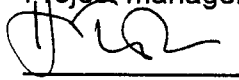


INCEPTION REPORT

Project Title	: Joint Venture(s) for the Caucasian Railways			
Project Number	: TNREG 939401			
Country	: Armenia, Azerbaijan, Georgia			
	Local operator	EC Consultant		
Name	: Ministry of Transport and Communication of Armenia	Azerbaijan State Railways	Ministry of Transport of Georgia	TEWET GmbH
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Telex	:			
Contact person	: Mr Shahnazarian 1st Vice Minister	Mr Mekhtiev 1st Deputy	Mr Adeishvili Minister	Mr Hippenstiel Project manager
Signatures	: _____	_____	_____	

Date of report : 20/09/96

Reporting period : 08/96

Author of report : Mr. H.-R. Hippenstiel

EC M & E team	_____	_____	_____
	[name]	[signature]	[date]
TACIS CU	_____	_____	_____
	[name]	[signature]	[date]
TACIS Bureau [task manager]	_____	_____	_____
	[name]	[signature]	[date]

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PROJECT SYNOPSIS

Project Title	:	TRACECA: Joint Venture(s) for the Caucasian Railways
Project Number	:	TNREG 939401
Countries	:	Armenia / Azerbaijan / Georgia

Project Objective[s] :

Determining those areas for which there is the possibility of cooperation between the railways of Armenia, Azerbaijan and Georgia as well as between the railways and the ports of these countries on the Caspian Sea and the Black Sea and railway ferry lines within the scope of joint ventures.

Establishing the legal, organisational, financial, management and marketing conditions for such joint ventures. Preparing of joint ventures with participation of Western capital, preferably in the infrastructure area and the transport service.

Planned Output :

Assessing the technical condition of the three railways, focusing on their main network, i.e. on those lines catering for more than 90 per cent of the total transport performance. Economic and financial assessment of the railways. Determining the priorities and sequence of necessary maintenance and investment measures. Forecasting the development of goods and passenger traffic. Conducting the necessary investigations for forming joint ventures in the infrastructure area as well as the transport service. Preparing the respective documents for business plans for forming joint ventures.

Project Activities :

WP 1000	Railway Infrastructure Authority
WP 1100 (1110 - 1170)	Present Condition of Network
WP 1200 (1210 - 1240)	Organisational, Legal and Financing Conditions
WP 1300 (1310 - 1340)	Establishment of International Co-operation
WP 2000	Business Strategy Infrastructure
WP 2100 (2110 - 2130)	Traffic Forecast
WP 2200 (2210 - 2260)	Investment Plan for the Railway's Infrastructure
WP 2300 (2310 - 2340)	Management
WP 3000	Trans-Caucasian Railway Service Centre
WP 3100 (3110 - 3150)	Present Conditions of the TCR and Deficiencies Analysis
WP 3200 (3210 - 3260)	Objectives and Strategy
WP 3300 (3310 - 3350)	Foundation of a Service Company
WP 3400 (3410 - 3450)	Business Plan
WP 4000	Port and Ferry Service
WP 4100 (4110 - 4130)	Present Conditions in Ports
WP 4200 (4210 - 4230)	Techn. and Operational Requirements for Ferry Connections
WP 4300 (4310 - 4340)	Ferry Operation Company

Project Starting Date : 23/07/1996

Project Duration : 10 months

2 Analysis of project

Economic and trade-policy conditions

The disintegration of the former Soviet Union and the subsequent start of a transition from the centrally planned economy to market economy structures has led to thoroughgoing changes in the economies of the Caucasian republics. This transition has been characterised by severe symptoms of crisis in all areas of the national economies. This economic slump was especially drastic for Armenia, Azerbaijan and Georgia. Due to their high degree of dependence on supplies from and to other republics, particularly in raw materials and supplied parts, the breakdown of traditional trade and production relations aggravated the already extreme manifestations of crisis.

By 1995, the gross domestic product (GDP) of Azerbaijan had dropped to about a third of the 1989 level. The downward trend in the economy has slowed down since 1995, but has not yet been brought to a halt. Decisive impulses of growth are expected to emanate from the start of oil production in new off-shore fields as of 1997.

In Georgia, too, there was a striking drop in the gross domestic product. In 1995, it was only about 20 per cent of the 1989 level. The economic situation in Georgia is being influenced especially by the tense situation in power supply, at the moment. Due to existing potential resources and the favourable geo-strategic location, there are prerequisites for overcoming the current crisis.

Among the former Soviet republics Armenia experienced the extremest drop in the gross domestic product at the beginning of the process of reforms. From 1989 to 1993 the GDP dropped by more than 70 %. Beginning by 1994 a slightly annual increase of national economy is registered. This process is mainly due to a national programme for improvement of structure of economy worked out in co-operation with international financing institutions. At present, the main economic problems of the country result, similiar to the situation in Georgia, from the tense situation in power supply. Good prospects for future development of national economy exist by modernizing industrial production, developing the service sector and using the well qualified specialists.

The economic situation of the three Caucasian republics has been aggravated even more by a great number of political, ethnic, religious conflicts and the ensuing military strife. A permanent solution to these conflicts is an indispensable condition for economic stabilisation.

With the disintegration of the former Soviet Union, the foreign trade relations of Armenia, Azerbaijan and Georgia have also undergone thorough changes. The economic symptoms of crisis, especially the decline in industrial and agricultural production, have led to a strong downward trend both in exports as well as imports. The near complete collapse of the trade and payment transactions with the countries of the former Soviet Union is another decisive factor for the radical changes in the foreign trade relations of the Caucasian republics.

Currently, there is a geographic re-orientation in international trade relations of Armenia, Azerbaijan and Georgia. These new geographic structures are characterised by a more or less strong drop in the exchange of goods with the former Soviet republics, especially with Russia, and a growing share of it with Western industrial nations. The development of goods exchange with the neighbouring states of the region is growing in importance, especially with Iran and Turkey as well as the countries bordering on the Black Sea.

Transport policies

The disintegration of the former Soviet Union has also led to significant structural and administrative changes for the railways of the Caucasus region. The Trans-Caucasian Railways (Georgia, Armenia) and the Azerbaijani Railways were one administration each in the network of the former Soviet Railways (SZD). After the Soviet Union was dissolved, national railways were founded in all three republics.

The following table shows the main selected parameters for all three railways (as in 1995):

	Armenia	Azerbaijan	Georgia
Size of network (km)	845	2,125	1,569
electrified (%)	98.0	60.0	100.0
double-track (%)	0.8	38.0	18.5
Network density (km/1000 km ²)	30,2	24,7	22,5
Locomotives	210	473	496
Goods wagons	5,236 ¹	28,650 ¹	19,184 ¹
Goods transport volume ('000 000 t)	1.5	9.1	4.7
Goods transport performance ('000 000 tkm)	403	2,409	1,246
Passengers ('000 000)	3.0	7,5	3,5
Passenger transport performance (('000 000 pkm)	166	...	371
Staff	6,497	22,000	18,800

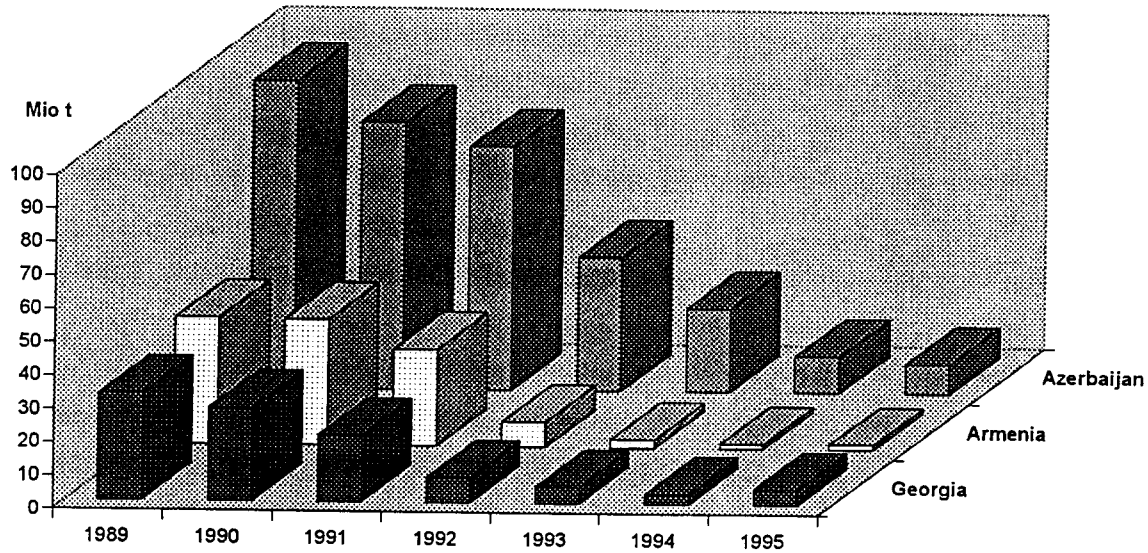
¹⁾ taken over from SZD, not completely available in part, as they are in other CIS states, container park has not yet been divided up

Due to the economic situation but also due to the political development in the region, there is a dramatic decline in the transport volume for all three railways. This quantitative drop was accompanied by a deterioration in quality of the transport services. Thus, there is only a very limited scope of transport in combined traffic or transportation of refrigerated goods. The volume of Azerbaijani railway transport dropped from 91.4 million tons in 1989 to a mere 9.1 million tons (i.e. to 9.9 per cent) in 1995. The transport performance was reduced from 41.9 thousand million tkm to 2.4 thousand million tkm during the same period. The number of passengers transported by the Azerbaijani Railways fell from 19.6 million in 1989 to 7.5 million in 1995.

In Georgia, the transport volume in railway goods transport declined from 36.2 million tons in 1988 to only 4.7 million tons (13 per cent) in 1995. The number of passengers transported was reduced from 17.0 million (1989) to a mere 3.7 million (1995).

The Armenian Railways recorded a sharp drop in the volume of goods transported from 37.6 million tons to 1.5 million tons, i.e. by more than 95 per cent in the period between 1990 and 1995!

Fig.: Goods transport volumes of the railways:



The quoted decline in the transport volumes both in goods as well as passenger transport, combined with the general economic difficulties in these countries has led to a significant reduction in the revenue of the three railways. One of the consequences was that over the past few years there have been next to no financial means for maintaining or extending the infrastructure or the rolling stock, which has led to a dramatic deterioration of the technical condition in these areas. The situation in communication technology and information systems is especially critical.

Due to their geographic location, all three countries are important transit countries for international rail traffic. Unfortunately, the political development in the region has led to the situation that especially transit traffic and thus the international significance of the Caucasian railways has dwindled. The shutting down of such important railway corridors as Baku - Yalama - Russia, Baku - Nakhichevan - Dshulfa - Iran or Tbilisi - Sukhumi - Russia, Tbilisi - Armenia - Dshulfa - Iran and the Baku - Aktau railway ferry link has had especially negative effects.

International rail travel via the railways of these countries has stopped more or less completely .

The transit goods transports of 37,1 million tons still had a share of 40.6 per cent of Azerbaijan's total transport volume in 1989. A mere 219,000 tons of transit goods were transported in 1995.

International transit transports are of particular importance for the Georgian Railways. Even though only 1.8 million tons of transit goods were transported in 1995, the share of the transit was still 37.8 per cent of the total transport volume.

Transit transport played a less significant role for the Armenian Railways in the past. However, in future the corridor Poti/Batumi - Tbilisi - Armenia - Dshulfa/Nakhichevan - Iran will gain in importance for transit transports from and to Iran.

Because of the currently small amount of transport services and the generally smaller networks of the three Caucasian railways, as compared to other CIS or European railway administrations, there is the natural prerequisite of minimising these objective disadvantages through increased cooperation. Especially maintaining the own production and repair capacities of each of the railways does not make business sense and they are really impossible to keep in view of the financial situation.

There are considerable deficits in the area of marketing. Customers are rarely approached on the railways' own initiative and they lack active and hard-hitting acquisition in most cases.

Thus there is the objective necessity of cooperating closely and of introducing new marketing mechanisms in order to improve the situation of the three railways in the short term and to stabilise it thoroughly in the medium or long-term.

First contacts with potential Western European partners from industry and banks have shown that there is a genuine interest in a commitment in the area of railway transport of the three Caucasian countries, if these meet certain framework conditions. Such framework conditions are:

- verification of sufficient transport flows, which have the potential for development, in order to stabilise the situation of the railways
- identification of such projects for forming joint ventures, with a participation of European capital, which are classified as absolutely necessary and worth supporting not only for the railways themselves but at a national level, too, and for which there is a guaranteed return of investment.

- the readiness and ability of the railways themselves to contribute an adequate share of their own,
- the existence of sufficient guarantees for securing the necessary loans either by the private economy or the state.

3 Project planning

3.1 Task

According to the tasks laid down for the project in the Terms of Reference (Annex 1), work focuses on the following ones:

- market analysis on the development of passenger and goods transport
- analysis of the organisational and legal/administrative regulations for the technical and technological conditions of the railways and deduction of conclusions for necessary measures guaranteeing a coordinated further development
- analysis of the technical conditions of the three Caucasian railways and their interfaces with other modes of transport as well as the quantification of the necessary investment and repair requirements; assessment of the necessary measures according to their priorities and sequence
- identification of projects in the infrastructure area of the railways suitable for forming joint ventures and preparation of the necessary legal, administrative, organisational and economic statements and documents, including the analysis of the financial situation of potential partners in the joint ventures
- investigation of the framework conditions and preparation for forming a joint venture as an operator company in the goods and/or passenger transport field, heeding especially the interfaces with other modes of transport (terminals, harbours, ferry links).

3.2 *Coordination with the final recipients*

During stays on location in Armenia, Azerbaijan and Georgia, talks were held with representatives of

- the national TACIS-Coordinating Units

- the government offices responsible for transport (Azerbaijan - Department of Transport and Communication of the Ministry of Economics; Georgia and Armenia - Ministry of Transport) and
 - the railway administrations
- on the task and processing of this project.

The following were important national partners in these coordination meetings e.g.:

Armenia

Mr Shahnazarian	- 1st Deputy Minister for Transport and Communication
Mr Hambartsumian	- Head of the International Relations Department MoT
Mr Asriyants	- Director General of the Armenian Railways
Mr Kagramanov	- Technical Director and Chief Engineer of Armenian Railways
Mr Avakian	- Assistant to the Director - TACIS-CU
Mr Lynn	- Team Leader - TACIS-CU

Azerbaijan

Mr Mamedov	- Director General of the Azerbaijani Railways
Mr Mekhtiev	- 1st Deputy Director General and Chief Engineer of the Azerbaijani Railways
Mr Panahov	- Commercial Director of the Azerbaijani Railways
Mr Sadykhov	- Head of the Transport and Communication Department at the Ministry of Economics
Mr Kazimov	- Director of the TACIS-CU
Mr Efendiev	- Deputy Director of the TACIS-CU

Georgia

Mr Adeishvili, M.	- Minister of Transport
Mr Adeishvili, D.	- Head of the International Relations Department MoT
Mr Chkhaidze	- Director General of the Georgian Railways
Mr Melkadse	- 1st Deputy Director General of the Georgian Railways Chief Engineer
Mr Chkhikvadze	- Commercial Director of the Georgian Railways
Mr Tsiskarishvili	- Director of the TACIS-CU

During these talks with representatives of the recipient organisations, the main points of the project, as contained in the ToR, were discussed in detail. It emerged that in principle the state institutions, railway administrations and transport customers of all three countries had a strong interest in forming joint-ventures.

