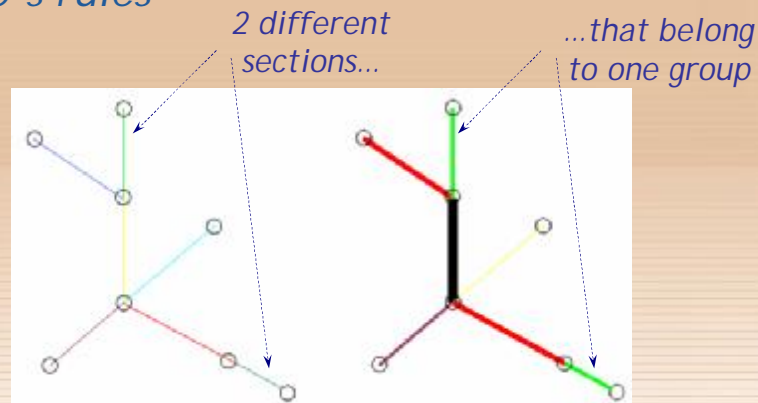
B. Charges for access to the Skopje Node



3. Methodology used to calculate TAC

A: Minimum access package for the network

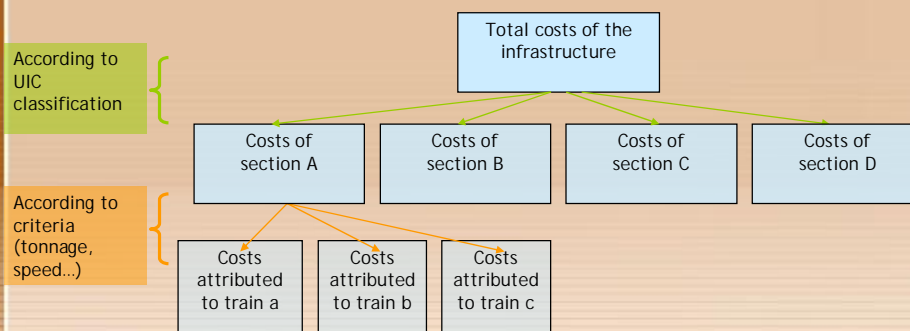
1: classification of the network according to UIC's rules



3. Methodology used to calculate TAC

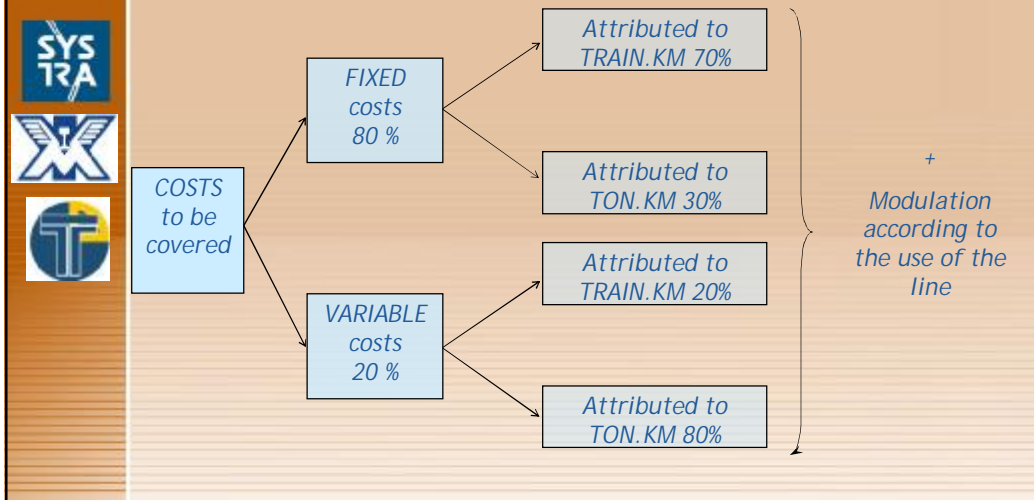
A: Minimum access package for the network

