EUROPEAN UNION - TACIS

Technical Assistance to the Southern Republics of the CIS and Georgia - TRACECA

TRADE AND TRANSPORT SECTORS

Terms of Reference

forq

IMPLEMENTATION OF PAVEMENT MANAGEMENT SYSTEMS

Final Recipients:
TRACECA Region Ministries of Transport

CONTENTS

1. Background and Introduction

1.1 During May 1993 a conference was held in Brussels organised by the Commission and attended by authorities of the eight Republics of the south of the former USSR:

- Armenia,
- Azerbaijan,
- Georgia,
- Kazakstan,
- Kyrgyzstan,
- Tadjikistan,
- Turkmenistan,
- Uzbekistan.

They are the Beneficiary States of this programme.

The objectives of the conference were :

- to stimulate interest in developing major transport corridors between Asia and Europe, including the Central Asian - Trans Caucasian - Europe Transport Corridor
- to promote co-operation among the participating Republics in all matters pertaining to the development and improvement of trade within the Region
- to identify problems and deficiencies in the Region's trade and transport systems
- to define, in terms of contents and timing a Technical Assistance Programme to be financed by the European Union (EU).

TRACECA (Transport Corridor Europe Caucasus Central Asia) was thence created as a component of the TACIS interstate programme.

The "Brussels Declaration" issued at the conclusion of the conference recommended the European Union to include in the TACIS programme the implementation of a Pavement Management System (PMS) through technical assistance and the training of technical personnel.

1.4 During and immediately after the days of the Soviet Union road maintenance was performed by hierarchically managed organisations within the Ministries (of Roads, Construction,...). It was funded systematically according to fixed term plans, which were based essentially on engineering rather than economic criteria.

Since independence the TRACECA states have been passing through difficult economic times. Authorities responsible for road maintenance, with the sole exception of Uzbekistan complain of chronic underfunding. The situation has progressively worsened over the past three years, so that most expect their funding for the present year to be only of the order of 15% of budgeted needs. Deterioration of road surfacings is now too frequently manifest, though not yet generalised.

1.5 The roads network was constructed to high nominal standards (eg.a design speed of 150km/hr on so-called Category IA roads). Basic pavement design theory and pavement deterioration mechanisms are well understood by engineers within the Region. However the standard of road construction has been low. Levelling was approximate, and compaction control was spasmodic. Consequently roughness was excessively high even when roads were new.

Roughness and deflection measures have been carried out in the Region, using local equipment similar but not always identical to that used in the West. Institutes which were responsible for these activities are now relatively inactive, because of a lack of funding.

So-called road passports have been compiled in the past. Certain records have been computerised, and synoptic displays of the status of road condition have been developed locally, in Kazakhstan for example.

Freeze-thaw cycles are marked across much of the Region. Precipitation is generally low.

1.7 Flexible, as against rigid, pavement construction dominates. Local standards for materials selection, mix design, and control have not been extensively reviewed by Western consultants. It is however apparent that surfacings have been poorly laid. Excessive bituminous content is a generalised problem.

Modern Western performance criteria and technical specifications for premix overlays and surfacings are little known in the Region.

1.8 Organisations for the collection and processing of traffic data exist, operating to varying degrees of efficiency, across the Region. The equipment they employ appears to be in doubtfull condition. In particular axle load data is missing from records.

Roads are not carrying high cumulative axle loadings comparable with Western traffic. This situation may change, especially on international routes, as road hauliers are eager to re-equip with Western type heavy goods vehicles. Overloading of vehicles may be expected whatever regulations are in force.

1.9 Road maintenance in the Region is typically financed by Road Funds. Specific taxes may be levied on the turn-over of general businesses, vehicle sales taxes, road transport firms turn-over, VAT on petroleum products, sales tax on fuel, rental income from property, transit taxes,... The potential revenues from these taxes is indeterminate, as is the linkage of cost with road use, in the perception of the user.

In fact the collection and allocation of these taxes appears haphazard and inadequate to finance even the short run marginal costs of road use. The result is deterioration of the network, as well as distortions of demand and other unforseen effects. Furthermore, these financial restraints are sapping the road maintenance organisations of the human and physical assets that they need to keep roads at reasonable service levels.

Under the circumstances assistance to improve technologies must be accompanied by actions to mobilise funding. Likewise, the eventual divestiture of maintenance plant and human resources into the private sector, can only eventually be successful if there is a reasonably stable workload to support it there.

1.10 Road safety is inadequate. Signage, junction design, lighting, and related aspects of traffic engineering are not well applied.

1.11 Bridges are commonly of reinforced and prestressed concrete construction, while steel trusses have been employed for longer spans. Split grade crossings are rare and the majority of bridges cross rivers with high seasonal flow variations.

The maintenance of bridges is being neglected, in similar circumstances to those relating to pavement maintenance. There appears to be little knowledge locally of the most recent Western techniques of Bridge Maintenace Systems (BMS) and rehabilitation techniques.

2. Objectives

The project aims to introduce Regional roads maintenance authorities to the latest Western pavement management techniques. It is to promote a reduction in road maintenance backlogs, which have arisen in certain states during the past three years. To do so, it must examine problems of financing maintenance activities. While the road maintenance problem is generalised, the focus of this project will be on international transit routes.

Specific objectives fall under two distinct but mutually complementary headings.

Technical

- Establish databases of:
    - road and bridge conditions, including roughness and pavement strength
    - traffic intensity, including axle-loadings
    - forecasts of future traffic (scenarios)
- Formulate, test and refine technical pavement maintenance strategies (using a computerised deterioration model). Establish Pavement Management Systems in each Regional state
- Implement a Bridge Maintenance System
- Familiarise local authorities with Western
    - road and bridge maintenance techniques and specifications
    - road safety standards
- Review roads design standards

Economic

Expand the resources available for road maintenance by:

- demonstrating the real costs of road utilisation, by users who at present pay little, and thus reinforce arguments for recurrent collections of revenue by charges (taxes) on users
- list and describe road maintenance projects and programmes susceptible to attract IFI interest, including presentation of their economic justification

Furthermore, by making extensive paid use of local Research Institutes, the appointed Consultant should re-invigorate their activities, and contribute to their long term survival.

Local persons are to be fully trained in the techniques employed throughout the project. Know-how transfer is a prime objective of the project.

3. Scope of Work

3.1 Implementation of the System

During the current Institutional transformations taking place in each TRACECA state, the titles of the entity responsible for the direction of roads maintenance vary. The counterparts for the implementation of the present system will be the following organisations, or their designees:

- Armenia, Ministry of Transport and Communications
- Azerbaijan, Azeravtoyol
- Georgia, Ministry of Transport
- Kazakstan Kazakhstan Zholdary,
- Kyrgyzstan, Ministry of Transport
- Tadjikistan, Ministry of Transport
- Turkmenistan, Turkmenautoellari
- Uzbekistan, Uzavtoyul

Where necessary in the following text, they will be refered to generically as the Roads Directorates.

The Consultant must commence work with experienced local Research Institutes, which he must contract to provide the local technical services he considers necessary to achieve the projects objectives. The eventual organisational form of the PMS (and BMS) will be decided during the course of the project, by the Roads Directorates. The Consultant will make recommendations on this mid-way through the project, and thereafter assist in the final implementation.

The intention is for the individual States to develop the systems fully themselves, beyond the scope of this present project.

Computer harware and software should be supplied to each individual state. The system implemented in each Recipient State should possess sufficient total capacity to at least manage all primary inter-urban type roads and bridges in that State. Systems supplied are to be common to all TRACECA states, facilitating eventual data sharing and development of common models.

The Roads Directorates or their designees will be the ultimate recipients of the necessary hardware, software, testing equipment, and know-how transfer which is the object of this project.

It is not a requirement that field testing equipment be supplied for each individual state. The eventual recipient of shared equipment may be decided during the course of the project, as Regional collaboration is one of the themes of TRACECA.

Equipment supplied is always to include five copies of manuals for operation and maintenance translated into Russian. Essential specialist tools, and spare parts for one years operation after termination of this project are also to be provided.

International road links of direct interest to this project are shown on the schematic included with this TOR. Consultants are to formulate a proposal to mount a pilot or demonstration activities on this network, in each TRACECA state. Modifications to conform with actual local priorities are to be made during the course of the project. Critical sections with highest traffic are to be identified during the course of the project, and subject to closer scrutiny (see Section 3.8)

Consultants are not expected to venture into areas of civil conflict.

Consultants must show in their proposal that they have established sufficient key liaisons with local Research Institutes to commence technical operations (not necessarily in every TRACECA State) immediately upon award of the contract.

3.2 Data Collection

3.2.1 Road Conditions

Existing road condition and geometrical databases, computerised or not, must be adapted to the proposed PMS functional model.

Field validation and measurement of data will also be necessary. At a minimum, roughness, deflection measures are to be taken, as well as visual parameters. Equipment for field measurement must be supplied by the Consultant. The Consultant should fully specify in his proposal the parameters to be considered, the equipment to be used, its origin, be it local existing or imported for the project, and arrangements made for local support.

Some field investigative work to discover the credibility of pavement history from records should be done.

The methodology for testing, including the extent and density of the testing campaign, are to described in the Consultants proposal.

3.2.2 Traffic Intensity

Classifed traffic counts have been systematically carried out in the past by the Roads Directorates. During the present economic difficulties, it is possible that the coverage has diminished, and the sufficient availability of suitably classified counts cannot be assured. Sufficient classified traffic counts must be taken by the Consultant to run the pilot demonstration, in all states.

Counts may be made both by manual and automatic methods. Sufficient axle weight measurements must be performed to categorise the characteristic traffic loading of the different road links. Equipment for traffic counting and axle weighing must be supplied by the Consultant. He should fully specify in his proposal, the equipment to be used, its origin, be it local existing or imported for the project, and arrangements made for local support.

Localised forecasts of future traffic are to be made, based on the counts, vehicle types, axle types, and suitable for input to the PMS.