There was special emphasis on establishing such joint ventures for the infrastructure area, in order to become able to meet the demand for spare parts and necessary equipment of tracks, rolling stock, signalling and telecommunication installations from their own production, to a growing degree. This is how the current more or less 100 per cent dependence on imports may be overcome, which has led to a very difficult situation for the railways due to the general financial conditions.

The objective to arrive at a closer cooperation of the railways involved in the TRACECA Corridor through establishing joint ventures was supported in principle. This readiness and also necessity of a closer cooperation between the countries of the TRACECA Corridor, especially in the area of transport, led to the recent conclusion of a number of agreements and treaties at state level and the level of the transport operators, for instance. The bi- and multi-lateral negotiations focused very much on developing the cooperation in the field of railway transport.

The following treaties, for instance, represent a decisive basis for further cooperation:

- Treaty between the Republics of Azerbaijan, Georgia, Turkmenistan and the Republic of Uzbekistan on Coordinating the Activities of Railway Transport, dated 13th May 1996

- Treaty on Cooperation in the area of Regulating Transit Transports between the Republics of Azerbaijan, Georgia, Turkmenistan and the Republic of Uzbekistan, dated 13th May 1996

- Treaty between the Governments of the Republic of Azerbaijan and the Republic of Uzbekistan on Mutual Relations in the Area of International Railway Traffic, dated 13th May 1996

- Treaty between the Railway Administrations of the Republic of Azerbaijan, Georgia, Turkmenistan and the Republic of Uzbekistan as well as the Administration of the Caspian Sea Shipping Company

The following principles, laid down in the treaties, are of great importance for developing railway transport between the states involved and beyond:

- guaranteeing of free transit, regardless of the common carrier, the place of dispatch and destination, in accordance with national legislation
- maintaining the technological unity of the network
- implementing a coordinated policy of tariffs and reducing the current level of tariffs
- important technical and operational regulations remain in force, in order to guarantee a trouble-free railway transport.

Despite this readiness in principle to cooperate, there are reservations, especially political ones on the Azerbaijani government's side, against an involvement in a joint venture including Armenian partners. The national coordinator was informed to this effect via the Director of the TACIS-Coordinating Unit.

In order to avoid political objections against the project by the Azerbaijani side, a twofold bilateral approach should be pursued initially:

***cooperation between Azerbaijan and Georgia or
cooperation between Georgia and Armenia, respectively.***

Thus, the Georgian partner has the function of a bracket or hinge.

During the coordinating talks with the final recipients, there were a number of discussions about the title of the project called "A Joint Venture ...", as the project envisages the exploration of joint-venture possibilities in various areas such as infrastructure or as an operating company. The second point of discussion was about the term "Trans-Caucasian Railway", especially in its Russian translation. In order to avoid future misunderstandings, the proposal for the project name is now

"Joint Venture(s) for the Caucasian Railways"

On the one hand, this expresses the aspect of not only one possible joint-venture and on the other hand, the existence of several railway administrations in the area of the TRACECA Corridor between the Black Sea and the Caspian Sea is acknowledged.

3.3 Harmonisation with other projects

Several projects were identified within the scope of the work during the Inception Phase of this project which dealt with the status and the development of the railways of Azerbaijan, Georgia and Armenia during the course of 1995 and partly also in 1996.

These are:

1. "Azerbaijani Railways" within the framework of the TACIS programme, conducted by the Transurb company (Project Manager Mrs Françoise Haidebroek)
2. "Georgian Railways" within the framework of technical aid rendered by the Federal Republic of Germany for the Caucasus Logistics Consulting Office of the World Food Programme (WFP-CLAU) in Georgia, conducted by the "Gesellschaft für Technische Zusammenarbeit" (Society for Technical Cooperation - GTZ) - Project Manager Mr Michael Strohn
3. "Governmental Advice to the Railway Department and Management Training", conducted by the companies Eurail Consult and Sofrerrail

Analyses of the technical condition of the railways were conducted within the scope of these three projects. Data was collected and compiled which may be used for individual tasks of this project, in coordination with the final recipients.

The investigations and results of the TACIS/TRACECA project

"Pre-investment study and Pilot-train Baku - Tbilisi - Batumi/Poti".

are of special significance for this project, as a number of investigations were conducted which can be used directly.

These are, for instance:

- investigations of the infrastructure and the rolling stock of the Azerbaijani and Georgian railways
- analysis and assessment of the financial situation of the two railways
- analysis and forecast of transport performance, especially in goods traffic
- preparations for the introduction of the Pilot Train as so-called

“Trans-Caucasian Goods Logistic Express”.

The available results are supplemented by data of the total networks or for the railway operations in goods and passenger transport on the main lines, respectively.

An exact coordination with the already available data and statements is especially important in order to avoid doing work all over again and tapping capacity reserves for processing the project's main points, identified as of special significance together with representatives of the recipient organisations.

During the processing of the project, there will be continued close relations with other projects of the TRACECA programme.

Such projects are, for instance:

- Regional Traffic Forecasting Model and a Review of International Route Capacity
- Legal and Regulatory Framework
- Trade Facilitation, Customs Procedures and Freight Forwarding
- Forwarding-Multi-Modal Transport System (operating freight transport on TRACECA route)
- Rolling Stock Maintenance - Railways
- Technical Assistance for the Development of the Port of Baku
- Implementation of a Rail Freight Traffic Management and Information System
- Renovation of the Ferry Terminals of Baku and Turkmenbashi

That is the reason why special attention should be attached to coordinating closely the timing and contents of processing this projects with the above mentioned ones.

3.4 Resulting revisions and conclusions

As explained in Points 3.2 and 3.3, it makes sense to revise the initially proposed project contents and processing in the interest of a successful implementation of the project (see Annex 2).

This has an effect on the following issues:

1. The investigations concerning the technical condition and maintenance requirements of tracks, locomotives, wagons, signalling and telecommunication installations, power supply and overhead systems shall be streamlined as there are pertaining results from the 4 previous projects. It is for this purpose that some experts, which had been intended to work within the scope of this project, will be replaced by experts with local experience from the project "Infrastructure Maintenance 1. Railways - Pre-investment Study and Pilot Train ..." and 2 experts for the issues of forecasting and financial assessment will be integrated into the project in addition.

This proposed replacement concerns the following experts:

<input type="checkbox"/> expert for overhead systems	-	proposal:	Mr Zander
		new:	Mr Adler
<input type="checkbox"/> expert for signalling and telecommunication	-	proposal:	Mr Enseleit
		new:	Mr Gebhardt
<input type="checkbox"/> expert for forecasting	-	new:	Mr Kupec
<input type="checkbox"/> expert for financial analysis	-	new:	Mr Draper

2. The WP 2200 block of investigation

"Investment Plan for the Railway's Infrastructure"

will contain a new working package

WP 2260 "Economic Assessment"

The contents of this working package will be:

Based on the recommendations regarding the requirements for investments in construction and equipment, which will be put forward by the experts responsible for the technical aspects, schedules will be prepared showing the individual cost elements and the timing of their expenditure. The individual cost elements include identified and quantified major construction and equipment items as well as costs (estimated) for works and supplies.

Separate schedules will be made for each appropriation, which will indicate the financial period in which the funds will need to be available. If possible infrastructure items will be separated from those investments relating to operations, in an effort to determine the costs which should be born from revenues and those for which some form of subsidy may be required.

The economic and financial profitability (net profit) will be calculated for each option as required; i.e. in accordance with the international rules. The economic profitability takes into consideration the effects for the local national communities in general, i.e. the effects of the operator, the users and other economic agents. The financial profitability will be executed only from the viewpoint of the railway operator.

The calculation will be made based on the present situation of the operators and any shortfall under present conditions highlighted. In this way the insufficiencies of current tariffs or other economic factors may be emphasised, where applicable. Main input will be expected from working packages 1170, 1240,2100, i.e. the deficiency analysis and rehabilitation plan and traffic volume and revenue forecast.

3. The contents of a number of working packages will be revised. This concerns for instance:

WP 2310 Development of the Organisation

The current organisation is the result of Soviet leadership tradition and practical experience. The main task consists in finding a form of organisation for cooperation between the three railways and this for the areas of rehabilitating the railway network and its extension as well as for joint production of defined parts of equipment within the framework of joint ventures. The various forms of cooperation (see WP 1320) between the joint ventures and the railways shall be drawn up and explained.

Claims:

The main objectives for the organisation are:

- management according to concrete targets, coordinated with the railways,
- best organisation of various processes of planning, production, distribution and sales,
- development of organisation and aspects of an efficient management and
- definition of the various types and organisational forms of international joint ventures.

Results:

Proposal of various joint ventures in the area of production of different equipment, spare parts and devices for the renewal and repair of the railway network and the structures.

Supplements shall be added to the below listed working packages. They have the following wording:

WP 1150

The terminals for combined traffic shall be analysed with regard to their conditions for transfer, the technology used for transfer, the rails under the cranes and the track under the cranes, the stores and storage possibilities and the links with the road network. The analysis regarding the containers shall be conducted according to types of container, the load-bearing capability of special devices for container transfer (spreaders) and the existing communication and data processing technology. The actual condition of the terminals as regards combined traffic shall be established and the current possibilities of utilisation detailed.

WP 2100

Instead of the envisaged 3 scenarios, only 2 scenarios shall be investigated, as the experience from the project "Pre-Investment Study ..." has shown that the 2 basic scenarios are not that far apart, so that the scrutiny of a third 'middle' scenario will

not yield many new results. Thus the processing capacity shall be extended especially to cover the development of transit transports and of competing transport corridors and to include the development of traffic and the economy in important neighbouring countries.

WP 2220

A network of terminals for combined traffic will be developed and substantiated for Georgia, Azerbaijan and Armenia, on the basis of the forecast for goods traffic (goods for combined transport).

Measures shall be drawn up for terminals, to be agreed with the railways involved, necessary for the development and the tasks of the terminal, as one special part of the investment plan. The required financial means and planning effort shall be established in this connection.

WP 3210

Combined traffic, as the main area of goods transport in multi-modal traffic, stands the greatest chance of a speedy development. The marketing analysis for combined traffic shall be drawn up separately, taking into consideration the first results yielded by the Baku-Poti Logistic Train in order to estimate the possibilities of container transport from Uzbekistan and Turkmenistan.

There were the following conclusions for processing the whole project drawn from the meetings and coordinating activities during the Inception Phase:

- The necessary inclusion of local experts into processing the project is guaranteed in all three countries. The respective agreements have been made and all required specialised areas are covered.

- The technical backup of the project has been secured through the close cooperation with the railway administrations involved, including the maintenance of project offices in the buildings of the railway administrations of Baku, Tbilisi and Yerevan. These offices shall be staffed with three deputies of

the Project Manager, with experts of the project team and local experts.
The railway administrations involved have named representatives to act as partners of the project team. They are:

Armenia	Mr Asriyants, Director General of the Armenian Railways
Azerbaijan	Mr Mekhtiev, 1st Deputy of the Director General and Chief Engineer.
Georgia	Mr Melkadze, 1st Deputy of the Director General and Chief Engineer.

In order to avoid additional complications for the project from the political situation Armenia/Azerbaijan, the deputy project manager and the project office in Georgia shall act as regional coordinating centre, on for both sides "neutral" territory.

- The project can only be processed on a bilateral basis initially, in order to secure the participation of the Azerbaijani side, i.e. at least 2 joint ventures

- ⇒ Azerbaijan/Georgia
- ⇒ Georgia/Armenia

have to be established.

OVERALL PLAN OF OPERATIONS

Project title : Joint Venture(s) for the Caucasian Railways		Project number : TNREG 939401		Country : Armenia, Azerbaijan, Georgia		Page : 1					
Planning period : 8/96 - 5/97		Prepared on : 20/09/96		EC Consultant : TEWET Transport East West Expert Team GmbH, Berlin							
Project objectives : Promoting the establishment of cooperation between the Trans-Caucasian railways and the creation of Joint Ventures for infrastructure rehabilitation and train operation services											
No	MAIN ACTIVITIES	TIME FRAME				INPUTS					
		1996		1997		PERSONNEL		EQUIPMENT AND MATERIAL	OTHER		
		3	4	1	2	3	4	EC Consultant	Counterpart		
001/2	Project manag./document.	X.....X		42,0 MM	4,0 MM	PC's, printer, copier	20 / 300
1100	Present condition of network		XX XXXX					6,9 MM	8,5 MM		8 / 140
1200	Organ., legal, financ. cond.	XX	XXXX XXXX					3,6 MM	6,0 MM		6 / 70
1300	Establishm. of intern. coop.		XX XXXX	XXXX				2,9 MM	1,5 MM		10 / 50
2100	Traffic forecast		XX XXX	XXXX XX				3,1 MM	4,5 MM		2 / 70
2200	Investment plan for infrastr.		XXXX	XXXX XX				7,2 MM	3,0 MM		6 / 120
2300	Management			XXXX XXXX				3,8 MM	1,5 MM	teaching material	3 / 60 30/420 p.d. (trainees) 4 / 50
3100	Present condition of TCR		XX XXX					2,6 MM	4,5 MM		4 / 70
3200	Objectives and strategy		XXXX XXXX	XXXX				3,8 MM	3,6 MM		5 / 107
3300	Foundation of service comp.			XXXX XXXX				6,2 MM	2,4 MM		2 / 40
3400	Business plan			XXXX XXXX				2,6 MM	1,1 MM		2 / 20
4100	Present conditions in ports		XXXX					0,9 MM	1,2 MM		- / 10
4200	Requirements for ferry connection		X XX	X XX				0,7 MM	1,2 MM		- / 10
4300	Ferry operation company							0,7 MM			
TOTAL								87,0 MM	43,0 MM		72 / 1117 (30/420 p.d. trainees)

OVERALL OUTPUT PERFORMANCE PLAN

Project title :		Project number : TNREG 939401	Countries : Azerbaijan / Georgia / Armenia	Page : 1
Joint Venture(s) for the Caucasian Railways		Prepared on : 20/09/96	EC Consultant : TEWET Transport East West Expert Team GmbH, Berlin	
Planning period : 8/96 - 5/97				
Output		Agreed Objective Verifiable Indicators		
<ul style="list-style-type: none"> Assessing the technical condition of the main lines of the railway networks of Armenia, Azerbaijan and Georgia; quantifying the necessary repair and investment expenditure according to priorities and sequence 	<ul style="list-style-type: none"> Drawing up a stage plan for the maintenance of the following areas <ul style="list-style-type: none"> - rolling stock (locos, wagons, workshops) - track and constructional work - signalling and telecommunication - power supply 	Constraints and Assumptions C/A		
<ul style="list-style-type: none"> Economic and financial assessment of the three railways 	<ul style="list-style-type: none"> Drawing up the financial assessment required for business plans 	<ul style="list-style-type: none"> The system of accountancy in place at the railways does not always permit the direct takeover of data for the balancable documents; own investigations and assessments are necessary 		
<ul style="list-style-type: none"> Forecasting the development of passenger and goods traffic for the next 20 years, heeding especially the development of transit transports and competing transit corridors 	<ul style="list-style-type: none"> Developing 2 scenarios, based on the economic, political, socio-demographic development in the three countries and their neighbouring states 	<ul style="list-style-type: none"> It is too time consuming and expensive to gather data in the neighbouring countries on our own; thus, the possibility of using first results from other TRACECA projects should be looked into 		

<p>Project title :</p> <p>Joint Venture(s) for the Caucasian Railways</p> <p>Planning period : 8/96 - 5/97</p>	<p>Project number : TNREG 939401</p> <p>Prepared on : 20/09/96</p>	<p>Countries : Azerbaijan / Georgia / Armenia</p> <p>EC Consultant : TEWET Transport East West Expert Team GmbH, Berlin</p>	<p>Page : 2</p>
<p>Outputs</p>	<p>Agreed Objective Verifiable Indicators</p>	<p>Constraints and Assumptions C/A</p>	
<ul style="list-style-type: none"> Identifying the areas in which a joint venture makes sense 	<ul style="list-style-type: none"> Deciding on the concrete projects for joint ventures, heeding the national and international conditions for taking out loans and providing loans 	<ul style="list-style-type: none"> The possibilities of state guarantees for foreign loans are limited due to stipulations by the IMF. Possible joint venture projects have to be chosen depending on this situation. The position of the railways within the overall state investment policy is of great significance. 	
<ul style="list-style-type: none"> Drawing up the necessary legal, organisational and financial documents for forming joint ventures in the infrastructure field and for operating companies (business plans) 	<ul style="list-style-type: none"> Business plans for joint ventures <ul style="list-style-type: none"> - infrastructure areas - operating companies (passenger and/or goods traffic) 	<ul style="list-style-type: none"> The preparation of joint ventures only seems to be possible on a bilateral basis at the moment. The conditions of an extension to cover all three countries have to be verified. 	
<ul style="list-style-type: none"> Training of railway staff in modern management and marketing methods as well as in technical procedures and standards 	<ul style="list-style-type: none"> Conducting of training courses for 30 participants (10 Armenia/ 10 Azerbaijan/ 10 Georgia) and a Management-Study Tour for senior railway representatives to Germany 	<ul style="list-style-type: none"> The most important areas of training shall be identified during the project work in the countries involved. 	

