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**TRACECA TRANSIT TARIFF AGENCY**



**TECHNICAL NOTE 1**

**Traceca Transit Tariff  
Price Setting Handbook**

**Edition 1**



## Technical Note No. 1 - Price Setting Handbook

### **Disclaimer**

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## Technical Note No. 1 - Price Setting Handbook

### **TTTA TECHNICAL NOTES.**

#### **Technical Notes Issued by the TTTA.<sup>1</sup>**

#### **Prepared UPTFT project**

- |                   |  |
|-------------------|--|
| Technical Note 1. | Price Setting Handbook. Edition 1.                           |
| Technical Note 2. | Best Practice for Trader Access to Railways. Edition 1.      |
| Technical Note 3. | Strengthening Railway Marketing. Edition 1.                  |
| Technical Note 4. | Estimation & Use of Price Elasticities of Demand. Edition 1. |
| Technical Note 5. | Freight Forwarder Attitude Survey.                           |
| Technical Note 6. | TTT Draft Regulatory Document                                |

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<sup>1</sup> The TTTA is the designated name of the Traceca Transit Tariff Agency. One of the key roles of the TTTA is to carry out research and to issue advice to TTTA partners. To best utilise the work of the UPTFT project, its outputs have been configured as Technical Notes that could be issued by the TTTA.



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## **PART 1. CONTEXT AND PURPOSE OF THE TTT.**

### **1.2 Introduction**

The basis for charging for freight transit services on the TRACECA Railways is the TRACECA Transit Tariff (TTT). The TTT is the first entirely new railway tariff structure to be introduced in the TRACECA region<sup>2</sup> for over 50 years. It was signed in Baku, Azerbaijan on *To be inserted* by the heads of the following railways:

*To be inserted*

Additionally, the following ports and shipping companies will cooperate within the TTT to reflect the multi-modal nature of TRACECA. These companies are as follows:

*To be inserted*

The purpose of the TTT is to provide a single through-rate, easily comprehensible to current and potential customers and other interested parties, for the rail conveyance of international freight transit traffic through and within the TRACECA region. The TTT has a clear formal structure presenting its components in a transparent and unambiguous format. It has been formulated to reflect the changed geo-political conditions and the emergence of a competitive transport market in the TRACECA region and replaces earlier tariffs which were opaque in structure, required negotiation with separate railway, port and shipping administrations and were liable to unpredictable changes. The new tariff will facilitate the transport planning and increase the business efficiency of customers by permitting a rational comparison with alternative transport services and

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<sup>2</sup> The TRACECA region comprises those countries that are parties to the TRACECA programme, namely Azerbaijan, Armenia, Bulgaria, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Romania, Tajikistan, Turkey, Turkmenistan, Uzbekistan, Ukraine. These countries are described collectively in the text as the TRACECA countries



highlighting the substantial benefits and cost economies offered to international freight transit traffic by the TRACECA Railways

The TTT is not, however, applied in a rigid manner through a strict interpretation of the tariff rulebook. In the competitive transport environment in which TRACECA Railways now operate, a new flexible approach to pricing has been adopted by the TRACECA Transit Tariff Agency (TTTA) to enable the railways to compete effectively against other Euro-Asian rail corridors and other transport modes. The TTT is applied in a flexible manner, based on a thorough understanding and constant observation of the rail operating costs on which the TTT is based and the market conditions in which it operates. This permits the granting of cost related tariff discounts in appropriate circumstances. The flexible pricing policy can offer substantial transport cost savings to customers.

### 1.3 Main Features of the TTT

The TTT Policy Document was distributed by the TRACECA Secretariat in *To be inserted*. A full description of the TTT is contained in the Policy Document. It is expected that users of this technical note will have obtained a copy of the TTT. The principal features of the tariff are as follows:

1. The TTT applies to international freight traffic transported by rail and maritime ferries through the territories of the TRACECA countries but with an origin or destination beyond the boundary of one or all of these countries.
2. The basic rates of the TTT are expressed in wagon units for application to internationally approved wagon operating on TRACECA.
3. The TTT varies according to each wagon type
4. The TTT is structured into four parts for rate calculation purposes: 1) line haul movement operations, 2) terminal operations, 3) infrastructure usage and 4) commission and administration.
5. The currency unit of the TTT is the Euro.
6. Many of the specific conditions of the TTT have been taken from the former Tariff Policy of Railways Administrations of the Commonwealth of Independent States and will be familiar to the customer. They have been retained because they are sensible and their application is widely understood.
7. The Secretariat is the TRACECA Transit Tariff Agency (TTTA) to whom any queries should be directed.





The principles and structure of the TTT are expounded in greater detail in Part 2 below.

#### **1.4 General Application of the TTT**

1. TTT applies to all railway routes designated by TRACECA partners.
2. The TTT shall be applied to provide a single through tariff that includes ports and shipping.
3. The TTT maybe used for all goods traffic though primarily intended to be applied to new international transit traffic.
4. The TTT shall be calculated by the originating railway, or port or shipping line.

## **2 PART 2. PRINCIPLES AND STRUCTURE OF THE TTT.**

### **2.2 The Standard TTT**

The following description of the principles and structure of the TTT is presented as an easily comprehensible guide for customers of TRACECA Railways. The definitive statement of the constitution and provisions of the tariff remains the TTT Regulatory

Document and Explanatory Notes of March 2003.

The TRACECA rail and ferry network is shown in Map 1. The principal transit routes through the TRACECA countries and their respective lengths are detailed in Appendix T1.1. The TTT does not normally apply outside the TRACECA region but may be extended beyond its boundaries by unanimous consent of all parties concerned.

In order to maximise the inherent advantage of rail freight transport in conveying larger consignments over longer distances and to offer cost sensitive rates to customers, the single wagon has been taken as the basic unit for charging under the TTT. This is more administratively convenient and cost-effective than charging by weight/volume or by train-load, as under some earlier tariffs, and permits a more flexible response to changing competitive or cost conditions. The respective rates for the different types of wagons in use on the TRACECA Railways take into account not only the unit running costs of the type in question but also the average proportion of empty back-running concerned. Current wagon types and their average empty returns are shown in Appendix T1.2.

The TTT is structured four parts to reflect the four principal types of activity involved in rail freight transport, namely:

- 1) line haul movement
- 2) terminal and transshipment operations
- 3) use of infrastructure



4) administration and commission.

Since these activities have their own distinct cost structures, charging separately for each under the TTT permits rates to be closely tailored to the actual aggregate costs of each customer's consignment, avoiding cross-subsidisation of traffics and the conveyance of uneconomic loads.

**2.3 Part 1. Line Haul Movement Charges.**

Definition

The movement component of the total charge is expressed as a basic rate per km for each wagon type. This rate reflects the cost of the line haul of the wagon type in question on routes agreed by TRACECA cooperating partners. The rate takes into account the costs of empty backhaul. As the average line haul cost per km differs amongst the TRACECA countries owing to terrain and other factors, the basic rate is adjusted for each country by an appropriate national coefficient.

Application

The total movement charge for a particular consignment is calculated by applying the resulting wagon movement rate for each country to the kilometers traversed within that country, summing for all countries traversed and multiplying by the number of wagons in the consignment.

Traceca	Wagon	lowest third full			Armenia	Azerbaijan	Bulgaria	Georgia	Kazakhstan	Kyrgistan	Moldova	Romania	Turkey	Tajikistan	Ukraine	Uzbekistan
		rate	party	rate												
Reference Type		TTT Coefficient			1.55	1.10	1.64	1.43	1.13	1.14	1.10	1.29	1.61	1.00	1.16	1.15
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	Covered	0.18	0.25	0.38	0.60	0.42	0.63	0.55	0.43	0.54	0.42	0.50	0.62	0.38	0.45	0.44
2	Platform General P	0.21	0.22	0.39	0.61	0.43	0.64	0.56	0.44	0.55	0.43	0.50	0.63	0.39	0.45	0.45
3	Semi Wagon	0.27	0.24	0.49	0.76	0.54	0.81	0.70	0.56	0.69	0.54	0.64	0.79	0.49	0.57	0.57
4	Tanker Wagon	0.44	0.28	0.73	1.13	0.81	1.20	1.05	0.83	1.02	0.80	0.95	1.18	0.73	0.85	0.84
5	Isothermal Wagon	0.30	0.23	0.64	0.99	0.70	1.05	0.92	0.72	0.90	0.70	0.83	1.03	0.64	0.74	0.74



6	Platform Containers	0.19	0.22	0.36	0.56	0.40	0.59	0.52	0.41	0.51	0.40	0.47	0.58	0.36	0.42	0.42
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Other

The table above and in Appendix T1.3 shows the basic movement rates for the use of TRACECA wagons and the corresponding rates for each country after adjustment by the national coefficient. Lower third party rates, applicable when the wagons are provided by the customer or another third party, are also shown. The table also shows a “concessional” (or “lowest”) rate, the application of which is explained in the next section. The movement component normally accounts for by far the greater proportion of a consignment’s total tariff rate and it is in the line haul operation that the greatest variations in operating conditions are encountered. Consequently, it is against the movement rate that discounts are most likely to be granted under the TTT flexible pricing policy

**2.4 Part 2. Terminal and Transshipment Charges**

Definition

Terminal operations at origins and destinations, including collection and delivery at the customer’s premises, transshipment operations at the rail/ferry interfaces and international border crossing formalities vary widely in type and cost.

Application

Unlike movement charges, terminal charges cannot be expressed easily in tabular form. In view of their diverse nature, therefore, terminal charges under the TTT shall be the subject of direct negotiation between the customer and the railways. For purposes of transparency and uniformity, however, the TTT incorporates some indicative cost-related charges for key terminal operations which should be regarded as maxima for charging purposes. Some examples are shown in Appendix T1.4. More detailed guidelines for terminal charges are given in Appendix B3 to the TTT Regulatory Document and Explanatory Notes

Other

Associated with terminal charges is demurrage, chargeable when wagons are delayed in transit or left standing while awaiting loading or unloading for reasons attributable to the customer. Hourly demurrage rates for the different wagon types are shown in Appendix T1.2.

**2.5 Part 3. Infrastructure Usage Charges**

Definition

A separate charge is made for the use of the infrastructure. This distinction is necessary as restructured railways invariably have separate authorities for infrastructure and for operating. The unit is logical in that the demand for infrastructure services is more likely to be related to train rather than wagon units.

Application



Charges shall be made, therefore, according to train kms, irrespective of the length of the train or whether it is loaded or empty. The corresponding wagon costs, irrespective of type, are derived by dividing the total train infrastructure charge by the number of wagons in the train. The basic TTT infrastructure charge is €9.22 per train km on CIS gauge track, implying a wagon charge of 15.33 for an average 60 wagon train. The corresponding charge for EU standard gauge track is € *To be inserted* per train km giving a wagon charge of *To be inserted* cents for an average 40 wagon train.

Variation

The basic charge may, however, be varied where the railway is able to offer a higher or lower standard of infrastructure service (sustained for two consecutive years) on any of the national territories. Taking line operating speed as an indicator of the quality of infrastructure service, the basic charge, which assumes an average 40km per hour operating speed, may be adjusted by the following factors according to the standard of service offered:

Average Operating Speed (kmph):	30	40	50	60	70	80
Adjustment Factor (%)	60	100	137	155	190	225

Other

As for movement charges, therefore, the infrastructure cost per wagon may vary according to the national territory traversed. The infrastructure charge provides for the normal range of infrastructure services, such as the use of the track and provision of signalling and other train control services. Additional infrastructure services, such as access to tele-communications or refuelling facilities are available at appropriate charges. Standard and additional infrastructure services are described in greater detail in Appendix B4 to the TTT Regulatory Document and Explanatory Notes.

**2.6 Part 4. Handling and Commission Charges.**

Definition

Initiating railways incur charges that relate to the process of negotiation, documentation, planning, contract and payment. These and other charges combine to form a single administration and handling charge that can be credited to the initiating railway (or port or shipping company if so enacted).

Application

The associated costs are recovered on an average basis under the TTT through a general administration and commission rate of €20 levied on each wagon forwarded irrespective of type or content. Differential wagon rates may be charged for particular consignments requiring more or less than average administration and handling. These are;

- Export traffic €25.
- Import and domestic traffic €15.
- Transit traffic not requiring documentation in the transit countries €10.



The above rates reflect costs incurred by all traffics. In some cases, however, customers require additional services such as special storage or security arrangement or wagon tracking. These are paid for by supplementary charges under Part 4 of the TTT. The additional services and their rates are detailed in Appendix B4 of to the TTT Regulatory Document and Explanatory Notes.

### 2.7 TTT Flexible Pricing Policy.

The provisions of the TTT described above are employed for the calculation and charging of the standard TTT applicable under normal operating and traffic conditions. However, as noted in Part 1 above, the TTT is applied in a flexible manner permitting discounts on the standard tariff where justified by cost considerations. The rationale of a discounted tariff and traffic circumstances where its application would be appropriate are described below

The objective of the standard TTT (or third party TTT where the customer provides his own wagons) is to generate sufficient revenues to enable TRACECA Railways to recover their total transit traffic costs through wagon-load charges reflecting the wagons' long-run variable costs.<sup>3</sup> This is a prudent financial approach, permitting the operation, maintenance and replacements of the railways' assets to an adequate standard and a specified return on their invested capital..

Yet the rigorous implementation of the standard tariff would not necessarily be in the best interests of either TRACECA Railways or its customers. It would impose on the railways a pricing rigidity that may be to their disadvantage in a constantly changing competitive transport market where frequent strategic price changes are necessary to safeguard the respective market shares of the competing routes and modes and to achieve a rational allocation of traffics amongst them. Likewise, the indiscriminating application of the standard TTT would deny to customers potential cost savings where the consignment in question has characteristics which permit its conveyance at less than average cost. In such circumstances, the concessional rate shown in the table of Appendix T1.3 may be charged rather than the full (or third party rate), passing on at least a part of the cost saving to the customer. The concessional rate covers the shorter-term variable cost of operating the wagons, basically those costs related to the distance covered such as fuel consumption and routine track and rolling stock maintenance, but excludes the time related costs such as the depreciation of the value of existing wagons necessary for their eventual replacement.

A further element of flexibility is embodied in the TTT in that, in certain low-cost cases, such as the utilisation of a wagon normally returning empty to its original point of despatch (the costs of which will already have been recovered through the outward journey tariff), discounts even greater than those of the concessional rate may be offered.

Again, in certain circumstances, where a consignment has a modest cost-saving potential not qualifying for the concessional rate, a smaller discount may be offered.

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<sup>3</sup> The railways' invariable overhead costs are recovered through the tariffs on non-transit traffic.



Examples of operating or marketing circumstances in which in which the concessional rate or even larger discounts would be appropriate are given in Part 3 below.

### **3 PART 3. TTT PRICE SETTING IN PRACTICE.**

#### **3.2 Tariff Calculation**

The tariff for a particular consignment may be calculated by any of the railway, port or shipping administrations party to the TRACECA Agreement (hereafter referred to as the Agreement ) on the basis of information provided by the customer, subject to approval by all other parties.

A draft TTT calculation proforma is contained in Appendix T1.6

#### **3.3 Tariff Approval Procedure**

Once calculated the tariff is notified to all participating transport operators. Such approval is assumed if no objection is lodged within a specified period following notification the tariff to all parties. If an objection is lodged then ...*To be Inserted*

#### **3.4 Examples of TTT**

Examples of the calculation of wagon rates for some typical consignments at the different tariff rates are given in Appendix T1.5 demonstrating the application of the pricing principles and provisions described above. Corresponding rates for the consignment are calculated by multiplying the wagon rate by the number of wagons utilised.

The first example illustrates the application of the standard TTT tariff. The second assumes that the consignment, a container in this case, would be eligible for the concessional rate owing to favourable operating or handling circumstances. The third allows for use of the customers' own wagons, sparing the railways the wagon provision and maintenance cost element of the standard tariff.

#### **3.5 Concessions**

Instances of traffic or operating conditions under which consignments could qualify for the concessional rate or even greater discounts are as follows:

Back Loads. The standard tariff for a particular commodity, reflecting the average long-term variable cost for the type of wagon utilised, takes into account the average proportion of empty running for that wagon type. Industrial materials conveyed in covered wagons, for example, are normally priced to allow for 40% empty returns. An extreme case is that of oil tankers with 100% empty running. In these cases, the average variable costs of the empty return trip have will already been recovered through the standard tariff on the outward loaded trip. So, if a potential customer offers a less than train load back-load, any resulting revenue over and above the direct running cost of the trip, e.g, fuel, wagon provision , would make a contribution to long-run variable cost



increment. Discounts greater than that offered through the concessional rate can sometimes be offered in such cases.

Freight with Good Handling Qualities. Consignments of commodities or materials with especially good handling characteristics, reducing the cost of terminal operations, may be conveyed. Apart from the obvious case of containers, shipments may be offered in exclusively unitised, palletised or pre-packed form which can be economically and expeditiously loaded and off-loaded, possibly direct to the customer's own road vehicles. Such cost savings could justify application of the concessional rate.

Longer-term Bulk Contracts. In some circumstances, such as the implementation of a major capital construction project or supply of raw materials to an industrial plant, the customer may be able to guarantee the shipment of large quantities of a commodity, e.g. cement, car parts, at regular intervals over a long period. This would permit economies in administration and operations as well as securing future business, justifying the offer of a discount on the standard tariff.

Commodities in Seasonal Demand. A fleet of a particular wagon type may be maintained by one or more of the TRACECA railways sufficiently large to provide for the peak demand of a seasonal commodity such as grains or other agricultural produce. Normally, the cost of supporting idle stock during the off-season will have been recovered from the standard tariff rate for that commodity. Consequently, the short-run variable cost of the under-utilised wagons will be low at that period so that the concessional rate or greater discounts may be offered .

Other situations may arise in which tariff discounts would attract traffic able to contribute to the recovery of total costs.

The wagon rates and, where appropriate, supplementary discounts are calculated on the basis of information provided by the customer. The customer information is codified on a standardised TTT Tariff Calculation Form to facilitate the calculation by the tariff authority. A copy of the form is shown in Appendix T1.6: in this case it has been completed for a hypothetical specimen consignment to illustrate how the tariff rate is calculated in practice.

In this particular example, it is assumed that the consignment travels under normal standard tariff conditions,, except that certain additional services are requested by the customer and that particularly good loading/unloading characteristics qualify the consignment for a discount (but not the full concessional rate).



**Appendix T1.1. TRACECA NETWORK AND DISTANCES.**

<u>Country (km)</u>	<u>Border Crossing</u>	<u>Distance</u>
Ukraine	Yagodin – Ilyichevsk	940
Ukraine	Kuchurgan – Ilyichevsk	127
Moldova	Ungheny – Klimentovo	270
Moldova	Ungheny – Kuchurgan	213
Georgia	Poti – Gardabani	362
Georgia	Poti – Ayrum	387
Georgia	Batumi – Gardabani	387
Georgia	Batimi – Ayrum	423
Azerbaijan	Beyuk-Kasik – Baku	503
Turkmenistan	Turkmenbashi – Serkhetabad	1,225
Turkmenistan	Turkmenbashi – Farap	1,362
Turkmenistan	Turkmenbashi – Serakhs	995
Kazakhstan	Aktau – Beyneu	422
Uzbekistan	Beyneu – Chengeldy	1,847
Uzbekistan	Farap – Chengeldy	787
Uzbekistan + Turkmenistan	Farap – Termez	406 + 194 = 600
Uzbekistan + Turkmenistan + Tajikstan	Farap – Dushanbe	548 + 194 + 71 = 813
Uzbekistan + Tajikstan + Kyrgyzstan	Farap – Osh	817 + 231 + 23 = 949
Kazakhstan	Chengeldy – Druzhba	1,771
Kazakhstan	Druzhba – Aktau	4,141
Kazakhstan	Aktau – Chengeldy	2,524
Kazakhstan + Krygyzstan	Aktau – Balygchy	2,846 + 324 = 3,170





**Appendix T1.2. TRACECA WAGON TYPES.**

<u>Wagon Type</u>	<u>Reference No.</u>	<u>Empty Return</u> (%)	<u>Demurrage</u> (€ per hour)
Covered	1	40	3.07
Platform	2	50	1.92
Open-top	3	80	2.07
Tank Axle	4	100	2.18
Isothermal Axle	5	80	4.60
Flat-bed	6	40	1.94



**Appendix T1.3. TTT WAGON MOVEMENT RATES**

**(Euro)**

<b>Wagon Type</b>		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
Full Rate		0.38	0.39	0.49	0.73	0.64	0.36
Third Party		0.25	0.22	0.24	0.28	0.23	0.22
Concessional		0.18	0.21	0.27	0.44	0.30	0.19
<b>Country</b>	<b>Coefficient</b>						
Armenia	1.55	0.60	0.61	0.76	1.13	0.99	0.56
Azerbaijan	1.10	0.42	0.43	0.54	0.81	0.70	0.40
Bulgaria	1.64	0.63	0.64	0.81	1.20	1.05	0.59
Georgia	1.43	0.55	0.56	0.70	1.05	0.92	0.52
Kazakhstan	1.13	0.43	0.44	0.56	0.83	0.72	0.41
Kyrgyzstan	1.14(?)	0.54	0.55	0.69	1.02	0.90	0.51
Moldova	1.10	0.42	0.43	0.54	0.80	0.70	0.40
Romania	1.29	0.50	0.50	0.64	0.95	0.83	0.47
Tajikstan	1.00	0.38	0.39	0.49	0.73	0.64	0.36
Turkey	1.61	0.62	0.63	0.79	1.18	1.03	0.58
Turkmenistan	1.00	0.38	0.39	0.49	0.73	0.64	0.36
Ukraine	1.16	0.45	0.45	0.57	0.85	0.74	0.42
Uzbekistan	1.15	0.44	0.45	0.57	0.84	0.74	0.42



**Appendix T1.4. TERMINAL SERVICE CHARGES.**

**1) Loading/unloading, Collection/delivery & Border Crossing Operations**

<b>Type of Terminal Charging</b>	<b>Type of Goods Service</b>	<b>Output Norm</b>	<b>Wagon Type</b>	<b>Rate (€)</b>	<b>Unit</b>
Loading/unloading wagons in goods sheds & depots	General goods/packaged items/pallets/building materials/timber/out of gauge loads	3,000 tonnes per year	1, 2	6.34	Tonne
Loading/unloading/storage of reefers	Perishable goods - 48 hours cold storage	3,000 tonnes per year		11.79	Tonne
Collection/delivery of made-up trains at industrial sidings	Dry and liquid bulk	1 train per day	3, 4	6.20	Wagon
Collection/delivery of wagon groups at freight yards	All	20,000 wagons per year	1,2, 6	6.80	Wagon
Collection/delivery of wagons at ports	All cargo	100 wagons per day	All	5.60	Wagon
Loading/unloading containers to/from rail wagons	All containerised cargo	30,000 TEUs per year	5, 6	16.73	TEU
Isothermal storage	Frozen food	Not applicable	5	9.00 15.00	Wagon Day
Border crossing operations		10 trains per day	All	3.00	Wagon

**2) Locomotive Hire**

<b><u>Km(€)</u></b>	<b><u>Cost per Hour(€)</u></b>	<b><u>Cost per</u></b>
Electric locomotive	84.1	0.57
Diesel locomotive	70.7	0.60

**3) Demurrage**

See Appendix T1.2 for wagon type hourly demurrage rates.



**Appendix T1.5. CALCULATION OF STANDARD TRACECA TRANSIT TARIFFS.**

(Euro)

**EXAMPLE 1.**

**Route:** Poti – Dushanbe. **Wagon Type:** 4. Tanker Axle. **Tariff:** Full Rate.

**Part 1. Movement.**

<u>Route</u>	<u>Country</u>	<u>Distance (km)</u>	<u>Wagon Rate</u>	<u>National Coefficient</u>	<u>Total Charge</u>
Poti – Gardabani.	Georgia	362	0.73	1.43	377.89
Beyuk Kasik – Baku	Azerbaijan	503	0.73	1.10	403.91
Baku – Turkmenbashi	(Ferry)	300			911.00
Turkmenbashi – Farap	Turkmenistan	1,362	0.73	1.00	994.26
Farap – Dushanbe	Uzbekistan	548	0.73	1.15	460.05
	Turkmenistan	194	0.73	1.00	141.62
	<u>Tajikstan</u>	<u>71</u>	0.73	1.00	<u>51.83</u>
	<b>Total</b>	<b>3,340</b>			<b>3,340.56</b>

**Part 2. Terminal.**

<u>Location</u>	<u>Type of Operation</u>	<u>Total Charge</u>
Poti	Border Crossing	3.00
	Port Wagon Collection	5.60
Baku	Port Wagon Collection	5.60
Turkmenbashi	Port Wagon Collection	5.60
<u>Dushanbe</u>	Sidings Wagon Delivery	<u>6.20</u>
<b>Total</b>		<b>26.00</b>

**Part 3. Infrastructure User Charge**

Distance <u>(rail km)</u>	Wagon <u>Rate</u>	Total <u>Charge</u>
3,040	0.1533	466.03

**Part 4. Handling & Commission**

Wagon <u>Rate</u>	Total <u>Charge</u>
20.00	20.00

**TOTAL WAGON TARIFF****€ 3,852.59****WAGON TARIFF PER Km****€ 1.15**



**EXAMPLE 2.**

**Route:** Ungheny – Druzhba. **Wagon Type:** 6. Flat Bed (Container).

**Tariff:** Concessional.

**1. Movement.**

Route	Country	Distance (km)	Wagon Rate	National Coefficient	Total Charge
Uzgheny – Kuchurgan	Moldova	213	0.19	1.10	44.52
Kuchurgan – Ilyichevsk	Ukraine	127	0.19	1.16	27.99
Ilyichevsk – Poti	(Ferry)	1,000			744.00
Poti – Gardabani	Georgia	362	0.19	1.43	98.36
Beyuk Kasik – Baku	Azerbaijan	503	0.19	1.10	105.13
Baku – Aktau	(Ferry)	400			1,116.00
Aktau – Beyneu	Kazakhstan	422	0.19	1.13	90.60
Beyneu – Chengeldy	Uzbekistan	1,847	0.19	1.15	403.57
Chengeldy – Druzhba	<u>Kazakhstan</u>	<u>1,771</u>	0.19	1.13	<u>380.23</u>
	<b>Total</b>	<b>6,845</b>			<b>3,010.40</b>

**2. Terminal.**

Location	Type of Operation	Total Charge
Uzgheny	Border Crossing	3.00
	Freight Yard Wagon Collection	6.80
Ilyichevsk	Port Wagon Collection	5.60
Poti	Port Wagon Collection	5.60
Baku	Port Wagon Collection	5.60
Aktau	Port Wagon Collection	5.60
<u>Druzhba</u>	Freight Yard Wagon Delivery	<u>6.80</u>
<b>Total</b>		<b>39.00</b>

**3. Infrastructure User Charge**

Distance ( rail km)	Wagon Rate	Total Charge
5,245	0.1533	804.06

**4. Handling & Commission**

Wagon Rate	Total Charge
20.00	20.00

**TOTAL WAGON TARIFF** **3,873.46**

**WAGON TARIFF PER Km** **0.57**



**EXAMPLE 3.**

**Route:** Termez – Baku. **Wagon Type:** 3. Open-top. **Tariff:** Third Party.

**1. Movement.**

<u>Route</u>	<u>Country</u>	<u>Distance (km)</u>	<u>Wagon Rate</u>	<u>National Coefficient</u>	<u>Total Charge</u>
Termez – Farap	Uzbekistan	406	0.24	1.15	112.06
	Turkmenistan	194	0.24	1.00	46.56
Farap – Turkmenbashi	Turkmenistan	1,362	0.24	1.00	326.88
Turkmenbashi – Baku	<u>(Ferry)</u>	<u>300</u>			<u>911.00</u>
	<b>Total</b>	<b>2,262</b>			<b>1,396.50</b>

**2. Terminal.**

<u>Location</u>	<u>Type of Operation</u>	<u>Total Charge</u>
Termez	Border Crossing	3.00
	Freight Yard Wagon Collection	6.80
	Turkmenbashi Port Wagon Collection	5.60
Baku	Port Wagon Collection	5.60
	Goods Shed Unloading (20 tonnes)	<u>126.80</u>
	<b>Total</b>	<b>147.80</b>





**3. Infrastructure**

Distance <u>(rail km)</u>	Wagon <u>Rate</u>	Total <u>Charge</u>
1,962	0.1533	<b>300.77</b>

**4. Handling & Commission**

Wagon <u>Rate</u>	Total <u>Charge</u>
20.00	<b>20.00</b>

**TOTAL WAGON TARIFF** **1,865.07**

**WAGON TARIFF PER Km** **0.82**



**Appendix T1.6. SPECIMEN TRANSIT TARIFF CALCULATION FORM.**

**1. CUSTOMER**

Name of shipper ... *Western Enterprises* .....

Address of shipper ... *Thames Valley Park* .....

... *Reading, Berkshire, UK.* .....

Name of forwarder/agent placing order ... *Black Sea Forwarders* .....

Address of forwarder/agent placing order ... *Rustavelis Gamziri* .....

... *Tbilisi, Georgia*

**2. CONSIGNMENT**

Commodity (See Code 1) *Metal Parts*.....

Unit of dispatch (See Code 2) *Cases*.....

Dimensions and/or weight of unit *1,000 x 650 x 500cm.*

Tonnage (Bulk only) .....

Number of units or bulk tonnage *3,240* .....

Type of wagon allocated (or requested) (See Code 3) *Covered wagon* .....

TRACECA or customer owned wagon *TRACECA* .....

Units/tonnes per wagon *360*.....

Number of wagons *9* .....



**3. ROUTE**

Station or port of entry to TRACECA, or	(See Code 4)	... <i>Poti</i> .....
Station or siding of origin in TRACECA		.....
Station or port of exit from TRACECA, or	(See Code 4)	.....
Station or siding of arrival in TRACECA		... <i>Dusanbe (Station)</i> ...
Distance in Armenia (km)		.....
Distance in Azerbaijan (km)		... <i>503</i> .....
Distance in Bulgaria (km)		.....
Distance in Georgia (km)		... <i>362</i> .....
Distance in Kazakhstan (km)		.....
Distance in Moldova (km)		.....
Distance in Romania (km)		.....
Distance in Tajikstan (km)		... <i>71</i> .....
Distance in Turkey (km)		.....
Distance in Turkmenistan (km)		.. <i>1,362 + 194 = 1,556</i> .
Distance in Ukraine (km)		.....
Distance in Uzbekistan (km)		... <i>548</i> .....
Total TRACECA rail distance		... <i>3,040</i> .....
Black Sea ferry (State origin & destination)		.....
Caspian Sea ferry (State origin & destination)		. <i>Baku –Turkmenbashi</i>

**4. TRANSPORT CONDITIONS**

Estimated/requested departure date & time		... <i>11. 02. 04</i> .....
Estimated/requested arrival date & time		... <i>18. 02. 04</i> .....
Special consignment features	(See Code 5)	... <i>Fragile</i> .....
Additional services required	(See Code 6)	... <i>Van buffer</i> .....
		<i>appliances</i> .....
Other customer requests or instructions		.....



**5. STANDARD TARIFF CALCULATION**

Armenia movement	(Wagon rate x coefficient x distance)	.....
Azerbaijan movement	(Wagon rate x coefficient x distance)	... 210 .....
Bulgaria movement	(Wagon rate x coefficient x distance)	.....
Georgia movement	(Wagon rate x coefficient x distance)	... 197 .....
Kazakhstan movement	(Wagon rate x coefficient x distance)	.....
Kyrgistan movement	(Wagon rate x coefficient x distance)	.....
Moldova movement	(Wagon rate x coefficient x distance)	.....
Romania movement	(Wagon rate x coefficient x distance)	.....
Tajikstan movement	(Wagon rate x coefficient x distance)	.....27 .....
Turkey movement	(Wagon rate x coefficient x distance)	.....
Turkmenistan movement	(Wagon rate x coefficient x distance)	... 591 .....
Ukraine movement	(Wagon rate x coefficient x distance)	.....
Uzbekistan movement	(Wagon rate x coefficient x distance)	...239 .....
Black Sea ferry	(Wagon rate for itinerary)	.....
Caspian Sea ferry	(Wagon rate for itinerary)	... 911 .....
Total movement cost		... 2,175 .....
Terminal cost		... 44 .....
Infrastructure cost		... 466 .....
Administration cost		... 20 .....
Total wagon price		... 2,705 .....
Total standard price	(Wagon price x no. of wagons)	... 24,345 .....
Price of additional services	(See Code 7)	45
Total consignment price		... 24,390



6. TARIFF VARIATION ASSESSMENT

Estimated price elasticity of commodity	(See Code 8)	... 1.9 .....
Long-run variable cost of wagon type	(See Code 9)	... 0.38 .....
Short-run variable cost of wagon type	(See Code 9)	... 0.18 .....
Critical/non-critical traffic direction		... Critical .....
Surplus wagons available		... None .....
Exceptional loading/handling characteristics		Direct to customer's . road vehicles .....
Other abnormal operational circumstances		.....
External competitive situation		Northern Corridor ..
Estimated number of future similar consignments		4 per annum .....
		indefinitely .....
Maximum feasible discount or supplement		30% .....
Recommended tariff variation		20 %.....
Revised wagon price (Net of ferry charges)		1,435 .....
Revised short-run variable cost of wagon type		0.16 .....
Total journey short-run variable cost of wagon type		486 .....
Estimated net contribution to long-run variable cost		949 .....
Application range of discount/supplement	(See Code 10)	Customer only .....
Duration of discount/supplement	(See Code 11)	Until further notice .

**C2**



**TRACECA TRANSIT TARIFF AGENCY**



**TECHNICAL NOTE 2**

**Traceca Transit Tariff  
Best Practice for Trader Access to Railways**

**Edition 1**



Technical Note No. 2 Best Practice for Trader Access to Railways

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**TTTA TECHNICAL NOTES.**

**Technical Notes Issued by the TTTA.<sup>1</sup>**

**Prepared UPTFT project**

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## 1 Foreword

TRACECA was founded in 1996 by the EU and heads of state of many CEEC and CIS countries. The countries involved are: Republic of Armenia, Azerbaijan Republic, Georgia, Republic of Kazakhstan, Kyrgyz Republic, Republic of Moldova, Republic of Tajikistan, Turkmenistan, Republic of Uzbekistan, Mongolia, Ukraine, Republic of Bulgaria, Romania and Turkish Republic. Objectives of the project "TRACECA: Unified Policy of Transit Fees and Tariffs" are to simplify and unify rail tariff policy, improve the quality of services TRACECA railways provide to their customers; improve tariff-setting procedures; establish a Code of Best Practice for railways dealing with customers;

The Code of Practice (the Code) contains guiding principles to which all TRACECA participating railways will aspire when conducting their business. It aims to achieve a common and shared customer-friendly business environment in railway industry throughout Traceca route.

This code is the start of a continuing process to improve performance and to be a dynamic document with updates and changes to reflect Traceca operation at each point of time.

## 2 Customer Philosophy

When dealing with customers the main objectives of Traceca railways are:

- To provide a safe, efficient and reliable, "value for money" service to the customers;
- To build long-term relationships with existing and potential customers;
- To show professionalism in dealing with customers on all levels of corporate structures.
- To provide consistent standards of customer care throughout Traceca

## 3 Our services

TRACECA provides safe and reliable railway transport services, loading and unloading of freight, customer information support and other additional services, which are to be specified by the customers.



## **4 Comments from our customers and Enquiries**

We are striving to engage in a regular dialogue with our customers regarding our services we are currently provide, and welcome any comments from you and your future plans with us.

Enquiries regarding tariffs, conditions of carriage and etc. are handled either by Traceca Transit Tariff Authority (TTTA) or by the Marketing Department/Customer Service Department of the participating Traceca Railway. Enquiries shall have a standard time of processing, which shouldn't exceed 3 working days.

Comments or enquiries shall be sent to TTTA at the following address: ..... , e-mail address:..... or you can reach us on our hotline telephone number: ..... (to be inserted later).