A project expected to run in paralell to this one (see Section 3.9 Other Related Projects-Traffic Forecasting) will also carry out traffic counts. Duplication of effort is to be avoided, but the sufficient availability of results for this project from other sources is not assured. The Consultant will determin at Inception Report stage the opportunities for collaboration between this and other projects, the validity of existing data, and any possible redeployment of estimated project resources that collaboration may eventually allow.

3.3 Model

A road deterioration model is to be established to process road condition and traffic data. The model should be callibrated using local experience and historic traffic counts to the full extent possible.

If the HDM3 road deterioration module is proposed as a basis for a deterioration model then its adaptation to cold weather conditions must be described in the Consultant's proposal. Results from the current HDM4 development may eventually be used as available and considered appropriate.

Output from the model must identify where maintenance interventions are required, the technical options for action, and the timing of interventions. The model must be capable of demonstrating the effects of different intervention strategies. Estimates of total and discounted costs are to be produced by the model. These estimates must indicate the total vehicle operating costs and the cost of maintenance operations. The processes should be interactive, with the operator able to establish optimised priority rankings according to criteria he sets.

Vehicle Operating Cost (VOC) data and unit prices of work are to be developed within the, project.

Road safety aspects should be taken into account, at least qualitatively, or manualy.

3.4 Bridges

A bridge management system is to be implemented in each State, defining strategies based on the real condition of each bridge, determined by periodic inspections. It must formalise the decision making process for bridge maintenance.

Two levels of analysis are to be considered:

- at the bridge level, determin the optimal maintenance alternative for the bridge
- at the system level, support decision makers in developing system wide strategies for optimal use of the limited bridge maintenance budgets

The system should incorporate the following characteristics:

- an integrated diagnostic and assessment procedure to investigate defects, with a standardised description of defects
- build on existing bridge databases as far as possible
- be installed using either established or purpose written software
- be based on proven software, though data entry may be via portable interactive devices during inspection, or later via a standard keyboard and PC. It would be an organisational advantage for the PMS and BMS systems to be as closely integrated as possible..
- provide information on repair techniques
- select network-wide optimal maintenance and repair procedures and priorities based on an optimisation model

The Consultant must develop and enter sufficient economic data to implement the system.

The Consultant's and counterpart local staff are to be trained to run the system. The Consultant is to recommend the staffing levels, other resources, and operational cycle, to permit local staff to continue full implementation of the system

A structural survey of main bridges on the project network is to be performed, and an assessment of maintenance needs including costs is to be presented.

The Consultant is to fully describe in his offer the system he proposes to install, and the extent of inspection and analysis which he plans to implement within this project.

3.5 Design Standards and Maintenance Techniques

3.5.1 Pavements

Current maintenance working practice is to be examined, particularly the use of bituminous bound products. Recommendations are to be made on the progressive introduction of new technology, evolving from the present equipment and working methods.

Existing specifications for bituminous bound materials are to be reviewed in detail. Recomendations for their revision are to be made, basing any proposed changes on Western codes. Draft specifications in the Russian language are to be prepared, by the Consultant's local personel and under the Consultant's guidance.

Pavement design standards are to be reviewed in detail with local experts, and compared with Western best practice. Suggestions for revision, if considered necessary by the Consultant, are to be made. They should recommend the most suitable Western design guidelines for adoption, noting necessary adaptations.

3.5.2 Traffic Engineering - Safety Standards

Design guidelines and codes relating to road signage, and to geometric design of rural highways, including rural road intersections, are to be reviewed in detail with local experts and compared to current Western practice. Suggestions for revision are to be made. They should recommend the most suitable Western design guidelines for adoption, noting any adaptations, if considered necessary.

Work in this section should be closely coordinated with the road safety seminars, to promote a maximum of local input.

3.6 Study Tour and Seminars

A study tour to Western Europe is to be provided for twenty persons, to be nominated by the Consultant and approved by the Recipient States. The tour is to focus on routine maintenance practice, bitumen bound materials technology and road safety.

The Consultant is to arrange site visits and demonstrations, such as to

- working road and bridge maintenace units
- bituminous bound materials production plants
- in-situ surface recycling operations
- on-site expositions and explanations of road safety dispositions

About five full working days is to be foreseen, plus appropriate acclimatisation/briefing and debriefing periods. Participants should meet West European counterparts, and be able to question them on all aspects of the activities they are shown. Russian language interpreters are to be in attendance.

Short seminars are to be organised in each of the Recipient States to present overviews, explanations of state-of-the-art PMS, bituminous bound products technology, bridge maintenance techniques and concepts of road safety, to Roads Directorate senior staff. Seminar manuals are to be prepared in the Russian language.

Road safety presentations should cover the most recent and ongoing work in the West concerned with the prediction of accidents and implementation of safety measures (eg. conflict techniques of safety situation analysis, the economic analysis of safety measures, recent case studies and risk analysis findings). It may be assumed that the basic principles and established standards of road safety design are already known by the local authorities.

Bridge maintenace presentations should include the most recent Western practice for treatment of cracking, concrete removal, patch repairs, sprayed concrete, external reinforcement, supplementary prestress, corrosion countermeasures, surface treatments, coating of reinforcement, cathodic protection, desalination and realkalisation..

3.7 Cost and Financing of Road Usage

3.7.1 The present system of taxes is neither effective in financing road maintenance, nor in allocating the incremental cost of road usage within the economy. Furthermore, it could provoke

distortion of demand within the transport sector. The general problem has been reviewed in previouse reports by Western consultants.

This study is to present a rigorous, authoritative analysis embracing:

- the cost of road usage
    - the elements comprising vehicle operating costs and their dependency on road condition
    - the dependency of condition on maintenance practice
    - the eventual reconstruction costs under scenarios such as do-nothing, minimum maintenance and optimised scenarios
    - the incremental deterioration of pavements under the effect of axle loads
- the advantages and disadvantages of the present collection systems, including for example
    - a comparison with marginal cost pricing
    - the impact of transit fees across the region
    - distortions to competition between modes
    - distortions to vehicle and fuel demand
- external costs of road transport
- foreign exchange components in overall cost of road transport, for the different states

Recommendations are to be made for workable, balanced, systems of levying taxes on road use, and the equitable allocation of funds to road maintenance. The cost inputs are to be considered separately for each State.

A full analysis of tolling of roads and bridges is beyond the scope of this study. However any obvious candidate projects may be cited and used as an example.

The order of magnitude of time and safety costs and savings are to be estimated and presented, but separately from direct costs. The effects of congestion may be included qualitatively.

Full collaboration with the Ministries of Economy and Finance in the preparation of this analysis and recommendations, will be essential for the output to have any impact.

Serious price distortions (eg.through subsidies) have been encountered. Shadow pricing is to be applied as appropriate, but applications should then be clearly explained.

The cost and financing analysis described in this section is to be issued as a separate report dealing with this single issue. It should be clear and concise, to address a readership of Officials in the TRACECA states, foreign consultants (eg to Ministries of Economy and Finance), as well as other decision makers, who may be presumed unfamiliar with transport economics. It should be strictly objective, and applicable as a reference document for negotiations between Ministries of Transport and Ministries of Economy and Finance in the Region. It should emphasise the local consequences and obligations of road maintenance policies, rather than seeking to justify IFI intervention.

3.8 Immediate Investment Opportunities

The PMS (and BMS) and the economic analysis are to be applied to compile an inventory of the most urgent regional road maintenance actions based on the highest economic returns.

It should catalogue and justify, State by State, maintenance sub-projects most susceptible to attract IFI funding.

This section in particular is to be coordinated with the work of other Consultants working on national projects.

3.9 Other Related Projects

Several related reports prepared by Western consultants precede this project. They include:

Road Development Study	Republic of Kazakhstan	EBRD
Roads & Road Transport Study	Russia, Ukraine, Kazakhstan & Bielorussia	EBRD
Central Asia Outline Transport Strategy	Kazakhstan, Kyrgyzstan, Turkmenistan, Uzbekistan	EBRD/TACIS
Azerbaijan Road Project	Azerbaijan	TACIS
Armenia Highway Study	Republic of Armenia	TACIS
Road Improvement Project	Republic of Turkmenistan	EBRD/TACIS

The last two mentioned contain detailed recommendations on financing of road improvements particularly relevant to the *Economic* objectives of this project. The contents of these reports may be validated and used by the Consultant for this project, in so far as Armenia and Turkmenistan is concerned, to formulate his recommendations.

At the time of writing the following projects within a similar domain of interest are expected to commence shortly:

Road Rehabilitation Project	Republic of Kazakhstan	ADB
Bishkek-Osh Feasibility Study	Republic of Kyrgyzstan	ADB/EBRD
Highway Project	Republic of Armenia	WB
Meghri-Batoumi Road Study	Republic of Armenia	TACIS/PCP
Transport Legal Reform	TRACECA	
Improvement of Roadside Services	TRACECA	

Other related projects are or may be expected to commence within the timeframe of this present one. TRACECA may sponsor a project concerned specifically with institutional reform of highway maintenance.

The Consultants appointed to carry out this project are to co-ordinate their work closely with all other related activities within the TRACECA region. The preceding information must not be considered limitative.

3.10 Local Participation

National consultants and local Institutes should be deeply involved in every aspect of the project. All TRACECA countries have Institutes specialising in various aspects of roads planning and engineering. It is a firm requirement that Organisation and Methodologies include local experts and Institutes to:

- make full use of local experience, antecedent projects and data bases
- promote the emergence of a financially viable local consulting sector
- ensure the effective transfer of know-how to the Beneficiary states
- ensure the enduring effect of project output

Consultants should base their activities, including the writing of reports, largely in the TRACECA region, carrying out the project in close collaboration with local technical organisations, and employing both senior and junior professional staff, from several TRACECA states.

The Consultant's Methodology should fully explain his training and know-how transfer programme within the project. This should allow local organisations to maintain, update and modify the PMS installed. Consultants must make amply clear in their proposal the arrangements they have made to work with local entities.

The databases, models, functions, and licences for software are to remain with regional organisations. At the end of the project, the local organisations must be able to continue developing the systems autonomously.

The Consultants schedule should allow for continuous field work/data collection by local personel, throughout the project, such that an ongoing operation may be programmed (see Sections 3.1, 3.4 and 4.5).