PLAN OF OPERATIONS FOR THE NEXT PERIOD (Work programme)

Project title : Joint Venture for the Trans-Caucasian Railway		Project number : TNREG 939401		Country : Azerbaijan, Georgia, Armenia		Page : 2						
Planning period : 8/96 - 1/97		Prepared on : 20/09/96		EC Consultant : TEWET Transport East West Expert Team GmbH, Berlin								
Project objectives : Promoting the establishment of cooperation between the Trans-Caucasian railways and the creation of Joint Ventures for infrastructure rehabilitation and train operation services												
TIME FRAME 1996 / 1997 (months)												
No	ACTIVITIES	PERSONNEL						OTHER				
		August	September	October	November	December	January		EC Consultant	Counterpart	EQUIPMENT AND MATERIAL	flights / DSA
2200	Investment plan for railway infrastr.											
2210	Track							XXXX		1,0 MM		6 / 120
2220	Freight and passenger stations					XX		XXXX		1,0 MM		
2230	Signalling, communication, data proc.					XXXX		XXXX		0,5 MM		
2240	Power supply					XXXX		XXXX		0,5 MM		
2250	Maintenance shop					XXXX		XXXX		0,5 MM		
2260	Economical assessment					XX	XXXX	XX	XXXX	0,5 MM		
2300	Management											
2310	Development of organisation							XXXX		0,5 MM		1 / 15
2320	Model for financing of infrastructure							XX		0,2 MM		
3100	Present conditions of TCR											
3110	Freight transport					XXXX				0,6 MM		
3120	Passenger transport					XX				0,5 MM		
3130	Combined or multimodal transport					XX				1,0 MM		
3140	Tariffs, user charges, revenues									0,5 MM		
3150	Conditions/tariffs for road/ship transp.									0,5 MM		
3200	Objectives and strategy											
3210	Freight market analysis					XX				0,6 MM		
3220	Passenger market analysis					XX				0,6 MM		
3230	Operation									0,4 MM		
3240	Locomotive and waggon service									0,4 MM		
3250	Information service							XXXX		0,7 MM		
3260	Sales strategy, tariffs and marketing							XXXX		0,5 MM		

PLAN OF OPERATIONS FOR THE NEXT PERIOD (Work programme)

Project title : Joint Venture for the Trans-Caucasian Railway		Project number : TNREG 939401		Country : Azerbaijan, Georgia, Armenia		Page :3						
Planning period : 8/96 - 1/97		Prepared on : 20/09/96		EC Consultant : TEWET Transport East West Expert Team GmbH, Berlin								
Project objectives : Promoting the establishment of cooperation between the Trans-Caucasian railways and the creation of Joint Ventures for infrastructure rehabilitation and train operation services												
TIME FRAME												
1996 / 1997 (months)												
No	ACTIVITIES	August	September	October	November	December	January	PERSONNEL EC Consultant	Counterpart	EQUIPMENT AND MATERIAL	OTHER flights / DSA	
3300	Foundation of a service company Legal and institutional framework Eval. of manag./ownership strategies						XX XXXX XXXX	0,8 MM 0,5 MM			1 / 27	
3310												
3320												
4000	Port and ferry service Present conditions in ports Techn./oper. requirem. for ferry conn. Ferry operation company							0,9 MM 0,7 MM 0,3 MM	1,2 MM 1,2 MM		2 / 35	
4100												
4200												
4300												
		TOTAL							45,7 MM	36,0 MM		49 / 762

Annex 1

Terms of Reference

EUROPEAN UNION

Technical Assistance to the Southern Republics of the
CIS and Georgia

TRADE AND TRANSPORT SECTORS

Terms of Reference

for .

**A Joint Venture for the
Trans-Caucasian Railway**

Final Recipients:

TRACECA Region Ministries of Transport

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Table of Contents

1. Introduction and background
2. Project objectives
3. Relevant project reports and data available
4. Scope of work
5. Expertise required
6. Timetable and reporting.

1. Introduction and background

- 1.1 A decision was taken by the Council in July 1995 to encourage mutual co-operation in the area of the Caucasus and adjacent territories and to introduce sustainable projects involving a number of countries to this end. This was confirmed by a meeting in October 1995 between the Prime Ministers of the republics of the region. It was agreed at this meeting that
- (a) the Governments of the Caucasian Republics are in favour of regional collaboration in matters of mutual interest and given suitable conditions
 - (b) one of the areas of mutual interest is transport and a feasibility study should be prepared to provide a design for a future Joint-Venture involving national railways and ferry transport which would be undertaken when conditions in the area make it feasible. Such a Joint-Venture could form a framework for investment from Europe
 - (c) the study should initially embrace the three railways of Azerbaijan, Georgia and Armenia and the ferry boat connections between Baku, Krasnovodsk and Aktau.
- 1.2 The study would complement other studies undertaken as part of the TRACECA programme (Transport Corridor Europe Caucasia Asia) which was created as a component of the TACIS (Technical Assistance to the Community of Independent States) programme.
- 1.3 The Trans-Caucasian railway service should be examined with the short term problems and interests of Azerbaijan, Georgia and Armenia in mind but also taking into account the long term transport development possible in the corridor from Europe / Caucasia / Asia.

1.4 The short term considerations that should be taken into account are

- (a) that Armenia relies on Georgian railways to secure services to and from the North, an unreliable supply of electric power for railway traction and shortages of diesel fuel, the poor state of the railway track especially in mountain areas and the decline in traffic due to changed industrial structures and trade and transport patterns in recent years. Problems were exacerbated by the earthquake of 1989 and the regional military conflicts. Armenia is now short of funds for reconstruction and development of both its road and rail transport system.
- (b) the decline in freight traffic on Georgian railways from some 35 million tons/year under the Soviet system to between some 1 and 1.5 million tons in 1994. This is in no small part the consequence of the cessation of the "command" economy. The railways asset base is eroding with unsatisfactory permanent way (rails, sleepers and ballast), bridges requiring urgent replacement or repair, stolen signalling equipment and little technological innovation to provide the capacity for anticipated future services required or even to provide for the current demands for the conveyance of "food aid". There are few funds available even for the most urgent replacements.
- (c) the necessity for almost total reconstruction of the railway in Azerbaijan where equipment needs to be renewed and radical physical and management restructuring is essential. Since the COMECON days, Azerbaijan Railways has lost 90% of its freight traffic and 60% of its passenger traffic. A total of some 900 kms of track needs to be replaced, only 30 locos out of an inherited fleet of 560 locos are available for traffic and tele-communications and signalling are poor.

1.5 This deterioration of assets and services is in an area where people have suffered extensively from military conflict but which could now respond to the economic exploitation of Azerbaijan and other neighbouring state's hydro-carbon, oil and gas production potential following the new discoveries along the "Aspheron Sill" in the Caspian Sea. It is conservatively estimated that there is between 4-7 billion barrels of oil some 100-300 meters below sea level. Extraction will require the technologies currently used in the Gulf of Mexico and the North Sea. The skills exist locally for "offshore" drilling platforms to be built in Baku but the high technology for deep water extraction needs foreign expertise. International consortia are currently planning oil pipe lines for crude oil and gas and consideration is being given to a pipe for the 840km from Baku to Batumi as well as using the existing pipeline through Chechnya and Russia.

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- 1.6 With a development of oil reserves comparable to, if not larger than, those of Saudi Arabia and production eventually peaking at some 700,000 barrels a day, the impact on the economies of Azerbaijan and its neighbour states is likely to be very significant.
- 1.7 It is in the light of this recent ^{and} development and the peaceful exploitation of other assets in the region that declining transport facilities and services should be reviewed. Some work has begun with the assistance of a number of lending agencies but current investments proposed are not enough to ensure the required improvements to capacity and efficiency. For the movement of food aid and to improve the railway system rail track is being repaired and new sleepers provided, rolling stock is being repaired, some bridges restructured and rail access to the ports of Poti and Batumi rehabilitated.
- 1.8 A radical new approach with private funding and management of state railway assets may be the solution to under-funding, poor services and inadequate financial returns from the railways. It may also help direct the funds made available from donors into areas which would help to ensure more efficient operation. A reconstructed and jointly operated railway from the Black Sea to the Caspian could become a model for rail transport re-organisation for the TRACECA programme. This is particularly important now that the empirical central directives and instructions from Moscow are no longer manifest and the responsibilities for management now lie with the newly independent states, a development which has clearly identified gaps in those managements and shortfalls in performance of the railways.

2. Project objectives

2.1 The overall goals of the project are therefore

- (a) to promote co-operation in the region
- (b) to encourage mutual co-operation between the republics of the region and promote use of the Europe, Trans-Caucasian and Central Asian rail transport corridor.

2.2 The project purposes are

- (a) to provide an efficient railway service in the region acceptable to the users and potential users in the TRACECA corridor
- (b) to ensure that the railway service provided is economically, financially and environmentally satisfactory to the Governments involved
- (c) to identify the framework of a Joint Venture between Azerbaijan, Georgia and Armenia with possible investments of European parties on a sound commercial basis which is agreed between the parties concerned, and
- (d) to consider the possibilities of a multi-modal service based on a re-structured railway network and ferry-boat links.

2.3 The results of the project would be the establishment of a Joint Venture to establish an organisation involving the Republics of Azerbaijan, Georgia and Armenia and the improvement of passenger and freight services as the consequence of improved railway

- (a) management
- (b) infrastructure
- (c) operations and engineering
- (e) finances, and
- (e) staff conditions and performance.

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- 2.4 These improvements should also be considered in the case of possible future relations with road passenger and freight services and those provided by ferry boat and other shipping services in the Black and Caspian Seas as links to Europe and Central Asia in the TRACECA programme.
- 2.5 This must, amongst other things, take into account,
- (a) past perceptions of railways as a public service and a production orientated activity rather than one required to cover costs in a market economy
 - (b) that the railways were until recently directed from the centre of the USSR "command" economy to achieve strategic objectives for the overall Soviet economy
 - (c) the apparent belief that rail transport is necessarily a cornerstone of economic well-being in the newly independent states and that massive cross-subsidy by one service for another necessarily enhances that well-being
 - (d) that those who administer a railway under the current system may be less interested in the service given to users and ensuring revenues exceed expenses than in their own organisation, domain and status, and
 - (e) that when funding for maintenance or operational improvement is provided by the Government through a separate Ministry to that dealing with transport, such as the Ministry of Finance, the decisions given may be political as well as in the interests of railway users.
- 2.6 The objective will be met by
- (a) agreement on a Joint Venture Agreement drawn up for the three Governments to sign and implement
 - (b) detailed headings and arrangements for sub-contracts for joint operations, provision of maintenance facilities and services
 - (c) restructuring transport facilities and services to ensure long term economic viability, and
 - (d) production of 'business' strategies to ensure good management and proper consideration of public interest.

3. Relevant project reports and data available

- 3.1 The project reports shown as available in Fig 3.1 could be provided. Project reports expected to be available in 1996/7 are shown in Figure 3.2. There is other data available and a great deal of background reading on the economic and institutional changes which have taken place since the secession of territories from the former USSR.
- 3.2 It must be recognised that the political and administrative changes which have taken place in recent years have had a profound effect on those currently acting as administrators and managers of railways who now have financial as well as logistical responsibilities. It is an important consideration in any strategy for development.

Fig. 3.1 Project reports available

1. Transfer: Legal Framework - Kingston Consultants Dec. 1994
2. Information Systems Data Flows - Euriware and Eutelis Dec. 1994
3. Rising Level of the Caspian Sea - Soframer July 1995
4. Human Resources: Railway Training - UIC Dec. 1995
5. Azerbaijan Railways - Interim - Neth Consult July 1995
6. Armenia Highway Survey - Technechon January 1991
7. Armenia "Government Advice to Railway Department" - Eurail Consult and Sofrerail Nov. 1991.
8. World Bank Country Study of Azerbaijan - From crisis to sustained growth - Sept. 1993.
9. World Bank Country Study of Georgia - A blueprint for Reforms - Oct. 1993
10. World Bank Country Study of Armenia - The challenge of reform in the agricultural sectors - May 1995.
11. Traffic Forecasts for the Ports of Poti and Batumi - Hamburg Port Consultants Aug. 1995
12. Forwarding Agent in Georgia - TIMOG June 1994

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Fig. 3.2 Project reports expected 1996/7

1. Road Transport Services - DHV Consultants Oct. 1995 / August 1996
2. Intermodal Transport - BCEOM Oct. 1995 / Oct. 1996
3. Human Resources : Transport Management Training - Neth Consult Oct. 1995 / April 1996
4. Regional Traffic Forecasting Model - W.S. Atkins Oct. 1995 / Jan. 1996
5. Transport Legal and Regulatory Framework - Scott Wilson Kirkpatrick Oct. 1995 / Oct. 1997
6. Implementation of Pavement Management Systems - Kocks Consult Oct. 1995 / Dec. 1997
7. Human Resources : Maritime Training - HPTI Oct. 1995 / Dec. 1996
8. Rolling Stock Maintenance - tender launched Nov. 1995 / Nov. 1996
9. TRACECA Trade Facilitation - tender launched Nov. 1995 / Nov. 1996
10. Railway Infrastructure Maintenance - tender launched Nov. 1995 / Dec. 1996
11. Ferry Terminals : Baku and Krasnovodsk - tender launched Nov. 1995 / Dec. 1996

4. Scope of work

4.1 The scope of work required involves consideration of

- (a) trade potential, investment needs and framework for development given different political and social developments in the region
- (b) possible joint venture arrangements, management, investment and business strategies for a reconstructed transport service
- (c) economic and financial appraisal of relevant alternative strategies and
- (d) an agreement for a Joint Venture.