## **5 Safety and security**

Traceca railways are fundamentally committed to the provision safe and secure transportation of goods and this is a key priority in respect to customer relations.

Upon request railways will provide information what they are doing in order to provide secure services, for instance, specific modernisation of infrastructure projects, rolling stock updates and etc.

Requirements for carriage of freight are widely available, also through electronic sources (web page address will be inserted at a later stage). Freight is supposed to have all the necessary fittings, packing in order to be ready for shipment. Railway representative will check freight in the presence of consignor's representative for ensure safety.

In case additional handling or security is needed for the goods railways can organise them at extra charge.

## **6 Traceca Transit Tariff**

Customers will receive fair and non-discriminating treatment in carrying goods via Traceca. The purpose of the Traceca Transit Tariff (TTT) is to provide a single through-rate, easily comprehensible to current and potential customers and other interested parties, for the rail conveyance of international freight transit traffic through and within the TRACECA region.



The main principles of TTT are the following:

1. The TTT applies to international freight traffic transported by rail and maritime ferries through the territories of the TRACECA countries but with an origin or destination beyond the boundary of one or all of these countries.
2. The basic rates of the TTT are expressed in wagon units for application to internationally approved wagon operating on TRACECA.
3. The TTT varies according to each wagon type
4. The TTT is structured into four parts for rate calculation purposes.
5. The currency unit of the TTT is the Euro.
6. Many of the specific conditions of the TTT have been taken from the former Tariff Policy of Railways Administrations of the Commonwealth of Independent States and will be familiar to the customer. They have been retained because they are sensible and their application is widely understood.
7. The Secretariat is the TRACECA Transit Tariff Agency (TTTA) to whom any queries should be directed.

The TTT is structured into four parts, namely:

1. Line haul movement
2. Terminal and transshipment operations
3. Use of infrastructure
4. Administration and commission.

Charging separately for each part of the tariff makes the total cost transparent and closely tailored to the actual aggregate costs of each customer's consignment. To learn more about each part of the tariff, please, refer to the Price Setting Handbook.

## **7 Tariff Calculation**

TTT applies to all railway routes designated by TRACECA partners. It is applied to provide a single through tariff that includes ports and shipping.



TTT is calculated for customers by the originating railway, or port or shipping line on the basis of information provided by the customer, subject to approval by all other parties. Since the enquiry is made the tariff will be calculated on the next day. If not all parties participating in Traceca agreement agree to the tariff quoted then reply time will be increased to 3 days and the customer notified of the delay.

Tariff will be calculated using the standardized TTT Tariff Calculation Form to facilitate the calculation by the tariff authority.

## 8 Concessions

TTT is applied in a flexible manner permitting discounts on the standard tariff. The flexible pricing policy can offer substantial transport cost savings to customers.

In some cases under traffic or operating conditions under which consignments could qualify for the concessional rate or even greater discounts are as follows:

- Back Loads
- Freight with Good Handling Qualities
- Longer-term Bulk Contracts
- Commodities in Seasonal Demand.

Other situations may arise in which tariff discounts may be applied. It is advisable that the customers make an enquiry in regards to that with the contact railway organisation and provide all the relevant information.

## 9 Procedure times

Railways are liable to follow set procedure times for handling requests for freight transportation, promised delivery times, processing enquiries, complaints and etc.

A shipper shall send a query stating 10 days in advance of the shipment (if it is not a contract-base delivery) stating volume of shipment in wagons and tonnes, type of freight, stations of departure and destinations and route chosen to the local railway administration.

Railway administration should consider if it accepts or rejects the order within 10 days. Rejection of order shall have thorough explanation on the reason for rejection. If the



railway accepts the order or doesn't reply within the specified number of days, it has to fulfill its obligation for the freight consignor.

Railways should allocate necessary number of wagons at least 3 days before the departure date.

In case of delays in procedure times a written notification will be issues, stating reason for the delay and a new date.

## **10 Freight Delivery times**

Railways customers are liable to deliver freight on agreed time, same refers to customers.

Delivery times throughout Traceca railways are the following:

For delivery – 1 day;  
Transportation – 200 km per day.

Time starts from 00:00 on the following day when freight was accepted for transportation.

The delivery times are to be prolonged by 1 day for reloading, extra handling of freight, border-crossing and customs. Delivery times will also be prolonged for the time for custom formalities.

In case of failing delivery times a notification shall be sent to the shipper and recipient and agreed penalties for idle time are applied.

When order for delivery is accepted railways give an approximate date and time for freight arrival. Upon arrival of freight the local railway station shall inform the recipient.

## **11 Conditions of carriage**

Conditions of carriage are to be unified on Traceca. They will be available, with the fullest use of electronic means (possible using the Traceca web site and online User Guide).



## 12 Documentation

Within TRACECA a unified Bill of Lading will operate the later stage, which is accepted in all participating railways, shipping administrations and ports within TRACECA.

## 13 Complaints procedures

One of the key objectives for Traceca railways is to maintain constructive relations with customers and avoid any complaints.

Any customer who believes that he received an unfair treatment within the Traceca region or that the terms of this Code have been breached, shall contact firstly the initiating railway and try to solve the problem. If not, TTTA is dealing with settling them. Their contact details are as follows: .....

TTTA will acknowledge the fact of receiving a complaint and will take it forward in a timely and efficient manner. Complaints shall be carefully and open-mindedly analyzed and investigation initiated where necessary.

Complaints will be dealt in a timely manner and customers will be made clear when they will receive a feedback.

TTTA shall monitor and evaluate results of investigations, designating a co-ordinator responsible for it, who will insure that lessons are learnt and disseminated.

Once the investigation has been carried out, the co-ordinator shall write a summary of the results of the exercise and make them available to the concerned parties.

## 14 Liability

Railway is liable for:

- o Loss
- o Damage
- o Exceeding the transit period
- o Between acceptance for carriage and delivery.

Grounds for relieving the carrier of liability:

- o Fault or order on the part of the person entitled
- o Inherent vice of the goods





## Technical Note No. 2 Best Practice for Trader Access to Railways

- Circumstances, which the railway could not avoid and the consequences of which it was unable to prevent.

In case of railway liability the customer is liable for compensation. Basis for compensation calculation shall be defined in the Conditions of Carriage.

Traceca seeks to unify compensation procedures; minimum levels and speed of payments will be documented and added later.

## 15 Confidentiality

Railways shall not disclose any confidential information to third parties in relation to customers save where:

- The information is already in the public domain
- It is a legal duty
- It is a request from the competent authority, as Ministry of Transport, TRACECA Secretariat or etc.
- It is a customer's request

Railways will expect the same treatment in regards to confidentiality issues from their customers.

**C3**

**TRACECA**

**TRACECA TRANSIT TARIFF AGENCY**



**TECHNICAL NOTE 3**

**Traceca Transit Tariff  
Rail Marketing**

**Edition 1**



Technical Note No. 3 Marketing

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## **1 Introduction.**

As explained in Technical Note 1 Pricing Handbook for TRACECA Transit Tariff (TTT), the new tariff has been formulated to reflect the changed geo-political conditions and the emergence of a competitive transport market in and around the TRACECA region. The in-built flexibility of the TTT permits a prompt and effective response by the TRACECA Railways to changes in the pattern of demand for international freight services in the Euro-Asian transport corridor and to economic and technical developments in the new market-oriented transport sector.

A prerequisite for an effective flexible pricing strategy under the TTT is a thorough understanding and detailed knowledge of the market for freight transit services in the Euro-Asian region in general and the TRACECA corridor in particular. The guidelines in this technical note describe the areas in which TTTA marketing staff should develop an expertise and indicate currently available sources of data and information.

## **2 Structure and Scope of the TTTA Marketing Services.**

It is proposed that, over the longer-term, the TTTA progressively builds up its own database, expanding and improving on the limited material currently available. Appendix T3.1 indicates the scope and content of the different categories of data that should be collected, monitored and analysed for both marketing and price setting purposes. An early priority for marketing staff, therefore, will be to locate the statistics and data required for this purpose and to establish a regular monitoring system to maintain them up-to-date. Many of the data required will be specific to the TRACECA countries themselves and should, therefore, given the cooperation of the relevant departments and institutions, be amenable to quantification and systematic collection. Collection of other data, however, such as estimates of traffics in competing transit corridors, where there are no statistics in the public domain, will require a more informal approach in which the required information will be drawn from miscellaneous, changing sources identified through the general experience of the Marketing Department. It is expected that the list will be modified or expanded by the TTTA in the light of its accumulating experience.



In the meantime, immediate data requirements and currently available data sources are described in Sections 3.3 to 3.6. In Section 3.7 guidelines are offered for the preparation of transit traffic forecasts based on analysis of the preceding data.

### **3 Familiarity with the Euro-Asian Freight Transit Market.**

Information Requirements. TTTA staff should develop a thorough familiarity with the structure and operation of the market for rail freight services between western Europe and the Far East. This should involve a knowledge of the volumes and composition of transit traffic and of tariff structures and operating costs in the competing transit corridors.

Appendix T3.2 contains a table of competing Euro-Asian rail transit routes with distances and average transit times and a general description of the competitive relationships with the TRACECA corridor. Details of the principal European and other international shippers using the corridors should be kept by the TTTA. The purpose of this would be to provide a basis for identifying traffics potentially capturable by the TRACECA Railways.

Current Information Sources. Some of the information required can be obtained from public sources, such as the published tariffs of the competing railway companies. Other data, though not necessarily in the public domain, such as the railways' annual financial statements and traffic figures, can usually be obtained without too much difficulty. Some data such as rail cost estimates may remain confidential or not be available at all. In these latter cases a flexible approach will be required from the marketing personnel by maintaining a continuing review of external sources such as professional journals e.g., *Railway Gazette International*, consultancy studies or appraisals carried out by the international financing agencies. Consultations should also be held with international forwarding agents represented in the TRACECA countries. In the longer-run, the expanded data indicated in Appendix T3.1 will permit a more thorough analysis of the Euro-Asian market.

### **4 Analysis of TRACECA Transit Traffic.**

Information Requirements. Current data on TRACECA transit traffic is limited and does not lend itself to detailed analysis. In particular, it rarely distinguishes transit from other traffic. The TTTA will need to produce and maintain up-to-date a database of transit traffic in terms of commodities, volumes, origins and destinations, seasonality, wagon types utilised, etc. A brief review of transit traffics, based on present limited data is provided, by way of illustration, in Appendix T3.3. The purpose of the database would be to permit TTTA marketing staff to analyse the circumstances of individual consignments, e.g, movement in non-critical traffic direction, to determine the scope for variations from the current traffic levels both to maximise net revenues from current transit traffic and to encourage new traffic. Specific business opportunities identified by





marketing staff would be reviewed in the light of this database to determine the appropriate tariff charges.

Current Information Sources. In this case, the data sources would be internal to TRACECA and should, therefore, be easily obtainable from official sources, given the full cooperation of the national TRACECA railway administrations and local freight forwarders. The longer-term TRACECA traffic data requirements are, again, indicated in Appendix T3.1.

## **5 Familiarity with Industrial & Commercial Sectors of TRACECA Countries.**

Information Requirements. Demand for TRACECA's freight services will depend largely on economic and commercial activity in the region. Account therefore needs to be taken of longer-term economic planning and development as well as the more immediate transport needs of producers, importers and exporters. Substantial oil industry investments are firmly planned or in prospect for the next decade with important implications for the demand for transport of constructional and industrial materials and equipment. The structure of regional transit trade is, moreover, constantly changing, as past statistics indicate, with new commodities emerging and current commodities varying in relative importance. It is important that the TTTA should remain alert to this constantly changing demand pattern and to the longer-term development prospects.

Current Information Sources. Again, most of the data required will be internal. Information on the longer-term development prospects would be available from the economic planning ministries of the TRACECA countries and from the principal oil companies in the region. It will, however, be necessary for marketing personnel to keep abreast of broader international developments, e.g. the current decline in the demand for cotton in southern Europe, bearing on the TRACECA transit market by a continuing review of the international press and trade literature. In this regard, a press cuttings service should be maintained by the marketing staff. For more immediate business prospects, a continuing liaison should be maintained with local freight forwarders, export/import agencies and principal manufacturers. The economic and commercial data to be collected over the longer term is detailed in Appendix F3.1.



## 6 Study of Competing Transport Modes.

**Information Required.** Given the long distances covered by transit traffic, rail should have a clear cost advantage with little effective competition from road hauliers. The attention of the TTTA is, therefore, likely to be engaged primarily with competition from other Euro-Asian rail corridors. Nonetheless, there is evidence of growing road competition in transit trade in the TRACECA corridor. Some of this may be due to non-price factors such as more flexibility in avoiding delays at border-crossings or door-to-door delivery which could best be countered by improved rail services rather than tariff strategy. But there are some road movements, notably the carriage of containers through Turkey, for which rail's potential cost advantage should be more than sufficient to off-set road transport's advantage in flexibility. TTTA staff should, therefore, study the structure of the road transport industry and the extent of its operations in the region in order to identify areas of potential competition and apply appropriate pricing measures to secure the traffic to rail. Data should be collected, as indicated in Appendix F3.1, on the structure of the road vehicle fleet, volume and composition of traffic carried by road, origins and destinations, rates and charges and road vehicle operating costs. Observation should also be kept on traffic movements on the Volga-Don Canal which, despite significant operating disadvantages, notably its closure during the winter months, is also carrying transit traffic such as pipes, oil industry materials and some cotton, that could possibly be re-captured by rail through appropriate pricing strategy.

**Current Information Sources.** Data on road transport is notoriously difficult to collect, given the structure of the industry with its numerous small, usually privately owned, units. In most cases records are not kept by operators and few are aware of their own operating costs. Even where data are kept operators may not wish to disclose them for competitive reasons. Rates may, however, be obtained through quotation. Customs records are kept at border posts but these, in their present form, are not particularly helpful: the number of containers crossing the border but not their contents is recorded. (The new data proposed in Appendix F3.1 envisages improved traffic recording at border posts.). A more informative source of information is likely to be regional freight forwarders who often use road transport for non-transit traffics. Details on comparative vehicle operating costs may be obtained from special studies or the appraisal reports of the international development agencies.

## 7 Rail Transit Freight Traffic Forecasts.

On the basis of continuing analysis of the data and information detailed above, TTTA marketing staff would produce forecasts of rail transit freight traffic through the TRACECA corridor. Detailed forecasts on a commodity and tonnage basis should be



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prepared for three years ahead with broader indicative forecasts for five years ahead. The forecast should also show the direction of movement for each commodity as this will be an important consideration in flexible pricing. The forecasts would provide an important tool for the formulation and implementation of the flexible pricing strategy by indicating its broader financial implications and prospects for total cost recovery. A specimen forecast is set down in Appendix F3.4. (This table is available on CD in spreadsheet form with all formulae incorporated for ease of working).

Another important factor to be taken into account in forecasting transit traffic is the estimated price elasticity of demand for international rail transit services. This complex concept is the subject of a separate Technical Note.<sup>2</sup>

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<sup>2</sup> Technical Note 4. Estimation & Use of Price Elasticities of Demand. Edition 1. (01.09.03)



## **Appendix T3.1. DATA COLLECTION AND MONITORING PROCEDURES.**

### **Data Collection.**

The effectiveness of the TRACECA Railways' flexible pricing strategy will depend largely on the extent and quality of the data and information available to the TTTA's Marketing Department. The data currently available are limited in scope, not always compatible between the different railway administrations and were, in any case, originally devised for objectives different to those now confronted by TRACECA in the new competitive transport environment.

The purpose of this appendix is to recommend new data and methods of collection and monitoring to be maintained and processed by the Marketing Department to support the flexible pricing strategy. The data and information, described below, fall into three main types. Internal data would be drawn from existing sources within the TRACECA countries and should, therefore, present little difficulty in collection, given cooperation between the organisations and institutions concerned. External data would be drawn from quantified sources in other countries but as these may not be easy to locate or not be willingly made available to TRACECA, possibly for good competitive reasons, it may not be practicable to build up a detailed, accurate database: in this case, approximations and estimates may have to be resorted to by marketing personnel. Finally, there is data, which would be more realistically described as market intelligence for which no quantified data sources exist and which would, consequently, have to be compiled from whatever indirect sources are available at the initiative of the marketing specialists. TRACECA rail transit freight statistics would be an example of the first type, corresponding rail traffic statistics in competing Euro-Asian corridors, an example of the second and identification of business opportunities in TRACECA and other European and Asian countries, of the third. All three types are represented in the detailed data requirements detailed below. Existing data sources which should be the starting point for collection of the extended and refined data described below are indicated in Section 3.3 to 3.6 of the main text above. Guidelines for the preparation of forecasts of rail transit traffic in the TRACECA corridor, on the basis of analysis of the data, are given in Appendix T3.4.

The following data and information requirements can be subdivided into five categories:



1. Euro-Asian Marketing Information.

Transit traffic in competing Euro-Asian rail corridors by commodities, tonnages, directions and average transit times.

Official tariffs and discounted rates charged on competing rail systems for key transit commodities.

Infrastructure and rolling stock investments and service improvements on competing rail systems.

General pattern of transit trade in the Euro-Asian market with the locations of principal shippers and importers.

2. TRACECA Transit Traffic Data.

Rail transit traffic in the TRACECA corridor by commodities, tonnages, directions, seasonality and average transit times and empty running coefficients.

Inventory of the wagon fleet indicating wagon types utilised by key transit commodities and locations of wagons in the TRACECA corridor and neighbouring countries at specified dates.

Transit traffic by road and waterway by commodities, tonnages, origins & destinations and seasonality.

Estimates of price elasticity of demand for key transit commodities.

TRACECA Economic and Trade Data.

Planned and prospective economic, industrial and commercial development in the TRACECA corridor.

Locations of principal shippers, importers and forwarders and potential customers in the corridor.

Details of short-term business opportunities.

4. Tariff and Transport Cost Data.

Official TTT rates for key transit commodities.

Long-run and short-run variable costs for different wagon types under normal and "back-load" running conditions.



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Details of non-standard (discounted or premium) rates actually charged on specific consignments.

Rates and tariffs of road and canal transport

Estimates of road vehicle and waterway operating costs

Continuing review of relationship between normative and actual measured rail cost data.

### **Monitoring Procedures.**

The data and information should be collected, stored and maintained up-to-date by the TTTA's Marketing Department. Much of the material, particularly market intelligence, would be collected on the initiative of the department itself: other data, particularly technical data such as short and long-run variable rail costs, would be supplied to the Marketing Department by the responsible departments within the national railways.

Separate files for each of the five data categories detailed above should be maintained. Not all the data lend themselves to precise tabulation so that the files would contain, in addition to standard proforma, short annual reports and, possibly, collections of press cuttings and notices.

All material should be updated or verified annually. The Marketing Department will be responsible for checking annually with the railway departments on the validity of technical or financial data provided by them, although it is expected that these departments would advise the Marketing Department of significant changes occurring between annual checks. An exception would be the statistics on wagon location which

should be notified to the department on a more frequent, possibly monthly, basis, together with a short term prognostication of the disposition of the wagon fleets up to the next reporting date.

Marketing staff should liaise regularly between annual updates with forwarders, potential customers, government departments and other parties on which it is dependent for commercial and economic intelligence.

Appendix T3.4 discusses the traffic forecasting for which the analysis of the above data would provide the foundation

**Appendix T3.2 EURO-ASIAN RAIL FREIGHT TRANSIT SERVICES.**

The TRACECA corridor is one of several transit routes competing for international freight between western European and the Pacific coast. The principal routes are as follows:

**EURO-ASIAN TRANSIT CORRIDORS**

Corridor	Route	Distance (km)	Average Time (hours)
Northern*	Tashkent - Riga	4,008	
Northwest*	Tashkent - Brest	4,249	
Central (TRACECA)**	Tashkent - Farab - Poti	2,733	152
Southern	Tashkent - Bandar Abbas	3,617	
Southeast	Tashkent - Lianyungang	4,550	
Eastern***	Tashkent - Nahodka	8,701	

\*TRACECA from Tashkent to Kandagach(Russian border). \*\*Alternative route through Aktau = 2,309km.

\*\*\*TRACECA from Tashkent to Druzhba (Chinese border).

The principal competitors with TRACECA are the Northern and Northwest corridors serving northern Europe and giving access to the Baltic and North Sea ports. The distances to western Europe are, in fact shorter by the TRACECA – Black Sea route. But historically the Russian lines have been the principal transit routes between western Europe and the Far East accounting largely for their pre-eminence today. To this extent, they are vulnerable to competition from TRACECA. They do, however, have certain inherent advantages such as the small number of border crossings and the avoidance of rail/sea transshipments. There are other, perhaps temporary, advantages such as the good cotton handling facilities at Riga which continue to attract Uzbekistan cotton. Moreover, the fact that the sections of these lines within Russia constitute only a small part of the Russian railway system provides scope for retaliatory rate cutting in response to TRACECA tariff changes. TRACECA benefits from trade on these corridors to the extent that they pass through Kazakhstan.



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A growing competitor to TRACECA and, indeed to the northern corridors themselves, is the Southern corridor to Bandar Abbas on the Persian Gulf. This gives easy access to the sea and the benefits of low maritime freight, particularly container, rates. A large, possibly the greater, part of Uzbekistan cotton exports are now being shipped by this route. The Eastern and Southeast corridors are not major competitors to TRACECA as they serve the Pacific ports with shipping services to south-east Asia, the western United States and Australia rather than western Europe and the eastern United States. Substantial improvements have been carried out recently in the Southeast rail corridor in support of the "China Gateway" concept, designed to compete with the Trans-Siberia railway for the Pacific transit trade: this could have a limited effect in drawing traffic, e.g. foodstuff imports, from South America, away from TRACECA.



**Appendix T3.3.EURO-ASIAN RAIL FREIGHT TRANSIT TRAFFIC.**

The traffic statistics currently maintained by the TRACECA Railways are based on those in use under the earlier centralised railway administration. These were formulated to serve different operational and financial circumstances from those obtaining under the new commercial framework and, consequently, do not lend themselves readily to an analysis of current transit traffics. Moreover, the statistics of the individual railways have since been modified so that they are no longer on a comparable basis and, in most cases, do not distinguish transit from other rail traffic.

Estimates of the composition and volumes of TRACECA transit traffic have, however, been derived from a number of sources, notably the statistics of the Port of Baku. These are shown in the following table:

**TRACECA Rail Freight Transit Traffic. ('000 tonnes)\***

	2000	2001	2002**
Oil	3,571	3,246	
Dry Cargo			
Soybean	107	86	
Cotton	122	36	
Alumina	34	128	
Other	222	545	
Total Transit	4,056	4,041	

\* Passing through the Port of Baku. \*\*Estimate.

*[The "Others" category is too large: it needs to be broken down further. Apparently, pipes, other oil industry materials and foodstuffs are important but tonnages unknown.]*



It can be seen from the table that rail transit traffic through the TRACECA corridor is of the order of 4 million tonnes per annum. No estimates of total transit tonnages through the competing Euro-Asian corridors are available, by rail or other modes, but it may safely be conjectured that the current TRACECA share is a very small proportion of the whole. The scope for capturing additional transit traffics should, consequently, be considerable.

In 2001 total traffic through Baku amounted to 4,560,000 tonnes. This compares with about 16,000,000 tonnes in the late 1980s. But traffic is recovering having risen from less than 1,300,000 tonnes in 1995. Of the 2001 total, 4,040,000 tonnes or 89% was accounted for by transit traffic. However, of this, 3,240,000 tonnes or 80% consisted of oil traffic. The remaining 800,000 tonnes of dry cargo consisted of 130,000 tonnes of alumina, 90,000 tonnes of soybean, 40,000 tonnes of cotton and 550,000 tonnes of other products, mainly pipes, other oil industry materials and foodstuffs. (Cotton shipments were particularly low in 2002, so that the 2000 figure of 120,000 tonnes is probably a better indicator of its relative importance).

The westbound traffic predominates, consisting mostly of oil from Kazakhstan to Batumi and cotton from Uzbekistan to Poti. About two-thirds of tonnage passing through Baku is westbound. Of the eastbound traffic, the alumina is shipped from southern Europe to Tajikistan and the soybean from South America to Uzbekistan: most of the oil industry equipment and other construction materials also move eastward from western European origins and ports. Excluding oil with its inherent 50% empty running, however, the critical traffic direction for dry cargo is eastwards. Given the relatively low volumes of transit and export/import traffic, there is abundant spare capacity throughout the TRACECA corridor but, with the preponderance of eastbound dry cargo, empty running of freight wagons westwards is substantial, a feature that should receive full attention from TRACECA marketing staff in implementing its flexible pricing strategy. Container traffic, in both directions, is extremely low given the continuing expansion of containerisation in international transit trade: only about 1,000 TEU have passed through the container facilities at Baku port since they came into service in 2000. The reasons for TRACECA's failure to attract more of the growing container traffic should be examined by the Marketing Department.

Regarding future traffic trends in the TRACECA corridor, an increasing oil traffic seems assured even with continuing pipeline development in the region. There will be several major oil projects coming on stream over the next five years and rail can be expected to benefit in particular from increased output of oil products. For the same reason, construction materials and oil industry equipment can be expected to maintain a steadily rising trend over the next few years. As this eastbound traffic will be characterised by a constantly changing composition and numerous one-off or short-term shipments, TRACECA should be alert for tariff discounting or negotiating opportunities. Traffic in alumina and other chemicals will remain linked to the output of the importing plants and the emergence of new industries and may, therefore, show some increase with the growth of the industrial sectors under the stimulus of oil production. The outlook for the staple transit trade in cotton, on the other hand, is less certain. The serious competition of



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Bandar Abbas, providing a close outlet to the sea, has already been mentioned. Also, demand for cotton in southern Europe is, at present, in decline. Improved storage and handling at the Black Sea and Caspian ports could attract some cotton from the Northern corridor, but this, too, is vulnerable to competition from Bandar Abbas. Transit of foodstuffs, raw materials and equipment used in the processing and consumer goods industries will probably rise in line with general economic recovery and industrial diversification.



**Appendix T3.4.TACECA RAIL TRANSIT FREIGHT FORECASTS.**

In the light of the analysis of the data described in Appendix T3.1, an annual rolling forecast of rail transit freight in the TRACECA corridor should be maintained by the Marketing Department. The forecast should indicate the key transit commodities by tonnage and direction for three years ahead. A broader indicative forecasts for five years ahead should also be prepared. A specimen forecast for 2004 is given below: .

TRACECA TRANSIT TRAFFIC FORECASTS ('000 Tonnes)							
	2004			2005			
	Direction			Direction			
	E-W	W-E	Total	E-W	W-E	Total	
Crude oil	3485		3485	3590		3590	
Oil products	622	198	820	638	198	836	
Cotton	210		210	210		210	
Alumina		183	183		200	200	
Soybean		149	149		156	156	
Grains	25	133	158	15	118	133	
Other foodstuffs	44	128	172	49	135	184	
Pipes		101	101		116	116	
Machinery		98	98		104	104	
Construction materials	15	84	99	18	95	113	
Timber		76	76		70	70	
Paper products		50	50		52	52	
Others	9	32	41	10	45	55	



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Total oil		4107	198	4305		4228	198	4426
Total dry cargo		303	1034	1337		302	1091	1393
<b>Grand Total</b>		<b>4410</b>	<b>1232</b>	<b>5642</b>		<b>4530</b>	<b>1289</b>	<b>5819</b>

		2006			2008 (Indicative)		
		Direction			Direction		
		E-W	W-E	Total	E-W	W-E	Total
Crude oil		3755		3755	4000		4000
Oil products		666	205	871	750	220	970
Cotton		215		215	220		220
Alumina			200	200		200	200
Soybean			168	168		180	180
Grains		15	120	135	20	130	150
Other foodstuffs		52	144	196	50	170	220
Pipes			123	123		150	150
Machinery		10	115	125	20	140	160
Construction materials		25	127	152	30	160	190
Timber			72	72		80	80
Paper products			55	55		60	60
Others		12	60	72	20	90	110
Total oil		4421	205	4626	4750	220	4970



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Total dry cargo		329	1184	1513		360	1360	1720
<b>Grand Total</b>		<b>4750</b>	<b>1389</b>	<b>6139</b>		<b>5110</b>	<b>1580</b>	<b>6690</b>

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**TRACECA TRANSIT TARIFF AGENCY**



**TECHNICAL NOTE 4**

**Traceca Transit Tariff  
Estimation and Use of Price Elasticities of  
Demand**

**Edition 1**





Technical Note No. 4 Estimation and Use of Price Elasticities Of Demand

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**TTTA TECHNICAL NOTES.**

**Technical Notes Issued by the TTTA.<sup>1</sup>**

**Prepared UPTFT project**

- Technical Note 1. Price Setting Handbook. Edition 1.
- Technical Note 2. Best Practice for Trader Access to Railways. Edition 1.
- Technical Note 3. Strengthening Railway Marketing. Edition 1.
- Technical Note 4. Estimation & Use of Price Elasticities of Demand. Edition 1.
- Technical Note 5. Freight Forwarder Attitude Survey.
- Technical Note 6. TTT Draft Regulatory Document

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<sup>1</sup> The TTTA is the designated name of the Traceca Transit Tariff Agency. One of the key roles of the TTTA is to carry out research and to issue advice to TTTA partners. To best utilise the work of the UPTFT project, its outputs have been configured as Technical Notes that could be issued by the TTTA.



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## 1 Introduction to Price Elasticity

An important factor that should be taken into account in setting rates under the TTT flexible pricing policy is the price elasticity of demand for international rail freight transit services.

A successful flexible pricing strategy requires the capability to predict the response of demand for rail freight transit to proposed changes in tariff rates for particular commodities. For this purpose, understanding of the concept of the price elasticity of demand and some knowledge of the level of elasticity for different commodities is needed.

### The Concept of Price Elasticity of Demand.

In general terms, the elasticity of demand measures the change in the level of demand for a particular product or service in response to a change in its price. For example, if the price of an item is reduced by 10% and sales increase by 25% in consequence, its price elasticity is said to be  $25/10 = 2.5$ . The concept of price elasticity and its application to pricing for rail services is explained more fully in section 2.

Price elasticity will differ for different commodities partly reflecting the relative importance of transport costs in the commodities' total production costs and the availability of suitable transport substitutes. Heavy bulk commodities, for example, cannot switch between rail and road as readily as, say, machine parts so that their responsiveness to tariff changes and, hence, their demand elasticity may be low.

The estimation of the price elasticity of demand for TRACECA freight services will, therefore, be a prime responsibility of the TTTA as this theoretical concept can be put to practical use for determining the appropriate levels of discounted and negotiated tariffs to be offered on different commodities or wagon types. Separate elasticities for each of the key transit commodities should be estimated. The estimation of elasticities, however, is not without difficulties for reasons explained in section 2. Section 3 includes a proposed methodology for the measurement of price elasticity in the context of the TRACECA corridor.

The limitations of the elasticity of demand concept as a pricing tool should, however, be recognised. TTTA marketing staff should, therefore, avoid taking pricing decisions on the basis of elasticity estimates alone. There are frequently specific local circumstances that might over-ride the results indicated by the elasticity exercise. For instance, there may be traffic, even with a low price elasticity, transported by a competing route or road that could be captured in whole or large part if the rail were tariff were reduced below the competing rate. There may also be the prospect of retaliatory tariff reductions on competing routes that would not be disclosed by the elasticity estimates. In price-setting, therefore, elasticity estimates should be used only as a first step to identifying



possibilities for discounted, negotiated or increased tariffs. Further detailed examination of the particular local circumstances of the consignment or commodity in question and an estimate of its potential contribution to net revenues would be required before the special rate were offered.

### **The Estimation of Price Elasticities of Demand.**

In formulating the TTT, some indicative price elasticities for rail freight commodities have been formulated. These were based primarily on analyses of elasticity studies<sup>2</sup> on other rail systems and should, therefore, be applied with caution to the TRACECA corridor where local demand patterns and operating conditions may apply. It is expected that these will be refined in the light of the TTTA's own enquiries and data resources.

### **Price Elasticity of Demand in Practice.**

An understanding of the concept of price elasticity of demand and access to estimates of the price elasticities of differing commodities would permit the TTTA to offer beneficial discounts to specific shippers. For example, it would often be worth offering a discount of up to 30% to an individual shipper of machinery with an estimated price elasticity of 1.5 since the increased demand for transit services would, as shown in the example of section 3, produce revenues well in excess of the additional short-term variable costs of the extra wagons required

But even in cases where the TTTA does not deliberately estimate the elasticity of demand for a particular commodity and adjust its tariffs accordingly, the effects of elasticity will still make themselves felt following any tariff change of a general nature. If, for instance, a general discount is offered on a particular wagon type, the effect on the total demand for those wagons and, hence, revenues will depend on the respective elasticities of all commodities conveyed in that wagon type. It is important, therefore, that TTTA marketing staff should have sufficient familiarity with the price elasticities of the different commodities to be able to estimate the overall impact of a proposed tariff change on total revenues.

## **2 Price Elasticity Of Demand For Rail Transit Services.**

### **The Theory of Price Elasticity of Demand.**

In general terms, the elasticity of demand measures the change in the level of demand for a particular product or service in response to a change in its price. In theoretical terms, elasticity ( $e$ ) = (percentage change in quantity)/(percentage change in price). Thus, if demand for a product is 100,000 given a unit price of €100 and a reduction in price of

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<sup>2</sup> See Appendix T3.4 for details of studies referred to.



10% to €90 results in an increase in the level of demand by 25% to 125,000, then  $e = +25/-10 = 2.5^3$ . In the context of rail freight services and the TTT tariff, elasticity would measure the response in demand for a particular wagon type to a change in the tariff rate. Thus, if the tariff rate for a covered wagon over a specified route were €160 and a discount of 30% were offered on that route for a particular commodity conveyed in that wagon type, raising its demand by 44% from, say, 650 to 936 wagons, then  $e = +44/-30 = 1.47$ : the discount would be worth offering since it would result in an increase in net revenues, even after allowing for the variable costs of the extra wagons required. If, on the other hand, demand increased to only 806 wagons in response to the discount then  $e = +24/-30 = 0.80$ : in this case, where  $e$  is less than unity, demand is said to be inelastic and the discount would result in a decline in net revenues.

It should be noted that, as transport is a derived demand depending on the levels of demand for the products transported, the price elasticity for transport taken as a whole may be relatively low, particularly if the transport cost constitutes only a small part of total production and distribution costs. Price elasticity for a specific transport mode or route, on the other hand, could be quite high since a tariff reduction could have the effect of attracting traffic from competing modes or routes. This is particularly the case where rail and road transport are in competition in the same corridor, as could be the case to some degree with container traffic through the Caucasus by rail and through Turkey by road and where two railway lines serve the same origins and destinations as with TRACECA and the northern corridors.

#### **Measurement of the Price Elasticity of Demand.**

The difficulty of estimating price elasticities are considerable. Tariff changes are rarely made in isolation from other changes in rail operations or other changes are introduced shortly after, obscuring the effects of the tariff change alone. For instance, tariff changes may be introduced at the same time as or shortly before other operational changes such as the entry into service of new rolling stock, line upgrading or improved terminal handling facilities which would attract custom through service improvements. In this case it would not be practicable to attribute any increase in demand to the different factors in any quantitative manner and the effects of the price change alone cannot be isolated. In the TRACECA countries in particular data for estimating elasticities with any degree of accuracy is quite inadequate. The development of a capability for estimating price elasticities is, therefore, likely to take time and will require new data and monitoring procedures. A description of the methods that should be followed in estimating the price elasticities of transit commodities is given below. The corresponding data requirements are detailed in Technical Note 3.

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<sup>3</sup> In theory, elasticities are normally negative but conventionally the minus sign is dropped in citing elasticity values.



### **Methodology for Estimating Price Elasticity of Demand.**

Given the difficulties of measuring the price elasticity of demand for rail transit services described above, a number of complementary approaches, none of them perfect, should be followed in estimating the elasticities of different commodities.