The close involvement of local Research Institutes in the review of design guidelines is essential, to promote local acceptance of the results (see Section 3.5). Co-authorship of the reviews would be desirable.

3.11 Foreign Expertise

The Consultant is free to compose his expatriate Team for this project, mobilising long and short term participants, as he sees fit. The following domains of expertise should be clearly visible in the proposed staff list:

- project management
- transport economics, particularly road transport and including fiscal aspects
- roads maintenance planning, including cold weather experience
- bituminous bound materials technology

- roads engineering/road safety analysis
- bridge maintenance planning and technology

3.12 Logistics

The Consultant shall be responsible for arranging necessary living accommodation, transportation, telecommunications, equipment (IT and other), surveys, investigations, document reproduction, printing, secretarial services, interpretation, translation, office space and all other input required for the purposes of the work.

4. Time Table and Reporting

4.1 The project is to be completed within a period of twelve months.

Task durations and staff assignments are to be clearly shown on planning schedules in the proposal. Milestones for output and key dates for data acquisition are to be indicated.

4.2 It would be preferable for the study tour to be scheduled as early as possible within the project.

4.3 It is important that reports should not be considered the principal project output of the project, and should not distract from the achievement of all of the defined project Objectives. Reports may be considered as management tools.

4.4 All reports are to be delivered in the numbers, languages and locations as follows:

	Bound		Loose-leaf		Diskette
	English	Russian	English	Russian	(Eng.+Rus)
TACIS Brussels	5	1	1	1	2
TRACECA CU (per state)	1	5	1	1	0

The word processing programme to be used will be agreed with TACIS (and DOS compatible).

4.5 All reports are to be prefaced by an Executive Summary, and be in accordance with standard TACIS Guidelines.

Project inception report

An Inception Report will be issued within two months of the commencement of the project. It will summarise initial findings and propose any modifications to the methodology and work plan. In particular it will adapt the work plan to the needs of each individual TRACECA state taking into account the parallel activities of other Technical Assistance programmes, avoiding duplication of effort, and addressing unfilled needs.

Project progress report I

This report will be issued at the end of month 6. In addition to the normal progress reviews, and suggested adaptations of the project, it will contain recommendations on the full implementation of the PMS. These should include:

- the institutional arrangements for Recipient State authorities to adopt the system, including the transfer of equipment, hardware and software
- a detailed work programme for continuing field investigations and monitoring to develop the PMS, beyond the duration of the present project
- the staffing level and equipment necessary to maintain such an onging programme
- a cost estimate of this ongoing operation, for consideration of the level of financial support that could be provided to local entities to continue development of the PMS.

Progress report II

This report will transmit two separate self-contained Deliverables:

- the economic analysis and financial recommendations described in Section 3.7.
- the review of design standards described in Section 3.5

It will be issued at the end of month 8.

Final Report

The Draft Final Report will be submitted at the end of month 12.

It will contain a full review of project implementation, and recommendations for the development of the database and model.

A separate self-contained Deliverable will describe the Investment Opportunities of Section 3.8.

Any comments on the Draft Final Report will be issued by TACIS Brussels within six weeks of its receipt. The Final Report incorporating any modifications will be issued one month thereafter (2,5 months after issue of the Draft Final)

The Consultant is to describe in his proposal the instruction or operational Manuals for local staff which he intends to produce.

EUROPEAN UNION - TACIS

Technical Assistance to the Southern Republics of the CIS and Georgia - TRACECA

TRADE AND TRANSPORT SECTORS

Terms of Reference

for

Regional Traffic Forecasting Model, and a Review of International Route Capacity

Final Recipients:
TRACECA Region Ministries of Transport

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- Turkmenistan,
- Uzbekistan.

They are the Beneficiary States of this programme.

The objectives of the conference were :

- to stimulate co-operation among the participating Republics in all matters pertaining to the development and improvement of trade within the Region
- to promote the Central Asian - Trans Caucasian - Europe Transport Corridor
- to identify problems and deficiencies in the Region's trade and transport systems
- to define, in terms of contents and timing a Technical Assistance Programme to be financed by the European Union (EU).

TRACECA (Transport Corridor Europe Caucasus Asia) was thence created as a component of the TACIS interstate programme.

1.2 The "Brussels Declaration" issued at the conclusion of this conference recommended the European Union to address in the TACIS programme variously expressed needs for traffic forecasts, data retrieval, and feasibility studies.

Regional sectoral Working Groups (trade, rail, road, maritime), composed of experts and officials from each TRACECA state and the EU, have been established as part of the TRACECA programme. They meet periodically in the Region. They have inaugurated specific projects including this present one, and will monitor results.

A strategic study for Central Asia has recently been completed by the EBRD under TACIS financing (see Section 3.5).

1.3 National and Regional Technical Assistance projects carried out, approved or prioritised to date, are mostly aimed at halting a deterioration of the existing transport system due to maintenance difficulties, and obsolescence. Few consider reinforcing capacity. In fact transport demand has declined since the break up of the FSU.

East-West transit links are little exploited and North-South links were artificially discontinuous at the old borders of the FSU.

Enormous needs for investment in transport infrastructure have been expressed by regional authorities. New links and the relief of bottlenecks, present or future, would undoubtedly permit a reorientation of Regional-international trade along more efficient routes. To rigorously examine and help prioritise such options, there is a need for a quantitative planning tool which can simulate impacts of major developments and actions.

1.4 While the present macro-economic situation in the region appears moribund, there is strong private sector interest in large-scale regional industrial investments. The area is rich in natural resources, including substantial reserves of petroleum. There is an undoubted potential for rapid development of certain poles, which would immediately overstrain the present transport system.

Under these circumstances a wide range of future scenarios can be postulated.

1.5 Radical Institutional transformations are taking place in the region. The transport system has been particularly affected by these, especially the rail sector which is loosing market share to the benefit of road transport.

Tariff structures under the old regime were detached from economic considerations. It is by no means easy for regional authorities to inaugurate a market-based system.

The newly independent states are intensely interested in developing national systems, and there is a very real risk that this could lead to restrictive regulation of cross-border transport and trade, to the detriment of overall efficiency.

The need is apparent for a tool to assist in the analysis of all transport demand vectors in the Region, including institutional restraints, and tariffs.

1.6 The CETIR (EBRD sponsored project; CETIR=Central European Transport Information Reporting) database is considered an interesting exercise for eventual emulation in the TRACECA Region. The present project has different immediate objectives. However it may be considered as a pilot for eventual expansion along the lines of the CETIR.

2. Objectives

There are to be several interrelated component objectives or outputs:

2.1 Introduction and Establishment of Computer-Based Transport Planning Tools

The project will assemble the data elements and model required to forecast transport demand on all modes, across the Region. The model will be applicable to long term transport planning studies, notably investments in infrastructure. It must be sensitive to disaggregate input and a wide range of scenarios.

The following elements must be set up:

- common regional database(s), compatible with EUROSTAT and CETIR for :
    - transport and trade flows,
    - transport infrastructure, being links and nodes on rail, road, and maritime, on a pre-defined network (GIS based)
    - transport costs
- a software based multi-modal model for analysing scenarios, developing forecasts, and sensitive to:
    - time; of transit and administrative delays, generalised cost
    - multi-product demand
    - congestion, weak nodes or transfer points
    - reinforcement of capacity (e.g.Turkmenbashi-Batumi)
    - new links (eg.Yerevan-Turkey, Nackichevan - Turkey, Mished-Iran)
    - socio-economic changes
- the database and model are to be permanently accessible at one or more Regional centres for use on research and feasibility studies

2.2 Applications:

- create comprehensive multi-modal (road/rail/maritime) synoptics of existing transport flows, and of forecasts of future flows based on scenarios
- highlight the main commercial, institutional, organisational, physical and infrastructure bottlenecks, present and anticipated
- identify the best positioned centres for development of multi-modal transfer nodes
- identify and catalogue specific road/rail/maritime and multi-modal projects, which best address problems highlighted, for detailed feasibility studies

2.3 Know-how Transfer

The transfer of know-how in transport database design and modelling is a prime objective of this project. Furthermore this project will be a key Pilot exercise, to assist in the formulation of ongoing technical assistance for TRACECA regional co-operation in these domains.

3. Scope of Work

Their will be essentially three overlapping phases to the project, corresponding with the Objectives as described.

The first phase will comprise initial data acquisition and storage, to be completed at month 13. At that point preparation for modelling applications must also be complete, and phase two will comprise the production of the required synoptic forecasts, at the end of month 15.

The final phase will consist of a period of three months maintenance, assistance and hand-over of the project to local beneficiaries. Data collection is to continue throughout the project duration.

3.1 The Multimodal Traffic Forecasting Model

3.1.1 The model will concentrate on inter-urban movements of goods in the international multi-modal corridors of interest to the Region. The modes of primary interest are road/rail/maritime (including Inland Water Transport, or IWT). It must consider passenger traffic to the extent that such traffic competes for use of infrastructure and vehicles.

3.1.2 The architecture of the links for data flows between regional centres is to be proposed by the Consultant. The following functional requirements should be taken into account.

Computers and software must be supplied and the model set up at one or more regional centres (see also section 3.6 Local Participation).

The sources of data are dispersed (eg.in the National Regional capitals and industrial centres). During the duration of this project the free availability to other related projects of data collected is to be assured. On-line data exchange is not a requirement.

It is considered usefull for regional transport planning that the data collection and other activities established under this project be continued after its completion, possibly with on-going external Technical Assistance support.

3.1.3 The structure of databases should closely follow present European reporting practice, and be designed to serve as input to standard software packages for transport modelling. For reference, the main elements of the CETIR database are reproduced below:

1. Inventory of transport problems, projects, investments, studies, agencies
2. General socio-economic data (zonal)
3. Networks by mode
4. Services by mode
5. Vehicle types and characteristics
6. Foreign trade statistics
7. Domestic trade
8. Origin-Destination (OD) data
9. Logistics of large enterprises
10. Environmental parameters

11.Structure of the public transport sector
12.Structure of the private transport sector
13.Unit/infrastructure/operating/user costs, tariffs and revenue parameters
14.Macro-economics and national accounts

All of these exact elements, their sub-sets and attributes, which may be found in CETIR and EUROSTAT documentation, are not imposed on this project. Databases and eventual processing for the project must be designed to achieve the Objectives as defined above. These however include eventual compatibility with the CETIR structures.