2: Sharing of costs per section and per train



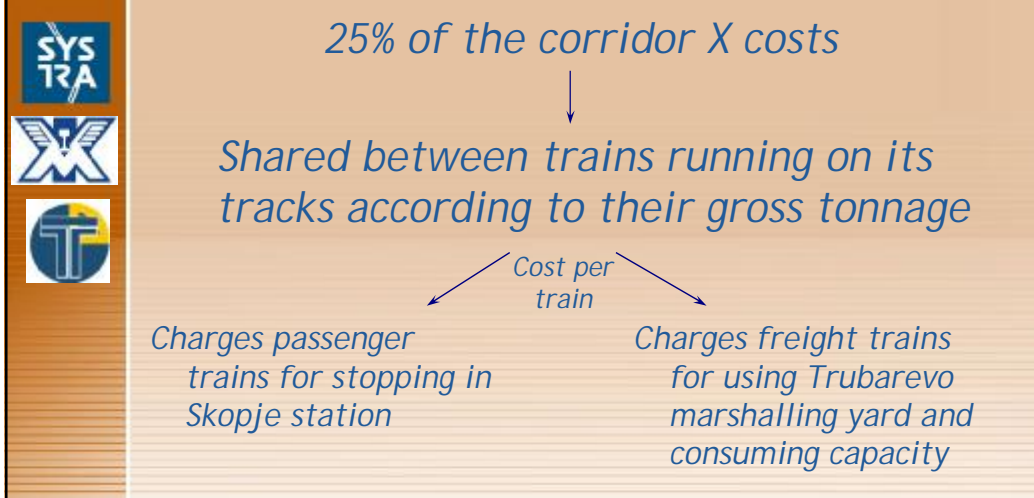
3. Methodology used to calculate TAC

A: Minimum access package for the network



3. Methodology used to calculate TAC

B: Access to Skopje node



3. Methodology used to calculate TAC

Other services

Potential additional services	Unit price	Comments
SPECIFIC ACCESS CHARGES FOR MARSHALLING AND MULTIMODAL YARDS	Contracted subscription monthly charge	
Access to multimodal yards for combined traffic	100 000 ден / month per Operator Company	for allowed access to all multimodal equipments on the MR Network and all Combined Traffic Trains of one single Operator
Access to other marshalling yards for general freight trains	1 000 000 ден / month per Operator Company	TUBAREVO Station only
SPECIFIC ACCESS CHARGES FOR SECONDARY TRACKS	Contracted subscription monthly charge	
Access to secondary tracks for freight or (empty) passenger trains	100 000 ден / month per Operating Traffic Activity	for allowed access to all secondary tracks on the MR Network by one single Operator
COMPLEMENTARY ALLOWANCE		
Reservation for the stabling of a train on locomotive holding sidings	500 ден / train stabling and per period of 2 hours.	Free of charge until 1 hour. Over 1 hour, proportional fee according to the delay
Licence fee for infrastructure operation of freight yards	1 000 000 ден / month per Operator Company	This amount is for memory only: already included in the Skopje Area Access Charge Evaluation
License fee for access to the GSM-R Network	5 000 ден / month and per user	This amount is for memory only: ERTMS Level 1 does not use GTSM-R.

3. Methodology used to calculate TAC

Costs to be covered by track access charges



Description of the cost	Costs for 2007 (million MKD)	Can pretend to be covered by track access charges
Net working costs	1 068	yes
Costs for employees	405	yes
Non personal cost	663	yes
Depreciation	937	yes
Financial costs	134	yes
TOTAL COSTS FOR 2007	2 140	

3. Methodology used to calculate TAC

3 scenarios :

	Method	Global reserve ratio	Corresponding amount of costs to be covered for 2007
Scenario 1 - a	CM+	36 %	770 M MKD
Scenario 1 - b	CM+	100 %	2 140 M MKD
Scenario 2	CF-	100 % after a defined subsidy (100 M MKD for 2007)	2 040 M MKD

3. ... and results

Example n°1 for 2007: International freight train on sections Tabanovci - Trubarevo, net tonnage 745 t

CF- method	Tabanovci - Ilinden (37,6 km)	Skopje node
Minimum access package	566,2 MKD/train.km	5881 MKD/train
Modulation according to cap. consumption	+ 97,2 MKD/train.km	
Other services	Electricity : no Access to Trubarevo services: 1 000 000 MKD/month Access to secondary tracks : 100 000 MKD/month	