As an initial step, the views of shippers and forwarders on their reaction to marginal changes in the tariff rates for specified commodities should be sought. This could be done through a simple questionnaire requesting the respondent's estimate of the percentage increase in the volume of the commodity that would be offered for transit through the TRACECA corridor in response to, say, a 20% reduction in the tariff rate and, conversely, the percentage decrease in demand in response to a corresponding 20% tariff increase. Such surveys, where the prospects of a definite inducement or deterrent are placed before the respondent are known from experience to evoke exaggerated replies, so that not too much reliance should be placed on the strict accuracy of the resulting data. Rather, they should be regarded as a preliminary screening of commodities into high, medium and low price elasticity categories to be subjected to further analysis.

An important determinant of the degree of elasticity is the presence or absence of close substitutes, in the present case competing transport corridors. An assessment should, therefore, be made of the ease with which the individual commodities could transfer to competing rail, road or waterway services. General elasticity estimates derived from the survey described above could be checked against the assessment and, where necessary, modified to reflect the degree of potential competition.

The most informative exercise, however would be the monitoring of specific test cases, if such can be organised. These would involve effecting a change from the existing standard tariff rate in isolation from other rail operational or service changes that could influence the level of demand for transit service for the commodities in question.. Changes in the level of demand for the service in volume terms could then be measured directly at, say, quarterly intervals following the price change until such time as other factors impact on the demand pattern. But even where the effects of the price change can be observed in a virtual railway vacuum, it should be remembered that external factors such as trends in national incomes or changing terms of trade could have effects on the level of demand quite separately from those of the price change itself. These external influences should be abstracted where possible, e.g; by the application of an average national income deflator, in estimating the price elasticities of the different commodities.

At the same time as these internal TRACECA studies are being carried out, a continuing review of studies and experience on other rail systems should be maintained. A helpful internet website for keeping up to date with such studies is that of the Transport Elasticities Database of the Australian Bureau of Transport Economics (<http://dynamic.dotrs.gov.au/bte/tedb>). The experiences of other railway systems using price elasticities as a pricing tool, such as Canadian National, could also be canvassed. These international comparisons should be compared with the internal TRACECA elasticity estimates as a general second check on their validity.



It can be appreciated from the diverse approaches suggested above that any methodology for estimating elasticities can only be an eclectic exercise, making the best use of whatever sources are available and involving some subjective judgements on the part of TRACECA marketing personnel. As emphasised in the main text above, the limitations of price elasticity estimates as a tool for price setting should be recognised. It should be used as only one of several approaches to assessing the case for tariff variations and conclusions drawn from its application should always be checked against specific local circumstances.

### **The General Effects of Price Elasticity on Tariff Discounting.**

Tariff changes of a general nature, such as a rate reduction for a particular wagon type, will bring into play the effects of the price elasticity of demand, even if this was not expressly taken into account in fixing the new rate. Although the charging unit of the proposed TTT would be the wagon load irrespective of the actual commodities carried, the response of demand for specific wagon types to the rate change will depend on the price elasticities of the commodities conveyed in that wagon type. In some cases, dedicated wagons are used exclusively for the transport of a single commodity, such as oil tank wagons or, to some degree, isothermal wagons used predominantly for perishable foodstuffs. In such cases the price elasticity of demand for the wagon type in question reflects that of the commodity or commodity group carried. In other instances, such as open-topped or covered wagons, a more diverse range of commodities is carried: but, even in these cases, given the composition of TRACECA's traffic, there is a fairly strong association between wagon types and the commodity groups that they convey. Covered wagons, for example, are used predominantly by cotton, soybean and chemicals. So, even in these cases, an approximation to the price elasticity of demand for the wagon can be derived from an analysis of the corresponding elasticities of the commodities carried and their respective shares in the usage of the wagon type in question.

### **3 Effects on demand and revenue of changes in price - examples**

A simple example is given in Table 1. It assumes that a fleet of 1,000 covered wagons, given a standard tariff of €100 per wagon between origin A and destination B, carries three commodities in the proportions shown in column 2 of the table. The corresponding revenues are shown in column 3.



**Table 1. Response in Demand to a 20% Tariff Discount (€). CASE 1.**

<u>Commodity</u>	<u>Elasticity</u>	<u>€100 Standard Tariff</u>		<u>€80 Discounted Tariff</u>		<u>Changes in</u>
		<u>Wagons</u>	<u>Revenues</u>	<u>Wagons</u>	<u>Revenues</u>	<u>Revenues</u>
	(1)	(2)	(3)	(4)	(5)	(6)
Textiles	1.8	550	55,000	748	59,840	+ 4,840
Foodstuffs	2.4	350	35,000	518	41,440	+ 6,440
<u>Car Parts</u>	0.3	<u>100</u>	<u>10,000</u>	<u>106</u>	<u>8,480</u>	<u>- 1,520</u>
Total		1,000	100,000	1,372	109,760	+ 9,760

Assume that a tariff discount of 20% is under consideration. At that level, the respective price elasticities of demand for the three commodities are assumed to be, for purposes of illustration, 1.8, 2.4 and 0.3 as shown in column 1 of the table. That is, a 20% decrease in the tariff would result in a  $20\% \times 1.8 = 36\%$  increase in the demand for covered wagons to carry textiles but only a  $20\% \times 0.3 = 6\%$  increase in the demand from the car part shippers. Textiles have a low value in relation to their distribution costs and could, consequently be highly responsive to tariff changes: in this example, it is assumed that the foodstuff in question could conceivably be attracted from (or lost to) other routes or modes by a relatively small change in the standard rail tariff and, so, has a high demand elasticity: car parts, on the other hand, have a relatively high value and a derived demand linked to the output of cars and, so, are likely to have a relatively low elasticity with little sensitivity to tariff changes.

The estimated number of wagons that would be demanded for shipment of each of the commodities in response to the 20% discount and the resulting revenues are shown in columns 4 and 5 of the table. It can be seen from column 6 that the interaction of the additional revenues that would be earned from the new traffic with the decline in revenues from the traffic already being carried at the standard rate would result in a total increase of revenues of nearly 10%. The demand for wagons to carry all three commodities would rise but the extra revenue from the additional car part wagons would be insufficient to offset the revenues forfeited by existing car part wagons that would still have been conveyed at the standard tariff. But this deficit would still be exceeded by the additional revenues on textiles and foodstuffs giving a positive increase in total revenues.



Technical Note No. 4 Estimation and Use of Price Elasticities Of Demand

So, providing that the surplus exceeds the short-run variable costs of the additional wagons required, it would be in TRACECA's interest to offer the 20% discount to secure the additional surplus.

The estimated increases in revenues resulting from tariff changes, as demonstrated in Table 1, can be calculated by means of the following formula:

$$((1+((t^1-t^2)/t^1)e)wt^2) - wt^1$$

where  $t^1$  and  $t^2$  are the tariff rates before and after the change,  $e$  is the price elasticity of demand, and  $w$  is the number of wagons demanded before the tariff change. Thus, the increase in revenues for textile traffic in Table 1 would be:

$$((1+((100-80)/100) \times 1.8) \times 550 \times 80) - (550 \times 100) = \text{€}4,840$$

But the sensitivity of the above conclusion to the relative shares of the different commodities in the total traffic conveyed by the wagon type in question is demonstrated in Table 2. In this case it is assumed that the proportions would be reversed with car parts constituting the major share and textiles the smallest share.

**Table 2. Response in Demand to a 20% Tariff Discount (€). CASE 2.**

Commodity	Elasticity	€100 Standard Tariff		€80 Discounted Tariff		Changes in Revenues
		Wagons	Revenues	Wagons	Revenues	
	(1)	(2)	(3)	(4)	(5)	(6)
Car Parts	0.3	550	55,000	583	46,640	- 8,360
Foodstuffs	2.4	350	35,000	518	41,440	+ 6,440
Textiles	1.8	100	10,000	136	10,880	+ 880
Total		1,000	100,000	1,237	98,960	- 1,040



It can be seen from column 6 that the total revenue would actually fall following a 20% tariff discount with the amount lost on the numerous car part wagons that would still have been demanded under the standard tariff exceeding all the additional revenues that would have resulted from the increased demand for wagons for foodstuffs and textiles. In this case the 20% discount should not be offered.

It should be noted that the above conclusions would only apply in the case of a 20% tariff reduction since the price elasticity of demand for each commodity may vary with the magnitude of the contemplated price change from its original level, the variations differing according to commodity and local circumstances.. For instance, a 10% reduction may be just as effective as a 20% reduction in capturing the textile traffic from other routes or modes, in which case the increase in the number of wagons demanded will be the same as in the 20% case. The price elasticity for foodstuffs might decline slightly while that for car parts might remain unchanged. Thus, Table 3 illustrates how, even with the same traffic distribution as Case 2 above, a 10% discount could result in a small but positive increase in revenues, contrasting with a potential loss under a 20% discount

Case 3 also emphasises the importance of using the elasticity estimates as no more than a general guide to be used in conjunction with an analysis of local circumstances. Dependence on elasticity estimates alone in the last example would have concealed the benefit to be secured from a more modest discount than originally envisaged.

**Table 3. Response in Demand to a 10% Tariff Discount (€). CASE 3.**

<u>Commodity</u>	<u>Elasticity</u>	<u>€100 Standard Tariff</u>		<u>€90 Discounted Tariff</u>		<u>Changes in Revenues</u>
		<u>Wagons</u>	<u>Revenues</u>	<u>Wagons</u>	<u>Revenues</u>	
	(1)	(2)	(3)	(4)	(5)	(6)
Car Parts	0.3	550	55,000	567	51,030	- 3,970
Foodstuffs	2.0	350	35,000	420	37,800	+ 2,800
<u>Textiles</u>	1.8	<u>100</u>	<u>10,000</u>	<u>136</u>	<u>12,240</u>	<u>+ 2,240</u>



Total	1,000	100,000	1,123	101,070	+ 1,070
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The above examples show that the relationship between the size of tariff discounts, the price elasticities of different commodities and the level of changes in revenues is far from direct. They indicate the importance, for an effective implementation of TRACECA rail pricing strategy, of a continuous analysis and review of the factors, e.g. rates offered by competing modes or rail routes, that determine the price elasticity of demand of the principal commodities carried by or in prospect for TRACECA.

**Service and Time Elasticity of Demand.**

The most commonly used measure of the elasticity of demand in the transport sector is price elasticity as defined above. Other concepts are, however, of use in maximising the financial surpluses of transport modes, notably service and time elasticities of demand. These measure the response in demand not to a change in price but to a reduction in journey times or similar improvement in service, e.g. reduced pilferage of or damage to goods in transit. More formally, they measure the change in the level of demand for a particular commodity or service in response to the investment per unit of the commodity in financial terms in the improvement to the service. In this case  $e = (\text{percentage change in quantity}) / -(\text{investment per unit as percentage of price})$  and can differ substantially from the price elasticity according to the relative values the customer places on lower costs and better service.

At present there is insufficient data to estimate time and service elasticities in the TRACECA corridor and very few studies have been carried out on other rail systems.

Such elasticities are infrequently used and are difficult to measure. They do, in any case, fall outside the province of price setting but are of interest from the broader investment perspective in indicating whether a given amount would be more profitably used in reducing tariffs or improving services.



#### 4 Estimates Of Price Elasticity Of Demand For Transit Of Selected Commodities.

Table 4 Selected price elasticities

<u>Commodities</u>	<u>Approximate Elasticity</u>
Aggregate commodities	1.5
Textiles	2.7
Electrical machinery	2.1
Primary metals	2.0
Foodstuffs	2.0
Metal products	1.9
Non-electrical machinery	1.6
Refined petroleum products	1.5
Cotton	1.5*
Wood products	1.5
Stone, clay, glass products	1.5
Paper, plastic, rubber products	1.3
Assembled automobiles	1.3
Grains	1.2
Crude oil	1.2
Lumber	0.9
Chemicals	0.8
Fertiliser	0.8
Minerals	0.8
Coal	0.4

\* No estimate available: assumed to be equal to aggregate estimate

It can be seen that, in addition to the extreme case of textiles, relatively high price elasticities are shown by metals, metal products, machinery and foodstuffs, a situation found in practically all the studies analysed. Refined petroleum products, cotton and building materials (comprising wood, stone, clay, glass and plastic products), highly relevant to TRACECA transit traffic, also have moderately high elasticities. The commodities with very low or negative elasticities tend to be the heavier bulk commodities such as crude oil, lumber, mineral ores and coal. The estimated aggregate elasticity for all commodities is 1.5.

Given the limited data available for analysis, the above estimates should be regarded as first approximations to be refined by TRACECA marketing specialists in the light of detailed observations and study in the region.



## Appendix A

### STUDIES CONSULTED IN THE RAIL FREIGHT PRICE ELASTICITY ANALYSIS.

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**C5**



**TRACECA TRANSIT TARIFF AGENCY**



**TECHNICAL NOTE 5**

**Freight Forwarder Attitude Survey**

**Edition 1**





Technical Note No 5 Freight Forwarder Attitude Survey

**Disclaimer**

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**TTTA TECHNICAL NOTES.**

**Technical Notes Issued by the TTTA.<sup>1</sup>**

**Prepared UPTFT project**

- |                   |  |
|-------------------|--|
| Technical Note 1. | Price Setting Handbook. Edition 1.                           |
| Technical Note 2. | Best Practice for Trader Access to Railways. Edition 1.      |
| Technical Note 3. | Strengthening Railway Marketing. Edition 1.                  |
| Technical Note 4. | Estimation & Use of Price Elasticities of Demand. Edition 1. |
| Technical Note 5. | Freight Forwarder Attitude Survey.                           |
| Technical Note 6. | TTT Draft Regulatory Document                                |

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<sup>1</sup> The TTTA is the designated name of the Traceca Transit Tariff Agency. One of the key roles of the TTTA is to carry out research and to issue advice to TTTA partners. To best utilise the work of the UPTFT project, its outputs have been configured as Technical Notes that could be issued by the TTTA.



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## 1 Rationale and Purpose of Freight Forwarders Survey

In 2002 the Freight Forwarders survey was carried out. Purpose of the survey was to establish the following:

- Views of users of TRACECA route on tariff policy
- Issues TRACECA users would like to change in tariff setting procedures
- Hidden charges freight forwarders face while sending a shipment through TRACECA
- Issues that should be addressed apart from pricing to improve access by traders or shippers to TRACECA services
- Factors, which users consider most important when choosing a route to ship goods
- Commodities transported by freight forwarders, choice of transport modes for them and reasons for preferring them
- View of freight forwarders on national railway organizations
- Main obstacles on TRACECA corridor
- Availability of information on TRACECA
- Collect Freight forwarders information for the TRACECA User Guide.



## 2 Organisation, Methodology and Sampling

In April – May 2002 several designs of the questionnaire were produced and the final one was forwarded to TPWG. In June the final design was approved by TPWG in Protocol.

In May the process of choosing freight forwarders started. The main requirements included for the freight forwarders were the following: the freight forwarder should be an independent company with no shares owned by the national railway organization; they should be carrying goods using railways; have wide experience using Traceca and have a national accreditation.

In July, after the final version of the questionnaire was approved by TPWG, it was distributed among chosen freight forwarders. The method of survey was interview-led. Local representatives were used to interview freight forwarders in person. This method was proved successful as most of the questions could be clarified on site. Ian Smith and John Crawford piloted the questionnaire during their site visit in May.

We were planning to interview 51 forwarding companies. Unfortunately, only 40 of them were fit to be analyzed for various reasons. Below is a breakdown of responses by countries:

Country	Planned	Received	% (Received/Planned)
Azerbaijan	3	2	67%
Bulgaria	5	6	120%
Georgia	8	8	100%
Kazakhstan	5	3	60%
Moldova	4	4	100%
Romania	5	6	120%
Tajikistan	5	1	20%
Turkmenistan	5	2	40%
Ukraine	7	8	114%
Uzbekistan	5	0	0%
<b>Total:</b>	<b>51</b>	<b>40</b>	<b>78%</b>

All participants were official accredited freight forwarders in their countries. 35% were accredited in foreign countries. Participated freight forwarders expressed their wish to be included into the TRACECA User Guide at a later stage.

In August and September questionnaires received started being analyzed to formulate appropriate recommendations. Results of the survey were presented to representatives of Traceca railway organizations in Baku in October 2002.



### **3 Conclusions arising from the survey and suggested actions**

Results from the survey show that customers are dissatisfied with the following issues when dealing with national railways:

- Lack of unified tariff policy in TRACECA corridor
- Absence of a through flat rate along TRACECA corridor.
- Complicated Tariff currency and exchange rates
- Propensity of hidden charges
- Excessive bureaucratic procedures and formalities
- Lack of unified requirements for conditions of carriage in TRACECA corridor
- Delays as a result of customs and border-crossing procedures
- Lack of information of TRACECA
- Lack of customer satisfaction concept

The study revealed a consistent failure of railway companies to understand and fulfil the needs of freight customers. In general, railways proved too slow to respond to requirements of the market, in which they operate.

In order to change the situation it is necessary to switch the focus towards the market, study its needs and give commercial departments more say in the decision-making process. This will require a significant change of culture of railway organisations. The activities of railway management will need to switch to identifying, understanding and responding to the needs of railway customers; developing tools to measure customers' needs and requirements and procedures, which ensure that they're met; identifying costs and income from different types of traffic and customers; developing a marketing organisational structure within the railways and on TRACECA level, which will ensure that railways satisfy new commercial goals.

Just setting up procedures and systems won't automatically guarantee success. The right attitudes of customer awareness need to be developed on all levels of TRACECA machine, starting from Traceca Secretariat and Heads of Railways to the lowest operating staff level. This is a big challenge due to a large number of railway organisations and diversion of corporate cultures.

One of the ways out for Traceca railways is to adopt an unified Inter-modal Commercial Strategy. The draft of which can be found in CHR draft protocol.



## Technical Note No 5 Freight Forwarder Attitude Survey

The survey also pointed out how important is tariff issue to railway customers. Tariff policy issues, such as introduction of unified tariff policy, tariff rates and charges, hidden charges, currency and exchange rates have already been addressed in a framework of this project. It resulted in production of a Price Setting Handbook, which has binding effect on all railways in regards to transit traffic through TRACECA.

Delays as a result of customs and border-crossing procedures and unified conditions of carriage are part of an ongoing project targeted on improving border-crossing procedures and Traceca legal base.

In order to improve customers' access to TRACECA railways in terms of **information availability and commercialisation of railways' practices** some necessary steps should be undertaken. Recommendations are given below in order to improve the following:

- Lack of information of TRACECA
- Lack of customer satisfaction concept
- Excessive bureaucratic procedures and formalities
- Delivery timing on the route
- Complex negotiation procedures,
- Lack of consignment tracking and monitoring
- Lack of common standards of trader access

Please, note that we recommend the following solutions, but whether they will be taken or not is your decision and it will require additional funds and your thorough consideration.

### ***Conclusion - Lack of information on TRACECA***

#### **Recommendation:**

As the survey indicated most of information freight forwarders gather from personal contacts, agents and partners. There is no single database for TRACECA users.

#### **User Guide**

In the framework of this project a User Guide for transport operators, consignors and consignees wishing to use the TRACECA transport network will be prepared. It will be in the booklet form and in the form of the web site.

As planned the User Guide it will contain the following:



## Technical Note No 5 Freight Forwarder Attitude Survey

- List of TRACECA member states
- Summary of the main tariffs and transit fees
- Road, rail, port and shipping route maps
- Main operators with contact details
- Traceca authorities contact details
- Relevant projects
- Routes in the region
- Notice of changes of regulations
- Summarised trading conditions
- Advertising of operators and Traders

It will have forms of unified Bill of Lading and enquiry forms for consignors at a later stage after they are developed. On the web site users will be able to download them.

Traceca users will have an opportunity to register on User Guide site, which will provide useful information for the Traceca customer base.

User Guide site and brochure can provide space for advertising of services, which can provide additional cash inflow to TTTA.

Development and site maintenance can be done either by IT person / IT group working in the TTTA or by contract with an outside party.

Technical requirements will include procuring a powerful server, separate broadband internet line and etc. Technical requirements will need to be developed in full detail.

### **Traceca Newsletter**

Newsletter is an excellent tool for informing Traceca users on monthly events, progress of various projects and policy changes. It can be produced monthly in an electronic format and e-mailed to site users or can be viewed online.

Putting Newsletters together will be a responsibility of a Marketing Intelligence Department and its publication – IT group.

### **Creation of a Help Line service**

Telephone Help Line or Information service can be a useful tool for providing information on Traceca services, answering questions regarding Traceca work, and directing people to relevant contacts in case of problems.





This service will require reliable telephone lines and an operator who will be handling the calls. A separate telephone number should be dedicated to the help line service. This service will need to be established within the TTTA or Market Intelligence Department.

***Key Conclusion - Excessive bureaucratic procedures and formalities***

The problem of having unified transit documentation and simplification of customs and border crossing procedures is being address by Harmonisation of Border Crossing Procedures project and Common Legal Basis for Transit Transportation project. Also, the Code of Best Practice (Technical Note 2) gives specific guidelines on improving traffic handling procedures.

**Recommendation:**

Faster handling of transport documentation can be achieved by establishing customer care/customer relations centres in the railways, which are to deal with all procedures of handling enquiries, requests approval and dealing with additional information needs. In future they can evolve into the sales force of railways. Their main responsibilities may include:

- Maintaining close contact with main customers and communicating with potential clients who are thinking of using the route;
- Representing the needs of customers;
- Reporting sales/traffic carried figures for Traceca;
- Collection of intelligence information on competitors;
- Processing requests for freight transportation

Deadlines for handling requests should be set up and railways must take care and meet them.

It will be useful if Customer Care departments for handling Traceca transit freight become a standard in railways and it will be railways responsibility to set them up. They can provide useful information for the TTTA.

Customer Care departments can handle other types of freight but this is will be on railways discretion.

***Key Conclusion - Lack of customer satisfaction concept***



**Recommendation:**

As mentioned in the above section it is necessary to introduce Customer Care departments within railways.

Customer Help Line will be another tool of information exchange with customers. Traceca customers may also ask questions and receive information through the e-mailing service.

Customer satisfaction concept should become part of corporate culture not just in TTTA but also on all structural levels of participating railways. The right attitudes of customer awareness need to be developed on all levels of TRACECA, starting from Traceca Secretariat and Heads of Railways to the lowest operating staff level.

***Key Conclusion - Delivery timing on the route***

**Recommendation:**

A number of things are already being done to improve delivery time in Traceca:

- Harmonisation of border-crossing procedures project, which should improve customs and border-crossing procedures;
- Many railways are working on improving condition of railways infrastructure, which will result in reduction of speed restrictions.

Standard delivery times for different destinations should be calculated and officially approved. The Code of Best Practice should contain delivery time guidelines, which are to be met by railways on Traceca routes. Railways need to make sure they meet promised deadlines. Customer need to be informed if delivery is late, explaining the reasons and expected time.

***Issue - Lack of consignment tracking and monitoring***

**Recommendation:**

Not all railways can boast a system of consignment tracking and monitoring. Very often railways don't have reliable lines and systems to track consignments.

In future, when the network is in place it is strongly recommended that such system is installed. Customers need to be informed, if requested, on their consignment position. It makes sense to allow customers to track their freight system online when technology is right.



***Issue - Lack of common standards on trader access***

**Recommendation:**

Lack of common standards on trader access is dealt in a Code of Best Practice (Technical Note 2). This document should be thoroughly revised and made obligatory for railways, which are part of the Agreement.

Appendix A shows our view on the Marketing Function in Traceca and is a food for thought. If future our suggestions can be elaborated and implemented. But we leave this in your discretion.

Appendix B contains the presentation of survey results, which took place in October 2002.



## **APPENDIX A - SETTING UP TRACECA MARKET INTELLIGENCE FUNCTION WITHIN TTTA**

### ***Need for a Market Intelligence Function***

Most TRACECA Railways have just started to establish marketing structures within their organisations and they haven't started functioning properly yet. Therefore making business for shippers and traders with Railways a very complex task. They have to go through complex procedures as transportation should be planned in advance and it involves many different departments within Railways. Therefore, traders commonly use services of freight forwarders to overcome difficulties of dealing with Railways directly as was mentioned previously.

Besides having Marketing departments in each railway, it will be useful to establish a Market Intelligence Function within TTTA responsible for creating a joint Marketing strategy for all participating railway companies. It can also be responsible to maintaining the main databases of traders and tariff rates of neighbouring countries and operating the computerised model.

### ***Proposed Marketing Organisational Structure***

Marketing function in Traceca is currently greatly undervalued. We believe that not just the technicalities are important but Traceca **should adopt common marketing strategy for the corridor** and market its transit services on a global level centrally. It is time for individual railway organisations to step down from their individualistic positions and think about running a profitable and successful transport corridor together.

Currently there is no structure on TRACECA level overlooking strategic marketing issues and this issue is not being addressed.

The position of marketing department within any organisation reflects the significance of the function and determines significance in achieving goals. New structure should allow the following:

- Active communications between Secretariat of TRACECA, Head of TRACECA Marketing Department and Heads of Marketing Departments in Railways when they understand the significance of customer-oriented culture;
- Successful co-ordination of commercial and operational activities in railways;



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- Deciding marketing strategies for Traceca under single Traceca Market Intelligence Function with consultation and input from participating railways. Individual domestic railway marketing policies to be dealt with by railways themselves;
- It will be advantageous if railway organisations will have all elements of the marketing mix under their management, that is sales, advertising and promotion, pricing, market research and planning, and, ideally, a group providing advice on technical condition of carriage and logistics. Marketing departments' structure in railways maybe functionally based or service based or they can be established as separate business unit – it doesn't matter and we are not dealing with it here, but what is important – they should exist and have their say in railways activities.

### ***Appointment of Head of Market Intelligence Function.***

Ideally, the person who will become Head of TRACECA Market Intelligence Function should be the person, who is dealing with railways but not part of it. He/she can have a freight forwarding background with experience in managing marketing activities for the company. It will ensure that this person knows thoroughly situation within the railway sector but also aware of market needs and thinks “outside the box”.

Head of the Market Intelligence Function should be the person outside of the Railway community, possible a person, who used to work for some major international freight forwarding company and who's got the outside knowledge about dealing with Railways and other organisations as a third person.

### **Marketing Management Process and Areas of Responsibilities**

Marketing or commercial department takes the main responsibility for translating customer needs into service requirements and communicating them to the service providers and insuring that they satisfy customer needs.

An active communication between Traceca marketing body and individual marketing departments should be established. If the first one decides that the block trains should operate across the route, the joint decision should be made about pros and cons between the latter.

Forecasting, pricing policies, providing advice to customers on logistics and conditions of carriage, Traceca promotion, maintaining User Guide (which is part of advertising and promotion) will be the main activities of Market Intelligence Function. It is important to mention that activities of TRACECA Market Intelligence Function and marketing department of individual railways should function in harmony with one another and supplement each other in order to maximise effect on the market.



### ***Forecasting Function***

- Receipt, analysis and maintenance of information on potential Traceca traffic.
- Advisory services to TTT signatories of potential market opportunities
- Research and advise on appropriate tariffs and other service attributes required for new market opportunities or for enhancing, or retaining existing traffic.

### ***Logistics and conditions of carriage function***

This function will advise customers in conditions of carriage, traffic handling issues and materials handling requirements.

This group can also provide telephone line help service, which was mentioned in previous sections.

### ***Advertising and Promotion Function***

This function will be responsible for all types of advertising, participating in exhibitions and fairs, and also maintaining User Guide site, distribution of printed materials, and preparation of newsletters.

## **Marketing Activities**

### ***Traceca Marketing Plan***

One of the first and ongoing objectives of a centralised Traceca Marketing Department will be to produce strategic marketing plan.

It should be done with close co-operation from individual railways. Traffic forecasting... It will be a good tool for expressing commercial objectives of the corridor; strategies of realisation of these objectives and the actions to be taken in order to realise strategies set.

What should be included into the marketing plan:

- Mission statement for TRACECA.
- TRACECA Objectives
- SWOT Analysis
- TRACECA Strategies
- Actions
- Forecast of traffic, financial figures – revenue and profit projections
- Resources
- Analysis/audit of results



Marketing plan should contain strategies by individual market segments.

### ***Carrying out Surveys***

Few have marketing departments and none carry out regular market research. It is necessary to carry out regular market researches.

### ***Gathering information on market segments***

Marketing strategies also should be applied in different traffic/market segments. It is important to know what factor is the driver when customers make decision about which mode of transport to choose. As the cheapest service might not be selected if other requirements like transit reliability or consignment security or delivery time are not present.

Different market segments will typically have different priorities in terms of price and service factors. If customers needs are identified, railways will be in a better position to apply specific price and service marketing strategies to seize those traffics.

### ***Customer Database***

To understand how to improve customer access to railways first it is necessary to know railway existing and potential clients. The first step is to create a database for each participating country in TRACECA with current and potential railway customers. It should contain all contact information, specialisation, details of production volumes, transport volumes, dates and volumes of each shipment, their clients, etc.

Marketing departments in Railways should lead the actual production of the database and be fully involved in the project.

This database should be updated on a regular basis and include information of all Traceca customers including:

- Name of the company and location;
- Personal contacts;
- Nature of business;
- Main outline of corporate structure;
- Market share;
- Commodities transported and routes used;
- Traffic volumes transported and transportation requirements (frequency of service, special loading/unloading facilities);
- Current tariffs and discounts applied;
- Any other relevant information.



### ***Collecting information on competitors***

One of the main functions of marketing function is to gather, analyse and act on activities and strategies of competitors. If competitors strategy becomes known to Traceca marketing function, railways can react accordingly in time or even lobby their governments in order to achieve a more competitive basis.

Gathering information not only on market segments but also on competitors will help railways to apply successful customer-oriented strategies and secure more traffic.

### ***Tariffs of neighbouring countries***

In order to constantly monitor competitiveness of TRACECA route in comparison with other routes including those of competing railways outside TRACECA it will be useful to create a database of tariff rates of other countries. A person should be appointed to be responsible for monitoring tariff rates and updating the database. This database should be maintained and updated.

Based on the above-mentioned database a computerised model can be developed in future, which will calculate:

- Cost of shipping particular commodities through the TRACECA route
- Approximate total cost of a commodity shipped from A to B (Turkmenistan to Italy) to the customer taking into account transportation costs. For example, price for a tonne of cotton from Turkmenistan to Italy. This will involve collection of data on tariffs of neighbouring countries (both rail and ports).





## **APPENDIX B - TRADER ACCESS SURVEY OF FREIGHT FORWARDERS USING TRACECA ROUTE**

### **Agenda**

1. Objectives of the Survey
2. Organisation of the Survey
3. Methodology and Sampling
4. Interim Survey Results
  - 4.1 Rail Tariffs and Rates
  - 4.2 Factors Affecting Mode and Route Choices
  - 4.3 Rail Performance
  - 4.4 Sources of Information
5. Conclusions
6. Next Steps

### **1. Objectives of the Trader Access Survey**

Purpose of this presentation is to show interim results of the Trader Access Survey. More specifically, establish the following:

- Views of users of TRACECA route on tariff policy
- Issues TRACECA users would like to change in tariff setting procedures
- Hidden charges freight forwarders face while sending a shipment through TRACECA
- Issues that should be addressed apart from pricing to improve access by traders or shippers to TRACECA services
- Factors, which users consider most important when choosing a route to ship goods
- Commodities transported by freight forwarders, choice of transport modes for them and reasons for preferring them
- View of freight forwarders on national railway organisations
- Main obstacles on TRACECA corridor
- Availability of information on TRACECA.

And to collect Freight forwarders information for the TRACECA User Guide.



## 2. Organisation of the Trader Access Survey

April – May - Several designs of the questionnaire were produced

May - the process of choosing freight forwarders started

June - the final design was approved by TPWG in Protocol

July - the questionnaire was distributed among freight forwarders

August – September – questionnaires received were being analysed to formulate appropriate recommendations

## 3. Methodology and Sampling

- o ● Planned number of freight forwarders to interview – 51
- o Questionnaires analysed so far – 40
- o Breakdown of responses by countries:
- o The method of survey was interview-led. Local representatives were used to interview freight forwarders in person.
- o This method was proved successful as most of the questions could be clarified on site.
- o ● The Questionnaire was piloted in May 2002.

Country	Planned	Received	% (Received/Planned)
Azerbaijan	3	2	67%
Bulgaria	5	6	120%
Georgia	8	8	100%
Kazakhstan	5	3	60%
Moldova	4	4	100%
Romania	5	6	120%
Tajikistan	5	1	20%
Turkmenistan	5	2	40%
Ukraine	7	8	114%
Uzbekistan	5	0	0%
<b>Total:</b>	<b>51</b>	<b>40</b>	<b>78%</b>

The survey studied 40 freight forwarders from the following countries-participants in TRACECA: Azerbaijan, Bulgaria, Georgia, Kazakhstan, Moldova, Romania, Tajikistan, Turkmenistan and Ukraine.

All participants are official accredited freight forwarders in their countries. 35% are accredited in foreign countries.

Participated freight forwarders expressed their wish to be included into the TRACECA User Guide.



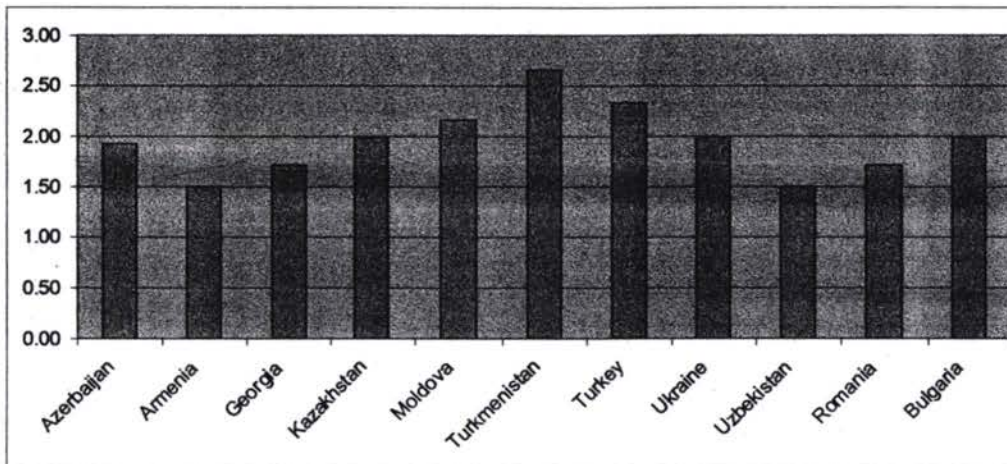
#### 4. Interim Survey Results

##### 4.1 Interim Survey Results: Rail Tariffs and Rates

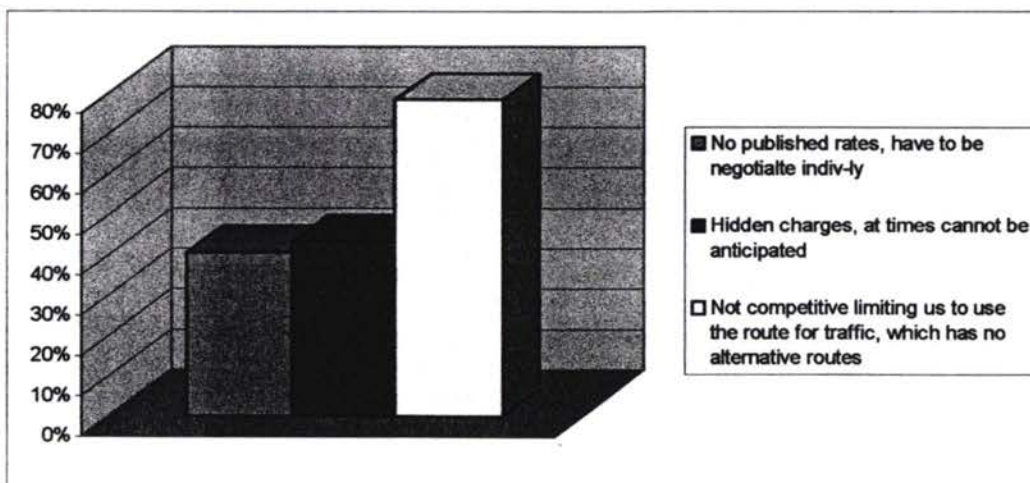
Respondents were asked to name the three most expensive national railway organisations in prioritised order. The most expensive named was given the score of 3, second – 2, the 3d most expensive – 1.