The Consultant should describe in his proposal the data structures that he intends to set up and exploit, notably the commodity classification system, as well as the level of zoning to be applied. External zones should be established for international trade and transit. He should also describe his data collection methodology, including local staff recruitment, training, monitoring, control and validation mechanisms.

Seasonal effects on traffic are to be considered. Data collection should start early in the project, and continue throughout.

Local staff in all TRACECA states should be extensively involved and provided with intensive instruction. Well before the end of the project, local staff should be in a position to continue the work autonomously. The Consultant will be responsible for ongoing data collection for maintenance of the database until the end of the project, and to facilitate any permanent implementations (see Section 4.4 Progress Report I).

The validity of existing data is not to be taken for granted.

A schematic plan of multi- and uni-modal road/rail corridors is attached to these TOR to give an order of magnitude to the density of the network. The Consultant will propose the existing network to be modelled in his Inception Report. Changes may be required during the course of the project, as new and detailed traffic and OD data becomes available.

Maritime links (eg.Caspian Sea, Black sea, and IWT) are to be taken into account. Air links and pipelines may need to be taken into account, but only to the extent that they significantly influence demand on modes of primary interest.

3.1.4 An established or standard transport modelling software package (eg.generation-distribution-modal split-assignment, or simultaneous,...) is to be calibrated to the existing transport flows. This implies determination of present transport costs, congestion areas present and future, and socio-economic input for generation and distribution vectors and functions.

It should be made clear in the Methodology that the modelling package proposed is:

- well suited to the projects Regional environment, with proven references of applications in equivalent circumstances
- output robust enough to stand up to critical examination by International Financial Institutions (IFI)

- well documented (manuals are to be made available in Russian, translated by local staff if necessary)
- guaranteed with long-term support and updating at reasonable cost
- multi-modal/multi-product
- interactive graphics input-output, with GIS interface
- able to estimate incremental time/cost savings, and deviated traffic under the wide range of scenarios that might be applied

Zonal growth sub-models are to be proposed.

The model will require calibration with valid current link flow and OD data, to be procured within this Scope of Work. Recent variations in tariff levels, and seasonal trends which might not be reflected in measured flow data, must be considered. The use of proxy, derived, or simulated data is to be avoided.

3.1.5 All hardware and software to be provided should be fully specified in the proposal.

3.1.6 Based on his experience gained during the opening phase of the project, the Consultant is to suggest options and make recommendations for the permanent establishment of the database and model in the Region (see Section 4.4 - Progress Report I).

The users licence(s) for software should eventually be ceded to the TRACECA Working Groups, or permanent regional trade and transport committee, or possibly to a Regional Institution. The model should in any case be constructed using a licence which can be transferred to a local entity. The possibility of multiple licences and dispersion of data collection and processing, is an option for the Consultant to consider. This scope of work is not limitative in this respect.

3.1.7 During visits to TRACECA capitals the Consultant is to arrange small (eg.half-day) seminars with senior officials. He is to explain state-of-the art transport modelling techniques, and the objectives of this present application.

3.1.8 The model should be developed concurrently with the data collection. The Consultant should actively collaborate with other projects, sharing data and running network simulations, as case-studies and training exercises.

In furtherance of the know-how transfer objectives of this project, and to stimulate interest in its end-products and perpetuation, the Consultants staff and activities should be widely accessible to local transport authorities and Institutions.

3.2 Scenarios

Given the radical economic changes underway, a detailed traffic analysis based on extrapolation of trends is not sufficient. Scenarios are to be formulated, refined by iteration on the model, and in consultation with the TRACECA management team and National authorities. Detailed Scenario propositions for approval will be contained in Progress report II.

Scenarios will take into account:

- demand vectors comprising
    - several product categories
    - variations in Regional tariffs
    - other factors considered relevant
- macro-economic and socio-economic projections compatible with IFI expectations (which must be determined)
- a full range of realistic transport system (infrastructure, vehicles, organisation) development, including completely new links, already planned, or suggested by the Consultant
- short (five year), medium (ten year) and long-term (fifteen year) situations
- emergency eventualities, such as closing of a corridor by natural disaster or conflict

The competition among corridors is to include the Transasia and Eurasian routes North and South of the Caspian, and traffic distributed according to realistic techno-economic criteria.

3.3 Synoptics

3.3.1 The Consultant will present a quantitative overview of the transport system, current flows, and costs of transport, on the international multi-modal corridors defined in the Inception report and accepted by TACIS.

He will present forecasts, based on simulations of the response of the system to the different scenario to be considered.

The Consultant will identify and catalogue options for investment or redeployment of assets which best address the needs illustrated by the model. All modes should be considered.

3.3.2. Traffic flows on new or enhanced links are to be predicted. Revenues under varying tariff levels are to be estimated.

3.3.3 Port traffic is to be forecast by product category (Poti, Batoumi, Aktau, Baku, Krasnovodsk)

3.3.4. The best positioned centres for multi-modal transfer nodes are to be highlighted. The volume of flows through these nodes is to be forecast.

3.3.5. Cost estimates to pre-feasibility accuracy, of the various options for investment proposed, are to be presented. These may be derived from existing reports for TACIS and IFI, where available and appropriate, or worked up by the Consultant if not. Indicators of cost-benefit and other criteria are to be calculated, taking account of the model forecasts.

Shadow costing should be used as appropriate.

The results of these studies are to be compiled in the Progress report III. The essential presentations should be included in summary tables and graphics.

3.4 Implementation

Subsequent to the issue of Progress Report III, containing the Synoptics, at the end of month 15, a three month period is foreseen for the Consultant to maintain a Project Manager and local staff in the field, for the final phase of permanent implementation and hand-over of the database and model.

Implementation will be planned and carried out progressively after the issue of Progress Report II (see Section 4.4) containing the Consultant's recommendations for implementation, and receipt by the Consultant of comments by the TRACECA management team and Regional authorities.

3.5 Other Related Projects

Several related reports prepared by Western consultants precede this project. They include:

Road Development Study	Republic of Kazakhstan	EBRD
Armenia Highway Study	Republic of Armenia	TACIS
Roads & Road Transport Study	Russia, Ukraine, Kazakhstan & Bielorussia	EBRD
Azerbaijan Road Project	Azerbaijan	TACIS
Central Asia Outline Transport Strategy	Kazakhstan, Kyrgyzstan, Turkmenistan, Uzbekistan	EBRD/TACIS
Caspian and Black sea Port Studies	Georgia, Azerbaijan, Turkmenistan, Kazakhstan	EBRD/TACIS/OTHERS
ESCAP studies	Asia	UN

At the time of writing the following TRACECA projects, sharing certain domains of interest with this one, are expected to commence shortly:

Implementation of Pavement Management Systems
Trade Facilitation, Customs Procedures, Freight Forwarding
Infrastructure Maintenance - Railways
Inland Terminals - Railways
Legal and Regulatory Framework
Forwarding, Multi-modal Transport Systems
Rolling Stock Maintenance-Railways
Inland Terminals
Improvement of Roadside Services
Port Network Plan and Improvement Programme
Human resources Training - Maritime

Other related projects are or may be expected to commence within the timeframe of this present one.

The Consultants appointed to carry out this project are to co-ordinate their work closely with all other related activities within the TRACECA region. Analysis of other TRACECA projects in the rail, road and maritime sectors would benefit greatly from the global approach of the present

exercise. However, certain of them have been designated urgent, and must be managed in parallel, rather than sequentially. A full collaboration with such projects will be required (see section 3.1.7.).

The preceding listing of related projects must not be considered limitative.

3.6 Local Participation

National consultants should be deeply involved in all aspects of the project. All TRACECA countries have Institutions specialising in various aspects of transport planning and engineering. It is a firm requirement that Organisation and Methodologies include local experts and Institutions to:

- make full use of local experience, antecedent projects and data bases
- promote the emergence of a financially viable local consulting sector
- ensure the effective transfer of know-how to the Beneficiary states
- ensure the enduring effect of project output

Consultants should base their activities largely in the TRACECA region, carrying out the project in collaboration with a local technical organisation(s), and employing both senior and junior professional staff, from several TRACECA states.

As training and know-how transfer is a prime objective of this project, the Consultants Methodology should fully explain his proposals in this respect. This should allow local organisations to maintain, update and modify the database, and to recalibrate and run the model autonomously.

Consultants must make amply clear in their proposal the arrangements they have made to work with local entities.

3.6 Foreign Expertise

The Consultant is free to compose his expatriate Team for this project as he sees fit. The following domains of expertise should be clearly visible in his proposed staff list:

- project management
- transport planning,
- transport databases, GIS, modelling
- transport economics
- modal specialisations

3.6 Logistics

The Consultant shall be responsible for arranging necessary living accommodation, transportation, telecommunications, equipment (IT and other), surveys, investigations, document reproduction, printing, secretarial services, interpretation, translation, office space and all other input required for the purposes of the work.

4. Time Table and Reporting

4.1 The project is to be completed within a period of eighteen months.

Task durations and staff assignments are to be clearly shown on planning schedules in the proposal. Milestones for output and key dates for data acquisition are to be indicated.

4.2 It is important that reports should not be considered the principal project output, and should not distract from the achievement of all of the defined project Objectives. Reports may be considered as management tools.

4.3 All reports are to be delivered in the numbers, languages and locations as follows:

	Bound		Loose-leaf		Diskette
	English	Russian	English	Russian	(Eng.+Rus)
TACIS Brussels	5	1	1	1	2
TRACECA CU (per state)	1	5	1	1	0

The word processing programme to be used will be agreed with TACIS (and DOS compatible).

4.4 Reporting is to be in accordance with standard TACIS Guidelines and foresee:

Project inception report

An Inception Report shall be issued within 2 months of the commencement of the project. It shall summarise initial findings and propose any modifications to the methodology and work plan. In particular it will adapt the work plan to the needs of each individual TRACECA state taking into account the parallel activities of other Technical Assistance programmes, avoiding duplication of effort, and addressing unfilled needs.