4.2 The work under this assignment should be undertaken in close collaboration with other TRACECA project teams working on relevant matters as indicated.

4.3 The work Tasks considered necessary are

A Potential trade and framework for development under different political and social developments

Task 1 Trade potential and forecast

This would be to examine trade and business prospects in the catchment area of the proposed railway and ferry services, identifying imports and exports, internal and external trade patterns and associated movements. Forecasts of trade would be required for the next 20 years. This would include examination of the plans of the oil consortia in Azerbaijan, gas and oil pipelines and the secondary activities following extension of refining in the Baku area and possibly elsewhere. (This is in cooperation with the regional traffic forecasting model development.)

Task 2 Inventory of present assets

To complement the studies of Task 1 there should be a review of the current railway and transport institutions which cause difficulty to managers and operators supplying services to users. This would establish amongst other things the deficiencies in equipment, facilities, skills and freedom to act which create 'bottlenecks'. This requires study of the personnel available for work, their

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abilities, the policies of Trade Unions and the social standards set by the Government and between representative parties. It requires appraisal of the suitability and condition of equipment and rolling stock, track, bridges, signals and telecommunications. (This based on the work of the team working on infrastructure maintenance and pre-investment study Baku - Tbilisi - Batumi -Poti) When this is being done the availability of power supplies needs to be assessed. It also requires study of controls of passenger fares and freight tariffs and for the supply of ancillary services. In this connection cost recovery should be assessed on the basis of a realistic accounting system reflecting current replacement of rather than the historic value of assets. At the same time any social or political legislation, convention or attitude likely to militate against proposed modest or radical reform needs to be noted. The capacities of other railways, complementary ferry services and the ports of Batumi, Poti, Baku, Aktau, Krasnovodsk, Trabzon or ancillary road services which could affect the performance of the railway would need to be noted and commented upon.

Task 3 Identification of investments required

These would involve identification of the investments required to make the railway and ferry services reasonably efficient and capable of providing services which would match those which could be provided by road or by ship using the River Volga. (This also from the work on the pre-investment study Baku-Tbilisi-Batumi -Poti and the Azerbaijan Railway Study). It would also involve examination of the Governments' plans for highway development, with especial attention to the developments anticipated on the 'Magisteri Road'. (This should be based on a number of road studies prepared for the three countries). It also involves the study of rail links and their potential use to Novorossisk or Odessa or through Armenia to Turkey, through Azerbaijan to Iran or to the Ukraine and other parts of Russia.

Task 4 Legal and institutional considerations

The legal and institutional framework needs to be established so that the implications of the acquisition of railway assets (land, buildings and rolling stock) and the possible take-over of personnel, safe operation of trains and provision of other services, the security of assets where theft and pilferage is a problem for the conveyance of goods and railway equipment is mis-appropriated, the ownership of land and the implications of 'patrimony', the possible sale of redundant land or other assets and the implications of leasing in regard to railway management are clearly understood. The existing taxation rules and practices, possible tax exemptions for certain activities or funding arrangements or if foreign investors are providing investment monies need to be clearly defined. (This also to be based on the legal framework report completed in 1994 and commissioned to start in 1996).

B Possible joint venture arrangements, management and implementation strategies

Task 5 Management strategies and joint venture arrangement

Having ensured the appropriate levels of service to be provided in a developing competitive situation, the management strategies, the engineering requirements and the consequences of each alternative need to be examined. Management or ownership strategies would be examined including but not restricted to establishment of

- a railway 'Joint Venture' group including ferry services across the Caspian Sea with representatives from Azerbaijan, Georgia and Armenia with a president of the group provided by a third party or elected from within the group
- joint provision of workshops for locomotive or wagon maintenance or maintenance of other equipment at one or two locations for the whole 'Joint Venture'
- separate operation of the Baku / ^{Ba} Potumi / Poti line with public or private operators providing all the required services to users
- establishment of a "track company" selling journey 'paths' to existing railway operators or new operators providing railway conveyance passenger and freight
- separate operating companies buying or leasing equipment services or track space
- free ports for TRACECA corridor services
- multi-modal operations within the Joint Venture.

Project viability involves assessment of 'economic' costs and 'benefits' and assessment of environmental impact of the various options. This would be shown as development possibilities ranked according to the internal rates of return from the different investments and net present values after 20 years and be subject to sensitivity tests as appropriate.

Task 6 Financial considerations

Financial arrangements for each management or ownership strategy then need to be considered in some depth. For each alternative which could possibly be implemented successfully there needs to be an outline 'business plan' including amongst other things the source and allocation of funds over a 10 year / 20 year period as appropriate, outline cash flow indications, outline 'balance sheets', profit and loss forecasts, indication of possible equity holdings and necessary 'stand-up' financing to part provide for debt service. The budgets prepared should be in some detail for the first five years and then in outline for the following three five periods. The financial arrangements would also be set against an appropriate evaluation of assets, a prescribed desirable capital structure, share capital, debentures for loan capital and arrangements for shareholders and so on. This would take into account any agreed taxation regime for what must be considered an important national asset whether or not it is in private hands.

C Economic and financial appraisal of alternative and recommended strategies

Task 7 Proposed procedures and implementation

This Task involves identification of the procedures for the implementation of the recommended strategy. The preferred implementation strategy would be analysed and targets set in an operations plan. "Hurdle criteria" or those problems which need to be solved before the objective can be achieved should be defined and time-limits set for the 'hurdles' to be surmounted. To enable the success of the proposed strategy to be measured, suitable operating and financial ratios should be set. These would involve traffic, operating, user-service and financial ratios which could be produced at monthly or quarterly intervals. In the course of this Task possible public or private participants in the provision of railway or ferry should be identified and consulted. This may be done earlier if appropriate. This Task would involve preparing the format for possible tender invitations, provision of advice to Governments and railways on the merits of individual bids, handling of preliminary negotiations and the preparation of the main headings of suitable contract documents.

Task 8 Human resource development

Throughout the work Tasks undertaken on this project, there should be an assessment of management training needs and the provision of short courses for railway managers and technical specialists considered essential and urgent. This

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would probably involve training in management, traffic costing and pricing, marketing and business strategy. These should be based on modern teaching techniques and be appropriate to the managers requiring new skills to enable them to fulfill the duties envisaged in the running of the new railway. This should be supplemented by a further training programme for managers after issue of the Final Report which would possibly be implemented by the growing TACIS training potential.

D Recommended strategy and heads of agreement for a Joint Venture

Task 9 The final report and contractual agreements

A final report would be prepared for the various Governments involved and the European Commission which would provide a detailed strategy and time schedule for implementation showing targets achieved and to be achieved and justification for the investments and restructuring of the transport systems involved .

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5. Expertise required

5.1 The project duration should not be more than 10 months. The expertise and time inputs required should not be less than

	"International" Number of Consultants	Time inputs man/months	"National" Number of Consultants	Time inputs man/months
Project Manager	1	12	-	-
Deputy Project Managers	3	30	-	-
Railway Operations Experts	1	6	1	6
Railway Mechanical Engineers	1	5	3	3
Railway Civil / Track Engineers	1	5	3	3
Railway Signalling and / Telecommunications Experts	1	5	3	3
Shipping and Ports Operations Expert	1	2	-	-
Legal Advisers	1	6	3	12
Financial Advisers / Auditors	1	10	1	10
Transport Economist	1	6	1	6
Man/month totals		87		43

5.2 The Project Manager should be responsible for the conduct of the project both within and without the TRACECA region and will co-ordinate the work of this project with that of others in the transport sector and involving trade facilitation. The Deputy Project Managers would be responsible for the project and administration in the three capitals, Baku, Tbilisi and Yerevan. Other experts would base their activities mainly within the region.

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- 5.3 It is required that full use be made of local experts and institutions in relevant transport disciplines and
- (a) full use is made of local experience and data bases, and
 - (b) skills are transferred to the Government administrators and railway and ferry-boat operators to ensure continuation of the activities recommended and to meet the criteria set as a measure of successful project implementation.
- 5.4 The Project Manager and the appropriate Deputy Project Managers would also be required to attend the monthly meetings of the proposed regional co-ordination committee of TRACECA.

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6. Timetable and reporting

6.1 Reports should be delivered to the TACIS organisation of the EU and to the Governments of Azerbaijan, Georgia and Armenia as follows

- (a) an "Inception" report to be issued within two months after the agreed start date and commencement of work to summarise initial findings and any proposed modifications to methodology or the work plan. This will take into account other Technical Assistance provided in the region to avoid duplication of effort
- (b) an "Interim" report after six months from commencement of work showing progress of work and findings
- (c) a "Draft Final" report at the end of the tenth month following commencement of work on the agreed start date
- (d) a "Final" report one month after receipt of comments by the Governments involved and the EC. Comments from all parties will be submitted to the Consultants within six weeks of the submission of the Draft Final Report.

6.2 A copy of each report will be issued in the Russian Language within one month after issue of the report in English. Each report will include a brief "Executive Summary".

6.3 The number of copies to be provided is as follows

	in English		in Russian	
	EU	Governments	EU	Governments
Inception Report	2	3	1	6
Interim Report	2	3	1	6
DFR	5	6	1	12
Final Report	10	15	2	15

STATEMENT of ENDORSEMENT

Joint-venture for the TRANSCAUCASIAN RAILWAY

During the EC mission of August 1995 negotiations have been undertaken between the Prime Minister M. Shahbazian and EC personnel. The following has been agreed:

- The Government of Armenia is in favour to implement the idea of regional collaboration as it was stated in the Memorandum of Understanding of February 1995 of the Operation Goodwill
- A joint venture of the national railways as an European investor will enhance the regional collaboration in the Caucasus
- The agreement takes in consideration a feasibility study which will be financed by TACIS EC. This feasibility study will provide all necessary technical details to make European investment possible in this project.
- The object of the feasibility study will include an audit of the concerned national railway and the ferry boat connection between Baku-Krasnovodsk.

Brussels, 22 September 1995

For the European Commission



Mr. Verrue
Deputy General Director

For the Government of Armenia



Mr. Shahbazian
Minister in Charge of Relations with
International Economic Agencies, the
European Union and the CIS

STATEMENT of ENDORSMENT

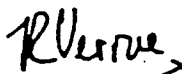
Joint-venture for the TRANSCAUCASIAN RAILWAY .

During the EC mission of August 1995 negotiations have been undertaken between the Prime Ministre M. KULIEV and EC personnel. The following has been agreed:

- The Government of Azerbaijan is in favour to implement the idea of regional collaboration as it was stated in the memorandum of understanding of february 95 of the Operation Goodwill.
- A joint venture of the national railways and an european investor will enhance the regional collaboration in the Caucasus.
- The agreement takes in consideration a feasibility study which will be financed by Tacis EC .This feasibility study will provide all necessary technical details to make European investment possible in this project.
- The object of the feasibility study will include an audit of the concerned national railways and the ferry boat connection between Baku-Krasnovodsk.

Bruxelles 22 th SEPTEMBER 1995

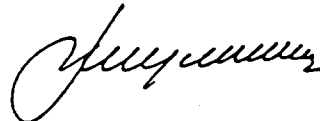
For the EUROPEAN COMMISSION
AZERBAIJAN



M. VERRUE

Deputy General Director DG1A

For the GOVERNMENT of



M. KOULIEV Prime Ministre .

STATEMENT of ENDORSMENT

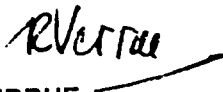
Joint-venture for the TRANSCAUCASIAN RAILWAY .

During the EC mission of August 1995 negotiations have been undertaken between the Prime Ministre M. PATSATIA and EC personnel. The following has been agreed:

- The Government of Georgia is in favour to implement the idea of regional collaboration as it was stated in the memorandum of understanding of february 95 of the Operation Goodwill.
- A joint venture of the national railways and an european investor will enhance the regional collaboration in the Caucasus.
- The agreement takes in consideration a feasibility study which will be financed by Tacis EC .This feasibility study will provide all necessary technical details to make European investment possible in this project.
- The object of the feasibility study will include an audit of the concerned national railways and the ferry boat connection between Baku-Krasnovodsk.

Bruxelles 22 th SEPTEMBER 1995 .

For the EUROPEAN COMMISSION
GEORGIA


M. VERRUE
Deputy General Director DGIA

For the GOVERNMENT of


M. PATSATIA Prime Ministre .

Annex 2

Technical Proposal

- part B.2 -

„Organisation and Methodology“

B.2.2 Project Description

This section contains the methodological and organisational measures the Consultant deems necessary to process the parts of the project according to the requirements laid down in the Terms of Reference.

The general approach to be applied in this project can be described as follows:

Within the Terms of Reference the various tasks to be performed have been described, in total nine tasks, which are very comprehensive and give a general sequence of activities. But each task covers numerous topics so that these topics have been broken down to various groups with a number of work packages each (see below). From the thematic point of view these groups are:

- railway infrastructure authority
- business strategy infrastructure
- Trans-Caucasian railway service centre
- port and ferry services.

Each of these groups contains a thorough analysis (technical, organisational, economical and financial, legal). Based on this analysis scenarios for future developments will be prepared to estimate future trade potentials, transport requirements, and requirements for rehabilitation measures (investment programmes). Scenarios for possible organisational developments of the joint ventures will be prepared and assessed with a view of coping with the estimated demand. Financial consequences under different scenarios for economic development, development of fares, fees, and tariffs etc. will be demonstrated as to obtain the most viable solution.

The following table shows the connections between the work streams / work packages and the Terms of Reference.

**Relationship between Work Breakdown / Work Packages and ToR
- Joint Venture for the Trans-Caucasian Railway -**

WP	Task	1	2	3	4	5	6	7	8	9
1100	10		x							
	20		x							
	30		x							
	40		x							
	50		x							
	60		x							
	70			x						
1200	10		x			x				
	20					x		x		
	30		x		x	x		x		
	40				x	x				
	50				x	x				
1300	10		x							
	20					x	x			
	30					x		x		
	40							x		x
2100	10	x								
	20	x								
	30	x								
2200	10									x
	20									x
	30									x
	40		x							x
	50									x
2300	10						x			
	20						x			x
	30						x			x
	40						x	x	x	

WP	Task	1	2	3	4	5	6	7	8	9
	3100									
	10	x		x						
	20			x						
	30			x		x				
	40		x							
	50			x						
	3200									
	10					x				
	20					x				
	30					x				
	40					x				
	50									
	60		x							
	3300									
	10					x				
	20					x				
	30			x		x				
	40				x				x	
	3400									
	10						x	x		
	20						x	x		x
	30						x	x		x
	40						x			x
	50						x			x
	4100									
	10		x							
	20	x	x							
	4200									
	10			x						
	20									
	30									
	4300									
	10					x	x	x		x
	20					x	x	x		x
	30					x	x	x		x
	40				x	x		x		x
	50									

To secure performance of the project within the anticipated time frame it is essential to make as much use as possible of the information already available or at present under preparation. This applies to studies and investigations already performed as well as to those at present in execution on behalf of different donors (as already mentioned in the ToR). Within the TRACECA programme a lot of other projects is foreseen, some of them being of high importance for the project on offer. In this respect are to be named:

- The "*Regional Forecasting Model*" (as already mentioned in the ToR) serves to estimate future demand
- The "*TRACECA Legal Framework and Regulatory Framework*" as well as "*Trade Facilitation, Customs Procedures and Freight Forwarding*" and "*Forwarding - Multimodal Transport Systems*"
- The "*Human Resources Training*" and the "*Human Resources Training - Maritime*".