The most expensive railway organisation was named Turkmenistan railways (average score – 2.67), second – Turkey (2.33) and third place was divided between Kazakhstan, Ukraine and Bulgaria (2.00).

Answered by 29 respondents.



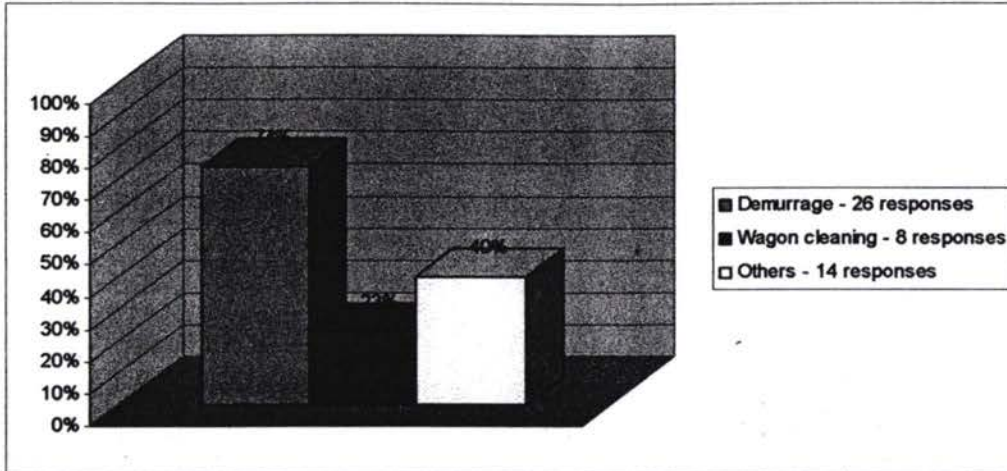
78% of respondents answered that railway tariff rates in TRACECA region were “Not competitive limiting us to use the route for traffic, which has no alternative routes”. Answered by 37 respondents.





## Technical Note No 5 Freight Forwarder Attitude Survey

Among hidden charges that are the most common and cannot be anticipated beforehand but influence the total transportation cost most freight forwarders named demurrage. Answered by 35 respondents.



Other hidden costs indicated by respondents included:

- Corrupted customs and other controls
- Changes of exchange rate between currency of payment and currency of tariff imposed by the railway
- Poor legal basis and absence of unified policies in the corridor
- Delivery time and handling in ports
- Technical conditions of carriage

Freight forwarders were asked if they would use railway services more if tariffs are decreased by 10, 25 and 50%. Below on the tables are the answers for different types of commodities. 35 freight forwarders answered this question.

Tariffs are reduced by 10%

5% increase for oil products, food and others	1
Glass bottles	1
General cargo	1
<b>Total:</b>	<b>3</b>



## Technical Note No 5 Freight Forwarder Attitude Survey

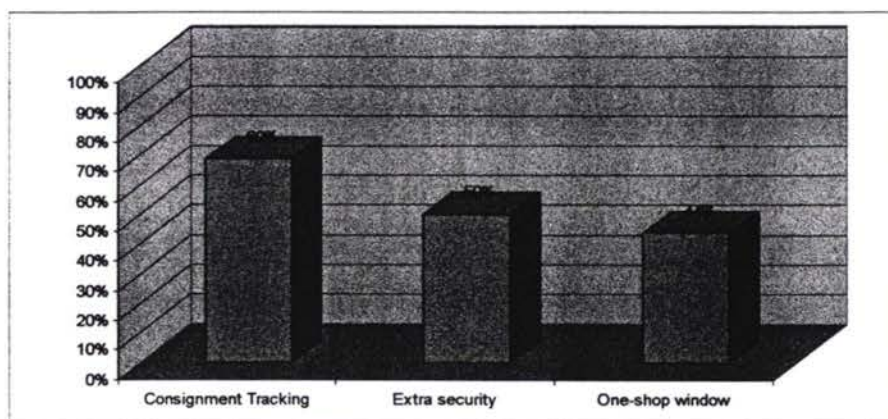
### Tariffs are reduced by 25%

10% increase for oil products, food and others	1
Containers	2
Cotton	1
Glass bottles	1
Canned food	1
Oil products	1
Wine	1
Metal	3
Agricultural products	2
Machinery, equipment	2
Bulk and liquid cargo	3
All types	3
<b>Total:</b>	<b>21</b>

### Tariffs are reduced by 50%

20% increase for oil products, food and others	1
Cigarettes and tobacco	1
Liquid cargo	1
General cargo	1
Food products (inc.canned)	2
Metal	1
Timber	1
Wine	1
Humanitarian goods	1
Construction materials	1
All types	8
<b>Total:</b>	<b>19</b>

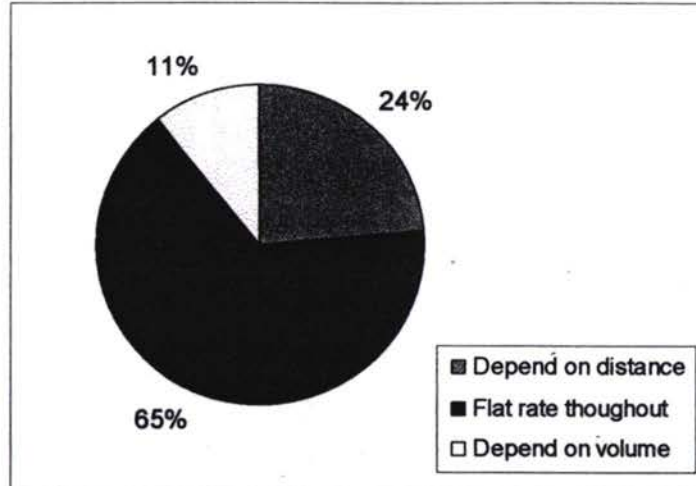
Respondents were asked if they would pay extra for Consignment Tracking, Extra security, One-shop window. Out of 40 freight forwarders 8 said that they wouldn't pay extra as it should be part of the service. The breakdown of opinion of the others is as follows:





## Technical Note No 5 Freight Forwarder Attitude Survey

Freight forwarders were asked what they would you like to change in tariff-setting procedures.



Most forwarders would like to have a flat rate through TRACECA – 66% (25 responses). 24% (9 responses) were for tariff rates depending on distance, on which the goods are carried. And other 11% (4 responses) were suggesting that tariff-setting procedures were depending on volume of shipment.

Comments included: to have discounts based on the period of prepayment and regularity of delivery. 38 respondents answered this question.

Respondents were asked if they are satisfied with current payment conditions. One third of freight forwarders answered “yes” (14 responses) and two thirds – “no” (24 responses). 38 respondents provided their opinion on this matter.

Reasons for lack of satisfaction:

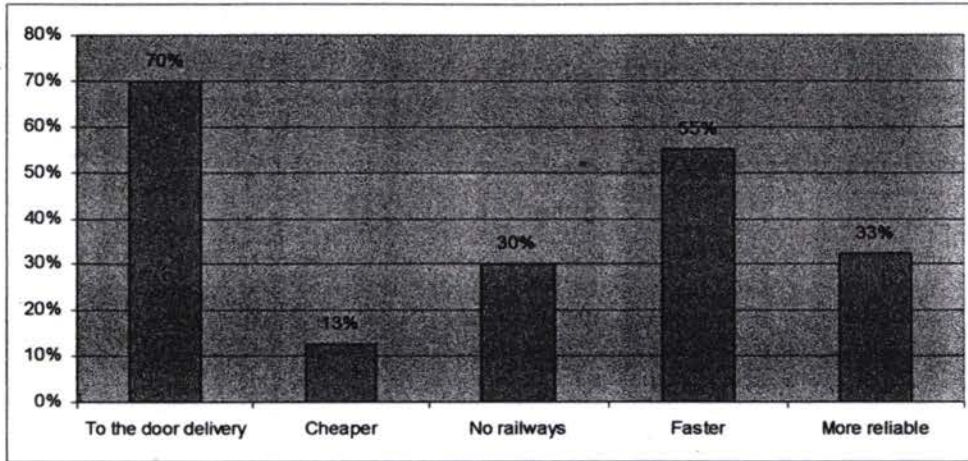
- ◆ Prepayment conditions
- ◆ Provide credit conditions for big freight forwarding companies with big freight turnover
- ◆ Different payment methods (letter of credit)
- ◆ More stable tariff rates not depending on changes in currency rates



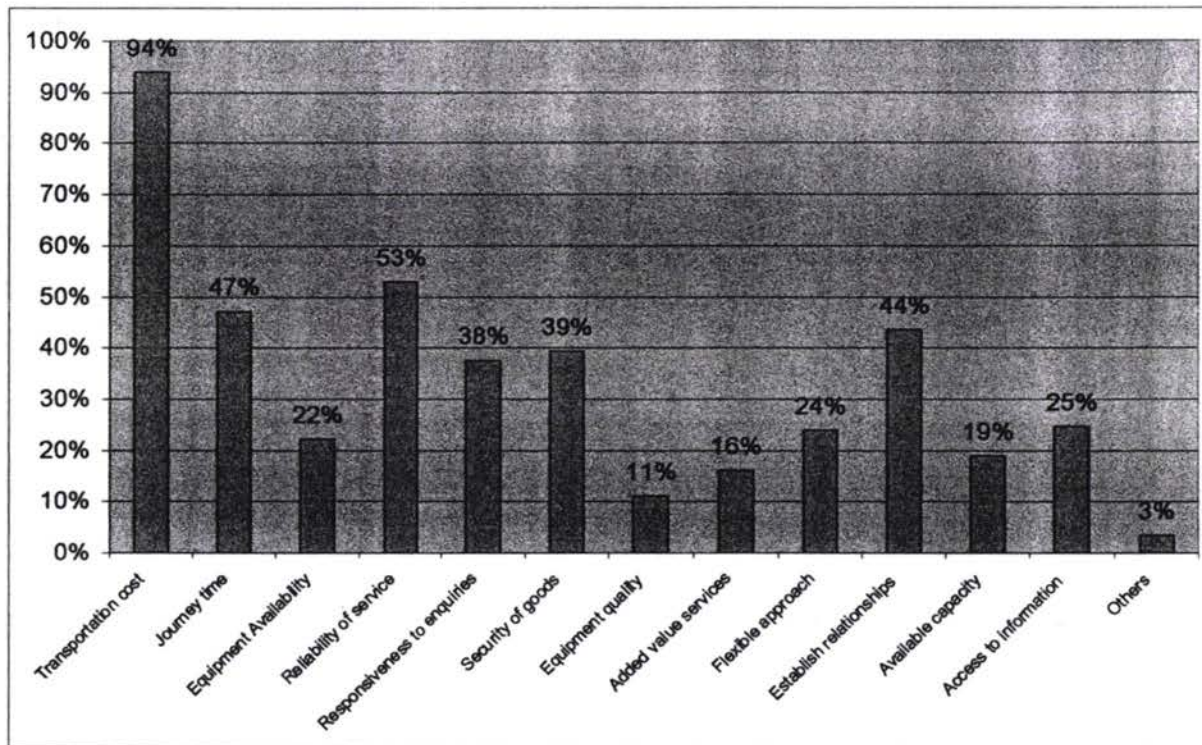
### 4.2 Interim Survey Results: Factors Affecting Mode and Route Choices

68% of respondents use both railway and road transport and gave the following reasons for preferring road transport for some commodities:

Answered by all 40 respondents.



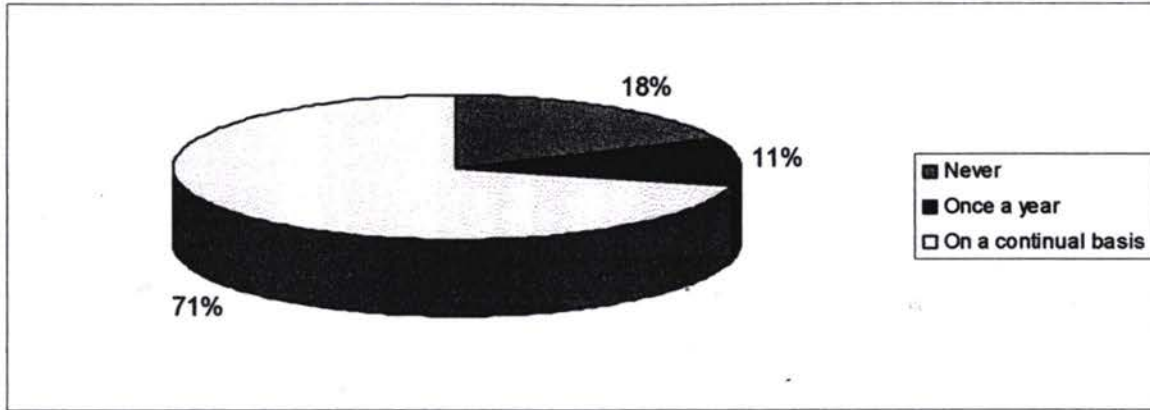
37 respondents named the following factors, which most influence decision regarding the route choice.



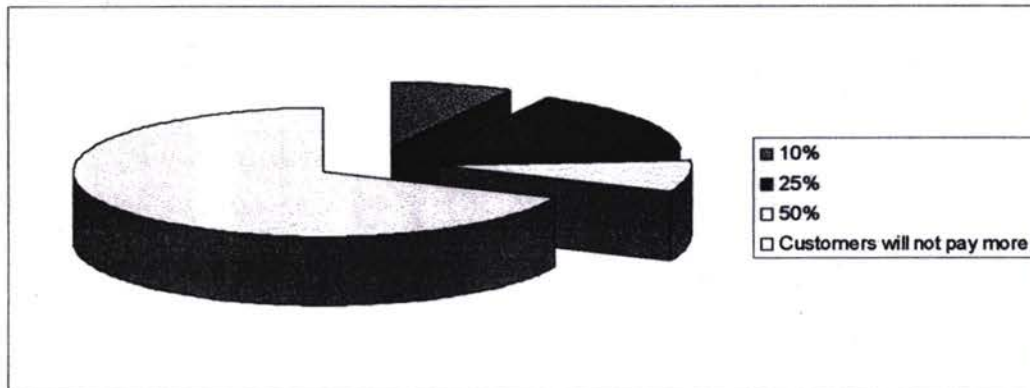


Technical Note No 5 Freight Forwarder Attitude Survey

Most of 40 respondents-freight forwarders review their transport strategy on a continual basis. Out of 7 respondents, who never reviewed their strategy, 4 are not using road transport at all.



68% of respondents indicated that they wouldn't pay more for railway services in case of transit time improvement. Answered by 37 respondents.



4.3 Interim Survey Results: Rail Performance

Freight forwarders were asked to evaluate the performance of national railways they work with on 1 to 10 scale (1 – the lowest mark, 10 – the highest). Below are results for national railways by countries:

Armenia	4.0	3.2	4.4	3.5	3.8
Azerbaijan	5.3	4.2	4.8	4.6	4.7
Bulgaria	6.3	6.3	5.9	6.5	6.3
Georgia	6.0	4.9	5.5	5.0	5.3
Kazakhstan	5.6	6.0	5.4	5.2	5.6
Kyrgyzstan	4.3	4.3	4.1	4.2	4.2
Moldova	6.1	5.9	6.2	6.1	6.1
Mongolia	5.5	5.5	4.5	4.5	5.0
Romania	6.5	6.3	5.7	6.9	6.3
Tajikistan	4.8	4.4	4.6	4.6	4.6
Turkey	4.7	3.7	3.9	4.0	4.1
Turkmenistan	3.6	3.4	3.2	3.1	3.3
Ukraine	6.1	5.7	5.7	6.6	6.1
Uzbekistan	4.8	4.5	4.4	4.5	4.6
Russia	6.6	6.2	5.5	6.7	6.3
EU Countries	7.7	7.3	7.9	7.8	7.7

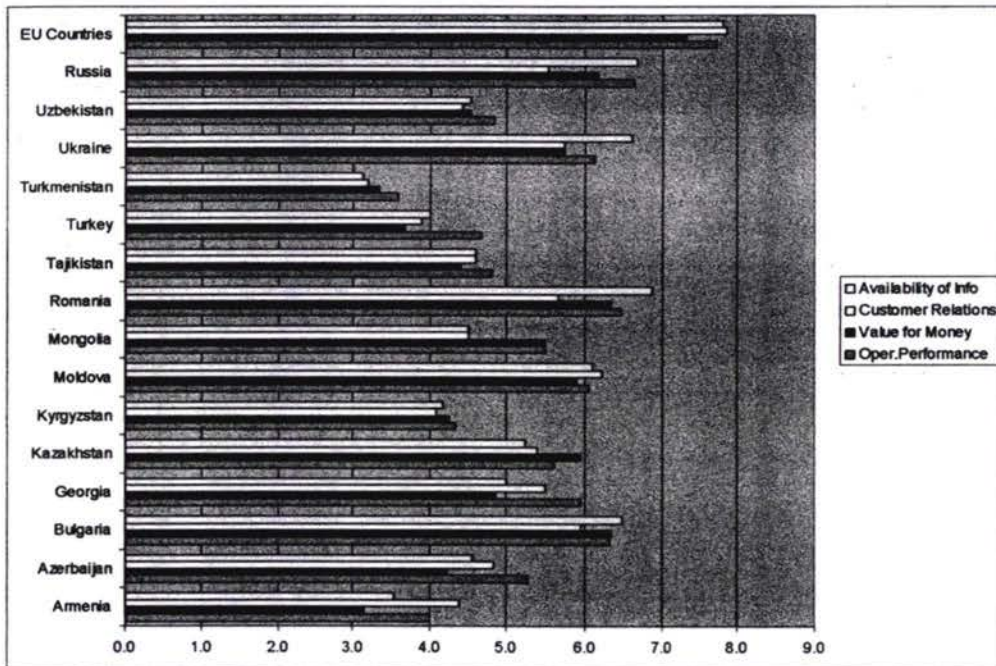
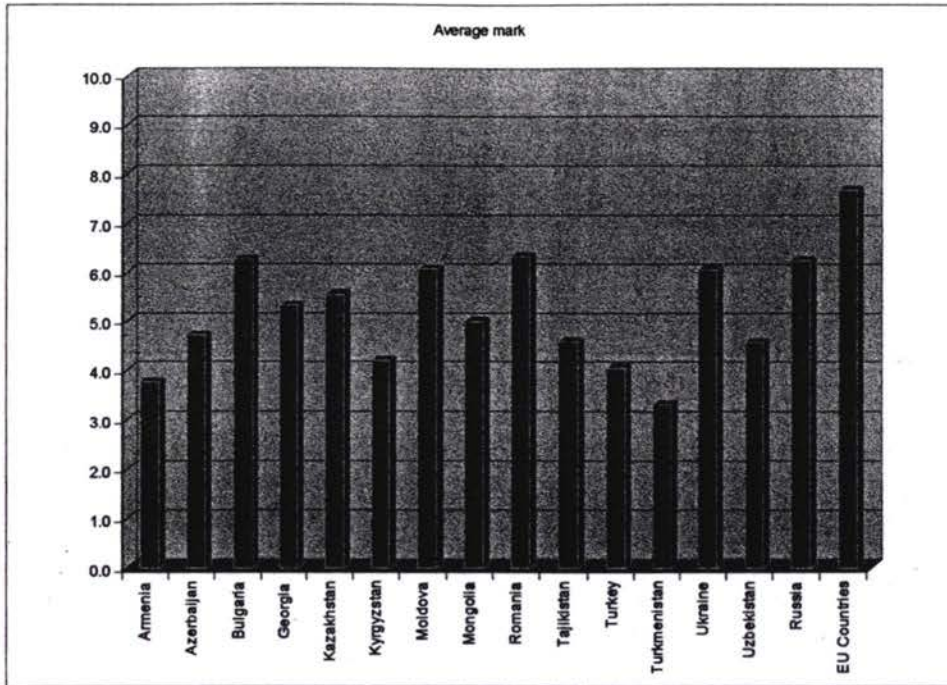
Scott Wilson

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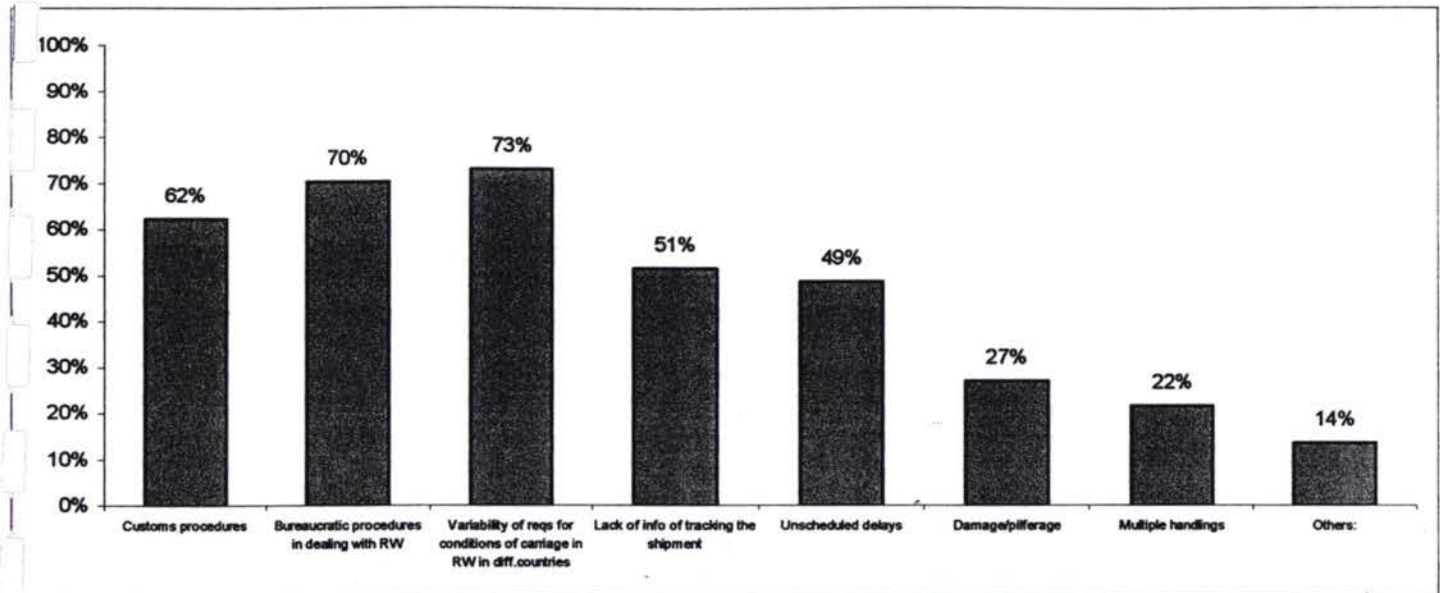
Technical Note No 5 Freight Forwarder Attitude Survey



Freight forwarders (37 responded) indicated the most difficult obstacles they endure when sending a shipment through TRACECA route:



## Technical Note No 5 Freight Forwarder Attitude Survey



Other obstacles, which were indicated, included:

- Uncompetitive tariffs
- Constant fastening or supporting of transit cargo (costs add. Money) + 20USD per wagon to track the shipment
- Corruption and bribery
- Readdressing of cargo and making relevant changes in a Way Bill;
- Inexpedient changes of tariffs;
- Lack of info: Georgia, Azerbaijan, Armenia, and Turkmenistan
- Corruption of control services (radiological, ecological and etc.)
- Border crossings
- Customs procedures in particular crossing the territories of Uzbekistan and Kazakhstan

Freight forwarders were asked to prioritise factors, which need improving in the way railways conduct business on 1 to 10 scale (1 – the lowest mark, 10 – the highest).

Tariffs level	8.1
Standard Conditions of Carriage	7.1
Simplified Documentation	6.6
Rate Negotiations	6.4
Customer Relations	5.9

Other factors for improvement included:

Unified Tariff policy, currency exchange rates	10
Transparency and work on opened basis	10
Reduction of transit time	8
Bureaucratic procedures	5
Ageing of wagons	5



#### 4.4 Interim Survey Results: Sources of Information

Freight forwarders named the main sources of the following information:

	Number of ff answered	Official sources	Personal contacts	Software/ Internet
Price Information	34	50%	44%	12%
Tariffs and rates of competing transport modes	26	31%	77%	8%
Import rules and regulations of foreign countries	26	38%	62%	31%
Methods of shipping	24	54%	46%	17%
Government Export Regulations	26	65%	35%	12%
Port Charges	27	63%	48%	7%
Documents connected with Foreign Trade	22	55%	32%	32%
Changes in Tariffs	28	61%	46%	21%

Most of information freight forwarders gather from personal contacts, agents and partners. There is no single database for TRACECA users.

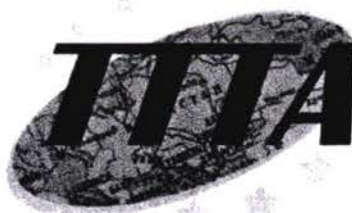
#### 5. Conclusions

Freight forwarders indicated the following issues, which require immediate attention for improving access to railways for TRACECA users:

- Adopt a unified policy in TRACECA corridor
- Competitive transit tariff rates – opportunity to attract more cargo
- Introduction of flat rate along TRACECA corridor
- Tariff currency and exchange rates
- Eliminate to the minimum hidden charges
- Eliminate to the minimum excessive bureaucratic procedures and formalities
- Unified requirements for conditions of transportation along TRACECA corridor
- User Guide, which provides sufficient amount of information for users of TRACECA route

**C6**

**TRACECA TRANSIT TARIFF AGENCY**



**TECHNICAL NOTE 6**

**Traceca Transit Tariff  
Draft Regulatory Document and  
Explanatory Notes**

**Edition 1**

**TTTA TECHNICAL NOTES.****Technical Notes Issued by the TTTA.<sup>1</sup>****Prepared UPTFT project**

Technical Note 1.	Price Setting Handbook. Edition 1.
Technical Note 2.	Best Practice for Trader Access to Railways. Edition 1.
Technical Note 3.	Strengthening Railway Marketing. Edition 1.
Technical Note 4.	Estimation & Use of Price Elasticities of Demand. Edition 1.
Technical Note 5.	Freight Forwarder Attitude Survey.
Technical Note 6.	TTT Draft Regulatory Document

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<sup>1</sup> The TTTA is the designated name of the Traceca Transit Tariff Agency. One of the key roles of the TTTA is to carry out research and to issue advice to TTTA partners. To best utilise the work of the UPTFT project, its outputs have been configured as Technical Notes that could be issued by the TTTA.

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# Draft

## TRACECA TRANSIT TARIFF POLICY FOR INTERNATIONAL FREIGHT TRANSPORTATION BY RAIL PORTS AND SHIPPING

### 1 PREAMBLE

#### 1.2 Parties to the agreement

The said Traceca Transit Tariff Policy (TTT) is a product of the Basic Multilateral Agreement (MLA) on International Transport for the Development of the Europe-Caucasus Asia Corridor signed on 8<sup>th</sup> September 1998 in Baku for and on behalf of:

The Republic of Armenia - ARM

The Republic of Azerbaijan - AR

The Republic of Bulgaria - AR

The Republic of Kazakhstan - KR

The Kyrgyz Republic - KRG

The Republic of Moldova - RM

Romania - R

The Republic of Tajikistan - TR

The Republic of Turkey - TUR

Ukraine - U

The Republic of Uzbekistan - UZR

and by their hand are hereinafter known as the Parties to this agreement.

#### 1.3 The subject of this agreement

The subject of this agreement concerns a common tariff policy and *inter alia* a common basis for its derivation and application by the Parties to this agreement.

##### Railways Ports and Shipping Lines

The railway, ports and shipping lines implementing this agreement are the national railways of the Parties to the agreement, the Ports of Varna, Borgas, Samsun, Illechevsk, Odessa, Batumi, Poti, Baku, Turkmenbashi, Aktau, the Caspian Shipping Company and UKRAFERRY.

#### 1.4 Policy of the TTT

The TTT particularly responds to Articles 3,5 and 6 in the main part and articles 4 and 6 in the technical annex of the Basic Multilateral Agreement. In particular it aims to ensure that

Traceca provides alternative transport routes to secure international trade for the parties to this agreement and that services provided on Traceca are economically sustainable.

#### 1.5 Objectives of the TTT

In accordance with the agreed policy goals the objectives of the TTT are *to simplify and unify rail tariff policy and integrate it with ports and shipping to reflect the intermodal nature of international transportation in Traceca.*

##### 1.5.1 Outcomes from the TTT

In pursuance of the stated objective, the parties to this agreement through their harmonious actions and through the unification of tariff policy expect to consolidate the position of TRACECA as an alternative trade route and enhance the interest in the services provided.

#### 1.6 Relationship with other Tariff Policies

In its formulation the TTT takes many of its general and specific conditions from the Tariff Policy of Railways Administrations of the Commonwealth of Independent States dated 17<sup>th</sup> February 1993 and as subsequently amended and will continue to utilise new or revised conditions in the CIS Railway Tariff Policy as is considered appropriate for Traceca.

#### 1.7 Coordination

The coordinating authority for this agreement shall be the Traceca Secretariat.

#### 1.8 Changes to this Agreement

##### 1.8.1 Notification of Changes

Changes to this agreement shall made in writing by any Party to this agreement to the coordinating authority who shall in notify in writing all other Parties to the agreement of the said changes.

##### 1.8.2 Conferences

Changes shall be made at meetings of the parties convened by the Coordinating Authority not less than annually.

## **2 GENERAL PROVISIONS**

### **2.2 Definitions**

#### **2.2.1 International Freight transportation**

The provisions of the TTT shall apply to 'international freight transportation' by rail, by rail ferry or other maritime vessels regardless of document types passing through the territories of the Parties whose origin or destination are beyond the boundaries of one or all of the Parties and which traverses over those parts of the transport system defined in Annex A 1 known as 'Traceca'.

#### **2.2.2 Railways ports and shipping**

The term 'Railways' encompasses all or part of those railways defined in Annex A.1 to this agreement.

The term 'Ports' encompasses those ports listed in Article 1.4

The term 'Shipping' encompasses those shipping lines listed in Article 1.4

The term Intermodal transport refers to transport units that can be conveyed without change on different modes (rail wagon on rail ferries; trucks on railway wagons and in ferries)

### **2.3 Application and jurisdiction**

#### **2.3.1 Minimum Units of Load**

The TTT shall apply to loads in units of not less than one railway wagon of types and containers of dimensions listed in Annex A 3

#### **2.3.2 Limits of application**

The TTT rates apply to the main transport activities between points defined in Traceca.

#### **2.3.3 Other charges**

The Tariff Policy rates that are defined in Appendix B3 for Railways and C3 for Ports and shipping are exclusive of any additional charges incurred that fall outside the remit of the TTT policy.

#### **2.3.4 Outside Traceca**

The rates do not necessarily apply to transport activities beyond the boundaries of the parties to this agreement.

### 2.3.5 Extension of limits

The TTT can be extended to beyond the boundaries of the parties to this agreement by unanimous consent of the parties to this agreement and that of the additional participating party.

## 2.4 Tariffs

### 2.4.1 Rates

The TTT rates are those quoted for the current year stated in Appendices B for rail and - for Ports and Shipping (*to be added later*)

### 2.4.2 Validity

The said rates are valid from the period stated as follows .....

### 2.4.3 Unit

The basic unit for railway tariffs is the wagon.

### 2.4.4 Currency

The currency of the TTT shall be the Euro.

For the recalculation of TTT Policy rates into other currencies the exchange rate established by the European Central Bank published monthly shall apply.

### 2.4.5 Taxation

Freight and additional charges do not include VAT

## 2.5 Notice of Change of Tariff

### 2.5.1 Increases

Railways Ports and Shipping Administrations Implementing the Tariff Agreement have the right to increase the freight and additional charges of this Tariff Policy not more often than annually by informing the Tariff Authority not later than three months before the convening of the annual tariff conference and requiring the approval of the 60% of the parties to the agreement.

### 2.5.2 Notifications of changes in Tariffs

The Tariff Authority shall notify changes in tariffs and other changes related to this agreement not later than one month following the decision to make the said changes.

### 2.5.3 Implementation of changes

Parties to the agreement shall implement the changes in tariffs or other changes related to this agreement with 2 months following the notification of the change.



#### 2.5.4 Decreases

Parties to the Tariff Agreement have the right to reduce the freight tariffs and additional charges of this Tariff Policy for transportation on respective Railways, Ports and Shipping during the freight year.

#### 2.5.5 Calculation of Freight charges

Freight charges are established by Railways Ports and Shipping on the basis of this Tariff Policy separately for each Railway Port and Shipping Organisation involved in international freight transportation in accordance with the transportation distance wagon type and other services provided.

#### 2.5.6 Through tariffs

The Parties to this agreement desirous of encouraging intermodal transport Agreements will apply special through rates with the participation of Railways Ports and Shipping wherever possible.

Parties to this agreement are entitled to enter into a contract with any shipper that entails transport on the territory of any other party to this agreement through application of 'special through rates' that are quoted in Appendix -

#### 2.5.7 Transit Distance

For freight charge calculation, the distance is determined by the Parties to the Tariff Agreement in accordance with the distances in Appendix A or the Tariff Guidance No 4 officially announced by the Railways if a lesser distance.

Railways not party to the aforesaid agreements to declare their Tables of Tariff Distances at the TTT Annual Conference or to submit to the Tariff Authority.

#### 2.5.8 Freight Charges Calculation (Ports and Shipping)

Ports and shipping: Rates will be charged on the basis of ---

#### 2.5.9 Multimodal rates

Special rates for the conveyance of international maritime containers as part of multimodal or combined transport operations are listed in Appendix D 3.

#### 2.5.10 Discounted Rates

Railways Ports and Shipping Administrations - Parties to the Tariff Agreement, entering into contracts with organisations, independently establish the size of discounts and the mechanism of financial responsibility for non-fulfilment of accepted liabilities on the basis of their economic interests.

### 2.5.11 Pricing Policy

Railways Ports and Shipping Administrations in determining the discounts shall apply any general policy on pricing agreed by parties to this agreement.

## 2.6 Payments

### 2.6.1 Policy

The stated policy of the TTT is for one payment to be made by the shipper to the initiating party to the conveyance through Traceca and for that party to transfer payment other parties to the agreement in accordance with guidance for tariff calculation.

### 2.6.2 Period of Inter-railway settlements

Confirmation of payments by the initiating party to the other parties must be made within 7 days of the date of the waybill or other appropriate document of conveyance.

### 2.6.3 Interest on Non-payment

In the event that payment has not been received then the underpayment shall be bear interest at a rate to be agreed by the parties to the agreement.

### 2.6.4 Currency of Payment

Where one party to the agreement has received a tariff on behalf of another party to the agreement then payments can be made between parties to this agreement in Euro or other currency declared by the Tariff Policy or regulating documents of each Railway, Port or Shipping Administration.

### 2.6.5 Payments to freight forwarders

Payments for international freight transportation through forwarding organisations are made if there is an agreement with a Railway, Ports or Shipping -Party to the Tariff Agreement and the full official name and legal address of the forwarding organisation has been announced to the Parties to the Tariff Agreement and on the market of international transportation.

## 2.7 Calculation of tariffs

### 2.7.1 Railway Tariff Structure

In keeping with the common policy shared by the parties to this agreement to promote harmonisation and transparency railway tariffs are to be calculated as directed in Appendix B in four separate parts the main features of which are that tariffs are cost-based and the minimum unit of conveyance is the wagon.

### 2.7.2 Part 1 Movement

The movement rate for transit comprises a basic rate for each wagon type by parties to the agreement as defined in Appendix B3 adjusted by the National TTT Coefficient the derivation of which is contained in Appendix C multiplied by the distance between pairs of border stations.