It will recommend the multi-modal links and nodes to be modelled, and confirm or modify the data structures upon which the model will depend. It will report upon initial data collection activities, and the utility of existing databases.

Project progress report I

This report will be submitted at the end of month 8, which should be approximately half way through the first twelve month cycle of data collection.

It is to be a key report, as the Consultant must suggest options and make recommendations for the permanent establishment of the database and forecasting modelling system to Regional entities.

Project progress report II

This report will be submitted at the end of month 13.

It will describe for discussion purposes the scenarios which the Consultant proposes.

It will report on progress in the implementation of the model.

It should be accompanied by a full twelve months record of data acquisition.

Project progress report III

This report will be submitted at the end of month 16.

It will contain the Synoptics.

Final Report

The Draft Final Report will be submitted at the end of month 18.

It will contain a full review of project implementation, and recommendations for the development of the database and model.

Any comments on the Draft Final Report will be issued by TACIS Brussels within six weeks of its receipt. The Final Report incorporating any modifications will be issued one month thereafter (2,5 months after issue of the Draft Final)

Each of the progress reports, and the final report will be issued with a separate digest of the database, in tabular form and on diskette.

The Consultant is to describe in his proposal the instruction or operational Manuals for local staff which he intends to use.

EUROPEAN UNION

Technical Assistance to the Southern Republics of the CIS and Georgia

TRADE AND TRANSPORT SECTORS

Terms of Reference

for

Immediate Training Action
A-Senior Management Level
B-Sectorial Training of Trainers

Final Recipients:
TRACECA Region Ministries of Transport

Table of Contents

1. Background

1.1 From May 3rd to 7th 1993 a conference was held in Brussels organised by the Commission and attended by authorities of the eight Republics of the south of the former USSR:

- Armenia,
- Azerbaijan,
- Georgia,
- Kazakstan,
- Kyrgystan,
- Tadjikistan,
- Turkmenistan,
- Uzbekistan.

They are the Beneficiary or Recipient States of this programme.

1.2 The objectives of the conference were :

- to stimulate cooperation among the participating Republics in all matters pertaining to the development and improvement of trade within the Region
- to promote the Central Asian - Trans Caucasian - Europe Transport Corridor
- to identify problems and deficiencies in the Region's trade and transport systems
- to define, in terms of contents and timing a Technical Assistance Programme to be financed by the European Union (EU).

1.3 The "Brussels declaration" issued at the conclusion of this conference recommend the European Union to include in the TACIS programme the implementation of comprehensive training programmes for transport and trade.

Regional delegates requested the EU for immediate technical assistance to include -as a matter of the highest priority - the familiarisation of regional transport personnel with the work practices and technical standards found in the transport sectors (rail, road, maritime) and trade within the EU, including policy and legislative framework.

1.4 The following Terms of Reference concern the immediate training needs. These are part of a multiannual training programme, which should be defined, for the future years, taking into account of the experience gained by this project.

2. Introduction

2.1 Prior to the separation of the former Soviet Union Republics, transport planning, development, organisation, management and operation activities were centrally coordinated and controlled by the relevant ministries and departments in Moscow. These activities were thus effectively monopolised with little or no input from managements of local organisations. The restrictions imposed upon local managements stifled motivation and inhibited initiative. This prevented effective management and monitoring of transport and trade, particular in terms of economy, efficiency etc...

Following the disassociation of the USSR this situation has changed dramatically.

2.2 One of the most important challenges now facing the transport/trade organisations in the region is how to adapt to the changing circumstances brought about by the economic reforms which are now in progress. Two key objectives of the reforms in the transport/trade sectors are :

- to foster trade both within the Region and between the Region and the EU and third countries
- to develop adequate transport resources to permit reliable and cost-effective cargo flows

To achieve this, cooperation among the regional Republics will be essential in the all areas of trade and transport, including : operational and financial self-sufficiency, technical upgrading of facilities and equipment, improvement of organisation and management, administration, legislation, documentation, tariffs, maintenance and repair, information and communications, the implementation of new, harmonised standards and norms and simplified trade procedures and the encouragement of private sector involvement.

2.3 Prior to the disassociation, Central Government set tariffs, allocated cargoes, financed major investments, covered operating deficits and appropriated most of any surpluses generated.

The independence of the Republics presents a challenge to local managements to operate within the changed economic environment. Transport organisations must be reformed, facilities must be technically upgraded, modernised, rehabilitated or extended, existing equipment repaired, new equipment purchased, operational efficiency improved, management information systems implemented, foreign/private investment has to be attracted, private sector services have to be established whilst legislation has to be developed and adapted.

2.4 The objectives as defined can be achieved and future tasks accomplished only by a qualified, motivated and innovative management and work force, contributing effectively to the future activities required to be carried out under the TRACECA Programme.

2.5 Representatives of top and middle management of transport/trade organisations within the Region should be given the opportunity to familiarise themselves with the latest trade and transport policies and legislation, intermodal technology, operating systems and productivity levels, service quality, administrative efficiency and marketing strategies etc... as developed and maintained within the European Union states. Only a management which has been given the opportunity for such familiarisation can realistically be expected to implement and adopt equivalent measures within their own environments.

2.6 The level of expertise of officials, and managers of trade and transport enterprises within the Region is very high. They have displayed considerable initiative in their rapidly evolving situations. They do however request exposure to Western working practices within their respective domains.

3. Objectives

3.1 To support regional managements and work forces directing and contributing to the reform process, specific training measures are a prerequisite. As independent Nations the Region's Republics want free traffic flow in line with market demand and future economic growth. Therefore, all staff must be acquainted with market oriented systems and administrative procedures suitable for adoption within the Region.

Given the size of the workforces involved, only a limited number of of staff may benefit directly from training by Western experts. A maximum leverage is sought from this programme, by orientating it to two particular sub-groups:

A-Senior Level Management
B-Trainers and Middle to Lower Level Management

3.3 To familiarise participants with all aspects of European transport and trade, including methods, systems, and commercial practices. This is to enable them to implement such systems in their Republics and work effectively with European counterparts.

3.3 Training in marketing strategy, demand segmentation, line of business concepts, and demand-led business development.

3.4 Training in competitive transport network planning. This would include traffic forecasts based on industrial, agricultural, and transit potential, as well as intercity passenger traffic. The dependency between demand and tariff levels, time, and other factors is to be emphasised.

3.5 Familiarisation with multi-modal methods (as practised in Western Europe) is also important, given that the ports and inland terminals will be essential components of the Europe-Caucasia-Asia Transport Corridor.

3.6 The programme also intends to foster the regional cooperation within the transport and trade sectors to solve problems on a coordinated basis. The spirit of the document "The Future Development of the Common Transport Policy" published by the Commission could serve as a useful guidelines in this respect. The advantages of open borders are to be emphasised.

4. Scope of work

4.1 Introduction

To implement this programme the EU will retain the services of a qualified Training Contractor. The Contractor will be responsible for the execution of the familiarisation programme locally and in Western Europe. It will cover the following transport components :

- road/combined
- rail/combined
- maritime
- trade facilitation eg. freight forwarding

The needs of four separate professional activities are to be taken into account. The courses should be designed with core and specialist modules. The emphasis is to be on transport chains linking modes, and in this respect a degree of overlap into the aviation sector is to be provided.

A previous TRACECA project has addressed the specific needs of Rail Senior Managers, hence they are not to be included in the A-Senior Mangement sub-group of this programme.

In order that the programme not be too dispersed or diluted, it will focus on freight flows, including international trade facilitation. Intercity passenger transport is to covered to the extent that infrastructure and vehicles are shared with freight. Urban passenger transport is not included in this programme. Urban goods distribution may be treated as an accessory subject.

The programme will be carried out in close cooperation both with the EU and the National Coordination Units of each of the eight TRACECA Republics.

To ensure a full integration of the project into the Region, the Training Contractor should foresee the involvement of local training Institutions as co-managers or on a similar basis. Such involvement should commence at tender preparation stage.

Training is to be provided both in the Region and in the EU.

4.2 Methodology

The training contractor will:

- prepare a comprehensive methodology giving details of the approach to be adopted, including the EU countries and organisations to be visited, the location(s) of seminars within the Recipient States, the instruction to be provided, timings etc...;

- prepare a complete and coherent set of documentation to be handed over to course participants upon commencement of each phase;

- organise a comprehensive introductory seminar at the commencement of the training and an end of course meeting to identify the conclusion and results.

- ensure that participants are exposed not only to EU theory and practice in trade and transport, but also the role of training for continuing professional development at all responsibility levels

The intention is that the course opens the way to a full acceptance of market oriented structures in the organisations managed or provided with training services by the participants.

The following are suggestions as to the organisation and range of activities for the study groups which will include representatives from the Ministries of Transport, road and port authorities, shipping lines, haulage companies and trade facilitation organisations of each of the eight Republics.

It is proposed that the programme will include a seminar organised in the Recipient States and a study trip to the EU.

The participant groups may comprise representatives with an administrative, commercial, technical, or operational background. The Training Contractor is free to develop a programme on the basis of his own experience, bearing in mind that :

(i) the recipient states are responsible for the nomination of course participants. The Training Contractor will list in his offer the number and proposed professional backgrounds of candidates.

(ii) courses will begin with training performed in the Recipient States. This may be a combination of formal lectures and tutorials.

(iii) visits to between two and three EU countries are to be provided, though the majority of time may be spent at one well situated location. The visit may follow immediately after the seminars, or after a limited lapse of time (eg.one month). While in the EU participants should be shown and receive explanations on working transport and trade systems by people intimately connected with their day to day operations. It would appear inappropriate to bring the participants to the EU for formal lectures.

(iv) during the course of a visit some time should be spent with EU representatives and TRACECA management. This will allow the development of ideas on a joint basis.

(v) each organisation or institution visited should be clearly described in terms of its vocation, competitive environment, administrative effectiveness, type of organisation and management, financial turnover, scope of business/activities, number of personnel, human resources and career development, type of finance and cost accounting, productivity criteria, standard and quality of services, marketing and sales activities, etc...