Furthermore, a couple of "Hardware Projects" is underway and/or envisaged, dealing with various aspects of maintenance, infrastructure, rolling stock, terminals, ports, etc. Also the results of these projects will be considered as far as they are available.

One of these "Hardware projects", namely "Railway Pre-investment Study and Pilot Train Baku - Tbilisi - Batumi - Poti / Bridge over Kura River" at present is carried out by the consortium TEWET/DE-Consult. This project will have as one result a pre-investment study to determine the requirements for rehabilitation of the main Trans-Caucasian rail route. Due to this fact the consortium already has collected considerable experience in the area to be investigated, both from the technical and operational aspects and from the geographical side so that the consortium can build on these experiences.

On the other hand it might well be that the results of the project on offer will influence the results and findings of the parallel project. So from our point of view it seems strongly advisable to have a continuous exchange of information between the various projects as to avoid parallel works. A first step in this respect will be the meeting scheduled for end of February.

The Project Manager is responsible for the conduct of the project both within and without the TRACECA region and will co-ordinate the work of this project with that of others in the transport sector and involving trade facilitation.

The three Deputy Project Managers will be responsible for the project and administration in the three capitals, Baku, Tbilisi, and Yerevan.

The members to the team work in their specific work packages in all three countries. This guarantees a uniform, technical standard in the realisation of the project. In order to determine co-ordinated objectives workshops will be organised, taking also into account psychological aspects in the solving of conflicts.

Local experts will be included strongly in all components of the project.

Following negotiations with the co-ordinating units for the TACIS programme and first contacts with possible local partners, experts will be available for this collaboration representing the railways of Azerbaijan, Armenia, and Georgia, and also the Ministries of Transport and Economics of the countries concerned.

The required co-operation in the individual work packages within the framework of the planned budget (compare 'Financial Proposal') will be conducted at the beginning of the project and will be handed over for approval to the bodies involved with the Inception Report.

In order to maintain the permanent contact with local sub-contractors and organisations, project offices are to be set up on location for the duration of the project processing. These offices will be staffed by the Deputy Project Managers or experts of the Consultant, and in their absence by local experts.

A strict project organisation will ensure the outputs of the work packages to serve as inputs for subsequent work packages.

The processing of the four streams shall be done simultaneously, taking into account the connections between the individual work packages.

As a special form of the project work the formation of an 'Advising Committee' is planned which will have advisory functions regarding the investigations. For this purpose, competent experts from railway administrations, economy, and science could be engaged.

Envisaged members to the committee:

- | | |
|-----------------------|---|
| - Dr. Lenke | Member of the Board for the Development of the DBAG Group (German Railways) |
| - Professor Burghardt | Technical University Dresden; business management, staff management |
| - Professor Legat | German Federal Ministry of Transport; section railway |
| - Mr Remmert | Group Representative of DBAG Berlin |
| - Mr Weiß | Managing Director of PBDE |
| - Mr Kolley | Expert in traffic law. |

B.2.3 Approach and Methodology

Main objective here is to propose viable solutions both for the infrastructure and for the Operating Company.

Regarding the infrastructure, it is assumed that it will be state-owned and that its further extension will be subject to the sovereignty of the respective states. Therefore, in this case an interstate solution will have to be found. Works under the first two work streams therefore refer to the establishment of an international co-operation between the three railway administrations in order to develop the network infrastructure. It is assumed that mainly those parts of the network's infrastructure will be investigated which will be required on the transit routes. The diagram below shows Main Railway Transport Corridors.

Co-ordination of the plans regarding the development of the infrastructure has to be done with the respective governments or railway administrations of the countries, which will be done with the help of the respective Deputy Project Managers.

With regard to its contents, the basis for the work of this international / regional organisation will be the strategy for the development of the infrastructure. The results will be submitted, together with a proposal on a master plan and an investment plan, this latter one containing the results of the deficiency analysis. Continuous inclusion of the local experts in this process shall ensure that the proposals will be widely accepted even before the Draft Final Report is submitted.

By this procedure the separation between network administration and network operation and discrimination-free access, as determined by the EU, can be reached. At the same time, this international / regional authority will market the railway infrastructure and thus in part ensure the recapitalisation of the investments necessary for the development of the infrastructure.

The second part of the project proposal refers to the creation of a joint venture, forming the service centre for the transport customers.

In the initial phases of the project, we will start by proposing low-key joint venture scenarios which would not be dismissed from the very beginning at political level. So these proposals should be based on the "lowest common denominator", the technical and economic justification being obvious. Having reached agreement on those, more ambitious proposals could be brought forward with the objective to test the limits of consensus of the governments involved.

The investigations as to the Trans-Caucasian Railway Service Centre are oriented towards the creation of a mixed, state/private, international enterprise which plans and realizes transport on the basis of own transport means, by way of leased appropriate transport capacities, and by using the railway infrastructure, and which puts at disposal all logistic information.

Hier einfügen:

Main Railway Transport Corridors

The investigations on marketing are based on the investigations to be made within the framework of the project regarding the development of transport requirements in the specific region. Main emphasis here has to be laid on international and regional/international transports of the east-west relation and the north-south relation. Here, also, there will be a co-ordination with the corresponding projects. The multi-modal approach (railway, sea / ferry transport) is chosen.

Though the investigations will mainly concentrate on freight traffic, options regarding marketing and offers in passenger traffic will also be developed. Here, also, the focal point will be international connections, where high-class offers and services in terms of quality are to be put at disposal.

Starting from the varied financial, organisational, and legal situation of the three countries' railway administrations and of the ports of the Caspian Sea and the Black Sea, the investigations on ferry transport and sea transport are being carried out separately. For these fields, joint venture solutions will be developed. Indispensable in this approach will be the respective participations of the countries and all-institutional capital participations.

All proposals are being made subject to the development of the political climate and of the capital market.

The contents of the main work packages of the structure plan is described below.

1000 RAILWAY INFRASTRUCTURE AUTHORITY

WS 1100 Present Condition of Network

Supported by local consultants, the railway experts will examine efficiency, technical conditions and standard of the railway systems in Armenia, Azerbaijan and Georgia, looking for deficiencies which will form the basis for the rehabilitation plan. There should be a differentiation between short-term measures to be taken because of the present extremely low volume of traffic - first and foremost to maintain management and guarantee the transport standards - and medium-term measures which will help to improve the operating processes with an increasing volume of traffic. Furthermore, an outlook on longer-term prospects can be given during which extensive modernisation of railway installations and rolling stock shall be realized.

It is vital to observe all short-term, medium-term and long-term rehabilitation measures so that the requirements of a co-operation between the railways of Armenia, Azerbaijan and Georgia within a joint venture shall be met.

The results of WS 1100 serve as inputs for WS 2200, Investment Plan for the Railway's Infrastructure

WP 1110 Technical Condition of Track

Quantitative and qualitative parameters are

- operational length and length of tracks
- structural condition and standard of tracks
- structural condition and standard of stations and signal boxes
- structural condition and standard of railway crossings.

The operational length has to be determined taking into account:

- the gauge of track
- the number of main tracks (single track, multiple track)
- use by freight traffic or passenger traffic and/or jointly by freight and passenger traffic, as well as the length of the electrically operated routes and routes with diesel traction.

For the track work the length of all tracks, the number of point units and possibly the switch heatings are of interest.

For the structural conditions and standards of the track work it will be necessary to indicate the standards and standards of the track formation regarding their design and stability, the conditions and standards of draining, the conditions and standards of the track bed as well as the conditions and standards of the laying of rails, including their fastening. Generally, a description and evaluation of the conditions and standards of the track formation for stations, signal boxes, crossings, additional facilities as loading and unloading facilities, goods sheds and maintenance and storage facilities have to be elaborated.

In a further investigation the possibilities for the maintenance of the structural facilities and the maintenance periods shall be appraised; however, the plan and real condition should be indicated separately.

Each evaluation yields the demands as to the rehabilitation plan, taking into account the various time horizons.

WP 1120 Technical Condition of Bridges

The technical conditions of bridges and tunnels have to be determined for

- railway bridges
- railway tunnels
- road bridges (as far as maintenance will be done by the railway company)
- over-line bridges/subways for pedestrians, especially in station areas.

For these buildings the construction type, age, load capacity and maximum axle load as well as the running speed have to be determined.

Furthermore, duration and conditions of further use will have to be indicated.

Maintenance procedures for bridges and tunnels have to be determined, as have periods needed for investigations on planned condition/real condition which are to be indicated separately.

Each evaluation yields the demands as to the rehabilitation plan, taking into account the various time horizons.

WP 1130 Signalling and Communication

The technical conditions of signalling and communication have to be determined for the

- signalling system
- train control system
- reliability
- internal telephone system
- data transmission system.

For the signalling system, conditions and standards for the stationary facilities in signal boxes and for pointsmen have to be analyzed and appraised, and for those facilities pertinent to the different lines (main and distant signals) which serve for the safety of train movements (including cable-laying).

For the communication system, conditions and standards for the train identification reporting system, train-running control and train control have to be described.

Maintenance procedures and periods (plan / real condition) and the signalling and telecommunication workshops have to be included into the analyses.

Each evaluation yields the demands as to the rehabilitation plan, taking into account the various time horizons.

WP 1140 Power Supply

The technical conditions of the power supply have to be determined for the

- traction network
- power supply
- contact wires.

For the power supply, conditions and standards regarding the energy basis for the traction power works, their location, capacity and kinds of power supply (overhead lines, earth cables) as well as overhead lines across routes and in stations have to be examined and described.

Each evaluation yields the demands as to the rehabilitation plan, taking into account the various time horizons.

WP 1150 Technical Condition of Stations

The technical conditions of the stations have to be determined for

- freight stations
- passenger stations

- shunting yards
- border stations
- intermodal stations.

For the stations, conditions and standards with regard to track development and station premises (e.g. stabling sidings, recessing sidings) have to be examined and their correspondence with the technological state-of-the-art. Stations should be classified and be put into proportion to the volume of traffic.

In completion of WP 1100, maintenance procedures regarding track formation, and station facilities have to be appraised. Of special interest is the condition of station buildings as well as their passenger service facilities.

Each evaluation yields the demands as to the rehabilitation plan, taking into account the various time horizons.

WP 1160 Maintenance Technology for Rolling Stock

The technical conditions of the maintenance technology have to be determined for:

- maintenance of freight waggons
- maintenance of coaches
- maintenance of locomotives.

For this equipment - belonging to the rolling stock - stock figures, structure, age, origin, load capacity / number of seats / tractive effort have to be determined. Of special interest are ownership rights (e.g. private cars of a customer taken over, operating company).

Special attention has to be paid to the possibilities for maintenance and, if need arises, the necessity for new buildings or the rehabilitation of rolling stock. In this connection maintenance shops, maintenance and storage facilities and repair stands have to be recorded and appraised with a view to their condition and equipment.

Each evaluation yields the demands as to the rehabilitation plan, taking into account the various time horizons.

WP 1170 Deficiency Analysis and Rehabilitation Plan

Deficiency analysis and rehabilitation plan will be worked out based on the individual results of WP 1110 to WP 1160.

For each network section the deficiencies have to be listed, appraised, systematised and arranged according to their urgency so that there will be a technologically settled analysis of deficiencies.

This deficiency analysis helps prepare the rehabilitation plan and will serve as a basis for WP 2000, Investment Plan.

WS 1200 Organisational, Legal, and Financing Conditions; Audit

WP 1210 Analysis of Present Organisation

Further to the description of the present state of infrastructure and performances, investigations have to be made as to which organisation will plan, perform, and realise the processes. Subjects of this analysis will be as follows:

- organisational structure, i.e. management and control structures;
- operational structure, i.e. the tasks and their respective assignment;
- staff, in particular: number of personnel, their qualifications and respective authorities;
- relevant co-operation relations, and
- structures for marketing and distribution.

The analysis is based on

- available documents regarding the organisation, and
- interviews with executives of relevant fields.

Results:

The result will be an overall description of the railways' administration in the area that was investigated. This will comprise:

- organisational charts
- spheres of business or scope of duties of the individual organisational units
- lists/tables regarding personnel assignment.

The presentation of results will be more detailed for those findings helping to deduce deficiencies, or potentials for effective and efficient work within the international management of infrastructure that remains to be developed, or within the future Service Centre, resp.

WP 1220 Financial Analysis

The existing financial situation of the three railway administrations and of the Caspian Shipping Company will be taken into account.

Especially will be analysed:

- Present cost accounting system
 - * calculation of actual cost
 - * cost differentiation between passenger and freight transport
 - * cost planning and cost control

- * recent developments in major cost items (such as personnel, material, energy)
- Present expenditures for infrastructure
 - * present calculation for infrastructure
 - * break-up of infrastructure into different sub-sectors (fixed assets)
 - * basis of a realistic accounting system
 - * break-up into fixed and current expenditures
 - * method of payment for infrastructure expenditures (repayment plan, lump sum, prices, etc.)
- Financial cash flow distribution
- Budgetary accounting and realisation
- Revenue structure concerning passenger and freight operation
- Descriptions as to the specific expenses involved (where are expenses recorded and what for?) and as to the truth of such expenses
- Analysis of calculation standards and calculation methods.

Results:

- Actual state of cost accounting system
- Fields of cost accounting
- Structure and size of costs
- Cost recovery on the basis of a realistic accounting system.

WP 1230 Legal and Institutional Organisation

The existing legal and institutional organisation of the three railways concerned will be analysed, taking into account the legal framework report of 1994. There is a close connection with WP 1210.

Government representatives and legislators will be interviewed to ascertain the political will of each individual State concerning the future of its railway, and whether proposals (and which proposals) for a common strategy and a joint venture in the field of railway infrastructure have a chance to be implemented. The need for legislative measures will be defined.

Corresponding proposals will be prepared.

Specific research will concern the

- relationship between the States and the railways;
- ownership of the railway infrastructure;

- management of the railway infrastructure (authority, company, etc.; integrated, separate, etc.);
- definition of railway infrastructure;
- investment mechanism;
- maintenance mechanism;
- possibility (no/yes/who/how) of third parties' access;
- access privileges;
- control mechanism (antitrust, etc.) and arbiter function;
- system of user fees/rates;
- establishment and approval of user fees/rates;
- relationship between railway infrastructure authority/company and user company/companies;
- consideration of stations, platforms, terminals, depot; and access tracks, shunting yards, etc.;
- public service obligations;
- safety control.

Results:

- Description of present situation
- Proposals for future development
- Definition of legislative need.