Where the movement rate is to be applied for import or export should parties to this agreement determine so to do the TTT will be calculated using the adjusted rate as previously defined multiplied by the distance from the originating or receiving station to the border station on the Traceca Network.

Parties to the agreement in their combined effort to secure more traffic may determine to charge a tariff based on a lower than full rate using the lowest rates indicated in Appendix B3 and should be aware that whilst useful in the short term the rate will not enable assets to be replaced.

TTT part 1 movement rate for wagons include for the costs of their empty return thus parties to the agreement anxious to utilise available capacity may apply the special rates listed in Appendix B3 for the use of wagons that might otherwise be unloaded in the return direction.

### 2.7.3 Part 2 Terminal

Rates for the provision of terminal services including collection and delivery to the premises of the shipper may be included by those parties wishing to apply the TTT to import and export traffic.

Rates applied for terminal services shall be subject of direct negotiation between the shipper and the railways but should not be higher than those indicated in Appendix B4.

Rates for the provision of services at border crossings shall be applied to all traffic and subject to rates no greater than those stated in Appendix B4

Rates for transferring wagons from the Railways Network to that of the Port shall apply rates no greater than those stated in Appendix B 4

Rates used for the hire of locomotives to shippers shall be at rates no higher than those stated in Appendix B4.

### 2.7.4 Part 3 Infrastructure User Charge IUC

Parties to the agreement either paying internally for the use of the national railways infrastructure or externally to another agency shall recover the costs through a charge for the use of the infrastructure that shall be separated from all other charges.

To encourage maximum utilisation the prime unit for charging for the infrastructure is the train km thus the tariff per wagon shall be derived by dividing the IUC per train km by the number of wagons that make up the train for each separately for each national segment.

In accordance with the general objective of harmonisation the IUC shall be the same for all parties to the agreement.

In support of higher operating standards and in recognition of the increased costs thereof the IUC may be varied according to speed using the factors and conditions in Appendix B5

#### 2.7.5 Part 4 Handling and Commission Charge

Desirous of promoting increasing standards and range of services a separate charge for handling and commission will be included in the tariff structure at a level which shall be no greater than that included in Appendix B5.

The charge shall be applied as a rate per wagon irrespective of the size of the wagon, the commodity or the distance.

Additional charges for services specifically listed in Appendix B5 shall be applied if such a service or services are requested.

The list of services and corresponding charges shall be built up over time and the TTT agreement accordingly amended by the Tariff Authority periodically at Tariff Conferences

#### 2.7.6 Itemisation and notification of TTT charges and conditions

Parties to the agreement shall include an itemisation of each of the four above - mentioned parts of the TTT in quotations invoicing and other documentation prepared for the consignee or the agent representing the consignee ensuring that copies of the said documentation are transferred to partner railways the same day of their issue.

### 2.8 Basis of tariffs and for changing tariffs

#### 2.8.1 Normative Cost Base

The costs upon which the TTT is based are derived from norms contained in Appendix C, which represent optimal standards of performance required by all railways of Traceca to supply services in the long term.

#### Adjustment to Normative Values

Where norms proposed are not be achievable in the nearest term adjustment factors that which can be periodically revised are used to modify the standard to that which is acceptable to the parties to the agreement.

#### 2.8.2 Changes to norms

Any changes to the normative base whether refinement of values presented in Appendix C or the addition of new norms may be made at the discretion of each party to the agreement or by the TTT Authority who will, in every case analyse the effect of the proposed changes on the tariffs and notified all parties to the agreement annually at each Tariff Conference.

### 2.8.3 Costs

Most of the costs that are used in the derivation of Tariffs are included in Appendix D, additional cost information maybe supplied by the Tariff Authority upon written request by any party to the agreement.

The Tariff Authority may utilise a traffic costing model to advise parties to the agreement of the effects of any proposal made to alter norms, adjustment factors and costs on tariffs the development and maintenance of shall be funded from the parties to this agreement. Refer to article 6 of the rail technical appendix to the Traceca Basic Multilateral Agreement.

### 2.9 Demurrage

To reduce the propensity for demurrage of railway wagons on Traceca Railways and the potential impact that unpaid demurrage may have on the TTT rates proposed based on same principles of normative costs in Appendix B6 shall be applied.

### 2.10 Tariff Authority

#### 2.10.1 Preamble

The TTT Authority shall have powers and responsibilities vested in it by the parties to the agreement and as may be altered from time to time in accordance with regulations prescribed in this agreement described in Appendix F.

The TTT Authority may be any organisation designated and qualifying for such a designation. Railway or other organisation proposing to take on the role of the TTT Authority the should initially make a request to the Traceca Secretariat where upon further information will be requested.

#### 2.10.2 Functions, Organisations, Personnel

The functions of the TTT Authority will include administration economics, information and promotion and optionally include market research and legal functions. The Organisation will be headed by a General Secretary and staffed by between 4 to 6 specialists who shall be recruited from any party to the agreement.

#### 2.10.3 Language

Appropriate international language of the TTT authority shall be Russian and English.

#### 2.10.4 Finance

The financing currency of the TTT Authority shall be Euro. Resources provided by the Traceca Secretariat or other agency appointed to be the TTT Authority shall be remunerated for the resources provided at rates agreed by signatories to the TTT regulation annually in advance.



**Appendix A CONTEXT**

**A1 Basic Multilateral Agreement**

**Important Extracts**

**Basic Agreement**

- Article 3 Objectives* a) to develop economic relations ....  
b) to create equal conditions for competition ..
- Article 5 Payments etc.* ... other payments shall not be imposed ...
- Article 6 Preferential Terms* Tariffs for transport services shall be established on the basis of preferential terms .... and equally for all parties.
- Article 8.7 Inter-Governmental Commission (IGC)*

The IGC may establish working groups

**Technical Annex (Rail)**

- Article 4 Preferential Terms and Tariffs*
- Article 6 Cooperation Objectives*
- 2c) to work out methods of cost calculations as a basis of preferential tariffs and common operational rates.

**A2 Protocols**

First Meeting of the TFTWG Baku, June 20, 2002 superceded by 2nd Meeting

**Second Meeting of the TFTWG Baku 17 October 2002**

- 1) The new rail tariff structure for Traceca transit traffic will be based on normative costs i.e. costs reflecting acceptable technical and financial indicators, acceptable to all TRACECA countries.
- 2) The tariff structure will be based on long run variable costs.
- 3) An allowance will be built in to provide a return on assets of not less than 12% on productive assets to be valued at current replacement costs.
- 4) By December, 30, 2002 the Consultants will make allowances for variations of coefficients from the agreed indicators, i.e. higher tariffs will be applicable to sections of the Traceca network where ruling gradients, train lengths, service standards and other technical and financial indicators exceed those specified.
- 5) The tariff structure will be based on the costs of moving a full wagon (not weight based), i.e. it will vary by type and weight capacity of wagon. The tariff structure will take into accounts the costs of return of empty wagons. The new tariff structure will not apply to less than wagonloads.
- 6) The new tariff structure will consist of four components:
  - (a) Movement tariff (flat rate per kilometre for each wagon type);
  - (b) Terminal tariff (in two sub-parts – per wagon and per wagon-kilometre; and for collection/delivery)
  - (c) Infrastructure user charge per train-kilometre (for access to main track, signalling, communications, power supply)
  - (d) Handling fees and commission per assignment
- 7) In the short run, to build up Traceca transit traffic, discounts should be offered from the new tariff scales down to the levels reflecting normative short run variable costs. These costs will be defined in the working paper. These discounted tariffs will be defined after calculating of tariff rates.
- 8) The tariff currency will be Euro.

**Appendix A 3 Traceca Network and Distances**

<i>Nº</i>	<i>Country</i>	<i>Border Stations</i>	<i>Distances (km)</i>
1	Ukraine	Yagodin – Ilyichevsk	940 km
2	Ukraine	Kuchurgan – Ilyichevsk	127 km
3	Moldova	Ungheny – Klimentovo	270 km
4	Moldova	Ungheny – Kuchurgan	213 km
5	Georgia	Poti – Gardabani	362 km
6	Georgia	Poti – Ayrum	387 km
7	Georgia	Batumi – Gardabani	387 km
8	Georgia	Batumi – Ayrum	423 km
9	Azerbaijan	Beyuk-Kasik – Baku	503 km
	Turkmenistan	Turkmenbashi – Serkhetabad	1225 km
	Turkmenistan	Turkmenbashi – Farap	1362 km
	Turkmenistan	Turkmenbashi – Serakhs	995 km
	Kazakhstan	Aktau – Beyney	422 km
	Uzbekistan	Beyneu – Chengeldy	1847 km
	Uzbekistan	Farap – Chengeldy	787 km
	Uzbekistan + Turkmenistan	Farap – Termez	406+194=600 km
	Uzbekistan + Turkmenistan + Tajikistan	Farap – Dushanbe	548+194+71=813 km
	Uzbekistan + Tajikistan + Kyrgyzstan	Farap – Osh	817+231+23=949 km
	Kazakhstan	Chengeldy – Druzhba	1771 km
	Kazakhstan	Druzhba – Aktau	4141 km
	Kazakhstan	Aktau – Chengeldy	2524 km
	Kazakhstan + Kyrgyzstan	Aktau – Balygchy	2846+324=3170 km

Note Modifications to the network may be made by the TTT Authority to correspond to the information provided in applications for a TTT National Coefficient made by Parties to the agreement in Appendix



**APPENDIX B TTT Rail Tariff Structure and Rates****B1 Preamble**

The TTT is to be calculated in four parts

**Part 1 Movement of wagons****Part 2 Terminal services****Part 3 Infrastructure user charge****Part 4 Handling and commission fee****B2 Part 1 Movement****B2.1 Definition**

Comprises a basic single rate for each wagon type whether fully, partly loaded or empty returning applied between stations and in the time specified.

**B2.2 Standard Wagon Types**

The number of different wagon types for which rates are provided in the TTT is indicated with the proportion of empty running that is built into the rate.

Traceca Type Reference	Wagon Name	Empty Return %
1	Covered	40
2	Platforms	50
3a	Open-top axle	80
3b	Open top bogie	80
4a	Tank axle	100
4b	Tanker bogie	100
5 <sup>a</sup>	Isothermal axle	80
5b	Isothermal bogie	80
6a	Flat-bed axle	40
6b	Flat-bed bogie	40

Additional wagon types may be added to the TTT schedule of wagons at determined by the tariff authority. Rates required for wagons not included in the current list of wagons shall be at the rate of the nearest wagon type.

**B2.3 Empty Returning Wagons**

The costs of empty returning wagons are built into the basic rates and shall be reviewed annually by the TTT Authority<sup>2</sup>

**B2.4 Types of Rates**

Rates for wagons are provided for

- Wagons owned by Traceca Railways
- Wagons owned by third parties<sup>3</sup>.
- 

**B2.5 Costs included in the TTT (General Statement)**

Note that TTT wagon rates include all long run variable costs as detailed in and will provide a 12% return on assets valued at current replacement costs and that Non-KTZ (i.e. customer or third party owned wagons) rates do not include wagon ownership costs<sup>4</sup>.

**B2.6 Note on application**

TTT wagon rates are flat<sup>5</sup> and when applied to provide the movement part of the tariff for the respective type of wagon, the rate is multiplied by distance.

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<sup>2</sup> The TTT part 1 is sensitive to empty return % and periodic review is essential.

<sup>3</sup> Industrial enterprises and neighbouring railways

<sup>4</sup> Maintenance, credit, amortisation, return on assets

<sup>5</sup> Flat rate does not vary with distance

**B2.7 Part 1 TTT – Wagon Rates**

Traceca Wagon Reference Type	lowest third full			Armenia	Azerbaijan	Bulgaria	Georgia	Kazakhstan	Kyrgistan	Moldova	Romania	Turkey	Tajikistan	Ukraine	Uzbekistan	
	rate	party rate	rate													
		TTT Coefficient 1			1.11	1.64	1.43	1.13	1.00	1.10	1.29	1.61	1.00	1.16	1.15	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	Covered	0.18	0.25	0.38	0.38	0.43	0.63	0.55	0.43	0.38	0.42	0.50	0.62	0.38	0.45	0.44
2	Platforms	0.21	0.22	0.39	0.39	0.43	0.64	0.56	0.44	0.39	0.43	0.50	0.63	0.39	0.45	0.45
3a	Open-top axle	0.27	0.24	0.49	0.49	0.55	0.81	0.70	0.56	0.49	0.54	0.64	0.79	0.49	0.57	0.57
3b	Open top bogie	0.44	0.40	0.77	0.77	0.85	1.26	1.10	0.86	0.77	0.84	0.99	1.23	0.77	0.89	0.88
4a	Tank axle	0.44	0.28	0.73	0.73	0.81	1.20	1.05	0.83	0.73	0.80	0.95	1.18	0.73	0.85	0.84
4e	Tanker bogie	0.55	0.38	0.98	0.98	1.09	1.61	1.41	1.11	0.98	1.08	1.27	1.58	0.98	1.14	1.13
5a	Isothermal axle	0.30	0.23	0.64	0.64	0.71	1.05	0.92	0.72	0.64	0.70	0.83	1.03	0.64	0.74	0.74
5b	Isothermal bogie	0.44	0.36	0.90	0.90	1.00	1.47	1.29	1.01	0.90	0.98	1.16	1.44	0.90	1.04	1.03
6a	Flat-bed axle	0.19	0.22	0.36	0.36	0.40	0.59	0.52	0.41	0.36	0.40	0.47	0.58	0.36	0.42	0.42
6b	Flat-bed bogie	0.23	0.30	0.50	0.50	0.55	0.81	0.71	0.56	0.50	0.54	0.64	0.80	0.50	0.57	0.57

Notes to columns:

- 1 Traceca wagon type code
- 2 Wagon name
- 3 Basic rate – lowest (distance costs)
- 4 Basic rate – third party wagons
- 5 Basic rate – full rate (time and distance)
- 6 – 17 – Head of column – TTT national coefficient, Full adjusted wagon rates to be applied

**B2.8 Note on rates**

The wagon rate for each country is the basic full rate adjusted by the TTT coefficient.

**B2.8 Note on rates for return loads**

Rates provided for return loads may be discounted up to 75% of the basic rate as the cost of the returning empty wagon is a part of the basic rate.

**B 3 Terminal rates and charges****B3.1 Customer defined services**

TTT general requirements are that terminal services are a matter for direct negotiation between shipper and railway depending on particular requirements. TTT policy is to promote uniformity and transparency and provide indicative rates only.

**B3.2 Private sidings and loading facilities**

If the customer privately owns sidings and loading facilities, the terminal costs will be in two parts.

**Part A - Collection and Delivery**

For collection and delivery along branch lines that are exclusively used by the customer, additional payment for collection and delivery is warranted; the price to be based on collection or delivery distance from the trunk route and the rate using part 1 tariffs.

**Part B - Loading and Unloading**

Where TTT signatories own freight terminals and provide loading and unloading operations the tabulated rates may be applied at the discretion of the railway.

**Tariffs for Terminal Services**

Type of Terminal Services	Type of goods	Output Norm	Wagon Type	Rate €	Unit
1	2	3	4	6	7
Loading unloading wagons in good sheds and depots	General goods Packaged items; pallets, bagged goods, building materials, timber out of gauge loads	3000 Tons per year	1,2	6.34	Ton
Loading unloading storage of refers	Perishable Goods - 48 hours cold storage	30,000 Tons per year		11.79	Ton
Collection Delivery of made-up trains Industrial Sidings	Dry and liquid bulk	1 Train per day	3,4a,4b,	6.2	Wagon
Collection Delivery of wagon groups from freight yards	All	20,000 Wagons per year	1,2,6a,6b	6.8	Wagon
Collection delivery of wagons in Ports	All cargo	100 Wagons per day	All	5.6	Wagon

Loading and unloading containers from rail wagons	All Containerised Cargo	30,000 TEU s per year	5a, 5b 6a, 6b	16.73	TEU
Isothermal Storage	Frozen Food	Not Applicable	5a 5b	€9, €15	Wagon Day
Border Crossing Operations		10 Trains per day	All	3.0	Wagon

Source: RAILCOST

Notes to table - refer to column numbering :

- 1 Brief description of terminal service is needed in a future KTZ Tariff Handbook.
- 2 General indication of the type of goods
- 3 The output norm in tons or wagons handled, based on general indications of performance for each terminal service
- 4 The wagon types most likely to be involved in the terminal operation
- 5 The 'Railcost' terminal analysis code
- 6 Long term costs including return on assets of 12%
- 87Unit of cost

**B3.4 Terminal charges for domestic import, export and transit**

TTT is intended to be applied to Transit Traffic where accepting at borders terminal services normally do not apply. However, should TTT signatories apply TTT to other traffic then the following rule is advised:

- Domestic traffic will have 2 sets of terminal costs.
- Import and export will have 1 set of terminal costs
- Services transit through a third country have no terminal costs.

**B3.5 International border crossings**

Provision for waiting at border crossings and any shunting shall be included.

**B3.6 Locomotive Hire**

Where locomotives run light to or from the customer's premises or are hired by the customer to perform certain duties then the customer may be charged for the service according to the following schedule

	Electric Locomotive €	Diesel Locomotive €
Cost per hour	84.1	70.7
Cost per km	0.57	0.60

## **B4 Infrastructure User Charges (IUC) Preamble**

### **B4.1 Preamble**

The TTT provides for the separation of charges for the use of the Traceca railway network in accordance with contemporary policy. TTT signatories will endeavour to harmonise as far as possible national IUC policy.

### **B4.2 User Contract**

The use of harmonised regulations, particularly the User Contract, is recommended.

### **B4.3 Schedule of Services**

Minimal services to be provided by the designated Infrastructure Operator or equivalent alternative in each country are listed below.

<b>1</b>	<b>SERVICES INCLUDED IN THE INFRASTRUCTURE USER CHARGE</b>
1.1	Handling of requests for infrastructure capacity
1.2	The right to utilise capacity which is granted
1.3	Use of running track points and junctions
1.4	Train control including signalling, regulation, dispatching and the communication and information on train movement
1.5	All other information required to implement or operate the service for which capacity has been granted
1.6	Tailor-made contracts for control of transport of dangerous goods
1.7	Provision of supplementary information
1.8	Parking of traction while the waiting time which is contracted in the timetable
1.9	Use of electric catenary (overhead wires for traction energy)
1.10	Technical inspection of rolling stock for safety reasons in train operations
<b>2</b>	<b>SERVICES FOR WHICH USER HAS A RIGHT OF ACCESS FOR WHICH AN ADDITIONAL CHARGE MAY BE RENDERED</b>
2.1	Access to passenger information facilities
2.2	Access to telecommunication network
2.3	Access to refuelling facilities
2.4	Access to passenger stations, their buildings, platforms and other facilities (by rail and road)
2.5	Access to freight terminals (by rail and road)
2.6	Access to marshalling yards

2.7	Access to train formation facilities
2.8	Access to maintenance and other technical facilities in case of danger
2.9	Access to railway owned sidings
2.10	Access to water filling facilities
2.11	Access to preheating facilities of passenger trains
2.12	Access to shunting facilities

#### B4.4 Note on charges

Charges covering the first part of the above schedule are specified in the TTT. Charges included in the second part of the schedule are at the discretion of individual railways. Harmonisation of the latter charges is desirable.

#### B4.5 Unit of Charge

The IUC will be applied to each train whether irrespective of length and whether loaded or empty.

#### B4.6 Traceca Basic Infrastructure User Charges

The possibility of TTT signatories applying a two-tiered IUC representing a full recovery charge and one that recovers only maintenance and traffic control costs shall be supported by the TTT Authority. The two levels of IUC are stated below.

Minimum IUC	Full IUC
€2.79 Per Train Km	€9.22 Per Train Km
4.65 cents Per Wagon Km	15.33 cents Per Wagon Km

Note that the wagon rate assumes a 60 wagon train length

#### B4.6 Nationally Adjusted Infrastructure User Charges

The Basic TTT IUC can be adjusted nationally to reflect better or worse standards of infrastructure using operating speed as a proxy, provided that the revised standard had been sustained for 2 years consecutively. Adjustment factors are to be applied to the basic intervals of 10 Km per hour.

Average Operating Speed Km Per hour	30	40	50	60	70	80
IUC Adjustment Factor	0.6	1	1.37	1.55	1.90	2.25

**B5 Handling Charges and Commission Preamble****B5.1 Preamble**

The basic charge is intended to cover documentation and administration associated with the consignment by the originating railway only recognising that such charges are in respect of corresponding costs that are unique to the originating railway and also in providing incentives for any railways to generate railways freight traffic. The basic charge will apply to each wagon forwarded. The charge relates to the number of wagons independent of distance.

**B5.2 Basic Charges**

A general amount of €20.0 per would be appropriate to recover the costs of administration and handling charges <sup>6</sup>.

**B5.3 Variations in basic charge**

A differential charges for export, import, domestic and transit to reflect their trade facilitation and transport documentation requirements is required. Transit transport, not requiring any documentation from the transit country, will have the lowest handling charges. Fees for each of the types of transport service are

- Export €25 per wagon
- Domestic and Import €15 per wagon
- Transit 10 € wagon.

**B5.4 Additional Charges**

Additional charges should be included in TTT Part 4 covering

- Special handling requirements, packaging etc.
- Additional security
- Insurance of consignment
- Wagon tracking<sup>7</sup>
  
- On-line information
- A full schedule services shall be available from the TTT Authority



**B 5.5 Wagon Demurrage**

Wagons of one party that are retained on the territory of another party beyond 7 days from the time of entry of the wagon to the territory of the other party shall pay demurrage to the owner of the wagon according to rates set out in the table below:

<b>Traceca Type Reference</b>	<b>Wagon Name</b>	<b>Demurrage €/hour</b>
1	<b>Covered</b>	<b>3.07</b>
2	<b>Platforms</b>	<b>1.92</b>
3a	<b>Open-top axle</b>	<b>2.07</b>
3b	<b>Open top bogie</b>	<b>2.60</b>
4a	<b>Tank axle</b>	<b>2.18</b>
4b	<b>Tanker bogie</b>	<b>2.75</b>
5 <sup>a</sup>	<b>Isothermal axle</b>	<b>4.60</b>
5b	<b>Isothermal bogie</b>	<b>5.10</b>
6a	<b>Flat-bed axle</b>	<b>1.94</b>
6b	<b>Flat-bed bogie</b>	<b>2.58</b>

**Appendix ?? TTT Ports and Shipping Tariffs**

To be added later

**APPENDIX C - NORMATIVE BASE****C1 - LOCOMOTIVE PROCUREMENT AND MAINTENANCE****C2 - WAGON PROCUREMENT AND MAINTENANCE****C4 - INFRASTRUCTURE, CONSTRUCTION AND MAINTENANCE****C5 - ENERGY, FUEL CONSUMPTION AND COST NORMS****C6 - OPERATING NORMS****C7 - LABOUR COSTS NORMS****C8 - FINANCIAL NORMS**

**C1 LOCOMOTIVE PROCUREMENT AND MAINTENANCE**

**DIESEL**

Items	Norm	Unit	Factor	Accepted Norm
Diesel Type 2TE10				
Replacement Cost €	1,600,000		1	1,600,000
Economic life	20	Years	0.75	15
Amortisation	15	Years	1	15
Availability	88	%	0.85	77
Annual productive output	220,000	Km	0.68	150,000
Annual productive time	4500	Hrs	0.73	3300
Average daily output	700	Km	0.77	540
Average daily Productive time	14	Hrs	0.86	12
Average Daily Speed	50	kph	0.90	45
Scheduled Maintenance		Km		A-F
Unscheduled		Km		U1,U2
<b>Cost per km</b>	<b>0.39</b>	<b>€/km</b>		<b>0.60</b>
<b>Cost per hour</b>	<b>57.6</b>	<b>€/hr</b>		<b>70.7</b>

**ELECTRIC**

Item	Norm	Unit	Factor	Accepted Norm
Electric Type VL80 6300Kw				
Replacement Cost €	2,500,000		1	2,500,000
Economic life	30	Years	0.85	25
Amortisation	25	Years	1	25
Availability	95	%	0.9	83
Annual productive output	250,000	Km	0.8	180,000
Annual productive time	5000	Hrs	0.8	4000
Average daily output	750	Km	0.78	585
Average daily Productive time	15.0	hrs/day	0.87	13.0
Average Daily Speed	50	Km/hr	0.90	45
Scheduled Maintenance		Km		A- F
Unscheduled		Km		U1,U2
<b>Cost per km</b>	<b>€0.45</b>	<b>€/km</b>		<b>€0.57</b>
<b>Cost per hour</b>	<b>€67.2</b>	<b>€/hr</b>		<b>€84.1</b>

Notes: Scheduled Maintenance -

**C2 WAGON PROCUREMENT AND MAINTENANCE**

2003 Prices and Performance

Traceca Type Reference	Wagon Name	Replacement Cost €	Economic Availability		Utilisation		Output		Provision Cost €/hour	Maintenance Cost €/km	
			Life years	%	%	Norm Hours/ year	Adjusted Hours/ year	Norm Km/ year			Adjusted Km/ year
1	<b>Covered</b>	50,000	20	90%	79%	4,674	2,721	160,000	115,200	<b>3.07</b>	<b>0.03</b>
2	<b>Platforms</b>	35,000	20	91%	86%	4,924	3,055	160,000	122,400	<b>1.92</b>	<b>0.02</b>
3a	<b>Open-top axle</b>	40,000	20	91%	83%	4,875	3,225	170,000	137,275	<b>2.07</b>	<b>0.03</b>
3b	<b>Open top bogie</b>	50,000	20	90%	86%	4,373	3,221	180,000	145,350	<b>2.60</b>	<b>0.03</b>
4a	<b>Tank axle</b>	45,000	20	91%	86%	4,757	3,445	160,000	129,200	<b>2.18</b>	<b>0.03</b>
4b	<b>Tanker bogie</b>	60,000	20	90%	86%	4,696	3,647	180,000	145,350	<b>2.75</b>	<b>0.04</b>
5 <sup>a</sup>	<b>Isothermal axle</b>	60,000	20	84%	68%	3,915	2,182	120,000	81,600	<b>4.60</b>	<b>0.04</b>
5b	<b>Isothermal bogie</b>	80,000	20	86%	78%	3,884	2,622	140,000	95,200	<b>5.10</b>	<b>0.05</b>
6a	<b>Flat-bed axle</b>	35,000	20	93%	88%	4,834	3,016	160,000	122,400	<b>1.94</b>	<b>0.02</b>
6b	<b>Flat-bed bogie</b>	50,000	20	92%	87%	4,783	3,243	180,000	137,700	<b>2.58</b>	<b>0.03</b>

**Notes to Wagon Norms:**

Column

1. Traceca reference for the wagon type is arbitrary and can be re-referenced by the TTT Authority
2. Wagon name to be unambiguous as the tariff will depend on precise denomination
3. Current replacement cost of wagon using international benchmark prices subject to international specifications, procurement regulations and whole-life costing scrutiny
4. Economic Life of wagons taken to be 20 years for each as norm for Traceca as international technical standards are usually higher and may change more often than for domestic traffic.
5. The standard % of days per year that an internationally utilized wagon is available to be operated in accordance with technical standards
6. The adjusted norm for Traceca of days the wagons are available for productive.
7. The standard norm for the hours per year that a wagon actively deployed in productive revenue earning use
8. The adjusted norm for Traceca of the hours per year that a wagon actively deployed in productive revenue earning use
9. The standard norm for the output in km per year that a wagon traverses in productive revenue earning use
10. The adjusted norm for Traceca of the output in km per year that a wagon traverses in productive revenue earning use
11. The normalised unit cost per hour (or rental) of wagon provision based on these wagon and other norms
12. The normalised unit cost per km of wagon maintenance based on these wagon and other norms

**C3 INFRASTRUCTURE CONSTRUCTION AND MAINTENANCE**

2003 Prices and Performance

Item	Accepted	Economic	Deprecation	Notes
	Norm/km	Life years	Years	
<b>Track</b>	Cost €			
1.Replacement Total	251,880	30	25	Based on Type P65 this standard accounts for 85% of all trunk line of which:
Rail - plain line	65,000	30/40		Type P65 cwr <sup>8</sup> , Life 30 years depending on traffic density 130 tons @ €500/ton
Rail – points	9,750	20/30		Including all accessories and equipment @15% pf plain line
Fastenings etc	18,326	30		Plates, clips, 2940 sets @ €5 /set + track circuit, detectors, retarders etc
Sleepers	54,978	30/40		Concrete 1470 per km @ €30 each
Ballast	20,700	10/20		Granite stone - 2,000 cubic metres/km
Track Bed	25,000	40		Profiled for drainage with geo-textile membrane – 5000 sq. m per km
Labour	33,907			Norm for E Europe and S. Asia @ 17.5% of materials costs
Equipment	24,219			@ 12.5 % of materials costs
2. Maintenance	12,594	Per year		Norm for mechanised maintenance taken as 5% of the costs of replacement of which:
Materials	3,148			Norm @ 25% mostly granite and minor items
Equipment	5,038			Norm @ 40% for mechanised track maintenance
Labour	4,408			Norm @ 35%
<b>CTC&amp; Communications</b>				
Replacement	73,000	30	25	Replacement of line-side equipment, controls, inter-blocking, relays, cabling
Maintenance	3,650			5% of construction costs
<b>Power supply</b>				
Replacement	25,500	30	25	Catenary, insulators, refitting sub-stations, transmission gear etc (not structures or pylons)
Maintenance	1,257			5% of construction costs

<sup>8</sup> cwr continuous welded rail, price including 'flash-butt' welding, expansion jointing.



**C4 ENERGY, FUEL CONSUMPTION AND COST NORMS**

Item	Norm	Unit	Factor	Accepted	Notes
				Norm	
<b>FUEL / ENERGY</b>					
Fuel					Specific Gravity 0.92
Trunk Line Loco' Consumption	35	kg/10,000 gross tkm	1.1	38.5	Consumption norm should be lower in the future as locomotives are replaced with new and if track improvements are implemented.
Cost	400	€ / ton	1	400	World price (5year average) net of taxes and delivery
<b>Electric energy</b>					
VL80 Consumption	110	KW/10,000 gross tkm	1.1	120	Consumption norm should be lower in the future as locomotives are replaced with new and if track improvements are implemented
Cost	2.50	€ Cents / KW*hour	1.0	2.5	Norm should be 30% above the average cost of production of electricity



**C5 OPERATING NORMS**

Operating Norms	Norm	Unit	Factor	Accepted	Notes
				Norm	
IUC Network km	18,000	Km	1	12,000	Traceca Railway Network to be ratified
Trains per day both directions	30	Trains per day	0.78	23.5	Freight traffic
Average Train gross mass	3,300	Tons	1	3,300	5500 loaded; 1800 empty.
Traffic Density over trunk network	100	Gtk/per day/km 10x6	0.6	77,550	per day
Locomotive Power	1.5 average system wide	per train	1	1.5	Driver and assistant of driver
Wagons per train	60 wagons 15 coaches	Units	1	60wagons 15coaches	July 2002 data €200, does it include allowances employer costs and costs of employment???
Train Length	850	M	1	850	
Average section speed	50	km / hour	0.8	40.0	Overall operating speed
Average technical speed	70	km / hour	0.85	60.0	Allows for speed restrictions
Average waiting time at terminals, stations and borders (idle time at intermediate stations)	2	hours	1	2	Number of intermediate stops will be reduced
Average waiting time at terminals, stations and borders (idle time at freight terminals)	8	hours	1.25	10	Needs further consideration
Reliability (time table)	95	%	1	95%	

**C6 LABOUR COSTS (€/month)**

Item	Norm <sup>9</sup>	Factor <sup>10</sup>	Accepted	Notes
Normal working day				8 hour day
Average Hours per month	169	1	169	Paid hours
Productive hours	120	0.9	108	Allowances for waiting time etc
Productive days	211	1	211	Productive Days = 211, 365 – weekends (104) – holidays (20) – national holidays (10) – sickness (10) – training (3)
Social Retirement	25%	0.8	20%	

<sup>9</sup> Adjusted for actual productive time; real wage increases and social costs  $365/211 \times 169/120 \times 1.2 \times 1.1 = 3.6$

<sup>10</sup> Downward adjustment of 10% due to real increases in wages not transpiring at this time.

**C 6.1 Wage Norms**

JOB TITLE	WAGE \$ MONTH	SOCIAL COSTS	GROSS SALARY	TRAIN CREW KM INCENT	EMPLOY COSTS /MONTH	COSTS PER HOUR	WAGE MONTH	COSTS PER HOUR
		20.00%						
ADMINISTRATIVE STAFF	210	42	252	0.000	255	2.70	210	2.70
DRIVER	216	43	259	0.020	259	2.74	216	2.74
DRIVER'S ASSISTANT	210	42	252	0.020	252	2.66	210	2.66
EN ROUTE CLEANING STAFF	163	33	195	0.000	195	2.07	163	2.07
WAGON MANUAL BRAKE OPERATOR	158	32	190	0.020	190	2.01	158	2.01
SENIOR TICKET CONTROLLER	216	43	259	0.000	259	2.74	216	2.74
TICKET CONTROLLER	210	42	252	0.000	252	2.66	210	2.66
TRAIN GUARD	210	42	252	0.010	252	2.66	210	2.66
SUPERINTENDENT	229	46	275	0.000	278	2.94	229	2.94
DEPOT MECHANIC/ELECTRICIAN	210	42	252	0.000	255	2.70	210	2.70
MATERIAL STORAGE MAN	168	34	201	0.000	201	2.13	168	2.13
LARGE STATION MASTER	238	48	285	0.000	288	3.05	238	3.05
LARGE STATION MASTER ASSISTANT	231	46	277	0.000	280	2.96	231	2.96
1ST CLASS STATION MASTER	231	46	277	0.000	280	2.96	231	2.96
2ND CLASS STATION MASTER	229	46	275	0.000	278	2.94	229	2.94
3RD CLASS STATION MASTER	222	44	267	0.000	270	2.86	222	2.86
4TH CLASS STATION MASTER	222	44	267	0.000	270	2.86	222	2.86
5TH CLASS STATION MASTER	216	43	259	0.000	263	2.78	216	2.78
TRAIN DISPATCHER	222	44	267	0.000	270	2.86	222	2.86
PASSENGER TICKET SALESMAN	168	34	201	0.000	201	2.13	168	2.13
TREASURER	229	46	275	0.000	278	2.94	229	2.94
CASHIER	216	43	259	0.000	263	2.78	216	2.78
STATION CLEANING STAFF	158	32	190	0.000	190	2.01	158	2.01
FREIGHT BILLING CLERK	168	34	201	0.000	201	2.13	168	2.13
SHUNTER	163	33	195	0.000	195	2.07	163	2.07
MAINTENANCE CREW	168	34	201	0.000	201	2.13	168	2.13
MACHINE / EQUIPMENT OPERATOR	168	34	201	0.000	201	2.13	168	2.13
CONSTRUCTION WORKER	163	33	195	0.000	195	2.07	163	2.07
BRIDGE WORKER	168	34	201	0.000	201	2.13	168	2.13
STORAGE GUARD	158	32	190	0.000	190	2.01	158	2.01
TRACK INSPECTOR	163	33	195	0.000	195	2.07	163	2.07
MATERIAL STORAGE CLERK	168	34	201	0.000	201	2.13	168	2.13
METAL WORKER	168	34	201	0.000	201	2.13	168	2.13
CLEANING STAFF	158	32	190	0.000	190	2.01	158	2.01
MOVEMENT CONTROLLER	231	46	277	0.000	280	2.96	231	2.96
FREIGHT TERMINAL MANAGER	231	46	277	0.000	280	2.96	231	2.96
WAGON LOADERS/UNLOADERS	158	32	190	0.000	190	2.01	158	2.01
PORTERS	158	32	190	0.000	190	2.01	158	2.01
RESTAURANT STAFF	210	42	252	0.000	252	2.66	210	2.66

## C7 FINANCIAL NORMS

Item	Norm	Unit	Factor	Adjusted Norm	Notes
Currency	€				
Return on Assets	12	%	1	12	Based on opportunity cost of capital i.e. 6% foreign, 18% local, assuming 50/50 mix of foreign and local financing.
Average interest rate foreign currency	6	% per annum	1	6	Fixed at 3% over LIBOR
Average repayment period	20	years	1	20	Norm to be fixed on currently negotiated loans with EBRD and others
Depreciation					Sown for each asset - to be standardise for each type of asset.