(vi) the participants should be given the opportunity to be acquainted in detail with the principles of legislation applicable in the EU for contract matters. For that, representatives should learn - by means of least one case study - all phases of contract award exercised in the trade or transport sector. Types of contract may be relevant to purchase of equipment, infrastructure, sales and freight agreements according to common practice and EU legislation in the concerned sector. The case study should cover all contract stages e.g. definition of requirements, preparation of specification and ToR, bidding procedure both in public and private sector, evaluation of offers, award, control, commissioning, guarantee period etc..

(vii) The syllabus may include common core modules for all participants, and separate specialist courses. The programme should seek to compensate excessive vertical integration of sectors, institutionalised in the old regime.

Participants are to be provided with a comprehensive insight into the role and structure of the transport and trade sectors in a market economy. Intermodality, and the intimate links between transport and trade are to be exposed in site visits to companies and organisations providing the services. The need for competitivity and adaptation to changing demand patterns are likewise to be emphasised.

It is suggested that visits in the EU be arranged to:

- Forwarding and logistics companies
- Transport/shipping operators (road/combined, rail/combined, marine)
- Private sector Consultants
- A maritime port handling mixed traffic
- An inland terminal handling combined traffic
- Transport infrastructure construction companies
- Authorities/companies specialised in infrastructure maintenance (road, rail and maritime)

Participants should be enabled and encouraged to ask questions of managers of organisations during visits.

4.2.1 A broad overview of the transport industry in the EU should be presented. In particular the A-Senior Managerial participants should be encouraged to look at opportunities in complementary market niches and synergies outside of their traditional uni-modal sectors. The syllabus may cover the following domains:

- the principles of regional transport network planning and the mechanics of cooperation in transport development as applied in the EU ;
- methods and approach for a harmonised regional trade and transport development policy, their legal and regulatory framework and basis as applied in the EU ;
- business planning and marketing strategies. The need for competitivity and adaptation to changing demand patterns are to be emphasised;
- cost accounting, cost analysis and tariff setting ;
- investment planning (public/private/mixed);
- regulatory and legal framework;
- technical evolution (unitisation, telecommunications, EDI,...)
- technical standards and norms (national, international, & including those of the EU);
- multimodal cargo transfer stations ;
- intermodalism and integrated transport including containerised traffic;
- the roles of all participants in the transport chain, vendors/buyers, forwarders, shippers,...;
- banking and insurance practice, INCO terms, documentation;
- tendering procedures for equipment purchases, construction and maintenance ;
- international legislation, conventions and agreements related to transport and trade, including safety, environment protection, standards and norms, education and training ;
- customs procedures, technical equipment;
- safety and environment

4.2.2 The following particular facets of the transport industry may be presented by sector. The B-Trainers group should be provided with detailed explanations of the workings of these specialised activities:

4.2.2.1 Road/Combined

- National/international full load haulage
- Grouping (less-than-truckload)
- Parcel service providers (urgent deliveries)
- Warehouse and distribution centres
- Intermodal transfer platforms (road/rail, land/maritime, IWT/land)
- Containerisation and unitisation
- Logistic centres
- Telecommunication, EDI

- Computer applications, e.g. to pavement management systems
- Marketing strategies
- Cost accounting, estimating
- Vehicle financing, investment planning, leasing, insurance,...
- Infrastructure financing (public/private/mixed)
- Tendering procedures for equipment purchase, road construction, maintenance
- Regulatory and legal framework
- Documentation
- Technical standards and norms (national, international, & including those of the EU);
- Safety and environment

4.2.2.2 Rail/combined

- National/international trainload and wagonload
- Train dispatching centres
- Intermodal transfer platforms (road/rail, rail/maritime, rail/IWT)
- Containerisation and unitisation
- Telecommunication, EDI
- Computer applications, e.g. freight management systems
- Marketing strategies
- Tariff rules and contractual agreements
- Cost accounting, estimating
- Rolling stock financing, investment planning, leasing....
- Infrastructure financing (public/private/mixed)
- Infrastructure maintenance
- Tendering procedures for equipment purchase, construction, maintenance
- Regulatory and legal framework
- Documentation
- Technical standards and norms (national, international, & including those of the EU);

4.2.2.3 Maritime Transport (and IWT)

- Shipping lines/agents
- Port authorities
- Port operators
- Port and shipping line organisation and management, the roles of statutory authorities, international organisations and private sector operators
- Maritime planning for development including investments
- Commercial port and shipping line activities such as terminal operations, stevedoring, container stripping and stuffing, tally, warehousing, distribution, trucking, towage, pilotage, vessel fleet management, through freight and door to door operations,...
- Related service activities such as forwarding, banking, insurance, chartering, brokerage, agencies,...
- Public/governmental port activities such as safety, dredging, vessel traffic management, aids to navigation, enforcement of regulations
- Port facilities and infrastructure especially installations such as container terminals, car terminals, bulk terminals, oil terminals, fruit terminals, forest product terminals, container freight stations, customs yards,
- Port equipment such as gantry cranes, transtainers, vancarriers, mobile cranes, forklift trucks, bulk cargo stackers and reclaimers, cargo elevator systems, including repair and maintenance workshops and related management practice
- Telecommunications, EDI
- Computer applications to logistical and general management
- Inland waterways and locks, including multimodal and integrated transport techniques
- Tariffs

- Contractual relations, between local as well as international maritime transport participants
- Tender procedures for equipment and infrastructure procurement
- International legislation, conventions and agreements related to shipping and ports, including safety, environmental protection, standards and norms, education and training
- Port, shipping and cargo related documentation including statistics
- Customs procedures

4.2.2.4 Freight Forwarding

- Freight forwarding companies
- Customs procedures
- Banks, financial institutions
- Insurance companies
- Transport service providers in the road, rail, maritime and air sectors
- Regulatory and legal framework, international treaties, conventions,...
- The structure and practices of the freight forwarding industry
- Contractual relations, between local as well as international transport participants
- INCO terms, and the associated procedures and documentation for traders, insurers, and bankers
- Commercial arrangements including barter, counter-trade,...

4.3 Organisation

Participants in the A-Senior Management group will be drawn from:

- Ministerial department managers, Counsellors at Ministry level for each sector (road/combined, maritime, trade);
- Statutory bodies for each sector at the highest level.
- Senior Management of public or private transport enterprises.

Participants in the B-Trainers group will be drawn from:

- Educational and vocational training Institutions
- Middle to lower level management of public or private transport enterprises.

The following programme is suggested but should be developed or modified by the consultant:

- Organisation of seminar(s) in the Recipient States. The Training Contractor may propose to carry out this training in one, or in several States. As more participants from the Recipient States may attend the courses if they are presented in several States, the Contracting Authority will adjudge propositions on the basis of the quality of the instruction proposed, including the class sizes proposed, but also the cost per attendee. Tenderers should structure their methodology to benefit from their own particular circumstances (local relationships, availability and skill ranges of lecturers,...). The seminar(s) should last about two weeks.
- Organisation of a study trip to the EU, lasting about two weeks. The Contractor may choose to propose more time in the EU and less in the Recipient States should he feel that the quality of his offer is thus enhanced and without a cost penalty. A minimum of one week should however be reserved for the Recipient State seminars.
- The levels of attendance (number of participants) are to be proposed for each State by the Contractor. The levels should be aligned with the relative populations of the different States, and the extent and nature of their transport networks. Kazakhstan has a particularly extensive network of high Regional interest.

The Contractor must remain within the budget announced. A degree of flexibility on attendance levels has been allowed in the preceding paragraphs. Hence the following levels of attendance may be considered indicative:

Location	Regional	EU
Group A- Senior Managers	100 participants	35 participants
Group B- Trainers	150 participants	35 participants

- The maritime sector only concerns directly four of the Recipient States, and this fact should be reflected in the Contractors proposal.
- The courses should be intensive in nature, oriented towards experienced and highly qualified senior officials, trainers, and rising managers. Weekend activities should be programmed.

Arrangements and payment for accommodation and travel by participants is the sole responsibility of the Training Contractor.

Selections of attendees for the study tour to the EU will realised in cooperation with National Authorities.

A detailed schedule of the courses and other activities forseen in this training programme is to be presented in the Contractor's proposal. There is no requirement that courses be run sequentially, concurrently, or otherwise. However all programmed activities should be completed within six months of award of the contract.

4.4 General aspects

The above lists of topics are not exhaustive and the Training Contractor is invited to add his own suggestions.

Lectures and professional presentations may be given in any EU language. Nevertheless attendees will be mostly Russian speaking, without knowledge of EU languages. Interpretation arrangements should be carefully studied and specified by the Contractor.

Each participant is to receive manuals covering the material presented during the courses including all relevant documents used both in Russian and English languages.

Upon completion of the course all participants are to receive a simple attestation of participation.

5. Reporting

- **Inception Report**. This report is to be issued two weeks or earlier, before commencement of the first courses. It will confirm or modify, and amplify, the Contractors dispositions for providing the Training specified.
  Both academic and logistical arrangements are to be covered.
  The English language versions of training Manuals in draft form are to be annexed.

- **Progress Reports**. A short progress report should be issued at the completion of the seminars within the Region, for each participant group (A and B). Contents should include comments from participants.

- **Draft Final Report**. To be submitted one month after the completion of the programme, it will detail all the work undertaken and the recommendations of the Training Contractor concerning future training programmes. Contents should again include contributions from participants.

- **Final Report**. To be submitted one month after receipt of comments on the draft final report from the Recipient States and EU representatives.

All Reports are to be issued in the English language in twelve bound copies and one unbound copy. The Draft Final and Final Reports are, additionally, to be presented in the Russian language in eighteen bound copies and one unbound copy.

6. Staffing of the Training Contractor

6.1 The Training Contractor will present his offer with detailed programme for each course by session and will specify the places where the study components will be carried out, and by whom. For responsible/coordinating personnel engaged for this assignment curriculum vitae must be submitted with the offer. Together with his offer, the consultant/training organisation must present its technical and institutional capacity and sectoral and regional experience, supported by relevant references. The consultant should specify any alteration to be made to its standard programmes to meet the specificity of the region.

The Training Contractor will propose a staffing plan consistent with the above scope of work.