à total 30 826 MKD (819,8 MKD/train.km~13,3 €/tr.km)

Including path reservation 327,9 MKD/train.km (~40%)

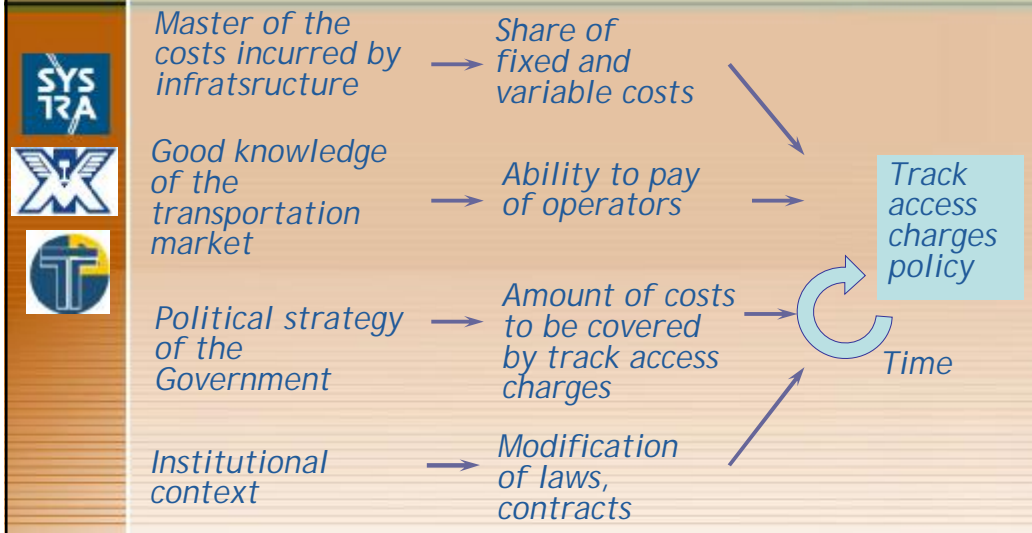
3. ... and results

Example n°2 for 2007: International freight train on sections
Tabanovci - Gevgelija, net tonnage 687 t

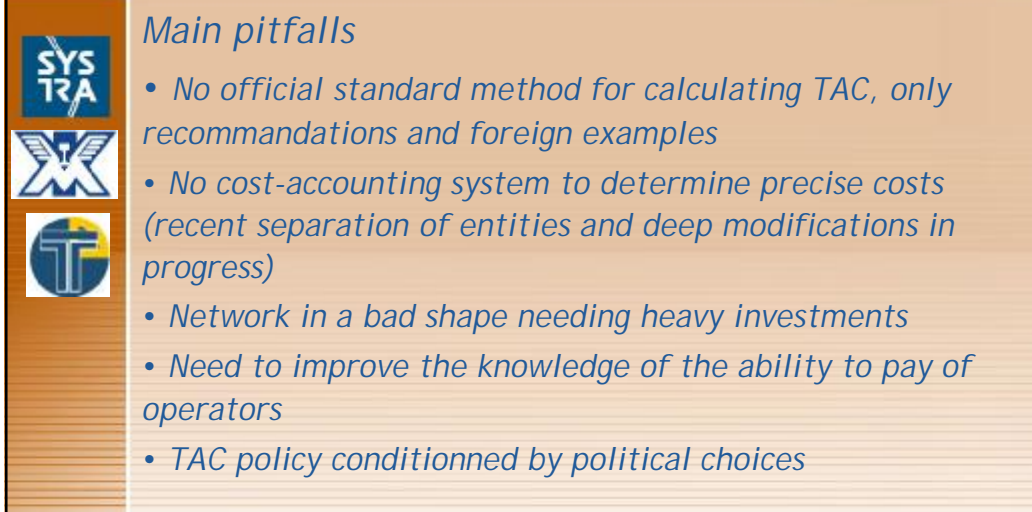
<i>CF- method</i>	<i>Tabanovci - Kumanovo</i>	<i>Kumanovo - Ilinden</i>	<i>Skopje node</i>	<i>Dracevo - Veles</i>	<i>Veles - Gevgelija</i>
<i>km</i>	13,2	24,4		38,7	115
<i>Minimum access package</i>	566,2 MKD/tr.km	566,2 MKD/tr.km	5881 MKD/tr	759,5 MKD/tr.km	749,7 MKD/tr.km
<i>Modulation according to cap. consumption</i>	+ 97,2 MKD/tr.km	+ 97,2 MKD/tr.km		+ 97,2 MKD/tr.km	+ 97,2 MKD/tr.km
<i>Other services</i>	<i>Electricity : no</i> <i>Access to Trubarevo services: 1 000 000 MKD/month</i> <i>Access to secondary tracks : 100 000 MKD/month</i>				
<p>à total 161 375 MKD (843,6 MKD/train.km~13,7 €/tr.km) including path reservation 337,4 MKD/train.km (~40%)</p>					