**APPENDIX D COST BASE****D1 Cost Definitions**

**Normative approach-** Using cost and performance values that would occur under stable and optimum conditions

**Short run variable costs-** Distance based costs that would be incurred by an additional unit of output in the short term includes maintenance, fuel, part labour, accidents

**Long run variable cost-** Time and distance based costs that will be incurred by an additional unit of output in the long term the cost of purchasing the asset,

**Current replacement value** – The present day cost of the asset

**Economic life** – The period over which the asset has a positive net value

**Return on assets** – The proportion of net asset value to cost

**D2 Main Cost Headings**

**Typical cost breakdown €**

<b>COST HEADINGS</b>	<b>SHORT</b>	<b>%</b>	<b>THIRD</b>	<b>%</b>	<b>LONG</b>	<b>%</b>
	<b>TERM</b>		<b>PARTY</b>		<b>TERM</b>	
			<b>WAGONS</b>			
<b>LOCO PROVISION</b>	0	0	11,618	25	11,618	21
<b>LOCO MAINTENANCE</b>	2,172	11	2,172	5	2,172	4
<b>WAGON PROVISION</b>	0	0	0	0	6,403	12
<b>WAGON MAINTENANCE</b>	2,621	13	0	0	2,621	5
<b>FREIGHT TERMINAL</b>	296	1	2,280	5	2,280	4
<b>TRACK MAINTENANCE</b>	538	3	538	1	538	1
<b>INFRASTRUCTURE USER CHARGE</b>	2,559	12	16,311	36	16,311	30
<b>TRAIN CREW</b>	120	1	504	1	504	1
<b>FUEL COSTS</b>	8,623	42	8,623	19	8,623	16
<b>ACCIDENT COSTS</b>	3,157	15	3,157	7	3,157	6
<b>SHUNTING COSTS</b>	455	2	631	1	631	1
<b>TOTAL SERVICE COSTS</b>	20,541		45,835		54,859	

Note:

The example in the table above is presented to indicate the main variable cost headings used in the normative costing base for Traceca. The example is based on a 60 x 40 T Container Flat Wagons

## D3 Locomotive Costs

## DEPRECIATION AND RETURN ON ASSETS €

TYPE	REPLACEMENT	ECON'	DEPRECIATION	RETURN ON	DEPRECIATION	FINANCIAL CHARGES		
	COST	LIFE	PERIOD	ASSETS			NORMATIVE	ADJUSTED
		YEARS	YEARS			ANNUAL	LOCO HR	LOCO HR
1 VL80	2,500,000	25	25	318,750	100,000	418,749	106	84.142
2 TE10	1,600,000	15	20	234,919	80,000	314,918	95	70.723

## LOCOMOTIVE SCHEDULED MAINTENANCE

## TYPE OF LOCOMOTIVE

## ELECTRIC VL80

SERVICE	ADJUSTED COSTS					SCHEDULED SERVICE		
	REF	INTERVAL	LABOUR	MATERIALS	EQUIPMENT	OVERHEAD	TOTAL	TOTAL
	KM	€	€	€	€	€	YEAR	LOCO.Km
A	25000	48	60	0	3	111	961	0.01
B	50000	439	600	8	31	1078	4658	0.03
C	100000	741	1200	15	59	2014	4714	0.03
D	250000	837	2400	27	98	3362	3389	0.02
E	500000	2392	12000	2444	505	17341	9364	0.05
F	1000000	3638	36000	8091	1432	49160	13273	0.07
G	2500000	12731	360000	17025	11693	401449	43357	0.24
U1	100000	520	4800	719	181	6220	11196	0.06
U2	2500000	6069	180000	912	5609	192590	13867	0.08
							<b>TOTAL</b>	<b>0.58</b>

## FUEL AND MAINTANCE COST PER KM LIGHT RUNNING LOCOMOTIVE

## TYPE OF LOCOMOTIVE

## ELECTRIC VL80

	KWH/	KWH/	ENERGY	LOCO	FUEL
	10,000	GTK	COST	MASS	COST
	GTK				
STANDARD	110	0.011			
ADJUSTMENT FACTOR	1.1				
ADJUSTED	121	0.0121	0.035	120	0.051
MAINTENANCE COST					<b>0.582</b>
RENTAL COST PER KM					<b>0.633</b>

**D4 Wagon Costs****NORMATIVE MAINTENANCE COSTS € - SUMMARY**

Notes to columns in table

1 Service code representing a b c scheduled services according to distance and U1 and U2 unscheduled services U1 for mechanical repairs mainly and U2 following an accident

2 Cost of labour per service

3 Cost of materials per service

4 Cost of equipment per service

5 Cost of overheads per service

6 Total costs per service

7 Total cost of service per year obtained from the output in km divided by the service interval of each type of service multiplied by the cost per service and totalised for all services

8 Total cost of each service per wagon km and totalised for all services to provide the maintenance cost per wagon km for the type of wagon.

The costs of return on assets and depreciation are calculated as with locomotives

For a summary of normative wagon performance and unit costs refer to C2

**TYPE 1: COVERED**

	LABOUR	MATER	EQUIP	OVER	TOTAL/	TOTAL	/TRAIN
		IALS	MENT	HEAD	SERVICE	YEAR	WAGON
							Km
1	2	3	4	5	6	7	8
A	9	15	2	1	27	209	0.0018
B	38	90	9	4	140	269	0.0023
C	678	3600	160	133	4570	810	0.0070
U1	508	1500	115	64	2186	1259	0.0109
U2	881	9000	232	303	10417	1000	0.0087
						<b>3547</b>	<b>0.0308</b>

**TYPE 2: PLATFORM**

	LABOUR	MATER	EQUIP	OVER	TOTAL/	TOTAL	/TRAIN
		IALS	MENT	HEAD	SERVICE	YEAR	WAGON
							Km
A	9	11	2	1	23	184	0.002
B	38	63	8	3	112	229	0.002
C	458	2520	107	93	3178	598	0.005
U1	322	1050	74	43	1490	912	0.007
U2	662	6300	176	214	7352	750	0.006
						<b>2673</b>	<b>0.022</b>



**TYPE 3: OPEN-TOP 4 AXLE**

	LABOUR	MATER	EQUIP	OVER	TOTAL/	TOTAL	/TRAIN
		IALS	MENT	HEAD	SERVICE	YEAR	WAGON Km
A	9	12	2	1	24	220	0.002
B	38	72	8	4	122	278	0.002
C	373	2880	92	100	3446	728	0.005
U1	373	1200	86	50	1710	1173	0.009
U2	881	7200	223	249	8554	1174	0.009
						<b>3574</b>	<b>0.026</b>

**TYPE 3a: OPEN-TOP BOGIE**

	LABOUR	MATER	EQUIP	OVER	TOTAL/	TOTAL	/TRAIN
		IALS	MENT	HEAD	SERVICE	YEAR	WAGON Km
A	9	15	2	1	27	263	0.002
B	38	90	9	4	140	340	0.002
C	543	3600	130	128	4400	984	0.007
U1	441	1500	101	61	2103	1528	0.011
U2	1033	9000	267	309	10609	1542	0.011
						<b>4658</b>	<b>0.032</b>

**TYPE 4: TANKER 4 AXLE**

	LABOUR	MATER	EQUIP	OVER	TOTAL/	TOTAL	/TRAIN
		IALS	MENT	HEAD	SERVICE	YEAR	WAGON Km
A	9	14	2	1	26	221	0.002
B	38	81	8	4	131	282	0.002
C	448	3240	109	114	3910	777	0.006
U1	441	1350	106	57	1953	1262	0.010
U2	1033	8100	259	282	9674	1250	0.010
						<b>3792</b>	<b>0.029</b>

**TYPE 4a: TANKER BOGIE**

	LABOUR	MATER	EQUIP	OVER	TOTAL/	TOTAL	/TRAIN
		IALS	MENT	HEAD	SERVICE	YEAR	WAGON Km
A	9	18	2	1	30	294	0.002
B	38	108	9	5	159	385	0.003
C	593	4320	143	152	5207	1164	0.008
U1	593	1800	139	76	2607	1895	0.013
U2	1185	10800	302	369	12656	1840	0.013
						<b>5577</b>	<b>0.038</b>

**TYPE 5: ISOTHERMAL AXLE**

	LABOUR	MATER	EQUIP	OVER	TOTAL/	TOTAL	/TRAIN
		IALS	MENT	HEAD	SERVICE	YEAR	WAGON Km
A	9	18	2	1	30	165	0.002
B	38	108	9	5	159	217	0.003
C	593	4320	143	152	5207	654	0.008
U1	757	1800	166	82	2805	1144	0.014
U2	1417	10800	349	377	12944	704	0.009
						<b>2884</b>	<b>0.035</b>

**TYPE 5a: ISOTHERMAL BOGIE**

	LABOUR	MATER	EQUIP	OVER	TOTAL/	TOTAL	/TRAIN
		IALS	MENT	HEAD	SERVICE	YEAR	WAGON Km
A	9	24	2	1	37	232	0.002
B	38	144	9	6	196	311	0.003
C	593	5760	150	195	6698	981	0.010
U1	824	2400	182	102	3509	1670	0.018
U2	1493	14400	381	488	16763	1330	0.014
						<b>4524</b>	<b>0.048</b>

**TYPE 6: FLAT-BED AXLE**

	LABOUR	MATER	EQUIP	OVER	TOTAL/	TOTAL	/TRAIN
		IALS	MENT	HEAD	SERVICE	YEAR	WAGON Km
A	9	11	2	1	23	184	0.0015
B	38	63	8	3	112	229	0.0019
C	458	2520	107	93	3178	599	0.0049
U1	322	1050	75	43	1491	913	0.0075
U2	662	6300	175	214	7351	750	0.0061
						<b>2674</b>	<b>0.0218</b>

**TYPE: FLAT-BED BOGIE**

	LABOUR	MATER	EQUIP	OVER	TOTAL/	TOTAL	/TRAIN
		IALS	MENT	HEAD	SERVICE	YEAR	WAGON Km
A	9	15	2	1	27	250	0.0018
B	38	90	9	4	140	322	0.0023
C	611	3600	143	131	4484	950	0.0069
U1	441	1500	101	61	2103	1448	0.0105
U2	881	9000	232	303	10417	1434	0.0104
						<b>4403</b>	<b>0.0320</b>

**D5 Infrastructure Costs****NOMATIVE INFRASTRUCTURE REPLACEMENT COSTS**

€

Track Type	Track Cost	Signaling Type CTC	Power Supply	Communications	Total
T65C	251,880	54,500	25,500	18,500	350,380

Refer: Appendix C3

**NORMATIVE DEPRECIATION INTEREST LOAN REPAYMENT COSTS**

€

Economic Life	Depreciation	Interest & Repayment	Total Financial Costs per km	Train Density per km per year	Cost per train km
30	11,679.34	43,497.48	55,176.82	8,577	6.43

**Infrastructure User Charges - Note on Unit Of Charge**

**Preamble:** Open access to a national railway system requires a common basis for charging for the use of the infrastructure and related services. Open access to railways is expected to encourage competition in a natural monopoly that will reduce prices and increase demand.

**IUC Objective** To create an equitable basis for charging for the common use of railway infrastructure.

**Background:** Monopolistic railways have used gross ton km for the past 100 years with concomitant inefficiency and poor utilisation of resources. Modernising railways are recognising that the capacity and economics of train networks relate more closely to train density, as exemplified by the timetable, than tons. Thus restructuring railways are moving to wagon km as a basis for pricing and Train Km as a basis for the IUC.

**IUC - Pricing Basis World Wide**

Train km in operation: Switzerland, Austria, Germany, Sweden, France, Italy, Netherlands, Argentina, Brazil, Mexico, Japan,

Train km planned: Moldova, Turkey, Romania, Bulgaria, Georgia, Azerbaijan, and Uzbekistan.

Gross Ton Km in operation: United Kingdom, Australia

Hybrid (dual) system in operation: Austria, Sweden.

Only 2 out of 25 countries with IUC have chosen GtK Great Britain and Australia neither of whom has adjoining foreign railways.

*No country has chosen Wagon Km and the decision for Kazakhstan to be the first should be reviewed.*

**Reasons for train km.**

- Improves utilisation, longer trains, lower empty running, resulting in savings of 10% to 15% in variable cost. For KTZ that will be 1,200 million Tenga (€8 million)<sup>11</sup>.
- Train Km is simple and inexpensive to administer for KTZ and its customers.
- Train km has proven to be effective in increasing competition and reducing prices.

**Reasons against gross ton km**

- Encourages lower utilisation, shorter trains more empty running and will increase unit costs.
- IUCs in GtK is complex and expensive to administer, (every wagon must be separately itemised on an invoice)
- Not sustainable requiring legal and accounting expertise to sort out the many anomalies.
- Difficult to integrate into a wagon based tariff structure.

**Composition of IUC**

€

Financing Costs	Direct Track Maintenance	General Maintenance	Traffic Control	Maintenance & Traffic Control	Total Cost (Full IUC)
6.43	0.27	1.80	0.72	2.79	9.22

<sup>11</sup> KTZ 2005 traffic forecast is 95 billion net ton km; short term variable cost = 1 Tenga/ntk; savings stimulated by IUC pricing in train km is 12.5% or 1,200 m Tenga. Savings exclude passenger services and lower administration costs.

**D6 Shunting and Terminals Costs**

**D6.1 Shunting Costs**

Shunting for transit traffic is minimal, confined to border and some major cities. Normalised costs are built up similarly to locomotives. The output for shunting locomotives is hours, the norm for which is built up in the table below.

**Utilisation**

TYPE	STANDARD	ADJUST	ACCEPTED	STANDARD	ADJUST	ACCEPTED	STANDARD	ACCEPTED	ACCEPTED
	WAIT TIME	FACTOR	WAIT TIME	LIGHT	FACTOR	LIGHT	SHUNTING	SHUNTING	UTILISE
	HRS/DAY		HRS/DAY	HRS/DAY		HRS/DAY	HRS DAY	HRS DAY	HRS/YEAR
1	8	1.2	9.6	1	1	1	15	13.4	3940.6

**Normalised Maintenance Costs €**

SERVICE INTERVAL HRS	LABOUR	MATERIALS	EQUIPMENT	OVERHEAD	TOTAL/ SERVICE	TOTAL/ YEAR	PER HOUR
A 50	43	84	219	10	357	17126	4.76
B 500	1113	3150	1920	185	6368	35268	9.80
C 3000	1475	3780	4237	285	9776	9776	2.72
D 6000	2264	6300	4127	381	13072	7130	1.98
E 20000	3731	10710	13409	835	28685	4694	1.30
F 30000	6759	11957	18224	1108	38049	4151	1.15
G 60000	7536	11957	74421	2817	96731	5276	1.47
U1 3000	1113	42	3865	151	5171	6205	1.72
U2 3000	291	6000	88	191	6570	788	0.22
						TOTAL	25.12

**Financial Costs**

TYPE	REPLACEMENT	ECONOMIC LIFE	DEPRECIATION	COSTS
	COST	LIFE	RETURN ON ASSETS	PER HOUR
1	800000	30	144077	37

from	to	start	end	distance	train length	speed	gradient	alignment	All	X
		km	km	km	m	kph	%	m radius	Factors	distance
						factor	factor	factor	Factor	
Constansa (Ferry-boat)	Palas			13.6	750	1.15	0.93	10.0	1.1256	15.3081
Constansa Port (Zones A)	Palas			9	600	1.34	0.93	1.0	1.3100	11.7
Palas	Cernavoda			54.8	750	1.15	1.10	5.0	1.2842	70.1173
Cernavoda	Fetesti			20	600	1.34	1.05	10.0	1.4320	28.6
Fetesti	Pantelimon			125.2	750	1.15	1.00	6.0	1.1320	141.726
Pantelimon	Videle			50.4	750	1.15	1.00	8.0	1.1830	59.623
Videle	Rosiori Nord			49.2	600	1.34	1.00	6.0	1.3655	67.182
Rosiori Nord	Filiasi			144.7	720	1.1	1.10	8.0	1.2300	177.98
Filiasi	Balota			58.9	720	1.1	1.00	3.0	1.1402	67.1577
Balota	Orsova			54.8	720	1.1	1.00	27.0	1.1730	64.280
Orsova	Caransebes			88.3	720	1.1	1.00	14.0	1.1510	101.633
Caransebes	Iugoj			39.9	600	1.34	0.93	6.0	1.2760	50.912
Iugoj	Timisoara Nord			58.9	600	1.34	1.00	4.0	1.3820	81.399
Timisoara Nord	Arad			57.2	750	1.15	1.00	5.0	1.1922	68.19612
Fetesti	Tandarei			30.6	700	1.07	1.05	4.0	1.1590	35.465
Tandarei	Faurei			58.1	640	1.31	1.00	3.0	1.3400	77.85
Faurei	Buzau			40.4	700	1.07	1.00	2.0	1.1030	44.561
Buzau	Ploiesti West			71.6	700	1.07	1.05	8.0	1.1494	82.2970
Ploiesti West	Predeal			81.1	600	1.34	1.00	10.0	1.3841	112.2505
Predeal	Brasov			27	600	1.34	1.00	1.0	1.0444	37.378
Brasov	Coslaru			181	600	1.34	1.00	18.0	1.3984	253.110
Coslaru	Simeria			66.4	600	1.34	1.00	4.0	1.3880	92.163
Simeria	Arad			157.4	750	1.15	1.00	3.0	1.1898	187.2808
Arad	Curtici Fr			25	750	1.15	1.00	2.0	1.1560	28.
Filiasi	Carbunesti			46.5	550	1.47	1.05	8.0	1.5620	72.63
Carbunesti	Targu Jiu			29.1	550	1.47	1.00	10.0	1.5138	44.0515
Targu Jiu	Livezeni			46.1	550	1.47	0.93	1.0	1.4435	66.5453
Livezeni	Subcetate			49.6	600	1.34	1.00	18.0	1.4032	69.5987
Subcetate	Simeria			30.2	600	1.34	1.00	7.0	1.3805	41.691
Bucuresti triaj	Ploiesti West			57.7	700	1.07	1.05	5.0	1.1530	66.528
									-3.0000	
Coslaru	Teius			3.4	600	1.34	1.05	3.0	1.3960	4.746
Teius	Razboieni			33.5	600	1.34	1.16	2.0	1.5360	51.45
Razboieni	Apahida			25	600	1.34	1.05	11.0	1.4372	35.9
Apahida	Episcopia Bihor Fr			177.4	600	1.34	1.05	9.0	1.4350	254.56
				sum A					sum B	2664.959
TTT National Coefficient				sum B / A						1.2925401

Notes: speeds submitted converted to assumed operating speed



E5.4 Kazakhstan

Kazakhstan Railways			TTT National Coefficient Calculations											
from	to	start	end	distance	train length		technical speed		gradient		alignment		All	X
		km	km	km	m	factor	kph	factor	%	factor	m radius	factor	Factors	distance
Druzhba	Aktogay	0	318	318	850	1.03	47.8	1.12	4.3	1.000	634	1.0220	1.1690	371.7293
Aktogay	Almaty	1125	1679	554	850	1.03	43.8	1.06	10.8	1.000	275	1.0435	1.1305	626.297
Almaty	Shu	4052	3741	311	850	1.03	49.3	1.14	16.0	1.007	283	1.0430	1.2195	379.2707
Illy	Arys	3742	3213	529	850	1.03	50.3	1.15	11.0	1.002	238	1.0457	1.2322	651.8444
Arys	Chengeldy	3213	3290	77	850	1.03	54.2	1.21	11.1	1.002	480	1.0312	1.2762	98.2674
Arys	Kandyagas	3213	1881	1332	850	1.03	40.7	1.01	11.6	1.003	280	1.0432	1.0867	1447.484
Kandyagas	Makat	0	392	392	1050	0.92	45.2	1.08	9.4	1.000	470	1.0318	1.0298	403.6816
Makat	Beyneu	1337	1036	301	1050	0.92	48.6	1.13	7.8	1.000	474	1.0316	1.0806	325.2486
Beyneu	Mangistau	0	403	403	850	1.03	44.6	1.07	15.5	1.007	402	1.0359	1.1419	460.1776
				sum A	4217								sum B	4764.001

<b>TTT National Coefficient</b>	sum B / A	<b>1.129713</b>
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Notes: No changes to data submitted



## E5.3 Georgia

Georgian Railways		TTT National Coefficient Calculations													
from	to	start	end	distance	train length		speed		gradient		alignment		All	X	
		km	km	km	m	factor	kph	factor	%	factor	m radius	factor	Factors	distance	
Batumi	Samtredia	2	109	107	490	1.7	40	1	8	1.000	300	1.0420	1.7420	186.394	
Poti	Samtredia	41	109	68	550	1.54	30	0.85	7	1.000	260	1.0444	1.4344	97.5392	
Samtredia	Zestaponi	109	170	61	660	1.28	40	1	7.5	1.000	400	1.0360	1.3160	80.276	
Zestaponi	Khashuri	170	233	63	660	1.28	25	0.77	28	1.042	170	1.0498	1.1418	71.9334	
Khashuri	Tbilisi	233	359	126	660	1.28	50	1.15	7.6	1.000	285	1.0429	1.4729	185.5854	
Tbilisi	Gardobani	359	401	42	800	1.1	40	1	10.1	1.000	540	1.0276	1.1276	47.3592	
			sum A	467									sum B	669.0872	
<b>TTT National Coefficient</b>			<b>sum B / A</b>	<b>1.432735</b>											
Notes:	Speeds submitted converted to assumed operating speed														

E5.2 Bulgaria

Bulgarian Railways				TTT National Coefficient Calculations										
from	to	start	end	distance	train length		speed		gradient		alignment		All	X
		km	km	km	m	factor	kph	factor	%	factor	m radius	factor	Factors	distance
all sections		0		500	550	1.54	50	1.10	10.0	1.000	1000	1.0000	1.6400	820
			sum A	500									sum B	820
<b>TTT National Coefficient</b>			<b>sum B / A</b>	<b>1.64</b>										
note	distance estimated - the same factors apply to all sections, so distance has no effect													
	speeds submitted converted to assumed operating speed													



**E5 Calculations of the TTT Coefficient**

Calculation presented on the following pages is for information and record only for the TTT participating railways that have submitted information. For railways that have not submitted information a TTT Coefficient of unity will be applied until such information is received.

Where changes have been made to the submitted data as described E1, a note has been attached to the calculation.

**E4 National Submissions**

Submissions for TTT National Coefficients to the Traceca Secretariat have been received from Countries shown in the table below.

<b>Country</b>	<b>Date Received</b>	<b>Comment on Application</b>
<b>Azerbaijan</b>	12-12-02	All sections complete
<b>Armenia</b>		
<b>Bulgaria</b>	12-12-02	Average provided for network
<b>Georgia</b>		All sections complete
<b>Kazakhstan</b>	28-11-02	All sections complete
<b>Kyrgistan</b>		
<b>Moldova</b>	14-01-03	All sections complete
<b>Romania</b>	14- 12- 02	All sections complete
<b>Tajikistan</b>		
<b>Turkey</b>	15-03-03	Average provided for routes
<b>Ukraine</b>	27 -11-02	All sections complete
<b>Uzbekistan</b>	6-01-03	Average provided for network

**E3 Application for New or Revised TTT National Coefficients**

**Presentation of Information**

National railways intending to apply for a new or revised TTT National coefficient should provide the information in the table below. The application also provides important data on the extent and length of the Traceca Network to be included in the TTT.

Traceca Section			Train Length	Technical Speed	Gradient	Alignment
Km start	Km end	Length	M	Kph	0/00	M radius
1	2	3	4	5	6	7

**Notes**

- 1 Start km of section (use national route distance classification.
- 2 End km of section.
- 3 Length of section - the TTT adjustment factor will apply only to sections that are greater than 20 km in length.
- 4 Limiting train length
- 5 Technical speed through section
- 6 Ruling gradient through section
- 7 Minimum radius through section

Alterations to national coefficients to be used in the TTT are expected to occur annually.

The information should be registered with the Traceca Secretariat no later than 30<sup>th</sup> November 2002 for application in the TTT policy.

Return this document to the TTT Authority

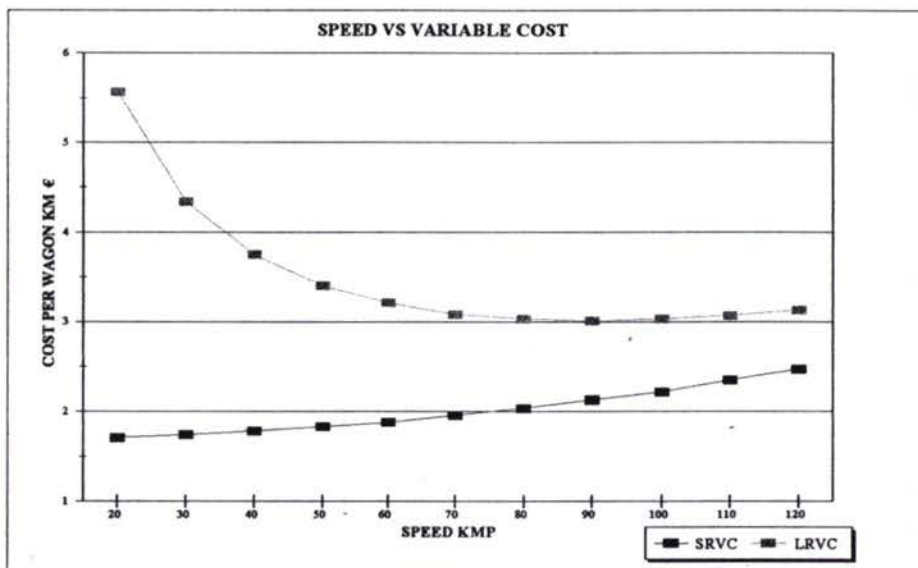
Name of railway .....

Signed ..... Date ..... (Seal)

Contact person .....

## E2 Note on Speed Cost Relationship

The relationship between speed and cost is indicated for information purposes in the figure below. The example uses 2 electric locomotives hauling 60 X 40 T Flat Wagons.



Source Railcost

Short run variable costs are seen to rise increasingly with speed. Within this range of speed the variation for electric locomotives is not as significant as diesel significant. For speeds of 160 kph the rate of increase in SRVC is much greater.

Long run variable costs are seen to decline steeply with speed due to the potentially higher utilisation that faster speeds produce and the corresponding lower unit costs of depreciation and return on assets. As speeds increase further, additional fuel costs increases faster than the reduction in asset provision costs.

An optimum speed for freight trains would appear to be between 70 kph and 120 kph.

However, the cost of infrastructure provision also increases with speed – refer to IUC speed adjustment factors F3.3. Note also that to achieve an average operating speed of 80 requires a technical speed of 120 kph

**APPENDIX E National Coefficients**

**E1 Derivation of TTT National Coefficients**

1. To compile TTT Coefficients that adjust the TTT Basic Flat wagon rate for each country according to agreed parameters.
2. TTT applying as it does to Traceca defined routes only requires a specific set of national coefficients that will apply only to TTT.

Coefficients are intended to reflect the actual operating conditions of Traceca railway routes.

3. Railways participating in the TTT are required to provide information that will be used to estimate TTT coefficients.
4. The TTT Coefficient (C) will be derived from the following formula

$$C = \sum f_n \times d / D$$

where  $f_n$  is an adjustment factor

$d$  is the section distance over which it applies

$D$  is the total length of Traceca in the country

5. The TTT national coefficient will be derived from 4 factors f: Train Length, Route Speed; Gradient; Alignment.

**TTT Normative Adjustment Factors**

train length		operating speed		gradient	alignment			
m	wagons	factor	kph	factor	%	factor	m radius	factor
1450	100	0.64	70	1.21	10/1000	1	1000	1
1170	80	0.85	60	1.16	20/1000	1.015	900	1.006
890	60	1	50	1.1	30/1000	1.03	800	1.012
750	50	1.15	40	1	40/1000	1.045	700	1.018
610	40	1.36	30	0.86	50/1000	1.06	600	1.024
470	30	1.73	20	0.67			500	1.03

6. Analysis carried out by Traceca in the project Unification of Transit Fees and Tariffs calibrated each factor shown in the table.

Notes to the adjustment factors<sup>12</sup>:

**Train length** –the normal train length comprises 60 14 m wagons and 2 locomotives totalling 890 m and has an adjustment factor of 1.0. Variations to train length, alignment and gradient are considered directly proportional to changes in operating cost.

**Speed** - average operating norm of 40 kph reflects average timetable performance on Traceca Routes. Variations in speed are exponentially related to changes in cost.

<sup>12</sup> Normative wagon size has been changed from 20 to 14 m; the speed has been modified from technical norm of 70 kph to an operating speed norm of 40 kph; TTT participants are invited to comment on the modifications to norms and adjustment factors





E5.7 Ukraine

Ukraine Railways		TTT National Coefficient Calculations													
from	to	start	end	distance	train length		speed		gradient		alignment		All	X	
		km	km	km	m	factor	kph	factor	%	factor	m radius	factor	Factors	distance	
		0	66	66	850	1.03	50	1.10	9.2	1.000	500	1.0300	1.1600	76.56	
		66	137	71	850	1.03	50	1.10	8.4	1.000	500	1.0300	1.1600	82.36	
		137	202	65	850	1.03	50	1.10	9.0	1.000	500	1.0300	1.1600	75.4	
		202	214	12	850	1.03	50	1.10	9.2	1.000	500	1.0300	1.1600	13.92	
		214	287	73	850	1.03	50	1.10	10.4	1.000	500	1.0300	1.1600	84.68	
		287	408	121	850	1.03	50	1.10	8.4	1.000	500	1.0300	1.1600	140.36	
		408	434	26	850	1.03	50	1.10	9.8	1.000	500	1.0300	1.1600	30.16	
		434	543	109	850	1.03	50	1.10	8.2	1.000	500	1.0300	1.1600	126.44	
		543	624	81	850	1.03	50	1.10	8.3	1.000	500	1.0300	1.1600	93.96	
		624	716	92	850	1.03	50	1.10	8.4	1.000	500	1.0300	1.1600	106.72	
		716	735	19	850	1.03	45	1.05	8.4	1.000	500	1.0300	1.1100	21.09	
		735	861	126	850	1.03	50	1.10	7.9	1.000	500	1.0300	1.1600	146.16	
		861	924	63	850	1.03	50	1.10	3.5	1.000	500	1.0300	1.1600	73.08	
		924	945	21	850	1.03	50	1.10	4.6	1.000	400	1.0360	1.1660	24.486	
		945	950	5	850	1.03	25	0.76	12.9	1.004	170	1.0498	0.8438	4.219	
			sum A	950									sum B	1099.595	
<b>TTT National Coefficient</b>			<b>sum B / A</b>	<b>1.157468</b>											

E5.8 Uzbekistan

Uzbekistan Railways				TTT National Coefficient Calculations										
from	to	start	end	distance	train length		technical speed		gradient		alignment		All	X
		km	km	km	m	factor	kph	factor	%	factor	m radius	factor	Factors	distance
Chengeldy	Hodjidavly	0	787	787	890	1.03	50	1.10	4.3	1.000	634	1.0220	1.1520	906.5925
Beyneu	Chengeldy			1847	890	1.03	50	1.10	4.3	1.000	634	1.0220	1.1520	2127.67
			sum A	2634									sum B	3034.263
<b>TTT National Coefficient</b>			sum B / A	1.15196										

Notes: Speeds submitted converted to assumed operating speed

**E5.9 TTT National Coefficients Summary**

TTT National Coefficients			Version 07 03 03		
Traceca partner	Network Included	TTT Coefficient	Notes		
	km				
Azerbaijan	500	1.11	No changes to data submitted		
Armenia	-	1	To be requested for information, TTT Coefficient of 1 assumed		
Bulgaria	500	1.64	Speed converted from technical to actual operating		
Georgia	467	1.43	Speed converted from technical to actual operating		
Kazakhstan	4217	1.13	No changes to data submitted		
Kyrgistan	-	1	To be requested for information, TTT Coefficient of 1 assumed		
Moldova	207.9	1.10	No changes to data submitted		
Romania	2061.8	1.29	Speed converted from technical to actual operating		
Tajikistan	-	1	To be requested for information, TTT Coefficient of 1 assumed		
Turkey	6987	1.61	Speed converted from technical to actual operating		
Ukraine	950	1.16	Speed converted from technical to actual operating		
Uzbekistan	2634	1.15	Speed converted from technical to actual operating		
Turkmenistan	-	1	To be requested for information, TTT Coefficient of 1 assumed		

**APPENDIX F Tariff Authority****F1. List of Functions**Administration

Organisation and coordination of TTT conferences and meetings

Changing TTT regulations as instructed by TTT conferences

Receipt and processing of requests from TTT signatories for changes to TTT National Coefficients or other National requests for changes and advising all other TTT signatories of the said changes

Processing complaints or suggestions for improvement regarding the execution of the TTT Authority

Maintenance of the TTT Authority's Accounts and periodic reporting

General Administration of the TTT Authority

Economics and research

Receipt and processing data on the numbers and types of wagons using Traceca that have been priced using the TTT

Maintenance of the TTT normative cost base

Maintenance and application of the TTT normative costing methodology

Research into norms and other elements of the cost base

Analysis of requests to change TTT coefficients or other elements of the TTT

Calculation and proposal of annual or periodic revision of tariffs to TTT signatories based on changes to the normative costs

Preparation of economic briefing reports to TTT signatories

Information and Promotion

TTT information and advisory services to the agencies that apply or intend to apply the TTT

Advising Users of TTT rates and tariffs

Liaison with related tariff authorities

Promotion of TTT changes when agreed by TTT signatories

Updating and issuing TTT regulation and other information

Organisation and provision of guidance or if necessary training in various aspects and application of the TTT

Market research (optional)

Receipt, analysis and maintenance of information on potential Traceca traffic

Advisory services to TTT signatories of potential market opportunities

Research and advise on appropriate tariffs and other service attributes required for new market opportunities or for enhancing, or retaining existing traffic

Carrying out market research on existing or potential users

Preparation of briefing reports to TTT signatories

Tariff and Revenue Legal Services (optional)

Advising Traceca Users of Conditions of Carriage

Resolution of revenue allocation issues between TTT signatories

## **F2. Organisation**

The TTT Authority organisation shall be headed by the TTT General Secretary that shall be responsible for the administrative functions and have overall responsibility for the performance of the TTT Authority

The following additional positions shall be included in the TTT authority:

- Railway Economist to carry out the Economics and Research functions:
- Information Officer to carry out the functions of Information and Promotion:
- an administrative secretary.

Additional position of Market Researcher and Legal Officer shall be included in the organisation of the personnel of the TTT Authority at the discretion of the signatories to the TTT regulation.

The functions of the TTT Authority shall be carried out by the Traceca Secretariat or by one or more of the organisations that are signatories of the TTT regulation.

The Agency appointed TTT Authority shall make available all necessary resources for the proper functioning of the TTT Authority.

When establishing or changing the agency appointed TTT Authority organisations intending to become the designated agency shall advise TTT signatories in advance of the resources, costs and conditions of their provision

The official working languages of the TTT Authority shall be Russian and English.

Translation and interpretation into the languages of the signatories shall be carried out at the discretion of and resourced by the TTT signatories

## **F3. Personnel**

Any qualified citizen of any TTT signatory shall be eligible for any of the positions in the TTT Authority.

The positions shall be occupied under 3 yearly contracts that can be renovated twice upon satisfactory performance thus making it possible for the positions to be filled for a maximum of 9 years by the same individual.