There should be a sufficient number of team members to allow an effective transfer of know-how.

The Training Contractor should exercise professional judgement defining the nature and duration of the involvement of the expert team. The team could include the following positions :

- Project Manager/Senior Trainer
- Specialist Training Experts, and Practitioners

During the seminars in the Recipient States, experienced lecturers and/or practitioners should make presentations and lead tutorials, while during the visit to the EU the participants should be exposed as much as possible to practitioners in varied professional categories.

Experts shall have the following qualifications :

- University degree, Chartered Engineers or experienced senior executive.
- At least ten years experience in a Western European country, as a lecturer or practicioner in the transport and/or trade sectors.
- Experience in the CIS or Eastern Europe will be an advantage.

6.2 The full training programme is to be completed within a period of eight months, from the date of award of the contract.

7. Involvement of local Institutions and services to be provided by the Recipient States

The project should be carried out in cooperation with an existing Institute(s) in the Region. Several local Institutions have expressed keen interest in collaborating in this project. The Contractor should specify clearly in his offer the arrangements he has made.

Any equipment such as projectors which are provided by the Contractor for the seminars, should be left with the host Institution. Details should be provided in the Contractors proposal.

The Recipient States are to nominate participants in the programme.

EUROPEAN UNION - TACIS

Technical Assistance to the Southern Republics of the CIS and Georgia - TRACECA

TRADE AND TRANSPORT SECTORS

Terms of Reference

for

TRADE FACILITATION CUSTOMS PROCEDURES AND FREIGHT FORWARDING

Final Recipients:
TRACECA Region Ministries of Transport

CONTENTS

1. Background and Introduction

1.1 During May 1993 a conference was held in Brussels organised by the Commission and attended by authorities of the eight Republics of the south of the former USSR:

- Armenia,
- Azerbaijan,
- Georgia,
- Kazakstan,
- Kyrgyzstan,
- Tadjikistan,
- Turkmenistan,
- Uzbekistan.

They are the Beneficiary States of this programme.

The objectives of the conference were :

- to stimulate interest in developing major transport corridors between Asia and Europe, including the Central Asian - Trans Caucasian - Europe Transport Corridor
- to promote-operation among the participating Republics in all matters pertaining to the development and improvement of trade within the Region
- to identify problems and deficiencies in the Region's trade and transport systems
- to define, in terms of contents and timing a Technical Assistance Programme to be financed by the European Union (EU).

TRACECA (Transport Corridor Europe Caucasus Central Asia) was thence created as a component of the TACIS interstate programme.

The "Brussels Declaration" issued at the conclusion of this conference recommended the European Union to include in the TACIS programme assistance in the domains of Trade Facilitation, Customs Procedures, and Freight Forwarding.

1.2. In order to develop and manage the TRACECA Technical Assistance Programme, a Management Team has been established in Brussels, consisting of a Team Leader and Trade Expert, a Road Expert, a Rail Expert, and a Maritime Expert. Parallel to this, similar national sectoral working groups have been established in each of the TRACECA States as part of the TRACECA programme. They meet periodically in the region, the last meeting being in Almaty on May 1995, during which this project was approved.

1.3. The trade and transport systems of the TRACECA States were inherited from the command economy of the Former Soviet Union, which was designed for trade and economic relations planned by directed from, and centred on Moscow.

Moscow thus controlled internal and external trade policy, customs administration and practice, membership of international conventions, collection of statistics, insurance etc. There was little or

no private sector activity, and hence independent trade facilitation activities such as freight forwarding and customs agencies never developed.

The influence of the previous monolithic structure of the command economy is still dominant in all trade and transport institutions, though many now operate with various degrees of autonomy.

Freight forwarding organisations remain largely unimodal and attached to transport operating companies.

The execution of banking and insurance operations implied by INCO terms is by no means routine.

The new separate independent sovereign States in the TRACECA sub-region find themselves compelled to create new trade facilitation structures, customs procedures and freight forwarding systems commensurate with their own national requirements, and with the TRACECA region as a whole.

These systems must take into account previous USSR laws, regulations, codes of practice, present Russian Federation laws, International laws or conventions, and International codes of practice and procedure.

1.4. Reportedly, a transit agreement signed in February 1992 by all the CIS countries specifies, in theory, that goods should be controlled only when entering the CIS border. An Economic Union treaty was signed in January 1994 between Armenia, Belorussia, Kyrghistan, Moldovia, Russia, Tadjikistan, Uzbekistan and Ukraine. An agreement of 16 January 1994 created a single economic space between Kazakhstan, Uzbekistan and Kyrghistan.

The effectiveness of application of these agreements is not reported. However considerable congestion at some border crossings has been observed.

The agreements mentioned are indicative that all states see multilateral trade and transport collaboration as necessary for their economic development, and that at the political level there is a willingness to act.

2. Objectives

In order to facilitate trade throughout the TRACECA region, harmonised customs procedures and trade documentation need to be set up. Furthermore private operators, or freight forwarders are to be encouraged, to assist merchants with their documentation, and to negotiate with carriers and insurers for best service, price, and multi-modal efficiency.

To work towards the achievement of these ends this project will design, develop or provide for the Region the following elements:

- harmonised customs documentation (as co-ordination with Project N°1, Legal Framework)
- essential international documents (e.g.conventions and model contracts) in Russian
- co-operation between customs authorities, and freight forwarders throughout the region
- customs services with modern control, telecommunications and data processing equipment, and staff trained in their use
- a study to identify the principle surface transport customs control points within and around the Region and to analyse common problems as well as those specific to each
- the introduction of EDI
- computerised systems for the collection of statistics
- assistance in the creation of trade and freight forwarding associations in the TRACECA region and the encouragement of links between the national associations

3. Scope of work

3.1. Organisational Framework

It is proposed that an International Trade Task Force (ITTF) reporting to TACIS be established to carry out the project. This Task Force would cover three specific domains of expertise:

- Trade Facilitation (Systems Analysis)
- Customs Procedures
- Freight Forwarding

One of the Task Force experts would act as Project Manager and guide the project throughout its duration. Short term specialised experts may also be proposed.

The ITTF should be complemented by individual National Trade and Transport Facilitation Task Forces (NTTF) in each TACIS state, which will consist of officials from the Ministry of Trade, the Customs Service, Chambers of Commerce, Freight Forwarding and Customs Agents, Insurers, Bankers, and Transport Operators. It is desirable that the NTTF in each Recipient State share members common to the Transport Legal Framework NTF (see Section 3.6.Other Related Projects).

The ITTF and NTTFs are to promote the development of National and Regional:

- Customs Consultative Councils
- Customs Agent Associations
- Freight Forwarding Associations
- Trade and Transport Associations

The contractor is to advise the Recipient State governments on the composition and appointment of their NTTF, and agree with them a workplan, as well as relationships of the NTTF with other governmental and non-governmental bodies.

The contractor is likewise to organise bi-annual Regional meetings of NTTF members, for concertation, planning and approval of operational technical links between the Recipient States trade related organisms, particularly Customs Services.

It is to be noted that the activities of this project are to concentrate on the technical and operational aspects of the stated Objectives. The Legislative aspects are the concern of the Transport Legal Framework project.

While remaining within this loosely defined framework, the Consultant's proposal must clearly explain his own detailed plan of action to address the projects' Objectives as defined in Section 2.

3.2. Tasks

The following Tasks form a possible framework for carrying out the project. The activities described are not to be considered limitative, nor to be carried out sequentially in the order below. The contractor is welcome to enlarge upon the activities described and to introduce his own approach, to achieve the project objectives.

3.2.1. Trade Documentation

The contractor is to design a standardised trade documentation package for the Region, "aligned" to the UN system, and suitable for eventual production by computer and EDI processes. The following list is indicative:

- Certificate of origin
- Quality certificate
- Documentary credit forms
- Insurance certificate
- Standard shipment notes
- Commercial invoice
- Forwarders certificates of receipt or shipment
- Warehouse receipts
- Consignment notes for road, rail and waterway
- Phytosanitary certificates
- Veterinary health certificates
- Packing list
- Customs clearance forms or Single Administrative Document" (SAD)
- Import and export licensing
- a model freight forwarding contract, based on EU standards
- commodity classifications and specifications

The contractor is to design this package in close collaboration with the NTTFs, his own locally appointed experts, and in co-ordination with the Transport Legal Reform Project.

The package should be designed such that its adoption not be dependant on the implementation of EDI or other technology based systems.

The ITTF in collaboration with the NTTF should demonstrate the internal advantages to the Region of the adoption of international documentation and the procedures to which they are linked, and promote affiliation to the international organisations concerned with their administration and updating.

3.2.2. System Architecture and Software

The contractor is to propose common National trade data transfer systems and recommend software modules appropriate to the local technical and institutional circumstances. Ideally, it should be possible to enter and extract required information from dispersed databases and produce "aligned" documents, using networked PCs.

The system should cover the flow of information between dispersed sites within a Recipient State, and the interfaces between the Recipient States. The system should be modular, and provide for the Customs Service internal operational needs initially. Appropriate interfaces and application modules for the nascent freight forwarding industry and others should be studied and reported.

The introduction of EDI should be studied and reported.

The contractor is to analyse the present situation in close collaboration with interested authorities, make recommendations including a conceptual design and progressive implementation schedule, for eventual approval at a bi-annual Regional meeting of NTTF members.

3.2.3. Surface Transport Customs Control Points

This task will contribute a detailed analysis of concrete needs, for other components of the project, as well as studying specific actions or investments which might be required at border crossings and other possible customs bottlenecks which are impeding trade.

The contractor is to identify and visit principle surface transport border crossings and customs control points within and around the Region. He may concentrate on those concerned with trade flows eventually reaching beyond the borders of the FSU. He is to examine the customs infrastructure, equipment, personnel, and procedural systems, to enable him to define and analyse common problems as well as those specific to each point.

An overview of the existing situation is to be presented, cataloguing the customs control points and proposing improvements to the existing installations and procedures, at prefeasibility level. Proposals should cover:

- infrastructure
- data processing and telecommunications equipment
- control, detection, and testing equipment and facilities
- staffing and training

The sufficiency and geographic disposition of customs control points, bonded wharehouses and similar infrastructure across the Region should also be considered.