WP 1240 Deficiency Analysis and Rehabilitation Plan

Comprising:

- Financial evaluation of backlog works (divided into material assets, production technologies, premisses as to time, etc.)
- Preparation of a financing schedule in terms of time as a planning variant (financing need)
- Ascertainment of possible sources for financing and financing institutions
- Analysis of possibilities for possible discounts conditions (premium - extra premium as a punitive measure; rebates, promotion instruments, underwriting of interests by other institutions, etc.)
- Comparison of effectivity indicators and financing

Results:

- Definition of total investment sum for infrastructure revitalisation and development
- Financing and funding proposals
- Investment responsibilities proposal
- System for suitable operating and financial ratios
- Data for cost-effectiveness analysis.

WS 1300 Establishment of International Co-operation

WP 1310 Definition of the Main Aims of Co-operation

A precondition for the realisation of railway transit is the availability of an efficient railway network, and concerted technical and commercial conditions. The later are in part determined by the leaflets of OSShD. Furthermore, it could be assumed that the rules and regulations of RID (instructions) keep being the basis for the technical standards. Here, the relevant provisions have to be assessed and checked whether they comply with international standards.

The necessary investments and their integration in terms of time and system techniques are subject to co-ordination between the railway administrations. As a basis for the investigation it is assumed that the infrastructures of railway and port for the most part remain state-owned. Invitations for tenders will be done jointly on the basis of previously concerted terms of reference.

For the utilisation of the infrastructure a route management will be indispensable. Outline conditions for route charges are to be determined and co-ordinated.

WP 1320 Alternative Forms of Co-operation

Taking into account the outline conditions still to be determined (cf. WP 1230), various forms for a co-operation between the railway administrations have to be investigated and assessed. Within the framework of such investigations, firstly the following forms will be investigated (in co-ordination with local authorities):

- A) Infrastructure Authority (international/regional authority for the development, extension, maintenance, operation, and marketing of the railway network) with equal numbers of activity rates;
- B) like A, but with the participation of the Ministries of Transport;
- C) Creation of 'International Route Management' departments in the three railway administrations, and co-ordination of conditions and of the systems of development, investments, and maintenance. Formulation of legally binding agreements.

Evaluation of the variants, taking into account the respective points of view of the three countries involved. Spot-lighting of potentials for conflicts, and recommendation of the variants to be preferred.

Main activities in this co-operation will be:

- technical uniformisation and standardisation in the following fields: track (e.g. permissible axle loads, speeds, gross trailing loads), bridges, signalling and communication (e.g. distances between sections, block intervals), stations (e.g. useable lengths of tracks)

- organisation and creation of purchase pools for typical railway equipment and spare parts, in order to minimize procurement costs by means of bulk discounts
- creation of joint structures in terms of division of labour for the maintenance of infrastructure
- creation of joint structures for the granting of usufruct of routes
- creation of an organisational unit for technological planning (co-ordination of timetables and train formation, e.g. in order to save expenses by the formation of long-distance trains).

WP 1330 Requirements of International Agreements

Following co-ordination with the railway administrations, on the basis of the assessed, alternative forms (WP 1320) designs for national agreement are drawn up and co-ordinated. Main items of these will be:

- (1) form of organisation,
- (2) financing of organisation,
- (3) financing of investments,
- (4) proceeding during preliminary planning, planning, implementation
- (5) project management for construction traffic
- (6) principles of route charges
- (7) planning of maintenance
- (8) rules and regulations (preparation and co-ordination).

Results:

Designing of international agreements regarding the infrastructure authority.

WP 1340 Border Control and Customs Procedures

A harmonised legislation in the field of border crossing traffic is of major importance for a high qualitative and reliable railway traffic between the countries concerned.

Therefore, the main objective of this work package is to analyse the legal and institutional framework for border crossing traffic and the actual customs legislation, and draw up recommendations for improvements of procedures and legal framework.

The analysis of present situation in this field will cover the following areas:

- legal framework for cross-border traffic in the respective countries both for interregional and international traffic;

- organisation of border control at border stations between these countries as well as on the borders with third countries;
- customs legislation and customs tariffs;
- organisational and institutional framework for customs clearance and control;
- border clearance procedures in railway traffic, including operational issues, customs, safety and sanitary inspections, etc.

The analysis will be carried out separately for passenger traffic and for freight traffic, taking into account possible differences for traffic within the region and international traffic with countries outside the FSU.

Based on the above mentioned analysis weak points are to be defined and recommendations for improvements be drawn up. Possible directions for future improvements might be:

- harmonisation of national legal acts and regulations between the countries concerned, adjustment to international acts and recommendations;
- recommendations for necessary bilateral or multilateral agreements aiming at improvement of border crossing railway traffic;
- improvement of the organisational framework for border clearance activities, for example by agreements on joint border and customs control.

The consultant is fully aware that for these issues the actual political situation and further political trends and developments in the region are of outstanding importance. They therefore will be thoroughly considered when recommendations are drawn up.

2000 BUSINESS STRATEGY INFRASTRUCTURE

WS 2100 Traffic Forecast

WP 2110 Trade Potentials

As one of the main factors for determination of future freight volumes trade patterns in the area will be analysed and a forecast for possible developments over the period of the next 20 years is to be drawn up.

After the breakdown of the former Soviet Union, trade relations of the countries concerned severely changed. While in the past trade flows mainly were the result of centralised allocation and production, now completely new trade patterns are coming up.

Future trade and business prospects will be examined for the following areas, defining changes in geographical and commodity structures:

- internal business relations between the main industrial areas of the three Caucasian republics;
- inter-regional trade between Azerbaijan, Georgia and Armenia;
- exports and imports with other FSU - countries, mainly with Russia and Ukraine;
- foreign trade with countries outside the FSU area, especially with Turkey and Iran;
- trade relations between third countries, creating potential transit flows through the Trans-Caucasian corridor.

The trade forecast will include examination of oncoming developments in main industrial areas, as for example the oil-extracting industry in Azerbaijan, oil refining, mining industry as well as deliveries of machinery and equipment into the area for these growing branches .

WP 2120 Freight Traffic Forecast

Traditional mathematical and statistical methods of traffic forecasts, normally used under West European conditions, are not applicable to prognoses of traffic flows in the present situation in East European countries, mainly because severe structural changes took place in all areas of political, economical, and social life in the reform countries.

Based on our relevant experience of successfully prognosticating traffic flows in various East European countries, the consultant suggests the application of a procedure adjusted to these special conditions. The forecasting method consists of the following main elements:

- analysis of all existing statistical materials and information on the future development of economy, trade, socio-demography, transport, etc. by the consultant;
- elaboration of an own forecast by the consultant, based on the methodology of correlation between main economic indicators like GNP, national income, etc. and the development of foreign trade and freight transport;
- harmonisation with independent forecasts of local bodies / organisations.

As a result, a forecast consisting of three scenarios will be drawn up, figures being available for the years 1994/1995, 2000, 2010 and 2015:

- Scenario I: best case
- Scenario II: medium case
- Scenario III: worst case.

The forecast for railway freight transport will be presented in the form of O/D - matrices separately indicating export, import, transit and domestic traffic for various types of transport (individual waggon load, block trains, etc.).

The breakdown into commodity groups will be done into ten groups according to NST/R, or by adjustment of other available classification to NST/R.

In addition, a forecast for other relevant modes of transport (road, pipeline, sea) will be included.

The traffic forecast will be done in close co-operation with all projects and activities concerning the development of a regional traffic forecasting model.

WP 2130 Passenger Traffic Forecast

According to forecasting methods, the above mentioned difficulties apply to passenger traffic as well as to freight transport.

Therefore, the consultant will use a procedure similar to the method described under WP 2120. The forecast will be based on an analysis and evaluation of the future development of main factors influencing railway passenger traffic as follows:

- political situation, migration processes,
- development of main socio-economic indicators,
- population (number, structure, dislocation etc.),
- economic and trade relations between the countries concerned,
- present situation and prospects of tourism,
- development of individual car ownership.

As a result, a forecast for passenger railway traffic consisting of three scenarios will be drawn up too, figures being available for the years 1994/1995, 2000, 2010 and 2015:

- Scenario I: best case
- Scenario II: medium case
- Scenario III: worst case.

The forecast for railway passenger traffic will be structured as follows:

- passengers leaving the country
- passengers entering the country
- transit passengers
- domestic traffic
- main lines of the transport corridors under consideration.

For passenger transport the situation and future developments of competitive transport modes are also to be assessed.

WS 2200 Investment Plan for the Railway's Infrastructure

The business strategy for the railway's infrastructure has to be prepared for the fields:

- Track
- Freight and Passenger Stations
- Signalling and Communication
- Processing and Transmission of Data
- Maintenance Shop,

using the results of WS 1100.

Furthermore, they will integrate and financially appraise all those measures of the Rehabilitation Plan which in the long run will help to ensure and improve the operating conditions of Armenian, Georgian and Azerbaijan railways, and increase their efficiency by modernisations according to their specific requirements.

The Investment Plan has to be established considering the economic working life and maintenance costs for the railway premises.

Within the Investment Plan the various measures for rehabilitation and modernisation have to be itemised, indicating investments for equipment on the one hand and building measures on the other hand.

The various measures have to be combined in a timetable in a way to provide greatest possible effectivity with a view to their realisation.

When preparing the Investment Plan for the railways in Armenia, Azerbaijan and Georgia, attention should be paid that economically significant divisions of labour and co-operations be included.

WP 2210 Track

Rehabilitation measures as given under WP 1170 will be included, separately indicating investments for equipment and investments for buildings.

The investment plan for the track refers to the following fields:

- land
- railroad
- tunnel (s)
- railway crossings
- railway bridges

- bridges
- superstructure.

Each measure has to be financially evaluated.

WP 2220 Freight and Passenger Stations

Rehabilitation measures as given under WP 1170 will be included, separately indicating investments for equipment and investments for buildings.

The investment plan for freight and passenger stations refers to the following fields:

- superstructure (passenger buildings, interlocking towers, station-master's office, shunting yard, workshop)
- transport-related facilities (platforms, inclines, tracks)
- shunting facilities and track stops.

Each measure has to be financially evaluated.

WP 2230 Signalling and Communication, Data Processing & Transmission

Rehabilitation measures as given under WP 1170 will be included, separately indicating investments for equipment and investments for buildings.

The investment plan for signalling and communication refers to the following fields:

- mechanically operated signalling facilities
- electromechanical signalling facilities
- electric signalling facilities
- central systems for control and co-ordination
- lines for transmission techniques
- telecommunication facilities
- data processors.

Each measure has to be financially evaluated.

WP 2240 Power Supply

Rehabilitation measures as given under WP 1170 will be included, separately indicating investments for equipment and investments for buildings.

The investment plan for power supply refers to the following fields:

- electrical facilities for traction current
- electrical facilities for light and power
- wiring for traction current.

Each measure has to be financially evaluated.

WP 2250 Maintenance Shop

Rehabilitation measures as given under WP 1170 will be included, separately indicating investments for equipment and investments for buildings.

The investment plan for the maintenance shop refers to the following fields:

- facilities for generation and supply of heat, compressed air, liquids, gas
- lifting and winding engines
- machine tools
- measuring and control equipment
- workshop equipment
- tools.

Each measure has to be financially evaluated.

WS 2300 Management

WP 2310 Development of Organisation

This present organisation is a compound of tradition, precedent, and established practice. The main task will be a proposal on how to organise the co-operation between the three railways in the fields of network reconstruction and development.

Approaches:

- management by objectives,
- optimal organisation of processes,
- centralised organisational development under aspects of managerial effectiveness.

The steps are:

- Initial Phase: modern seminars on
 - * leadership abilities,
 - * the increase of self-understanding,
 - * problem-solving,
 - * management of conflicts;
- Creation of Teams
value of team work (team of representatives of different railways)
- Interface Development
interfaces between the different departments and the railway administration(s)
- Designing of an Ideal Strategic Organisational Model
- Implementation of the Model Developed
- Consolidation.

Results:

Recommendations on steps to change the organisation, and on phases of development.

WP 2320 Model for Financing of Infrastructure

The infrastructure has to be rehabilitated according to the required standard of technology. The necessary implementation scheme will require enormous investment sums. Besides the infrastructure as such there will be a necessary shift to mechanised maintenance of fixed structures. There is also a need to improve the quality of manpower resource through changes in the recruitment policy and intensive training.

Priority should be given to investments directed towards improving the productivity of existing assets.

Concerning this investment scheme, there is a variety of interests from the railway organisations, the port authority, and the respective industry.

Therefore, various options as a model for financing of infrastructure will be analysed, such as:

- Public private partnership
- Build Operate Transfer (BOT)
- Build Operate Lease Transfer (BOLT)
- Own-your-track concepts
- Donor participation: national - international
- Going-public concepts.

The above listed models for financing and ownership strategies will be analysed taking into account local conditions. The experience from privatisation of the German Rail Organisation (Deutsche Bundesbahn) will be used as a valuable source of information.

WP 2330 Financing Sources

According to the various interests involved, the various sources for financing the infrastructure investment scheme will be analysed. It is the overall goal to set up a business plan stating the sources and funds over a 10 to 20 years period, outline cash-flow indications, outline balance sheets, profit-and-loss forecasts, indications of possible equity holdings and necessary financing to provide for debt service.

Concerning financing sources, the following organisations, institutions, and industrial enterprises will be evaluated as serious possibilities:

- Government financing agencies
- commercial banks
- international development banks
- national and international donor agencies
- private industry as supplier and/or construction companies
- petrol/oil investment industry
- port authority
- other potential railway users.

Results:

The evaluation results will document the financial arrangements and respective partners involved, taking into account the existing legislation of the three countries involved.

WP 2340 Human Resources Management

Based on the organisational structure developed for international co-operation in the infrastructure management field (WP 2310) the requirements as to personnel will be determined.

These requirements can be classified according to organisational criteria in connection with the management of human resources, like, e.g.:

- availability of personnel;
- responsibilities of personnel (limits to freedom of action);
- organisational structure of "Working Group";
- technical basis for the support of activities, and
- number of personnel,

and according to individual criteria of staff members being of importance for the activities to be performed like, e.g.:

- organisational talent;
- social / communicative abilities;
- leadership qualities, in particular:
 - * project management qualities,
 - * ability to settle conflicts, and
 - * professional competence.

The comparison of these requirements with the actual status (WP 1200) of human resources results in the definition of deficiencies with a view to the objectives of the joint infrastructure management.

A vital point of this process is the creation of long-term, stable structures as to the division of labour for the objective-oriented co-operation between the Republics of Armenia, Azerbaijan, and Georgia on the personnel side, for the joint technological planning, and for the maintenance of infrastructure.

Those measures helping to overcome the deficiencies in the human resources will be compiled in an 'Action Programme', detailed in terms of time and finance. Such measures are:

- special training for management personnel, concerning relevant individual abilities and organisational management;
- special training for specialised personnel, concerning relevant individual abilities;
- training of specialised personnel and management personnel to train others in turn, in order to start a continuous, internal process of principal training and refresher training;
- putting management personnel in a position to recruit (select) personnel.

Special attention shall be paid here both to the training of abilities and the training of methods.

The methodical bases best suited for these training units are, on the one hand, the internationally acknowledged managerial GRID technique, and, on the other hand, modern 'workshops', calling for contributions of their participants.

They do not only guarantee the impartment of knowledge, but at the same time - and very strongly so - that own experience can be integrated and developed in a common work process.