Personnel shall be appropriately qualified technically and linguistically and shall not have any criminal record

All personnel appointments have to be approved by a majority of the signatories to the TTT regulation

In the event that any position fall vacant unexpectedly the General Secretary has the discretion to fill the position temporarily without approval from TTT signatories for a maximum period of 12 months until a permanent appointee is approved.

#### **F4. Financing**

The financing currency of the TTT Authority shall be Euro

Resources provided by the Traceca Secretariat or other agency appointed to be the TTT Authority shall be remunerated for the resources provided at rates agreed by signatories to the TTT regulation annually in advance.

The Personnel Contracts shall be remunerated at the rates agreed in the contracts and altered annually to rates agreed by signatories to the TTT regulation.

Other expenses shall be advised to signatories to the TTT Regulation annually in advanced.

The annual budget including the aforementioned items shall be prepared by the General Secretary to the TTT Authority for approved by signatories in advance.

The budget shall be financed by signatories to the TTT agreement in proportion to the annual throughput of wagons priced using the TTT regulation.

The General Secretary shall advise each signatory to the TTT of the contribution expected 3 months in advance of the approval of the annual budget.

The TTT Authority shall obtain income from other sources including international development and financing institutions and from revenue from sales of information and services provided.

**C7**





**TRACECA**

## **Working Paper**

# **Comparison of possible TTT with Rail Tariffs for Humanitarian Aid for Afghanistan**

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## 1. Introduction:

The conveyance of humanitarian goods to Afghanistan provides an example of the kind of new traffic that the UPTFT project is to assist in attracting to Traceca.

The purpose of this note is to compare the tariffs agreed by Traceca Partners for the conveyance of humanitarian goods to Afghanistan with those of the proposed Traceca Transit Tariff - TTT – being designed through the UPTFT project.

## 2. Protocol on Traceca Rates for Humanitarian Aid Traffic

Extracts from Protocol 22nd November 2002 show a) the routes over which the special tariffs apply and b) the agreed special tariffs for the conveyance of containers.

### a) Routes applying special tariffs:

1. Poti/Batumi-Baku-Turkmenbashi-Serkhetabad/Turgundi
2. Poti/Batumi-Baku-Turkmenbashi-Farap-Karshi
3. Poti/Batumi-Baku-Turkmenbashi- Farap-Termez
4. Poti/Batumi-Baku-Turkmenbashi- Farap-Kurgan-Tyube.

### b) Special basic tariffs

The table below shows the special tariffs for containers for each separate route segments through the territories of each Traceca partner.

**Table 1. Special tariffs for containers in USD**

Route segment	20' loaded	40' loaded	20' empty	40' empty
Port Poti/Batumi	40	48	20	24
Poti/Batumi-Gardabani (Railway – Georgia)	101	181	50	90
Beyuk-Kyasik-Baku pier (Railway Azerbaijan)	150	270	75	135
Baku pier-Turkmenbashi pier (CASPAR ferry)	per one r. m. 26	Per one r. m. 26	per one r. m. 13	per one r. m. 13
Turkmenbashi-Serkhetabad (Railway Turkmenistan)	414	745	244	438
Turkmenbashi-Farap (Railway Turkmenistan)	421	757	247	445
Farap-Termez (Railway Uzbekistan)				
Farap-Kurgan-Tyube (Railway Uzbekistan)				

### 3. Example for comparison

The example chosen for this comparative exercise is the route from Poti to Serkhetabad<sup>1</sup>. It is likely that the same conclusions will be drawn for the other routings covered by the Protocol of November 22<sup>nd</sup> 2002.

### 4. Note on Currency.

Note that the Traceca Tariffs are expressed in US Dollars, the MTT is transacted in Swiss Francs and the TTT is expressed in Euro. Being almost entirely funded by the European Union and in compliance with EU policy and directives, the single unit of currency for Traceca and its domain is determined to be the Euro.

### 5. TTT Rates

TTT rates for each of the main types of wagons have been calculated based on regional norms of the main cost components and adjusted by National Coefficients based on information supplied by Traceca Partners.

The table below provides the following information

- The basic wagon rates for each wagon type as either a **full rate** based on long term variable costs, a rate to be applied if wagons are owned by third parties and a lowest rate based on short run variable costs
- The TTT National Coefficients (in italics) for each country
- The adjusted full rates for each country applying the TTT National Coefficient to the basic full rate.

The derivation of the information contained in table 2 will be supplied in another working paper. The point of presenting it here is to provide an opportunity for colleagues to examine the results and to see them being applied to an important example.

### 6. Distances

A prerequisite is to fix the Traceca distances over which the TTT applies. These distances are implicit in the special tariff in Table 1 but need to be explicit in our comparison with TTT for transparency. It is understood that tariff distances are not necessarily the same as physical distances for pricing purposes. The process of fixing Traceca distances has been started by the Secretariat and the distances used in the TTT calculation shown in Table 5 are those provided by them. It will be vital that TTT distances are part of the TTT agreement.

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<sup>1</sup> On the Turkmenistan Afghanistan border

Table 2 Proposed TTT Wagon Rates

Traceca Reference	Wagon Type	lowest	third	full	Armenia	Azerbaijan	Bulgaria	Georgia	Kazakhstan	Kyrgistan	Moldova	Romania	Turkey	Tajikistan	Ukraine	Uzbekistan
		rate	party	rate												
		<b>TTT Coefficient</b>			<b>1.11</b>	<b>1.64</b>	<b>1.43</b>	<b>1.13</b>	<b>1.00</b>	<b>1.10</b>	<b>1.29</b>	<b>1.61</b>	<b>1.00</b>	<b>1.16</b>	<b>1.15</b>	
1	Covered	0.18	0.25	0.38	0.38	0.43	0.63	0.55	0.43	0.38	0.42	0.50	0.62	0.38	0.45	0.44
2	Platforms	0.21	0.22	0.39	0.39	0.43	0.64	0.56	0.44	0.39	0.43	0.50	0.63	0.39	0.45	0.45
3a	Open-top axle	0.27	0.24	0.49	0.49	0.55	0.81	0.70	0.56	0.49	0.54	0.64	0.79	0.49	0.57	0.57
3b	Open top bogie	0.44	0.40	0.77	0.77	0.85	1.26	1.10	0.86	0.77	0.84	0.99	1.23	0.77	0.89	0.88
4a	Tank axle	0.44	0.28	0.73	0.73	0.81	1.20	1.05	0.83	0.73	0.80	0.95	1.18	0.73	0.85	0.84
4e	Tanker bogie	0.55	0.38	0.98	0.98	1.09	1.61	1.41	1.11	0.98	1.08	1.27	1.58	0.98	1.14	1.13
5*	Isothermal axle	0.30	0.23	0.64	0.64	0.71	1.05	0.92	0.72	0.64	0.70	0.83	1.03	0.64	0.74	0.74
5b	Isothermal bogie	0.44	0.36	0.90	0.90	1.00	1.47	1.29	1.01	0.90	0.98	1.16	1.44	0.90	1.04	1.03
6a	Flat-bed axle	0.19	0.22	0.36	0.36	0.40	0.59	0.52	0.41	0.36	0.40	0.47	0.58	0.36	0.42	0.42
6b	Flat-bed bogie	0.23	0.30	0.50	0.50	0.55	0.81	0.71	0.56	0.50	0.54	0.64	0.80	0.50	0.57	0.57

### 7. Service Assumptions

Normal service assumptions are used for this comparative exercise, namely that the train consist is of 60 wagons hauled by 2 locomotives at an average operating speed of 40 kph. Because the exercise requires comparison of rates for containers and not of wagons it is necessary to assume a load factor for containers. Loading of containers is assumed to be 70% of the capacity of the train<sup>2</sup>.

<sup>2</sup> In fact the rates quoted to clients should be that of the wagon not the container. It should be the client's risk to load the wagon not that of the railways whose costs are almost the same whether the wagon is fully loaded or not.

<b>Service Specifications</b>	
<b>Poti to Serkhetabad</b>	
via Baku and Turkmenbashi	
14 m flat-bed wagons per train	60
Average Operating Speed	40 kph
TEU per wagon	2
Fully loaded TEU per train	120
Load Factor	0.7
TEU per train	84

### 8. TTT Rates

TTT rates have been calculated for each of the four parts of the TTT in Table 4.

Part 1 Movement comprises wagon rates deduced from table 2. The rates are different for each country, as they have been adjusted using the TTT Coefficient shown also in Table 4. The rate through Turkmenistan is taken at the unadjusted basic rate.

Part 2 Terminal charges will include port access charges and border crossing charges for each segment. Standard railway access charges for each Traceca Port are proposed. The charges for border crossing relates to a standard waiting time of 1 hour per train – in accordance with AGC standards and also includes shunting activities.

Part 3 IUC has been deduced from the normalised approach (described in an earlier paper) which can be applied either at a level for full recovery of the costs of reconstructing the railways infrastructure and generating a 12% return or at a level for the recovery of operating costs including maintenance and traffic control etc. The decision shall be that of the Traceca Partners of course.

Part 4 Handling charges cover the costs of the initiating railway in setting up the service with concomitant documentation. Its derivation is also explained in another paper.

**Table 4 TTT Rates**

<b>Tariff Part</b>	<b>Coefficient</b>	<b>Full</b>	<b>Lowest</b>
<b>1 Movement</b>		€	€
Basic rate per wagon		0.36	0.19
Georgia	1.43	0.51	0.27
Azerbaijan	1.11	0.40	0.21
Turkmenistan	1	0.36	0.19
<b>2 Terminal charges per wagon</b>			
Standard port access charge		5.60	5.60
Standard border crossing charge		3.00	3.00
<b>3 IUC TTT Standard Charge per train km</b>		8.30	1.60
IUC rate per wagon km		0.14	0.03
<b>4 Standard handling fee</b>		20.00	20.00
Empty Return Container Discount	0.75		

### 9. TTT Results

The TTT results for each of the segments between Poti and Serkhetabad are presented in table 5 below. The tariffs are based on the segmental distances shown.

The full and lowest rates for each segment are quoted<sup>3</sup>. The total full TTT wagon rate Poti to Serkhetabad is €1,019.28 (\$1153.19) or €728.06 (\$764.46) per TEU.

#### 10. Empty Containers

The Tariff for returning wagons carrying empty containers can be discounted even further than short run marginal costs because the cost of the empty return has already been structured into the tariff for the loaded journey. Analysis shows that the additional costs of carrying empty containers is therefore very small equating to around 25% of the full rate.

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<sup>3</sup> The full rate is based long run marginal cost, which includes asset depreciation and replacement at current values and also includes a return on assets of 12.0% as agreed in our Protocols.

Route Segment	Tariff	Distance km	Movement Per Wagon	Terminal Per Wagon	IUC Per Wagon	Handling Fee Per Wagon	Segment Total Per Wagon	Per TEU	Per 40ft	Empty Returns per TEU
<b>(Railway - Georgia)</b>	full	387.00	199.23	11.60	53.54	20.00	284.36	203.12	406.23	50.78
Poti/Batumi-Gardabani	lowest		105.15	11.60	10.32	20.00	147.07	105.05	210.10	26.26
<b>(Railway Azerbaijan)</b>	full	503.00	201.00	11.60	69.58	0.00	282.18	201.56	403.11	50.39
Beyuk-Kyasik-Baku pier	lowest		106.08	11.60	13.41	0.00	131.10	93.64	187.28	23.41
<b>(CASPAR ferry)</b>										
Baku pier-Turkmenbashi pier	-									
<b>(Railway Turkmenistan)</b>	full	1225.00	441.00	11.60	0.14	0.00	452.74	323.38	646.77	80.85
Turkmenbashi-Serkhetabad	lowest		232.75	11.60	32.67	0.00	277.02	197.87	395.74	49.47
<b>Total</b>	full	2115.00	841.23	34.80	123.26	20.00	1019.28	728.06	1456.12	182.01
	lowest		443.98	34.80	56.40	20.00	555.18	396.56	793.12	99.14

Table 5 TTT for Containers Poti - Serkhetabad (€)



## 11. Round Trip Tariffs

For shippers, especially of containers, it is the round trip price that is important. The table below summarises tariffs for each national segment for a TEU (twenty foot equivalent) in both the loaded and empty directions.

### Comparison between special rate and TTT €

Country	Special Tariff			TTT full rates		
	Loaded	Empty	Round Trip	Loaded	Empty	Round Trip
<b>Georgia</b>	96	47.6	143.6	203.12	50.78	253.90
<b>Azerbaijan</b>	142.8	71.4	214.2	201.38	50.39	251.77
<b>Turkmenistan</b>	394.3	213.3	607.6	323.38	80.05	403.43
<b>Total</b>	<b>633.10</b>	<b>332.3</b>	<b>965.4</b>	<b>728.06</b>	<b>181.22</b>	<b>909.28</b>

Note that the special rates in USD have been converted to Euro at \$1 = €0.95

## 12. Conclusions

- Generally TTT and Traceca Special Tariffs are similar overall, indicating that the regional normative cost base used to derive the TTT is performing rationally given current capacity surpluses and suboptimal performance.
- The TTT 4 part structure combines to give comparable tariffs to those being currently proposed.
- The 4 part structure, by successfully separating an infrastructure user charge, provides an excellent opportunity to progress restructuring reforms in Traceca Countries.
- Local differences between TTT and the special Traceca Tariffs can be due to a number of factors. The special rate is higher through Turkmenistan probably because the country's TTT coefficient should be higher than unity – maybe 1.2. Through Georgia the normal TTT rate is much higher than the special rate whereas it is much closer to the lowest TTT rate so representing a very good discount. The TTT and special tariff through Azerbaijan is similar to the 2 – way tariff at the TTT full rate.
- The lowest TTT tariff from table 5 is €495.97<sup>4</sup>. Traceca Tariffs for Special Humanitarian Aid for Afghanistan could be discounted much further to approach the lowest rate.

<sup>4</sup> loaded outward – €396.56 + return of empty container – €99.41

- However, the conclusions say nothing about whether a discount is needed to attract Afghan Traffic – maybe a higher rate would attract similar volumes if the transport of aid and development is more sensitive to routing (avoiding Iran) than price.
- Traceca Partners should be offering wagon not container rates.
- Overall the comparative exercise shows that the proposed TTT - whose rates are based on the traffic-costing model 'Railcost' - performs acceptably well.

### 13. Recommendations

There are number of recommendations that arise indirectly from this short exercise.

- Circulation of this working paper internally within Traceca Secretariat and use during discussions with Traceca partners;
- TTT should be promoted as a main output to the UPTFT study with Traceca and with the partner countries;
- That the institutionalisation of the TTT be given careful consideration, particularly the establishment of a TTT Authority that will oversee the administration of the TTT;
- Careful consideration given to sustainability of TTT, resources allocated, provision of appropriate tools and training in the underlying methodology.

**C7**

Tariff Part	Coefficient	Full	Lowest
1 Movement		€	€
Basic rate per wagon		0,36	0,19
Georgia	1,42	0,51	0,27
Azerbaijan	1,11	0,40	0,21
Turkmenistan	1	0,36	0,19
2 Terminal charges per wagon			
Standard port access charge		5,60	5,60
Standard border crossing charge		3,00	3,00
3 IUC TTT Standard Charge per train km		8,30	1,60
IUC rate per wagon km		0,14	0,03
4 Standard handling fee		20,00	20,00
Empty Return Container Discount	0,75		

Service Specifications	
Port to Serkhetabed	
via Baku and Turkmenbashi	
14 m flat-bed wagons per train	60
Average Operating Speed	40 kph
TEU per wagon	2
Fully loaded TEU per train	120
Load Factor	0,7
TEU per train	84
TEU per wagon	1,4

Terminal	Wagon	Lowest rate	Full rate	Full	0,1	0,2	0,3	0,4	0,5	0,6	0,7	0,8	0,9	1,0	1,1	1,2	1,3	1,4	1,5	1,6	1,7	1,8	1,9	2,0	
				TEU/Container	0,1	0,2	0,3	0,4	0,5	0,6	0,7	0,8	0,9	1,0	1,1	1,2	1,3	1,4	1,5	1,6	1,7	1,8	1,9	2,0	
1	Georgia	0,18	0,25	0,38	0,38	0,43	0,63	0,55	0,43	0,38	0,42	0,5	0,62	0,38	0,45	0,44									
2	Azerbaijan	0,21	0,22	0,38	0,29	0,43	0,64	0,56	0,44	0,39	0,43	0,5	0,63	0,39	0,45	0,45									
3a	Georgia side	0,27	0,24	0,49	0,49	0,55	0,81	0,7	0,54	0,49	0,54	0,64	0,79	0,49	0,57	0,57									
3b	Georgia side	0,44	0,4	0,77	0,77	0,85	1,16	1,1	0,86	0,77	0,84	0,99	1,22	0,77	0,87	0,88									
4a	Turk side	0,44	0,28	0,78	0,78	0,81	1,2	1,02	0,82	0,79	0,8	0,95	1,18	0,79	0,81	0,84									
4b	Turk side	0,55	0,38	0,98	0,98	1,09	1,61	1,41	1,11	0,98	1,08	1,27	1,58	0,98	1,14	1,13									
5	International side	0,3	0,23	0,64	0,64	0,71	1,05	0,92	0,72	0,64	0,7	0,83	1,03	0,64	0,74	0,74									
5b	International side	0,44	0,36	0,9	0,9	1	1,47	1,29	1,01	0,9	0,98	1,16	1,44	0,9	1,04	1,03									
6a	Flat bed side	0,19	0,22	0,34	0,34	0,4	0,59	0,52	0,41	0,36	0,4	0,47	0,58	0,36	0,42	0,42									
6b	Flat bed side	0,23	0,3	0,5	0,5	0,55	0,81	0,71	0,56	0,5	0,54	0,64	0,8	0,5	0,57	0,57									

Route Segment	Tariff	Distance km	Movement	Terminal		IUC		Handling Fee		Segment Total		Empty Return
				Per Wagon	Per Wagon	Per Wagon	Per Wagon	Per Wagon	Per Wagon	Per TEU	Per 40ft	
(Railway - Georgia)	full	387,00	199,23	11,60	23,54	26,00	224,26	263,22	696,23	50,78		
Port/Batumi-Carabulak	lowest		105,15	11,60	10,32	20,00	147,07	105,05	210,10	26,26		
(Railway - Azerbaijan)	full	503,00	261,00	11,60	49,28	6,00	282,28	261,58	693,21	50,39		
Beyah-Kyash-Baku pier (CASPAR ferry)	lowest		106,08	11,60	13,41	0,00	131,10	93,64	187,28	23,41		
Baku pier-Turkmenbashi pier												
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Turkmenbashi-Serkhetabed	lowest		232,75	11,60	32,67	0,00	277,02	197,87	395,74	49,47		
<b>Total</b>	full	2115,00	842,23	34,80	123,26	26,00	1019,28	728,69	1656,22	182,91		
	lowest		443,98	34,80	56,40	20,00	555,18	396,56	793,12	99,14		

Total rates full 0,34 lowest 0,19

**C8**

## Council of Heads of Railways

### Draft Agenda

The main task of the first meeting is to establish the forum and the common goals that will bind its participants to periodically meet. For that reason the forum should have a broad but concrete agenda that tackles contemporary problems of regional interest.

The agenda may be structure as follows:

1. Level of Business – Traffic
2. Money – Payments, currency etc
3. Operating issues – including technical matters
4. Commercial Issues - including tariff matters
5. Management Issues – Including restructuring matters
6. Policy Issues - including external relations
7. Legal Issues – Harmonisation, conditions etc.

### Itemisation

#### 1. Level of Business

Common strategy to international traffic in keeping with Traceca BMLA

Monitoring Demand

Sharing information

Relations with agencies

Promotion and public relations

#### 2. Money

Intra railway payments for wagon demurrage – dispute resolution

Currency – conversion to Euro

Moving towards one-stop shop

#### 3. Operating issues – including technical matters

Promoting through operations

Maintaining common technical standards

Exchange of information – wagon tracking etc

Intermodal operations - a common approach to ports and shipping

#### 4. Commercial

Tariff Policy TTT and TTT Authority

Common pricing policy – containers + others

Through Traceca special rates

#### 5. Management

Restructuring, minimising divergence, ensuring harmonisation

Seeking economies of scale on supply side

#### 6. External Relations

Common approach to policy

#### 7. Legal Issues

Common conditions of carriage

**C8**



Council of Heads of Railways

Suggested amendments to memorandum

To item - II Harmonised Transport Tariffs

Item 1 to read

*Endorse the proposed TRACECA Transit Tariff structure (TTT), which follows a wagon-based principle and replaces MTT for international transport and prepare an implementation plan including a TTT Agency and tariff agreement.*

Reason for change...

- a) there is agreement on the TTT in principle and emphasis shall be placed on implementation
- b) it is important to make reference to the TTT Agency
- c) it is in this first point that the principals of being wagon based and replacing MTT is best positioned

Bullet 3 – to read

*To pilot the TTT in participating countries then if successful adopt TTT and establish a TTT Agency to administer it.*

Reason for change...

- a) Makes a clear statement of action of what is needed to be done
- b) Includes the necessity of piloting TTT

**C8**

## TRACIO Draft Declaration and Protocol

Of the TRACECA Conference of Intermodal Operators constituting Plenipotentiary Officials of Railways, Ports and Shipping of the country

– participants of the Basic Multilateral Agreement on International Transport Development of the Europe – the Caucasus – Asia Corridor (TRACECA) Azerbaijan, Armenia, Bulgaria, Georgia, Moldova, Kazakhstan, Romania, Tajekistan, Ukraine, Uzbekistan, etc

Baku

July -- 2003

The heads of railways ports and shipping administrations of Azerbaijan, Armenia, Bulgaria, Georgia, Moldova, Kazakhstan, Romania, Tajekistan, Ukraine, Uzbekistan, etc. in their capacity as signatories of the Multilateral Agreement at their meeting in Baku on ---- presided by Azerbaijan and in accordance with the main objectives and tasks arising from the said agreement and having regard to the continuing goal of improving the competitiveness of TRACECA

### 1. Regarding the Forum

**agree to establish a conference that will be known as the TRACECA Conference of Intermodal Operators known as TRACIO with parties that share common goals and interests that bind its participants to periodically meet to solve those contemporary problems that are of mutual interest and**

### 2. Regarding the agenda

**to include though not be limited to the current level of business; management and operating issues, financial matters, commercial considerations, tariff policy, manpower development and training, multimodal services and legal matters, investment and external relations;**

and by their hand do hereby subscribe to the following:

### 2. Regarding Commercial Matters

that the level of business on Traceca remains below its potential and that a common strategy to international traffic remains in the interests of participants of the Multilateral Agreement including much closer monitoring of demand through market research activities and market conditions and sharing said information generated by such activities; **agree that targets for increasing traffic will be proposed at the next meeting by participants as the first step to elaborating a common strategy including the means and modalities for achieving the said targets and a more aggressive and visible common approach to the promotion of TRACECA to potential users and investors;**

### 3. Regarding Financial Matters

that financial relations between participants of the TRACECA require to be placed on a more positive basis that includes more efficient settlement of payments and balances and where needed more rapid resolution of issues and disputes and undertakes to speed ongoing processes especially those of wagon demurrage and in that respect **agree to report to the next meeting of the Forum the progress that has been made;**

**to consider utilising where possible the Euro as the main currency of preference for international transactions in the future and undertakes to investigate the feasibility of so doing;**

3. Regarding Management and Operations

recognises the sovereignty and independence of participants and an increasing trend for TRACECA to restructure their activities but in so doing **to ensure that common technical and operating standards are maintained or enhanced by close cooperation;**

**that the interoperability of most of TRACECA is a major asset that should be maintained and strengthened through sustaining common technical standards operating parameters and performance traffic data and information exchange to facilitate exploitation of intermodal transport containerisation;**

appreciating also that restructuring may generate cross border opportunities for economies of scale in supply of services to parties to the protocol and **declare that such opportunities will be encouraged and regularly discussed by TRACIO;**

furthermore the parties to this protocol **agree to fully support the harmonisation of border operations and the reduction of any bottlenecks or constraints and in so doing welcomes proposals for its deliberation at the next meeting.**

4. Regarding Tariffs

that a common and unified policy to tariffs is advantageous to attracting new business and mindful the extensive work carried out by IGC Traceca in this regard and protocols signed during (2002/2003) by representatives of the participants of this Forum endorse **that the proposed four part TTT being developed by IGC Traceca provides an sound basis for a new tariff structure and request that it be elaborated further;**

acknowledges **that a draft agreement for implementing the TTT will be necessary a draft of which should be prepared for the next meeting;**

and that when such a tariff agreement is reached **an agency will be required to administer the said tariff agreement as well as provide other services that support efforts to generate new business for TRACECA and that proposals for such an agency shall be prepared for the next meeting;**

**agree that special consideration continues to be needed to attract new business particularly regarding the promulgation of through tariffs that combine the services provided by parties to this protocol and proposals for new through intermodal tariffs shall be prepared for the next meeting by TRACECA IGC.**

5. Regarding Multimodal Transport

that special attention should be given to the elaboration of such policies and strategies that will be needed to develop multimodal-transport including an appropriate regulatory basis and performance and **endorses that a draft for an additional technical annex to the MLA covering multi-modal transport be prepared for the next meeting by TRACECA IGC**

that to enable Multimodal Services to flourish, certain legal requirements will need to be developed and **agree that the harmonised legal basis for the development of Multimodal Transport should be elaborated as a matter of priority through TRACECA and request the IGC TRACECA to undertake appropriate activities that will be fully supported by TRACIO;**

6. Regarding Training

that the calibre of personnel engaged in transport activities needs improving and **agree to cooperate and liaise in areas such as education and training and undertakes to highlight areas where such cooperation is possible including each participant designating a coordinator through which efforts can be directed to develop such a coordinated programme;**

**such a programme may include a regional needs assessment, establishing goals for raising standards, common qualifications, exchange opportunities for some personnel; pooling training resources;**

8. Regarding External Relations

**recognises the need to for adopting common approach to external relations with third parties that may act for or against the interests of signatories to this protocol and the benefits of using this forum for debating such an approach; supports the maintenance of relations with external agencies such as those in CIS; UIC, OEJD, ECMT and others on international development;**

9. Regarding Investment

**declares a flexible approach to funding investment in infrastructure in TRACECA that may include either or both public or private interests and acknowledges the benefits of international coordination in generating investor interest and thereby agrees to support a strengthened investment programme coordination function for TRACECA IGC and in so doing its role as TRACIO in endorsing such proposals for investment for inclusion into a TRACECA programme, the first draft programme to be presented at the next meeting of TRACIO;**

11. Additionally

1. Requests IGC TRACECA to support the work of TRACIO;
2. Suggests that its work programme be prioritised as follows...
3. Desires that the Forum meet at least annually
4. Undertakes to establish such technical committees as it sees fit to deliberate on its decisions;
5. Undertakes to fund internally fund its activities;
6. Undertakes to issue a public statement following each meeting;
7. Undertakes to rotate each meeting in the countries of its participants;
8. Undertakes to select a chairman for each meeting from the host organisation;
9. Undertakes to next meet -----

**C9**

**TRACECA**

**UPTFT**

**A proposal for piloting the proposed  
"TTT" tariff policy structure**

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## **Introduction and Background**

### **1.1 Rationale and Objective**

It is proposed by the consultant that a good way of advancing the rail TRACECA Transit Tariff (TTT) policy structure that has been agreed "in principle", is to carry out trials (or pilot studies) that will run in parallel with the existing tariff costing systems with a number of key railway partners. It is intended to invite all TRACECA railways to participate in the trials, but it is felt that the greatest impact will be from those railway companies at the core of the TRACECA route.

It has been established that some heads of TRACECA railways have already stated an interest to cooperate in this way.

It is quite clear that although TTT has not been finally approved at this time within IGC TRACECA, there is nothing to stop us undertaking an evaluation to compare TTT with existing systems, as to do this generates no commercial risk and provides an ideal platform from which to refine TTT, develop a working agreement and understand better the requirements for later implementation of the policy.

It is expected that as TTT has been approved by protocol by members of the rail and maritime working group meeting in April in Baku that the adoption of TTT at the IGC conference in October will be a formality. However to have the preliminary results of the trials ready for discussion at the IGC conference would be a bonus.

The objective of this paper is to recommend to IGC TRACECA that they support us through the national secretaries to conduct a series of exercises to test the validity of TTT.

### **1.2 Aspects to be tested and results expected**

There are many aspects to consider when introducing a new railway tariff structure policy particularly when replacing a policy that has existed for over 50 years.

These can be broadly categorised into short term and medium term issues as follows:

#### **1.2.1.1 Short Term**

- Understanding the underlying principles and accepting them.
- Testing the assumptions contained in the normative costing model 'Railcost'
- Comparing the SRVC and LRVC with the actual tariffs now operating
- Testing the ease with which a new rate (tariff) can be established between the upper and lower limits of the TTT policy

- Establishing the marketing implications that come from knowing the range of the tariff and the ability to encourage new/additional transit traffic.

#### 1.2.1.2 Medium Term

- Implications of the TTT towards harmonisation with the to EU including pre-accession countries
- Further refinements in the parameters chosen to establish TTT
- Raising traffic demand by incentive pricing within known SRVC
- Testing the '€' as the currency of account with shippers and forwarders.
- Providing information for preparing the TTT Agreement
- Providing information for the function of the TTT agency / authority

## **2. Description**

### **2.1 TTT pilot partners**

To obtain interesting, robust and geographically rational results a key group of TRACECA railways would be needed. In particular the consultant would like to suggest Ukraine, Moldova, Georgia and Azerbaijan. Each of these countries has indicated support for TTT and Ukraine and Moldova have expressed a direct interest in carrying out a pilot project.

There is much to commend the participation of these particular countries. Ukraine for its size and interest in developing markets in Europe and the possibility of extending the TTT range through to Poland; Moldova for the probable speed and of application, the low base of traffic, connectivity with Romania and Ukraine; Georgia and Azerbaijan because of there significant transit volume, but low market share of non-oil traffic and container traffic as well there strong support of TTT. No exclusion is suggested by these comments, but we have to be practical in the time left in the project.

There are good prospects of extending the TTT pilot scheme at a later date.

Cooperation of the Black Sea Rail Ferry - Ukrferry - should be obtainable though support of Ukrainian Ministry of Transport. The cooperation of Poland is feasible as PKP is largely privatised and one of the rail-freight businesses may be interested -

## **TRACECA**

A proposal for piloting the TTT structure

though it is un-researched at this stage. Romania have also shown great interest in the UPTFT project and may also be keen to evaluate a pilot scheme.

Therefore it is possible to foresee TTT being piloted from within an expanded European Union in 2004 to the Caspian Sea. This would be in advance of a full TTT agreement involving all TRACECA countries later in 2005.

### **2.2 Selection of traffic type**

As we know, TTT is a wagon-based structure so it is necessary to select at least one wagon type with which to pilot a TTT derived tariff.

There seems little doubt that the best wagon type to pilot would be platform wagons used for the transport of containers. There are two good reasons for choosing this wagon type as they are the main focus of interest is in attracting new traffic in containers and the current traffic base in railway container movement is quite small so any improvement would be easy to identify.

It must be emphasised that there are no risks to revenue at all, as all tariffs at this pilot stage would have been compared to the present system and only progressed if found to be compatible and acceptable.

### **2.3 Selection of TTT rates**

As has been stated many times before, TTT upper(LRVC) and minimum(SRVC) rate levels are derived from the four-part TTT 4 part tariff structure,

Part 1 Movement

Part 2 Terminal services

Part 3 Infrastructure User Charge

Part 4 Commission and Handling.

Discussion with piloting partners will be necessary to select rates for each of the four parts that are within the TTT structure that will create a common structure that will be of interest to the market. Application of the TTT National Coefficient will enable each country to derive an acceptable tariff within the overall TTT structure.

### **2.4 Performance Criteria and Monitoring**

Based on the results expected in 1.2, a range of measurable criteria will be elaborated in cooperation with the Partners that can be used for monitoring and evaluation.

**3. Organisation and management**

**3.1 Programme and phasing**

Six months are required to establish a pilot scheme and to carry out initial evaluation. However, from evaluations done by the consultant and circulated previously (the Afghan evaluation) it may be possible for rail tariff departments to draw their own conclusions earlier.

The aim is to be able to "see" the upper and lower parameters within which the tariff can be set. Once the range is visible a marketing decision can be made on the rate or tariff to be used.

It may take time for any real trends in traffic demand to be clearly seen.

A more precise work programme will be drawn up in an inception phase with the pilot partners. If initial contacts are made with the partners as soon as a decision is made to proceed, there is no reason why planning cannot start immediately afterwards.

**3.2 Personnel and resourcing**

It is assumed that there will be a need for:

Railway Team Leader – 58 days

Railway Specialist – 21 days

Coordinator – 19 days

\*\*\*\*\*

**3.3 Next Steps**

1. Agree this outline with IGC TRACECA
2. There will be a need to extend / amend the UPTFT Contract
  - a) extend till June 2004
  - b) review remaining days
3. Contact participating railways and get approval.
4. Prepare detailed proposals and obtain revision to UPTFT contract.
5. Travel to participating railways and agree pilot details.
6. Set up and implement local management and coordination.

**C10**



**TRACECA**

**Technical Assistance  
to the  
TRACECA Transit Tariff Authority  
Scope of Work  
Draft at 12 May 2003**

## **1. Introduction**

### **1.1 TRACECA Transit Tariff (TTT)**

Within the Unified Policy on Transit Fees and Tariffs (UPTFT) project ToR there is a recommendation for the creation of a new railways and intermodal tariff structure. This new rail tariff has been given the title “TRACECA Transit Tariff (TTT)” and has received support from the delegates representing TRACECA countries participating in the workshop on 15<sup>th</sup> and 16<sup>th</sup> April 2003 as confirmed in the signed protocol.

### **1.2 Purpose**

This outline scope of work paper for the implementation of the proposals is intended to i) generate wider support for the TTT, ii) establish a governing authority (which is an essential requirement), iii) endorse the preparation of an application to the EU for funding a programme of support to the TTT Authority and iv) approve interim arrangements for a TTT Authority, within the lifetime of the UPTFT project if at all possible.

### **1.3 TTT Function, Organisation, Personnel and Funding**

General details of the TTT Authority functionality, organisation, personnel and funding are held in Appendix A.

### **1.4 Technical background**

Most of the technical background for the TTT and the Authority are contained in the papers and reports already prepared and circulated to national Secretaries and delegates, by the UPTFT project.

### **1.5 Objectives**

Overall Objective - Creating more favourable conditions for the generation of traffic on TRACECA.

Specific Objective – Implementation of a unified tariff structure for transit traffic.

### **1.6 Rationale**

The rationale for implementation of the TTT is best described with reference to the TRACECA Basic Multilateral Agreement as follows:

**Article 3 Objectives**                      *a) to develop economic relations....*

The TTT Authority formalises the process of negotiating special tariffs for TRACECA so promoting the development of economic relations.

*b) to create equal conditions for competition...*

The TTT is founded on a regionally acceptable common economic basis creating equal conditions for competition.

**Article 5 Payments etc.**                      *... other payments shall not be imposed...*

The TTT is a simple and transparent structure and precludes the possibility of other payments or hidden costs.

**Article 6**      **Preferential Terms**      *Tariffs for transport services shall be established on the basis of preferential terms.... and equally for all parties.*

Having a common economic basis, TTT provides the tariff framework for establishing preferential terms that are acceptable to all parties.

**Article 8.7**      **Inter-Governmental Commission (IGC)**

*The IGC may establish working groups.*

The creation of a TTT Authority is a significant step, though possibly beyond the working group style of operation.

#### **Technical Annex (Rail)**

**Article 4**      **Preferential Terms and Tariffs**

TTT fully satisfies the requirement for creating preferential terms and tariffs

**Article 6**      **Cooperation Objectives**

*2c) ...to work out methods of cost calculations as a basis of preferential tariffs and common operational rates;*

TTT is based on a method using normative costs that, whilst not being specific to any individual railway, is regionally acceptable and provides a sound basis for common preferential rates.