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4. Conclusion : Implementation steps and pitfalls



4. Conclusion : Implementation steps and pitfalls



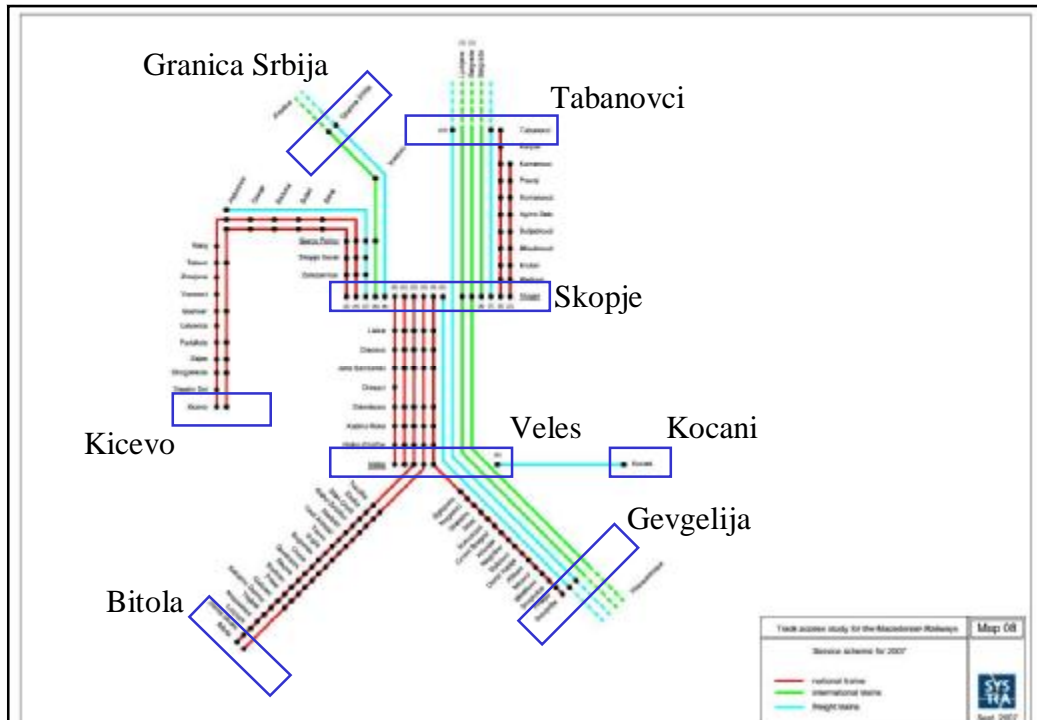
4. Conclusion : Implementation steps and pitfalls

Main actions to foresee for the IM:



- to modernize the organization : department for path allocation, annual conference on path allocation, edition of the official yearly train timetable, analysis of the TAC...*
- to improve the infrastructure performances*
- to anticipate the necessary evolutions of the legal framework*