The form in which these measures are presented will be adapted to the different contents and requirements as to:

- duration (one or more days, only once or permanently)
- location (either integrated in the local working sphere or on 'neutral' territory)
- training group (national group or joint group, specific or unspecific selection of participants)
- methods and programme of training.

This work package will be handled assisted by local specialists.

Results:

- Specific requirements as to human resources in the infrastructure management field
- Schedule of measures
- Training of abilities representing the most important factors of success for the international co-operation in the infrastructure management field
- Recommendations as to how the 'infrastructure' strategy, relative to human resources, can best be realized (contribution to WP 3430).

3000 TRANS-CAUCASIAN RAILWAY SERVICE CENTRE

WS 3100 Present Conditions of TCR and Deficiency Analysis

Supported by local consultants, the Transport Experts shall examine the present conditions of TCR within the railway systems of Armenia, Azerbaijan and Georgia in the fields listed below and ascertain any deficiencies which will form the framework for the objectives and strategies to be pursued.

- Freight Transport
- Passenger Transport
- Combined or Multimodal Transport
- Tariffs; User Charges and Revenues.

Both the investigations on the present conditions of TCR and the deficiency analysis have to be carried out with a view to short-term, medium-term, and long-term strategies regarding the co-operation between the railways of Armenia, Azerbaijan and Georgia.

WP 3110 Freight Transport

The analysis of the present conditions of freight transport should contain statements on:

- the efficiency of the traffic authorities
- products of freight transport
- traffic performances
- marketing organisation of the products transported
- organisation of production of freight transport
- production engineering of freight transport.

The efficiency of traffic authorities and traffic performances have to be determined in tons and ton-kilometres. Furthermore, traffic performances have to be classified according to the products transported. The investigations on the marketing organisation should also include aspects of distribution and sales organisation. As to the organisation of the production of freight transport, statements about marshalling yards and train formation are indispensable. For the investigation on production engineering of freight transport, quantitative and qualitative analyses of the freight waggon stock, including their availability and general maintenance, have to be rendered. Furthermore, a quantitative and qualitative analysis of the stock of traction vehicles for freight train haulage, their availability and general maintenance should be included.

Each assessment should result in a listing of deficiencies and recommendations as to which objectives and strategies shall serve as input for WP 3210.

WP 3120 Passenger Transport

The analysis of the present conditions of passenger transport should contain statements on:

- the efficiency of the traffic authorities
- products of passenger transport
- traffic performances
- marketing organisation of products of passenger transport
- organisation of production of passenger transport
- production engineering of passenger transport.

The efficiency of traffic authorities and traffic performances have to be determined in passengers and passenger-kilometres. Furthermore, traffic performances have to be classified according to the passengers transported. The investigations on the marketing organisation should also include aspects of distribution and sales organisation. As to the organisation of the production of passenger transport, statements about storing sidings and train formation are indispensable. For the investigation on the production engineering of passenger transport, quantitative and qualitative analyses of the coach stock, including their availability and general maintenance, have to be rendered. Furthermore, a quantitative and qualitative analysis of the stock of traction vehicles for passenger train haulage, their availability and general maintenance, should be included.

Each assessment should result in a listing of deficiencies and recommendations as to which objectives and strategies shall serve as input for WP 3220.

WP 3130 Combined or Multimodal Transport

The analysis of the present conditions of combined or multimodal transport should contain statements on:

- products of the combined or multimodal transport
- traffic performances
- marketing organisation of products of combined or multimodal transport
- organisation of production of combined or multimodal transport
- production engineering of combined or multimodal transport.

An inventory has to be taken of the products of combined or multimodal transport. The performances in combined and multimodal transport have to be determined in

tons and ton-kilometres, classified according to the products of combined and multimodal transport. The investigations on the marketing organisation should also include questions as to distribution and sales organisation, and existing co-operations with forwarding agents and other traffic authorities. As to the organisation of the production of combined or multimodal transport, statements about terminals, loading organisation and train formation are indispensable. For the investigation of the production engineering of combined and multimodal transport, quantitative and qualitative analyses of the stock of loading units have to be rendered, including statements about their availability and general maintenance. They have to be completed by statements about special waggons available and used.

Each assessment should result in a listing of deficiencies and recommendations as to which objectives and strategies shall serve as input for WP 3230.

WP 3140 Tariffs, User Charges, and Revenues

The objective is to design a tariff/user charges system that would lead to an optimal revenue structure and amount by composing economic and social needs of the users.

The tariff study will firstly be based on the market analysis of WPs 3210 and 3220. These studies will estimate total market demand in the freight and in the passenger sector according to income and price elasticities.

Secondly, it is obvious that the new tariff structures will be elaborated using the existing data on tariffs and revenues.

Thirdly, there will be a review of tariffs/charges in countries with efficient rail transport as well as new approaches that have been developed in the scientific world.

Fourthly, the study will take into account the improvements that will be implemented in the technical areas of improved infrastructure and capacity.

Fifthly, there will be a thorough analysis of competing tariff systems (see WP 3150).

Sixthly, there will be a close look up of all relevant legal and administrative regulations that influence the building up of a tariff system in the passengers and freight transport. In case there will be proposals for modifications of these regulations.

Seventhly, there will be a cost/efficiency estimate for all marketing measures that affect the revenues of the railway service centre.

As the last subpackage an estimate for other income of the railway has to be made. This includes fees, promotion income of service centres. In general these revenues will not contribute essential parts to the income.

Results:

- a tariff structure for passenger transport, subdivided into
 - * international
 - * national
 - * local travel
- a tariff structure for the freight market (probably subdivided into:
 - * international and
 - * national freight transport).

Both tariff systems will be complemented by proposals of special tariffs for special transport corridors and/or transport products.

This structure will lead to revenue tables to be integrated into the financial evaluation of the business plan (WP 3440).

The tariff structure will enable the Trans-Caucasian Railway Centre to be an efficient economic entity which will have enough income to be a valuable part of the international transport system and the social transport requirements of the different nations.

WP 3150 Conditions and Tariffs for Road and Ship Transport

The objective is to be able to elaborate proposals for the railway transport mode that are effective and competitive with other modes.

The work package will be elaborated in close connection with the structuring of the railway tariff system (see WP 3140):

The development and actual situation of all relevant competing transport modes will be analysed as far as their

- transport capacity
- transport volumes, and
- transport charges

are concerned. This analysis is linked to the market analyses in Wps 3210 and 3220.

As far as possible there will be an estimate of future medium-term changes in the above mentioned key influence factors of transport services for all relevant competing modes.

Results:

The outcome will be a comprehensive survey of user charges of competing transport modes that are linked to their key operating data. Two time horizons will be given: present situation and expected medium-term development.

WP 3150 will give the study team a comprehensive survey of all relevant developments of charges in competing transport modes, which in turn will enable a realistic estimate of the own future income situation of the railway service centre.

WS 3200 Objectives and Strategy

Objectives and strategies have to be prepared for the fields listed below:

- Freight Transport Market Analysis and Product Definition
- Passenger Transport Market Analysis and Product Definition
- Operation
- Locomotive and Waggon Service
- Information Service
- Sales Strategy, Tariffs and Marketing.

The works will be based on the results of WS 3100.

The strategy to be pursued comprises all measures deducible from the deficiency analysis and will give recommendations to TCR in the form of an action programme in which objectives, contents, periods of time and responsibilities for the specific projects are determined. This strategy will serve as a basis for the foundation of the Trans-Caucasian Railway Service Centre.

When creating objectives and strategies for the railways of Armenia, Azerbaijan and Georgia, economically significant departments of labour and co-operations must be taken into account.

WP 3210 Freight Market Analysis; Product Definition

Project tasks resulting from the deficiency analysis of freight transport shall be included in this strategy of freight transport, market analysis, and product definition.

The tasks to be defined for market analysis have to lay main emphasis on:

- analysis of the freight transport market's structure
- listing of market structure elements
- access to the market
- market demand
- internal and external interlockings.

Taking up the results of WP 2100, Trade Potential, the product definition defines products of freight transport which are significant for the concrete conditions of TCR, especially regarding goods like:

- bulk goods (oil, oil products, building materials, etc.);
- capital goods (equipment, material specific to railway, etc.);
- consumer goods;

- agricultural goods (food aid).

As technologies of the freight traffic have to be included: block trains, trains for single waggon loads, trains of combined and multimodal traffic, and a technological solution for the transport of smaller goods.

All proposals for the strategy of freight transport shall be developed from the standpoint of the Trans-Caucasian Railway Service Centre yet to be founded.

WP 3220 Passenger Market Analysis; Product Definition; Charges; Ticketing and Reservation

Project tasks resulting from the deficiency analysis of passenger transport shall be included in this strategy of freight transport, market analysis, and product definition.

The tasks to be defined for the market analysis have to lay main emphasis on:

- analysis of the passenger transport market's structure
- listing of market structure elements
- access to the market
- market demand
- internal and external interlockings.

Taking up the results of WP 2100, Trade Potential, the product definition defines products of passenger transport which are significant for the concrete conditions of the TCR, especially regarding

- long-distance traffic
- local traffic
- international traffic

The technologies of long-distance traffic have to be directed towards the connections of big cities and agglomerations for business and tourist traffic; technologies of local traffic have to be directed towards the connections of cities and rural districts, including commuting labour, and of international traffic for the connection with centres of the neighbouring countries and over and above that.

As technologies of passenger transport shall be included: long-distance trains as fast day and night connections, and trains provided with higher comfort in international traffic.

To improve customers service, appropriate forms for the travelling service have to be suggested, including the ticket sale within the area of the TCR, and the seat reservation.

All proposals for the strategy of the passenger transport shall be developed from the standpoint of the Trans-Caucasian Railway Service Centre yet to be founded.

WP 3230 Operation

Project tasks resulting from the deficiency analyses of freight transport, passenger transport, and combined and multimodal transport shall be included in this strategy of operation.

Emphasis shall be laid on the question how to carry out the operational realisation of the products developed in freight transport, passenger transport, and combined and multimodal transports.

Strategy of operation is divided into the parts 'Train Formation' and 'Scheduling'.

Recommendations on train formation have to be given considering customer wishes (beginning/end of loading and arrival/departure, respectively) and optimal operational expenditures for Trans-Caucasian Railways (TCR) as a whole.

Recommendations for scheduling shall be made on the premise that at transfer points of freight traffic there be optimal exchange stations, and at transfer points of passenger traffic there be optimal change times of waggons.

All proposals for the strategy of passenger transport shall be developed from the standpoint of the Trans-Caucasian Railway Service Centre yet to be founded.

WP 3240 Locomotive and Waggon Service and Maintenance

Project tasks resulting from the deficiency analyses of freight transport, passenger transport, and combined and multimodal transport shall be included in this strategy of the locomotive and waggon service.

Emphasis shall be laid on the question how to carry out the realisation of the manufacturing of technologies developed in freight transport, passenger transport, and combined and multimodal transport.

Locomotive and waggon service strategy is divided into the parts 'Operation of Locomotives', 'Operation of Freight Waggons' and 'Maintenance of Rolling Stock'.

Recommendations for the operation of locomotives have to take into account optimal vehicle dynamics on the one hand and optimal efficiency of traction on the other hand.

Recommendations for the operation of freight waggons shall be made on the premise of smooth exchanging of waggons at the transfer points of Trans-Caucasian Railways, and on the joint use envisaged.

All proposals for the strategy of locomotive and waggon service and maintenance shall be developed from the standpoint of the Trans-Caucasian Railway Service Centre yet to be founded.

WP 3250 Information Service

The tasks of the information service comprise the gathering, processing, and storage of data on:

- the handling of orders, e.g. consignment data (order data base)
- the handling of imports/exports (e.g. for the Customs)
- cost accounting and controlling
- transfer and storage of goods
- transport logistics (e.g. pursuit of consignments)
- senders, forwarding agents, carriers, terminals incl. ports, recipients
- further service institutions, like, e.g., banks and insurance companies.

For the information service an analysis of requirements has to be prepared and a conception showing the necessary information packages.

Existing data processing services have to be analysed and possibly taken into account.

WP 3260 Sales Strategy; Tariffs, and Marketing

The objective is to develop a cost-efficient marketing strategy that will enable the railway service centre to capture a market share that is optimal and/or reasonable in relation to its economic efficiency.

The history of any measure of promotional character will be taken up. This includes those measures which had controversial effects on sales of the railway.

The strength of a modernised railway system will be identified.

This strength will be compared to competing modes in the transport sector, using SWOT (strength/weakness/opportunities and threads) analysis.

Depending on the outcome of the SWOT analysis, a package will be elaborated that includes proposals for

- modifications of the railway line within the technical outlay

- the structure of the services rendered (to underline the strength of the railway service)
- the price of the services rendered (in close link with WP 3140)
- the organisational modifications that are required to have a sales-oriented company (in close link to WP 2310)
- any sensitive programme of promotion that might render a positive cost-benefit relation (i.e. information on the new product(s) to potential customers)

The marginal cost of these activities will be identified and included in the business plan.

Results:

A proposal will be made for the organisational set-up of marketing activities (in close link with WPs 2310 and 2340).

The package will deliver a cost-effective marketing plan which implements the institutional objectives of the railway centre. It will be a comprehensive but realistic tool for sales management.

WS 3300 Foundation of a Service Company

WP 3310 Legal and Institutional Framework

The existing legal and institutional organisation of the present freight and passenger traffic operators in the three countries concerned will be analysed, taking into account the legal framework report of 1994.

Government representatives and legislators will be interviewed to ascertain the political will of each individual State concerning the future of its railway, and whether proposals (and which proposals) for the creation of a common Transcaucasian railway operator have a chance to be implemented. The need for legislative measures will be defined.

Corresponding proposals will be prepared.

The analysis of regional, national, bilateral or international rules and preconditions as to the foundation of joint ventures in the participating states of Armenia, Georgia, and Azerbaijan, including the pertinent provisions of commercial law and traffic law or other provisions, resp., like, for instance, customs provisions and tax regulations, is done with the support of legal experts, economists, and experts for taxes and customs in co-operation with representatives of the corresponding governmental institutions. Legal provisions and internal railway regulations regarding the use of the railway's infrastructure and port by third parties have to be assessed.

An essential component of the investigations will have to be the analysis of procedures regarding the registration of foreign investments in the respective countries.

Specific research will concern the

- relationship between the States and the railways (cf. WP 1230);
- ownership of the railway operator/s;
- degree of separation of the operator(s) from railway infrastructure authority/company (separate legal entities, integrated structure, profit and/or cost centres, etc.);
- legal form of the entities;
- management of the operating entities;
- separation of freight and passenger operators or not;
- monopoly for one operator, or competition framework
- legal mandates for the operator/s
- conditions for access to the profession of railway operator
- relationship between railway infrastructure authority/company and operators (cf. WP 1230);
- public service obligations;

- safety control;
- establishment and approval of tariffs/rates.

Results:

- Description of present situation
- Proposals for future development
- Definition of legislative need
- Recommendation on the extension of the legal framework.

WP 3320 Evaluation of Different Management and Ownership Strategies and Selection

On the basis of the analysis of legal and institutional basic conditions regarding the foundation of a service company, this work package is to analyse and evaluate management and ownership strategies principally coming into consideration. This will be done in the following steps:

- (1) Provision of a methodical framework and of an evaluation system for the classification and assessment of strategies;
- (2) Determination and documentation of strategies or first attempts for strategies, resp.;
- (3) Evaluation of the strategies by means of the a/m evaluation system;
- (4) Selection of strategies, depending on the scenarios defined and on the preconditions;
- (5) Verification of selected strategies with a view to economic and ecological aspects or national particularities, resp.