#### **1.7 European Union**

TTT consolidates international relations between EU and its TRACECA partners, whilst introducing the Euro (€) as the currency of preference for TTT.

## **2. Outputs and Results Expected**

### **2.1 Outputs**

- TTT Authority Fully Functioning and Financially Self-Sustaining
- Trained Authority and Railways Personnel
- Physical Resources in place and working
- Software, Documentation and Procedures in place and working

### **2.2 Results**

- Adoption of TTT by all TRACECA countries
- Extension of TTT to import and export traffic



TA to the TTT Authority – Draft Scope of Work

- Extension of TTT to all commodities
- Application of TTT to a maximum intermodal network
- Measurable increase in new traffic on TRACECA

### **3. Timing, duration and phasing**

#### **3.1 Timing**

With heightening international interest in the region, increasing local support and momentum for TTT, implementation should proceed without pause and preferably overlap with the initiating activities of the UPTFT project.

#### **3.2 Overall Programme**

The implementation programme should be expected to take 3 years from establishment of the TTT Authority to it becoming financially self-sustaining. Following which a 12 month period of support is proposed that would be based on identified and quantified need, without guarantee, i.e. “Ad hoc”.

#### **3.3 Phases**

Initial Phase – Establishment of TTT Authority to either the first Tariff Conference or TTT implementation - 6 to 12 months

Main Phase – Technical Assistance to support all Authority operations, handover to counterparts and self-financing instruments in place - 12 to 36 months

Final Phase – “Ad hoc” support and first audit of operations months - 36 to 48.

### **4. Scope of Work**

\*Items in First Phase

#### **4.1 Establishing the TTT Authority**

- 4.1.1 \*Support the first steps of setting up the TTT Authority
- 4.1.2 \*Defining the functions and organisation
- 4.1.3 \*Resourcing including premises, furniture and equipment
- 4.1.4 \*Preparing job descriptions, contracts and recruitment of personnel
- 4.1.5 \*Procedures

#### **4.2 Tariff Conferences**

- 4.2.1 \*Establishing agenda for first TTT Conference
- 4.2.2 \*Prepare for meeting / notices / materials / schedule / check list
- 4.2.3 \*Hold first for meeting, minutes, protocol
- 4.2.4 \*Distribution of Proceedings
- 4.2.5 Follow up actions

#### **4.3 TTT Authority Operations**

- 4.3.1 \*Working with Counterpart TTT Gen Sec, Selection of other local experts, procedures
- 4.3.2 General Administration
- 4.3.3 \*Implementation Schedule for TTT / revisions
- 4.3.4 \*Work Programme
- 4.3.5 Member's admission, expansion of network, expansion to import, export
- 4.3.6 Funding – Authority Budget and Members subscriptions
- 4.3.7 TTT Authority Accounts – Preparation of first and audit.

#### **4.4 TTT Authority Economic Research and Market and Analysis Services**

- 4.4.1 \*Normative Railway Traffic Costing System and Data Base for TTT Authority – Development, Maintenance and application of changes
- 4.4.2 Development of Normative Railway Traffic Costing Systems in Railway Organisations
- 4.4.3 \*Identification of traffic to which TTT must, should and could apply
- 4.4.4 \*TTT National Coefficients - refinement
- 4.4.5 \*TTT Values - refinement
- 4.4.6 Market Analysis
- 4.4.7 Traffic Data Base
- 4.4.8 Currency support
- 4.4.9 Developing Research programme, including such topics as: single operator; one stop shop, intermodal pricing, level of service etc

TA to the TTT Authority – Draft Scope of Work

4.4.10 Development and updates TTT pricing handbook

4.4.11 Preparation of Technical Notes as required

**4.5 TTT Authority Information and Promotion Services**

4.5.1 \*Promotion of TTT and Authority

4.5.2 \*Promotion of TTT and Special rates

4.5.3 Shipper and Freight Forwarder Data Bases

4.5.4 Liason between UIC, OEJD and others

4.5.5 \*Publications, Tariff Conference Results,

4.5.6 Media Coordination

**4.6 TTT Legal Services**

4.6.1 \*TTT Regulatory Document

4.6.2 TTT Common Conditions of Carriage

4.6.3 Ombudsman and complaints in application of above

**4.7 Training**

4.7.1 \*Functions of Tariff Authority

4.7.2 \*Traffic Costing for TTT in TTT Authority

4.7.3 Traffic Costing for Railway Administrations

4.7.4 Application of the TTT

**5. Inputs**

**5.1 Technical Assistance**

To carry out the scope of work a total of 120 man months of technical assistance (TA) would be needed (EU of 40 mm plus local 80 mm). EU TA personnel would include Transport Economist, Marketing, Forwarding and Integration Specialist, Software, Legal, Training; local TA personnel to include Project Manager, Documentation expert and Software; Language services support and secretarial services will also be needed. Ideally, technical expertise should be regionally sourced as much as possible.

**5.2 Counterparts**

TTT Authority Counterpart Personnel would be 120 mm comprising Executive Officer, Economist, Promotions and legal specialists.

TA to the TTT Authority – Draft Scope of Work

### **5.3 Software**

Prescribed Normative Traffic Costing System to be developed and installed in a) TTT Authority and b) in Each Railway administration.

### **5.4 Office space, Equipment, Furniture, Consumables, Utilities**

Three offices for eight to ten persons plus access to meeting room etc.

### **5.5 Overall Project Budget**

Notionally, EU funding of approximately €2.0 million for TA, software etc is required plus €1.0 million for the TTT Authority, resources and activities for 3 years.

### **5.6 First Phase**

Approximately € 0.5 million is needed for the first phase TA plus €0.25 for TTT Authority Personnel, resources and activities – all included in the overall budget above.

Comment:

**APPENDIX A      Tariff Authority**

**A1. List of Functions**

Administration

Organisation and coordination of TTT conferences and meetings

Changing TTT regulations as instructed by TTT conferences

Receipt and processing of requests from TTT signatories for changes to TTT National Coefficients or other National requests for changes and advising all other TTT signatories of the said changes

Processing complaints or suggestions for improvement regarding the execution of the TTT Authority

Maintenance of the TTT Authority's Accounts and periodic reporting

General Administration of the TTT Authority

Economics and research

Receipt and processing data on the numbers and types of wagons using TRACECA that have been priced using the TTT

Maintenance of the TTT normative cost base

Maintenance and application of the TTT normative costing methodology

Research into norms and other elements of the cost base

Analysis of requests to change TTT coefficients or other elements of the TTT

Calculation and proposal of annual or periodic revision of tariffs to TTT signatories based on changes to the normative costs

Preparation of economic briefing reports to TTT signatories

Information and Promotion

TTT information and advisory services to the agencies that apply or intend to apply the TTT

Advising Users of TTT rates and tariffs

Liaison with related tariff authorities

Promotion of TTT changes when agreed by TTT signatories

Updating and issuing TTT regulation and other information

Organisation and provision of guidance or if necessary training in various aspects and application of the TTT

**Market research (optional)**

Receipt, analysis and maintenance of information on potential TRACECA traffic

Advisory services to TTT signatories of potential market opportunities

Research and advise on appropriate tariffs and other service attributes required for new market opportunities or for enhancing, or retaining existing traffic

Carrying out market research on existing or potential users

Preparation of briefing reports to TTT signatories

**Tariff and Revenue Legal Services (optional)**

Advising TRACECA Users of Conditions of Carriage

Resolution of revenue allocation issues between TTT signatories

**A2. Organisation**

The TTT Authority organisation shall be headed by the TTT Executive Secretary that shall be responsible for the administrative functions and have overall responsibility for the performance of the TTT Authority

The following additional positions shall be included in the TTT authority:

- Railway Economist to carry out the Economics and Research functions:
- Information Officer to carry out the functions of Information and Promotion:
- an administrative secretary.

Additional position of Market Researcher and Legal Officer shall be included in the organisation of the personnel of the TTT Authority at the discretion of the signatories to the TTT regulation.

The functions of the TTT Authority shall be carried out by the TRACECA Secretariat or by one or more of the organisations that are signatories of the TTT regulation.

The Agency appointed TTT Authority shall make available all necessary resources for the proper functioning of the TTT Authority.

When establishing or changing the agency appointed TTT Authority organisations intending to become the designated agency shall advise TTT signatories in advance of the resources, costs and conditions of their provision

The official working languages of the TTT Authority shall be Russian and English.

Translation and interpretation into the languages of the signatories shall be carried out at the discretion of and resourced by the TTT signatories

### **A3. Personnel**

Any qualified citizen of any TTT signatory shall be eligible for any of the positions in the TTT Authority.

The positions shall be occupied under 3 yearly contracts that can be renovated twice upon satisfactory performance thus making it possible for the positions to be filled for a maximum of 9 years by the same individual.

Personnel shall be appropriately qualified technically and linguistically and shall not have any criminal record

All personnel appointments have to be approved by a majority of the signatories to the TTT regulation

In the event that any position fall vacant unexpectedly the General Secretary has the discretion to fill the position temporarily without approval from TTT signatories for a maximum period of 12 months until a permanent appointee is approved.

### **A4. Financing**

The financing currency of the TTT Authority shall be Euro

Resources provided by the TRACECA Secretariat or other agency appointed to be the TTT Authority shall be remunerated for the resources provided at rates agreed by signatories to the TTT regulation annually in advance.

The Personnel Contracts shall be remunerated at the rates agreed in the contracts and altered annually to rates agreed by signatories to the TTT regulation.

Other expenses shall be advised to signatories to the TTT Regulation annually in advanced.

The annual budget including the aforementioned items shall be prepared by the General Secretary to the TTT Authority for approved by signatories in advance.

The budget shall be financed by signatories to the TTT agreement in proportion to the annual throughput of wagons priced using the TTT regulation.

The General Secretary shall advise each signatory to the TTT of the contribution expected 3 months in advance of the approval of the annual budget.

The TTT Authority shall obtain income from other sources including international development and financing institutions and from revenue from sales of information and services provided.

**Appendix B**

Preliminary estimate of inputs

Inputs Phase 1

TA EU	Rail Economist/Project Manager- 9, Marketing 2, Training Specialist 1	12
TA	Software 6, Documentalist 2, Local Manager 10	18
Local	<b>SubTotal TA</b>	<b>30</b>
Local	language, support	36

Interim Authority

Local	Gen Director TTT Authority	12
	Economist	12
	Information and Promotions	12
	Secretary	12

Inputs Phase 2

TA EU	Rail Economist12, Marketing and Promotions 4, Legal 3, Freight Forwarding 3, Training Specialist 4, Accountant 2,	28
TA	Project Manager 24, Software 12, Documentalist 4,	62
Local	Legal 4, Training 6. Researcher 12	
	<b>SubTotal TA</b>	<b>90</b>
Local	language, support	72

Interim Authority

Local	Gen Director TTT Authority	24
	Economist	24
	Information and Promotions	24
	Legal Specialist	12
	Secretary	24



## PROTOCOL

### On results of the first Transit Fee and Tariffs Working Group (TFTWG) for roads

Baku on 27/28 November 2002.

#### 1. Introduction

The first meeting of the TFTWG for roads took place in Baku on 27 and 28 November in accordance with the agreement made during the inception phase of the project. It had been determined that a roads working group would be established to provide a means for presentation and discussion of the Contractor's findings, and for the development of a unified policy for road transport fees.

Proposals made by the working group will be submitted to the Intergovernmental Commission (IGC) for their action. The IGC will wish to ensure that any reforms of transit fees presently set by state authorities are moves towards a market-driven system, based on improved efficiency and reduced cost.

It is intended that there will be further meetings of the working group during the life of the project (that ends in December 2003) and that ways will be found to extend the effective life of the working group beyond the prime period of the contract. This will be to provide continuing input to the work of the IGC and Permanent Secretariat, and to maintain the momentum of the work done by the National TRACECA Commissions.

#### 2. At the first meeting the TFTWG resolved that:

(a) There was a common desire to strengthen co-operation among all TRACECA States with a view to facilitating transport and trade that is essential for the economic development of the region. It was acknowledged that there are major deficiencies in the operation of international road transport in the region which are not only due to a lack of adequate infrastructure and border crossing procedures, but also due to institutional, regulatory and economic barriers.

(b) Solutions to such common problems require an innovative approach to regional co-operation that will come from commitments stemming from the acceptance of relevant international agreements and declarations.

(c) Proposed solutions should be aimed at achieving the objectives of the TRACECA General Multilateral Agreement (MLA) and also conform to (or at least take into consideration) the decisions taken and the legal provisions adopted in the field of road transport in the framework of other relevant international agreements.

(d) While concentrating initially on road transit fee issues, the working group should note other important issues affecting road transport that could be addressed by TRACECA and its member governments in future projects.

(e) That further meetings should take place to discuss a draft unified policy on road transit fees prepared by the Contractor. In order to contribute to the development of the draft policy, the

working group members resolved to work with the Contractor to supply information and assist in further discussions with relevant organisations concerned with transit fee issues. This action is likely to take place initially within the framework of country specific working groups established under the TRACECA National Secretaries

**(3) Discussions on the main transit fee issues**, based on an analysis of the draft inventories of transit permits and fees that had been prepared for each TRACECA country.

It was agreed that:

- (a) in accordance with the MLA, transit charges should (i) be related to costs of service provision (for example, the costs of road use, for maintenance and operation of the road network), (ii) be levied at point of use, and (iii) be fair (not discriminating between operators) and clear (transparent).
- (b) the present transit charges in most TRACECA countries are effectively charges on access to the market rather than charges for use of roads.
- (c) in particular, the permit and transit charges that are levied on foreign vehicles in many TRACECA countries, do not vary with distance or characteristics of truck.
- (d) transit charges discriminate (i) between operators from different countries, (ii) between permit holder and non-permit holders, and (iii) between domestic and foreign transporters.
- (e) transit charges are often unclear due to untimely notification of tariffs and proposed changes.
- (f) TRACECA countries have failed to agree on policies for charging of overweight or oversized vehicles.

**(4) Discussions on the possible ways forward to develop a unified, transparent transit fee policy.**

It was agreed that:

- (a) in order to rationalise and increasingly harmonise charging policies for international road transport of goods, a draft unified policy should be developed by the Contractor for further discussion.
- (b) consistent with the objectives of the TRACECA MLA, the draft unified policy would be based on the principles of cost-relatedness, non-discrimination and transparency, in order to establish a fair transit fee system, without excessively high charges, which can attract traffic along the TRACECA corridor.
- (c) the draft policy should be based on an approach that (i) bases transit fees on the costs of service provision (for example, the cost of road maintenance), (ii) removes unjustifiable fees (for example, fees charged by local authorities), (iii) simplifies the system of charges to make them more transparent.

- (d) the draft should include provisions to ensure that user charges shall not be imposed at the same time for the use of the same road section.
- (e) the draft should incorporate an agreement for harmonising overweight and oversize charges.
- (f) the draft policy should indicate the framework for calculation of transit charges imposed on carriers (for example, based on internationally recognised standard elements for the calculation of costs of road use), as well as the currency with which charges are payable.
- (g) the TFTWG members would assist the Contractor by supplying information and arranging further discussions as necessary to develop the draft unified policy.
- (h) the TFTWG members would inform the Contractor at the latest, by 15 December 2002, of any inaccuracies or gaps in the draft inventories of road transport permits and fees.
- (i) the Contractor would use this information to finalise the inventories and incorporate them into the User Guide, for publication on the TRACECA internet site.
- (j) the TFTWG members would timely inform the IGC of any changes in transit fees, so that the user guide can be updated.
- (k) the International Road Transport Union (IRU) and other similar groups are invited to provide this information to all interested users in whatever form they prefer.

#### **(5) Institutional Mechanism**

- (a) It should be noted that there is already established an Institutional Mechanism within the TRACECA framework.
- (b) The National Secretaries, in each TRACECA Member State, are Chairmen of the Trade Facilitation Working Group, in accordance with the MLA.
- (c) These Working Groups are responsible for carrying forward the work carried out by the three TRACECA Institutional Projects which are:
- Harmonisation of Border Crossing Procedures
  - Unified Policy on Transit Fees and Tariffs
  - Common Legal Basis
- (d) Initially there will be consolidated Modal Working Groups held in the IGC Baku where the focus will be on a common basis and agreements to enable the various discussions to move forward at National and Regional level.
- (e) Each of the National Working Groups under the Chairmanship of the TRACECA National Secretary, will undertake meetings with each of the relevant groups encompassed within the sectors of the three TRACECA Projects.

- (f) Therefore, all activities resulting from the Working Groups and Seminars should be addressed to the National Secretaries of the TRACECA Member States.
- (g) The IGC and relevant Project Experts are available for any queries or advice but this should be, where possible, carried out through the National Secretaries.

#### **NEXT MEETING**

The next full meeting of the road transport working group will be held no later than 31 October 2003, following individual meetings starting in Spring 2003 between the working group members and the Contractor, to discuss issues arising from the development of the unified policy.

**D1**

## PROTOCOL

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- (a) in order to rationalise and increasingly harmonise charging policies for international road transport of goods, a draft unified policy should be developed by the Contractor for further discussion.
- (b) consistent with the objectives of the TRACECA MLA, the draft unified policy would be based on the principles of cost-relatedness, non-discrimination and transparency, in order to establish a fair transit fee system, without excessively high charges, which can attract traffic along the TRACECA corridor.
- (c) the draft policy should be based on an approach that (i) bases transit fees on the costs of service provision (for example, the cost of road maintenance), (ii) removes unjustifiable fees (for example, fees charged by local authorities), (iii) simplifies the system of charges to make them more transparent.

- (d) the draft should include provisions to ensure that user charges shall not be imposed at the same time for the use of the same road section.
- (e) the draft should incorporate an agreement for harmonising overweight and oversize charges.
- (f) the draft policy should indicate the framework for calculation of transit charges imposed on carriers (for example, based on internationally recognised standard elements for the calculation of costs of road use), as well as the currency with which charges are payable.
- (g) the TFTWG members would assist the Contractor by supplying information and arranging further discussions as necessary to develop the draft unified policy.
- (h) the TFTWG members would inform the Contractor at the latest, by 15 December 2002, of any inaccuracies or gaps in the draft inventories of road transport permits and fees.
- (i) the Contractor would use this information to finalise the inventories and incorporate them into the User Guide, for publication on the TRACECA internet site.
- (j) the TFTWG members would timely inform the IGC of any changes in transit fees, so that the user guide can be updated.
- (k) the International Road Transport Union (IRU) and other similar groups are invited to provide this information to all interested users in whatever form they prefer.

#### **(5) Institutional Mechanism**

- (a) It should be noted that there is already established an Institutional Mechanism within the TRACECA framework.
- (b) The National Secretaries, in each TRACECA Member State, are Chairmen of the Trade Facilitation Working Group, in accordance with the MLA.
- (c) These Working Groups are responsible for carrying forward the work carried out by the three TRACECA Institutional Projects which are:
- Harmonisation of Border Crossing Procedures
  - Unified Policy on Transit Fees and Tariffs
  - Common Legal Basis
- (d) Initially there will be consolidated Modal Working Groups held in the IGC Baku where the focus will be on a common basis and agreements to enable the various discussions to move forward at National and Regional level.
- (e) Each of the National Working Groups under the Chairmanship of the TRACECA National Secretary, will undertake meetings with each of the relevant groups encompassed within the sectors of the three TRACECA Projects.



- (f) Therefore, all activities resulting from the Working Groups and Seminars should be addressed to the National Secretaries of the TRACECA Member States.
- (g) The IGC and relevant Project Experts are available for any queries or advice but this should be, where possible, carried out through the National Secretaries.

#### **NEXT MEETING**

The next full meeting of the road transport working group will be held no later than 31 October 2003, following individual meetings starting in Spring 2003 between the working group members and the Contractor, to discuss issues arising from the development of the unified policy.

**D2**

## PROTOCOL

### Second Transit Fee and Tariffs Working Group (TFTWG) for Roads

Baku, 2-3 July 2003

#### 1. Introduction

The second meeting of the TFTWG for roads took place in Baku on 2 and 3 July in accordance with the agreement made during the inception phase of the project. It had been determined that a roads working group would be established to provide a means for presentation and discussion of the Contractor's findings, and for the development of a unified policy for road transport fees.

Proposals made by the working group will be submitted to the TRACECA Intergovernmental Commission (IGC) for their action. The TRACECA IGC will wish to ensure that any reforms of transit fees presently set by state authorities are moves towards a market-driven system, based on improved efficiency and reduced cost. It is appreciated that each TFTWG meeting will build on the decisions and agreements agreed by protocols from earlier TFTWG meetings so that clear progress in decision-making is achieved.

It is intended that there will be a third meeting of the TFTWG in the second half of October 2003 and that ways will be found to extend the effective life of the TFTWG beyond the prime period of the contract through the expansion of the activities of the TRACECA National Working Groups which have now been established. This will provide continuing input to the work of the IGC and Permanent Secretariat, and maintain the momentum of the work done by the National TRACECA Commissions.

#### 2. At the second meeting the TFTWG reaffirmed the conclusions reached in the first TFTWG meeting, that:

(a) There was a common desire to improve efficiency and level of service of international road transport in the TRACECA region in order to promote trade and attract cargo flows from alternative corridors.

(b) The TFTWG should therefore continue working together in order to draft a unified policy for road transport transit fees which is consistent with the TRACECA Basic Multilateral Agreement (MLA) and based on the principles agreed at the first TFTWG meeting.

(c) Many problems facing international road transport require fundamental reforms in the systems of road transport permits and road user charges in TRACECA countries. The short term priority is to develop a unified policy which is based on reform of the existing national transit fee systems, in order that future charges are increasingly (i) related to costs of service provision (for example, the costs of road use, for maintenance and operation of the road network), (ii) levied at point of use, and (iii) fair (not discriminating between operators) and clear (transparent).

(d) In further developing the unified policy and the identification of changes recommended by this project, full use should be made of the National Working Groups established in each TRACECA country under the supervision of the TRACECA National Secretaries, in order to ensure that any proposed draft policy has broad support from all stakeholders in each country.

**3. Discussions on the framework for calculating transit fees:** based on an analysis described in the draft working paper on Road Transit Fee Policy Proposals, it was agreed that:

(a) in terms of overall framework, the transit fees should (i) take account of different costs of road use in each country, (ii) make use of cost information from both local and international sources, (iii) be based on either the variable or total cost of normal road maintenance, (iv) also cover the costs of road rehabilitation and environmental impact provided that this does not increase discrimination between domestic and foreign transporters, and (v) be based on the costs of using a clearly defined main road network.

(b) in terms of forms of charges, the unified policy should (i) take account of local geographic circumstances such as those which affect distribution of length of transit trip, (ii) take account of differences in road use costs for different vehicle types (distinguishing trucks with two axles, three axles, more than three axles), (iii) allow for differential charges between empty and loaded trucks except for vignettes and other network access charges.

(c) in terms of the level at which transit fees should be imposed, the unified policy should base transit fees on the required road maintenance expenditure rather than the actual maintenance expenditure (and also, if justified, on actual rather than planned road rehabilitation expenditure).

(d) a common framework should be adopted by TRACECA countries in order to show clearly the methodology used by each country for estimating the cost of road use by each type of vehicle (in terms of the total annual fixed and variable costs of road network provision, the total annual traffic using the network (traffic flows and traffic loading measured in terms of Equivalent Standard Axles (ESALs) and the derived unit costs per vehicle km and ESAL km).

**4. Discussions on the implementation strategy for the unified policy:** based on the implementation options described in the draft working paper on Road Transit Fee Policy Proposals, it was agreed that:

(a) in terms of overall strategy, coordinated action is required to tackle the issues of cost-relatedness, discrimination and transparency, through measures such as reducing, restructuring and simplifying transit fees

(b) the short-term priority is (i) to reduce or abolish those transit fees which have already been identified by the TFTWG to be excessively high, and (ii) where appropriate, to relate fees to type and size of vehicle and to distance travelled (or time spent) in the country. In particular, it is recommended to consider the possibility of reducing charges where overall charges for loaded trucks currently exceed (in equivalent terms) USD 0.20 per km for trucks with more than three axles, USD 0.10 per km for a three axle truck and USD 0.05 per km for a two axle truck. Charges for empty trucks should be no more than 50% of the above figures. In the medium term, consideration should be given to further reductions and abolishing of unjustifiable transit fees.

(c) TRACECA countries should also seek to abolish differences in bridge tolls and similar charges imposed on domestic and foreign transporters, and set transit fee rates for foreign transporters that apply irrespective of country of registration of vehicle.

(d) TRACECA countries should improve the transparency of the procedures for setting transit fees by simplifying the system of setting rates and by making available updated information about transit fees (giving at least six months notice of any changes being proposed).

(e) TRACECA countries should prepare, in the short-term, plans for abolishing those fees which were considered by the TFTWG to be unjustifiable – in particular (i) fees charged by local authorities which are targeted at foreign vehicles, (ii) environmental charges that are not related to environmental impacts and do not apply equally to domestic and foreign transporters, and (iii) fuel adjustment charges imposed on foreign transporters designed to compensate for low fuel prices in the country.

(f) TRACECA countries should work with domestic transporters to improve the supply of permits on a fair basis and to improve the way that transit fee regulations are formulated, in order to abolish unjustifiable charges.

(g) in the case of excess size and weight fees, the short-term priority is for all CIS countries to implement the CIS agreements on harmonised vehicle size and weight limits and on the structure of fees for excess size and weight, and remove any differences in the way that domestic and foreign transporters are charged

(h) TRACECA countries should also consider other important reforms of charges levied on transit traffic which could be introduced in the medium term such as (i) increasing fuel tax and introducing daily network access charges in order to increase cost recovery from all transporters (domestic and foreign) and allow further reductions in discriminatory transit fees aimed at foreign transporters, (ii) establishing international agreements to recognise, on a reciprocal basis, foreign motor insurance policies, in order to reduce additional insurance charges imposed on foreign vehicles, (iii) reducing excessive transit charges due to immigration and Customs practices (especially by full implementation of the TIR convention and setting convoy charges so that they reflect the cost of the service provided), and (iv) reducing unduly restrictive limits on length of stay of international vehicles to reduce penalty charges.

## **5. Next Steps**

(a) It was agreed that the Contractor should draft a unified policy based on the agreements made in the first and second TFTWG meetings. This draft would be prepared for circulation before the third TFTWG meeting in October.

(b) The unified policy should have the following form.

- (1) Introduction; summarising the context for developing the unified policy
- (2) Goals; setting out the overall goals of transit fee policy in terms of promoting trade and attracting traffic to the TRACECA corridor (as agreed in the TFTWGs)
- (3) Objectives of transit fee policy; in terms of cost-relatedness, levying at point of use, non-discrimination, and transparency (as agreed in the TFTWGs)
- (4) Basis for Calculating Transit Fees; in terms of the agreements described earlier in this protocol for the framework for calculating transit fees
- (5) Implementation Strategy; in terms of the agreements made in the first TFTWG and those described earlier in this protocol.

(c) the TFTWG members will submit to the Contractor by 20 July any comments on the possible actions, described in the Draft Working Paper on Road Transit Fee Policy Proposals, that could be taken by each country to implement the unified transit fee policy.

(d) IGC TRACECA should consider ways to assist its members in establishing a means of strengthening and coordinating the national mechanisms for implementing and enforcing the unified transit fee policy. Consideration should be given to establishing within IGC TRACECA a coordinating organisation similar to that suggested for the UPTFT Rail project.

## **6. Next Meeting**

The final meeting of the TFTWG for roads will be held no later than 31 October 2003, to discuss the draft unified policy being prepared by the Contractor.

**D3**

## PROTOCOL

### Third Transit Fee and Tariffs Working Group (TFTWG) for Roads

Baku, 15-16 October 2003

#### 1. Introduction

The third meeting of the TFTWG for roads took place in Baku on 15 and 16 October in accordance with the agreement made during the inception phase of the project. It had been determined that a roads working group would be established to provide a means for presentation and discussion of the Contractor's findings, and for the development of a unified policy for road transport fees.

Proposals made by the working group will be submitted to the TRACECA Intergovernmental Commission (IGC) for their action. The TRACECA IGC will wish to ensure that any reforms of transit fees presently set by state authorities are moves towards a market-driven system, based on improved efficiency and reduced cost. It is appreciated that each TFTWG meeting will build on the decisions and agreements agreed by protocols from earlier TFTWG meetings so that clear progress in decision-making is achieved.

It is intended that ways will be found to extend the effective life of the TFTWG beyond the prime period of the contract through the expansion of the activities of the TRACECA National Working Groups which have now been established. This will provide continuing input to the work of the IGC and Permanent Secretariat, and maintain the momentum of the work done by the National TRACECA Commissions.

**2. Discussions on the framework for calculating road vehicle excess size and weight fees:** based on an analysis described in the draft working paper on Proposals for Road Vehicle Excess Size and Weight Charges, it was agreed that:

(a) To promote efficiency and use of TRACECA routes, consideration should be given by all member governments to the harmonisation of maximum road vehicle size and weight limits in accordance with the standards adopted by the EU.

(b) It is further recommended that road vehicles should not operate with size or weight in excess of these maximum limits except when the load cannot be divided.





(c) The unified policy for excess size and weight charges should be based on the following formula:

$$P_1 = [P_{ew} + (P_{eaw1} + \dots + P_{eawi})] \times S + (C_l + C_w + C_h) \times S + K$$

where

$P_1$  = payment for one (valid for one occasion only) haul of freight by road vehicle;

$P_{cw}$  = payment if gross weight of vehicle exceeds the maximum legally allowed weight;

$P_{eawi}$  = payment (per axle) if an axle load exceeds the maximum legally allowed weight;

$S$  = length of haul (in km);

$C_l, C_w, C_h$  are the payments if length, width and height of vehicle exceed the maximum legally allowed dimensions.

$K$  is a payment made irrespective of the length of trip (per occasion)

(d) It is recommended that the following definitions are adopted for terms used in the above formula: (i) the charge for exceeding the maximum allowed gross vehicle weight,  $P_{ew}$ , is to be based on the additional costs of strengthening, maintenance or repairing bridges and similar infrastructure, which are explicitly related to the planned haul, (ii) the charge for exceeding the maximum allowed axle weight,  $P_{eaw}$ , is to be based on the pavement damage costs as measured by Equivalent Standard Axles (ESAL), and (iii) the charge for exceeding the maximum length, width and height,  $C_l, C_w, C_h$ , is to be based on the additional costs of modifying overhanging infrastructure or providing alternative routes that avoid low bridges.

(e) It is further recommended that, to ensure that charges cover only the additional costs incurred, excess size and weight charges should be based on variable road use costs, provided all variable costs are included (including administrative costs of planning and supervising the haul). It is recommended that the unified policy allows charges to be either fixed or to vary with distance or time.

(f) To help reduce excessively high charges in TRACECA countries, it is recommended that consideration be given to reducing the excess axle weight charge by basing it on an upper limit for the variable road use cost (per ESAL km).

**3. Discussions on the unified policy on road transit fees:** the TFTWG members recommend for adoption the unified policy described in the Working Paper: Draft Unified Policy on Road Transit Fees, subject to minor amendments agreed during TFTWG discussions.

#### 4. Next Steps

(a) It was agreed that the Contractor would prepare the following documents:

- A finalised Unified Policy on Road Transit Fees incorporating the amendments agreed in Point 3 above.
- Based on the suggested actions for implementing the Unified Policy described in Draft Working Paper: Road Transit Fee Policy Proposals (July 2003), an updated Implementation Strategy for the Unified Road Transit Policy, containing a list of proposed actions required by each government of the TRACECA member states to implement the Unified Policy.



Both documents should be circulated to all TFTWG members by 1 December 2003.

(b) It was recommended that the TRACECA Permanent Secretariat will distribute the Unified Policy on Road Transit Fees to the TRACECA National Secretaries and Heads of the National Commissions by 15 December 2003.

(c) It was agreed that, to provide the basis for implementing the policy, the TRACECA Permanent Secretariat should use the finalised Unified Policy to draft those sections of the Roads Annex to the TRACECA General MLA that will deal with transit fees. This annex should be presented for approval at the 4<sup>th</sup> IGC TRACECA annual meeting.

(d) In order to implement the Unified Policy, the TFTWG members, in cooperation with TRACECA National Secretaries, should submit to their respective National Commissions (i) the finalised Unified Policy, and (ii) the finalised Implementation Strategy for their country, by 15 December 2003.

(e) The TFTWG members recommend that the National Commission of each country prepares by June 2004, through dialogue with all important stakeholders, an agreed plan for implementing those actions which are required by each stakeholder to meet the short-term priorities described in the Unified Policy.

(f) The TFTWG members requested the European Commission to extend technical assistance, in the framework of the UPTFT project, to ensure implementation of the unified transit fee policy.

(g) It is recommended that IGC TRACECA should consider, through appropriate projects, giving assistance to member countries in tackling other important problems identified by the UPTFT project, including (i) developing a unified policy on road vehicle size and weight limits, (ii) developing a unified policy on vehicle insurance based on a green-card system, with mutual recognition of national motor vehicle and driver insurance policies, (iii) improving the supply of information to road users by further developing and updating the User Guide, (iv) improving the road transport permit system to remove current bottlenecks, (v) introducing an efficient, unified system for issuing visas to commercial drivers, (vi) setting up a unified vehicle weight certificate, and (vii) improving multi/inter-modal transport.

COUNTRY	NAME	POSITION	
Azerbaijan	Mr. R. Akhundov	Deputy Head Dept. International Transport Relations "Azeravtonaglyiyatservice"	<i>[Signature]</i>
	Mr. T. Nurullayev	President ABADA	<i>[Signature]</i>
Bulgaria	Mr. I.P. Panchev	Representative Department Road Fees and Permits	<i>[Signature]</i>
	Mrs. A. Atanassova	Expert Transport Information Department (AEBTRI)	<i>[Signature]</i>
Georgia	Mr. G. Tsiuria	Deputy General Secretary International Carriers Association	<i>[Signature]</i>
	Mr. A. Khmiadashvili	General Director Ltd "SACINTERAVTOSERVICE"	<i>[Signature]</i>
Kazakhstan	Mr. T. Mombajev	Head Road Transport Department Unit	<i>[Signature]</i>



	Mr. A. A. Ashurmetov	Transport Operator KazATO	<i>[Signature]</i>
Kyrgyzstan	Mr. Zh. Sh. Sadabayev	I Deputy General Director "Kyrgyzintrans"	<i>[Signature]</i>
	Mr. F. Khalmurzayev	General Secretary KyrgyzASMAP	<i>[Signature]</i>
Moldova	Mr. S. Taran	<i>Vice</i> Director International Conveyors Center, AITA <i>President Forwarders Association</i>	<i>[Signature]</i>
	Mr. A. Ruşnak	Chief Expert Department of International Relations	<i>[Signature]</i>
Romania	Mr. A. F. Kalapis	Head Dept. General Directorate for Regulations and Quality of Services in Road Transports.	
	Mr. M. Borza	Representative of ARTRI	
	Mr. C. Popescu	Department of Approvals and Permits, Ministry of Transport, Construction and Housing.	
Tajikistan	Mr. O. Boboyev	Director "Nagliyot" Institute MOT	<i>[Signature]</i>
	Mr. A. Abdulloyev	Vice-President ABBAT Association	<i>[Signature]</i>
Turkey	Mr. H. Özdemir	Head of Section, General Directorate of Road Transportation, Ministry of Transport	<i>[Signature]</i>
	Mrs. M. Kaya	International Transporters Association <i>Member of Executive Committee</i>	<i>[Signature]</i>
Ukraine	Mrs. E. Medvedeva	Head Department of International Shippers Association	<i>[Signature]</i>
	Mr. K. Kovalenko	Chief Expert UKRAVTOTRANS	<i>[Signature]</i>
Uzbekistan	Mr. A. V. Topalidi	Director of Scientific-Training Center (AIRCRIJ7) "BILIMINTERTRANS"	<i>[Signature]</i>
	Mr. M. K. Sydyknazarov	President International Freight Forwarders Association	<i>[Signature]</i>