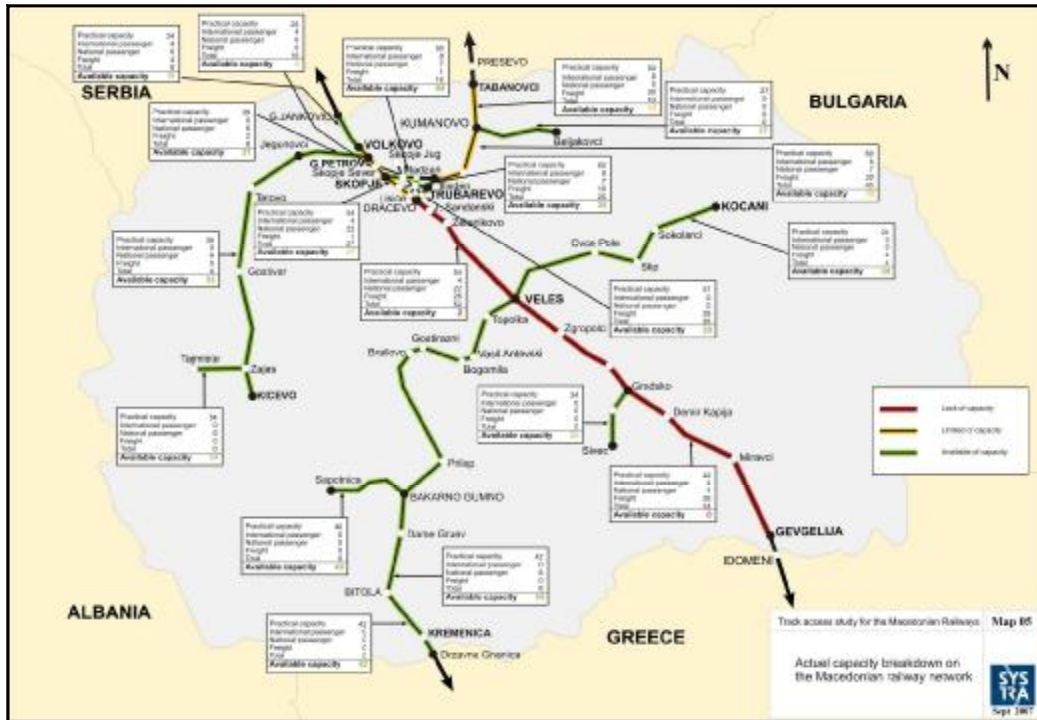
Thank you for your attention



Existing situation : Capacity calculation

Three types of parameters have an influence on the capacity of a line section :

- the infrastructure (number of tracks, signalling system, maximum speed limit in design, numbers of overtaking, special points...)
- the transport plan which determines all types of trains (difference of speed, order of distribution of trains, timetable constraints due to the priority levels between the different services, rolling stock performances,...),
- the required level of robustness to reduce the consequences of an incident (track occupation ratio according to the UIC rules : 75% during peak hours and 60 % on the whole period of daily service).



Services to be supplied to railway undertakings

CHARGING CATEGORY I	CHARGING CATEGORY II	CHARGING CATEGORY III
Minimum access package	Supply of services at services facilities	Additional services
handling of requests for infrastructure capacity;	use of electrical supply equipment for traction current, where available	traction current
right to utilise capacity which is granted;	refuelling facilities	pre-heating of passenger trains;
use of running track points and junctions;	passenger stations, their buildings and other facilities	supply of fuel
train control	freight terminals	tailor-made contracts for control of transport of dangerous goods,
Track access to service facilities	marshalling yards	tailor-made contracts for assistance in running abnormal trains
refuelling facilities	Train formation facilities	Ancillary services
passenger stations, their buildings and other facilities	storage sidings	access to telecommunication network
freight terminals	maintenance and other technical facilities	provision of supplementary information
marshalling yards		technical inspection of rolling stock
train formation facilities		
storage sidings		
maintenance and other technical facilities		

(Precisions concerning variable and fixed costs)

<i>Variable costs</i>	<i>Wear due to the use of the infrastructure</i>	<i>Maintenance costs</i>
	<i>Track renewal</i>	<i>Renewal costs</i>
	<i>Social cost (noise, pollution, accidents)</i>	<i>Other costs</i>
<i>Fixed costs</i>	<i>Ordinary maintenance that is not due to traffic</i>	<i>Maintenance costs</i>
	<i>Track renewal due to bad weather, security norms, etc.</i>	<i>Renewal costs</i>
	<i>Structure and administrative costs</i>	<i>Other costs</i>
	<i>Traffic management</i>	<i>Other costs</i>
	<i>Costs of new projects</i>	<i>Investment costs</i>