Methodology and evaluation system will be prepared prior to the analysis and will be presented to all participants to this project.

Presentation of the strategies is recommended to be done in workshops, inviting the principal parties concerned.

Preparation and execution of such workshops will be done by independent experts, i.e. specialists who are not in any way involved in the service company to be founded, or are planned to be a party to it.

Documentation of strategies is to be done by the experts responsible for the execution of the workshops.

Assessment and selection will be done under the responsibility of a so-called 'steering committee' which, prior to beginning the works for this work package, will have to be determined with a view to the persons being members to it.

The results of this work package will form the basis for the investigation on potential financing sources and for the preparation of a business plan.

WP 3330 Objectives and Organisational Structure, Forwarders and Travel Agencies

Main tasks of the company will be to prepare concepts for

- freight transport
 - * railway freight transport
 - * combined transport
 - * multimodal transport
- passenger transport,

considering the responsibilities of

- national and international forwarders and travel agencies,
- railways, and
- shipping companies and ports.

Main emphasis will have to be laid on creating optimal conditions for industry and passengers, and on guaranteeing a high level of service and security under difficult political conditions.

WP 3340 Sources of Financing

The investigation as to potential sources of financing has to be done

- within the service company, especially with the railway administration involved,
- within the potential Community of users, especially oil and gas companies and firms working in the tourism industry,
- at government level (tax reliefs, state promotion programmes).

Further fields of investigation will be:

- international and national finance markets (e.g. exchange),
- potential, international investors,
- international promotion programmes / financial aids.

Persons to be contacted as regards the analysis of internal possibilities for financing will be the experts of the enterprises pertaining to the service company to be

founded, and/or representatives of the national economy and large-scale enterprises.

Results:

Report about financing possibilities.

WP 3350 Human Resources Management

Based on the organisational structure of the service centre (WP 3330), the objectives, and the future strategy (WP 3200) the requirements as to personnel will be determined.

These requirements can be classified according to organisational criteria in connection with the management of human resources, like, e.g.:

- availability of personnel;
- responsibilities of personnel (limits to freedom of action);
- technical basis for the support of activities, and
- number of personnel,

and according to individual criteria of staff members in a joint venture company being of importance for the activities to be performed like, e.g.:

- management qualities and organisational talent;
- ability to work in teams / to manage teams
- social / communicative abilities (especially when dealing with customers);
- ability to settle conflicts;
- professional competence (in particular: marketing, strategic planning, cost accounting, etc.).

The comparison of these requirements with the actual status (WP 1200) of human resources results in the definition of deficiencies with a view to the objectives and future strategy of the service centre.

Main objective here is the most appropriate co-operation of all staff from the three republics on the personnel and operational management side.

Those measures helping to overcome the deficiencies in the human resources will be compiled in an 'Action Programme', detailed in terms of time and finance. Such measures are:

- special training for management personnel, concerning relevant individual abilities and organisational management;

- special training for specialised personnel, concerning relevant individual abilities.

The methodical bases best suited for these training units are, on the one hand, the internationally acknowledged managerial and sales GRID technique, and, on the other hand, modern seminars in the form of 'workshops', calling for contributions of their participants.

They do not only guarantee the impartment of knowledge, but at the same time - and very strongly so - that own experience can be integrated and developed in a common work process.

The form in which these measures are presented will be adapted to the different contents and requirements as to:

- duration (one or more days, only once or permanently)
- location (either integrated in the local working sphere or on 'neutral' territory)
- training group (national group or joint group, specific or unspecific selection of participants, senior managers or trainees)
- methods and programme of training.

This work package will be handled assisted by local specialists.

Results:

- Specific requirements as to human resources in the service centre
- Schedule of measures
- Training of abilities representing the most important factors of success for the service centre
- Recommendations as to how the 'service centre' strategy, relative to human resources, can best be realized (contribution to WP 2310).

WS 3400 Business Plan

WP 3410 Financing Institution for Implementation

Based on WP 3340, Sources of Financing, under this present work package potential financing institutions have to be selected and assessed with a view to their pre-conditions and conditions for the overall financing.

Analysis, selection, and assessment of potential financing institutions will be done by means of a valuation matrix yet to be supplied.

The results of this present work package will be integrated into WP 3440, Sensitivity Analysis.

WP 3420 Cost and Revenue Estimates

Based on the present conditions to be found with TCR (WP 3100) and on the choice of strategy (WP 3200 and WP 3300), an estimate of costs and revenues can be done, aided by experts from the national service companies and/or persons with experience in similar projects.

Basis of such estimates is a list, structured according to the specific cost types and quantifiable profits. Non-quantifiable profits like, for instance, from the environmental protection sector, have to be indicated separately.

The time horizon for these estimates is five (5) years, with a forecast of twenty (20) years. The description is given as a function of the planned extension phases of the company.

The present work package forms the basis for WP 3440, Financial Evaluation.

WP 3430 Organisational Plan for Service Company

Based on the results of WP 3330, the contractual structure between the Company on the one side and the

- railway administrations,
- port administrations,
- forwarders, and
- travel agencies

on the other side will be embodied in the Company. This structure will include items like:

- trackage right.

- use of waggons and locomotives,
- crews for trains,
- cleaning of rolling stock,
- maintenance support,
- calculation of charges,
- logistic management of waggons and goods,
- ticket sale and reservation,
- planning of transshipment,
- information service.

Railway administrations, ports, and shipping companies will be paid for the services they will render to the Company. The conditions in this field remain to be elaborated.

Responsibilities of each party concerned and the possible forms of co-operation have already been described.

The possible assessment of the Company's work from outside will have to be defined.

The management structure needs to be elaborated and agreed with the railway companies, the port and shipping companies.

The territorial structure of the organisation remains to be defined.

The role of the maintenance shop as a private enterprise needs to be determined and agreed.

WP 3440 Financial Evaluation

Depending on the management and owner strategies selected, various financing variants will be compared and evaluated.

Evaluation will be done by means of criteria fixed and weighted beforehand.

A vital precondition for the realisation of this present work package are the results from work packages 3300 and/or 3410.

WP 3450 Sensitivity Analysis

The sensitivity analysis is done by means of the parameter-dependent financing variants mentioned in WP 3440. Appropriate scenarios will be prepared well in advance in co-operation with experts of the respective railway administrations and further project members.

Results:

Business Plan with different options as to the implementation of the Joint Venture Service Company.

4000 PORT AND FERRY SERVICES

WS 4100 Present Conditions in Ports

WP 4110 *Port Conditions and Services*

The present conditions in the Ports of Baku, Poti and Batumi will be critically assessed with particular regard to physical constraints, capacity limitations and port performance deficiencies relevant to and with particular impact on present and future development of railway transport. Also, the Ports, Aktau, Krasnovodsk and Trabzon will be considered as per TOR; however, this assessment will be limited to the existing and future development of terminals for the complementary ferry services. The assessment will be based on available port information and studies as well as physical inspection of the port facilities. It will include:

- Port infrastructure such as rail access, road access, open storage areas, quays and jetties, harbour basin and approach channel
- Port superstructure such as transit sheds, warehouses, tanks, installations, marshalling yard, railway lines incl. port/railway interchange
- Port equipment such as quay cranes, ship loaders and unloaders, mechanical handling and rolling transport equipment, locomotives/shunting equipment; equipment availability and utilization
- Port statistics (import and export statistics divided by liquid bulk, dry bulk cargo, containers, RoRo and conventional general cargo, traffic statistics for railways, road and barge transport, container statistics)
- Port operations (cargo assignment, berth utilization, performance indicators, capacities for berth throughput, storage and receipt/delivery taking into account the interdependence between performance and efficiency of the port and of the railway system), ancillary port services
- Port organisation (e.g. organisation of dock work, working time, port management structure/s, co-operation with railway authorities and port users) and port personnel (number, qualification, payment system/s, labour laws, social conditions and industrial relations, etc.)
- Port and cargo handling tariffs, budgeting, financial accounting and costing
- Legal and institutional framework (port policy, governing port and other legislation, control through ministries and other supervisory bodies, customs regulations, port autonomy, identification of external factors limiting the performance of the port).

Results:

- Up-to-date, concise information on an integrated assessment of existing port facilities, services and organisation
- Analysis of existing bottlenecks, constraints and deficiencies with focus on railway operations.

WP 4120 Technical and Operational Requirements

The demand for modern services of the ports mentioned under WP 4110 as important sub-system of the future railway transport system will be determined and the related technical, operational and organisational requirements to overcome the problems mentioned under WP 4110 will be identified. Main objective of this task will be to balance port capacities and level of port services with the future potential and unhampered flow of railway traffic, thus to avoid railway system's development being affected by a port development lagging behind. The assessment will not be limited to the technical and operational development, but will also duly consider - under separate package - the necessary organisational and institutional development as far as appropriate, and the legal framework report, commissioned to start in 1996. It will be based on WP 4110 and will cover in particular:

- Port infrastructure, port zoning including free zone areas
- Port superstructure, facilities and installations
- Port equipment with particular regard to the dispatch of railway waggons
- Port capacities and operations with emphasis on container handling and intermodal operations and on co-operation with railways, customs, forwarders, ship agents, shippers and receivers (e.g. on positioning of railway waggons, operations planning and monitoring)
- Forecast on throughput of cargo for main commodities, forecasts on shipping (future types and sizes of vessels, average and max. shipload, arrival pattern), containers (20-ft/40-ft ratio, full/empty ratio, import/export ratio, FCL-/LCL ratio), and modal split
- Port organisation and institutional environment (possibly also commercialization or <semi->privatization of port services and port labour reform)
- Future development plans (status, timing, investment costs, impact on port capacity and importance for railway transport)
- Identification of investments required.

Results:

- Identification of future demand for modern, efficient and cost-effective port facilities, services and organisation
- Analysis of objectives how to eliminate or minimize existing bottlenecks, constraints and deficiencies and to align the capacities and standards of services of the ports with the ones of the future railway system.

WP 4130 Port Development Options and Strategy

A concise proposal will be made how to strengthen the conditions and services in the ports mentioned in WP 4110 as important links in the integrated railway transport chain and main destinations and origins of the potential cargoes to be transported.

As far as appropriate, development options will be identified and a phased development strategy will be proposed which will have to tune in with the rehabilitation and development programme for the railway system itself. The strategy will include:

- Development of cargo handling operations and related services
- Institutional development
- Organisational and management development
- Finance and human resources development
- Physical port development and outline on investment programme, including measures for free zone areas and related transit management as well as multimodal operations
- Identification of limiting external factors that may impede the future development, and of important prerequisites for the successful implementation of the development strategy.

Results:

- Strategy for the improvement of the existing port performance and for securing high levels of services in line with the future demand of the railways and of customers of the port
- Outline on investment programme for rehabilitation and extension measures to cope with expected increase in traffic
- Strategy for complementary organisational, management and institutional development.

WS 4200 Technical and Operational Requirements for Modern Ferry Connections

WP 4210 Present Waggon and Truck Transfer

The picture of the present ferry transport in the Caspian Sea will be drawn by the qualitative and quantitative parameters for the ferry ports of Baku, Krasnovodsk, and Aktau: kind and number of ferries, lines (destinations); kind and number of waggons; kind and number of trucks; frequency of shipping; regulations (conditions of transport).

The analysis must also include the present organisation and information system.

Present conditions will be critically assessed.

This assessment will be based both on available information, and on physical inspection of the ferry facilities.

Results:

- Description of the present infrastructure, capacity, and performance;
- Description of the present organisation and information system;
- Discovery of bottlenecks in the present system impeding efficient ferry transport;
- Determination of future marketing position of the Caspian Sea ferry transport.

WP 4220 Technical and Operational Requirements

The consultant will submit a proposal on how to operate ferry transport in Caspian Sea. This proposal will include infrastructural (also superstructural) requirements. Furthermore, customers' requirements have to be analysed, resulting in suggestions on improved operation. These will be prepared by means of comparisons (state-of-the-art vs. actual state) and expert knowledge (based on studies and projects regarding the Baltic Sea and the Black Sea) available in the project team.

Results:

- Identification of future demand for efficient ferry transport, corresponding to the future railway system;
- Proposals how to eliminate or minimise existing bottlenecks.

Based on the quantitative and qualitative parameters of the future ferry transport system, and taking into account the realisation of the a/m requirements, the project team will design an organisational model for co-operation. This model will include:

- tasks of each participant,
- contractual construction of co-operation, and
- communication for real transports by ferries.

The organisational concept will be founded on experience in modern port, railway, forwarder, and ferry companies, taking into account the concrete situation.

Results:

- Organisational scheme for management and transports;
- Strategy for improvements;
- Highlights for an investment programme.

WS 4300 Ferry Operation Company

WP 4310 Objectives, Different Options of Organisational Structure, and Models for Co-operation with Joint Venture

Customers ordering multimodal transport require through-carriage of consignments, pursuit of consignments, carriage bills, insurance, logistics, and information which services are to be rendered by forwarding agencies, transport companies, and other service institutions. Here, the port at the border between land and sea is the crucial interface.

The following forms of co-operation are to be investigated:

- extension of contractual relations between railway and port;
- agreements on traffic nodes;
- operating company for all transports going via the port;
- operating company for international transports.

For each of these possible forms, four variants have to be investigated as follows:

- national associations in each country concerned,
- all transport companies/operators, multinational/regional;
- nationally, for each port separately, incl. capital participation of third parties;
- internationally, with foreign capital participation.

The results of WP 3320 have to be taken into account.

Results:

- Proposal for Joint Co-operation
- Proposal for a Port Joint Venture
- Proposal for an International Joint Venture.

WP 4320 Legal Conditions for Private Companies

The analysis of legal conditions and provisions for the operation of private enterprises in the port and ferry service field is to be done taking into account the following:

- provisions under the private law of the respective country
- international provisions and requirements, especially regarding operation of ports and ferries,
- customs regulations,

- tax regulations and special features of port and ferry operation.

The group to be investigated is to be treated and structured analogous to WP 3310.

Partial results from this work package are to be applied.

Results:

Report about the legal and institutional framework, and recommendation for extension.

WP 4330 Sources of Financing

Main emphasis in this investigation regarding potential sources of financing for this field is to be given mainly to investors and financial resources from the private sector, this sector being very promising in terms of profit.

Experience from comparable markets like, for instance, Odessa, Sevastopol, should be taken into account.

Furthermore, the principal willingness of the states involved to create free trade areas has to be clarified.

The further proceeding in determining sources of financing is to be done analogous to WP 3330, taking into account the focussing described.

WP 4340 Business Plan; Implementation

The business plan for the port and ferry operation part will be prepared analogous to the one of the Railway Service Company.

The following is required:

- determination of the financing institutions involved,
- detailed listing of all cost types and profits under quantitative and qualitative aspects,
- description in the form of short-term, medium-term, and long-term planning quantities.

B.2.4 Work Plan

B.2.4.1 Work Breakdown Structure

In order to draw up the Task Schedule, each task (Work Package, WP) had to be defined and the links between them. This led to the preparation of a 'Work Break-down Structure' for the project (see next pages) which, however, does not give any information in terms of time.