3.2.4. Cost Estimates and Implementation

Cost estimates and cost benefit analysis to prefeasibility accuracy should be presented for the project recommendations generated in sections 3.2.1. to 3.2.3.

An implementation schedule is to be proposed taking into account local circumstances, and the cost benefit associated with the procedures, technologies, equipment, and infrastructure proposed. The schedule should enable any eventual international financing package for high investment recommendations to be linked to adoption and implementation of international conventions, and modern free market trade procedures in the Region, in a rationally prioritised and coherent manner.

Training programmes and their estimated costs are to be described.

3.2.5. Freight Forwarding Pilot

The first phase of this task is to design a pilot demonstration of a Regional Freight Forwarding multi-modal operation.

This could comprise:

- a limited marketing study, identifying and examining in closer detail, for example, the regional transhipment of containers, groupage operations or other sector presently ill-developed
- a technical study, identifying a potential pilot network, transfer or stuffing and unstuffing points, based upon present existing installations and equipment
- an institutional study identifying existing, sufficiently dynamic, private or quasi-private National organisations upon which to graft the pilot, as well as potential overseas participants for a pilot joint venture
- establishment of links between FIATA and nascent local freight forwarding associations
- a technical assistance package, comprising management support, training, IT and communications software and hardware sufficient for the pilot, supplementing local or external participating resources
- promotion of the use of documentation and procedures from other sections of this project, in collaboration with customs authorities
- a business plan, indicating the commercial prospects of the venture

The pilot proposal should be submitted to TACIS, for consideration of financial support to the pilot operation over a six month period. Such support is not to be taken as automatic.

Sponsored participation by EU international freight forwarders or national associations would be a strong commendation for TACIS financial support.

The pilot proposal should be submitted as a separate Technical Deliverable (see Section 4.). Whatever the format of the pilot project proposed, this Deliverable should permit an overview of the perspectives for an independent freight forwarding industry within the Region.

3.2.6. Training

Training is to be considered an essential component of the project. The contractor proposal is to describe his training programme, taking into account the following suggestions.

3.2.6.1. Familiarisation Visit

It is evident that familiarisation with Western trade facilitation professions and related customs procedures and technical systems would encourage National participants in the project, particularly members of the NTTF, to collaborate more fully and positively.

Therefore the Contractor is to propose and describe in his Methodology a familiarisation visit to the EU, for about thirty participants, at an early stage in the project schedule. This visit should present in working environments the most efficient modern EU technologies and procedures for customs controls. Russian language translators should be in attendance to allow visitors to question working professionals and officers on the functioning of systems.

This familiarisation visit could be combined with the first Regional conference.

3.2.6.2. Seminars

The contractor is to propose a seminar(s) to explain the advantages and facilitate the adoption of international trade documentation proposed in Section 3.2.1. It should be oriented to local Customs Officials, freight forwarders and trainers of transport professionals.

Seminars should ideally be conducted by experienced Customs Officers and Freight Forwarding professionals from the EU, who may be ITTF members or short term experts.

The number of participants and location of the seminar(s) is to be proposed by the contractor.

3.2.7. Insurance and Banking

It is considered that these subjects, although recognised as vital to facilitate trade, are too vast to be analysed in detail during the present project. An incremental approach is to be adopted. The present study will highlight any crucial deficiencies in the present system, in so far as they impact the operational aspects of systems recommended, to be considered in subsequent projects.

3.3. Local Expertise

The maximum possible use should be made of experienced national consultants of high academic standing, who should be closely involved in all aspects of the project. All TRACECA countries have institutions specialising in various aspects of transport legislation and planning. It is a firm requirement that organisation and methodologies include local experts and Institutions to:

- make full use of local experience, antecedent projects and data bases
- promote the emergence of a financially viable local consulting sector
- ensure the effective transfer of know-how to the beneficiary states
- ensure the enduring effect of project output

Consultants must make amply clear in their proposal the arrangements they have made to work with local entities.

3.4. Logistics

The Consultant shall be responsible for arranging necessary living accommodation, transportation, telecommunications, equipment (IT and other), surveys, investigations, document reproduction, printing, secretarial services, interpretation, translation, office space and all other input required for the purposes of the work.

This is to include the arrangements for seminars and regional conferences.

3.5. Other Related Projects

Several related reports prepared by western Consultants precede this project:

- Organisation for the Transfer of a Legal Framework for Transport and Trade in the Region TRACECA (TACIS "Mercadal")
- Technical Assistance in the Reform of Transport Law Kazakhstan (TACIS)
- Central Asia outline Transport Strategy Kazakhstan, Kyrgyzstan, Turkmenistan, Uzbekistan EBRD/TACIS
- ESCAP Studies

At the time of writing the following projects, sharing certain domains of interest with this legal framework project are expected to commence shortly.

- Transport Legal Framework, TACIS
- Forwarding-Multimodal Transport Systems, TACIS
- Regional Traffic Forecasting, TACIS
- Programme of Economic Integration between the Republics of Kazakhstan, Uzbekistan, and Kyrgystan (CACOM), Regional Governmental Initiative supported by TACIS
- Transit Treaty for Central Asia sponsored by UNCTAD and ESCAP

Other related projects are or may expected to commence within the time frame of the present project.

The consultants appointed to carry at this project are to co-ordinate their work closely with all other related activities within the TRACECA region, especially with the Transport Legal Reform Project.

4. Time Table and Reporting

4.1 The project is to be completed within a period of twelve months.

Task durations and staff assignments are to be clearly shown on planning schedules in the proposal. Milestones for output are to be indicated.

4.2 It would be preferable for the familiarisation visit to be scheduled as early as possible within the project schedule.

4.3 Technical Deliverables

The contractor will catalogue in his proposal the individual Deliverables by which he proposes to address the full range of issues raised in the Objectives and Scope of Work, and his schedule for their provision.

Technical Deliverables may be Documentation packages, model procedures, seminar manuals, databases, or any other tool which the Contractor proposes to utilise. The Contractors Work Schedule must indicate his follow-up activities with the NTTF, to promote and guide adoption of internationally compatible documentation and operational procedures.

All Technical Deliverables must be provided in both English and Russian, in numbers and formats to be agreed with TACIS.

4.3 Reports

4.3.1 All Reports are to be delivered in the numbers, languages and locations as follows :

	Bound		Loose-leaf		Diskette
	English	Russian	English	Russia	(E.+R.)
TACIS Brussels	5	1	1	1	2
TRACECA CU (per state)	1	5	1	1	0

The word processing programme to be used will be agreed with TACIS.

4.3.2 Reporting is to be in accordance with standard TACIS guidelines.

4.3.3 A Project Inception Report shall be issued within one month of the start of the project.

It shall summarise initial activities and propose any modifications to the methodology and work plan.

In particular it will describe:

- the establishment of the NTTFs.
- the arrangements for co-ordination with the Transport and Legal Reform Project

Moreover it will adapt the work plan to the needs of each individual TRACECA state taking into account the parallel activities of other international assistance programmes, avoiding duplication of effort, and addressing unfilled needs.

4.3.4 Periodic/Status Reports

Periodic Status Reports will be submitted to TACIS on a quarterly basis, and will cover the operational progress of the project, the programme for the following quarter and administrative aspects of the project.

Any deviation from the Contractors schedule or difficulties encountered should be noted, as well as actions necessary to compensate them.

4.3.5 Final Report

A Draft Final Report on the operational and technical contribution to the project will be submitted at the end of month 11. Any comments on the Draft Final Report will be issued by TACIS Brussels within six weeks of its receipt. The Final Report incorporating any modifications will be issued one month thereafter (2,5 months after receipt of the Draft Final Report by TACIS).

EUROPEAN UNION - TACIS

Technical Assistance to the Southern Republics of the CIS and Georgia - TRACECA

TRADE AND TRANSPORT SECTORS

Terms of Reference

for

Legal and Regulatory

Framework

Final Recipients:
TRACECA Region Ministries of Transport

LEGAL AND REGULATORY FRAMEWORK

(TRACECA PROJECT N° 1)

Contents

1. INTRODUCTION AND BACKGROUND

The present project is one of the priority components of the TRACECA initiative launched at the Brussels Conference held in May 1993, at which the states of Armenia, Azerbaijan, Georgia, Turkmenistan, Uzbekistan, Kazakhstan, Kyrgyzstan and Tadjikistan were represented.

The objectives of the Conference were :

- To promote co-operation among the participating states in all matters pertaining to the development of trade and transport in the region.
- To promote the Central Asian-Trans-Caucasian-Europe transport corridor.
- To identified problems and deficiencies in the region trade and transport systems.
- To define in terms of content and timing a Technical Assistance Programme to be financed by the EU.
- For the Technical Assistance programme 23 projects were identified to be implemented over several years.

In order to develop and manage the TRACECA Technical Assistance programme a Management Team has been established in Brussels, consisting of a Team Leader and Trade expert, a Road expert, a Rail expert, and a Maritime expert. Parallel to this similar national sectoral working groups have been established in each of the TRACECA states as part of the TRACECA programme. They meet periodically in the region. They have inaugurated specific projects, including this one and will monitor results.

Five horizontal projects were marked out as priority projects for immediate implementation including the Legal and Regulatory Framework project

The legislation framework of the trade and transport sectors in the TRACECA states was inherited from the Soviet Union command economy system of transport management, designed for trade and economic relations planned by, directed from and centred on Moscow.

The new separate independent Sovereign States in the TRACECA sub-region now find themselves compelled to create new legislation for the transport sector.

Such legislation must take into account previous USSR laws, new Russian Federation laws, Republic laws, and International laws or conventions.

Clarification and harmonisation of this situation is of vital importance to the transport sector in the TRACECA corridor. A fact-funding mission has been carried out, but except in Kazakhstan, no previous projects have actively promoted harmonisation of legislation and regulation.

2. OBJECTIVES

At a conference held in Almaty on 19-20 May 1995, which brought together authorities from the Recipient States, the following general objectives were defined for this Legal and Regulatory Framework project :

To provide technical assistance and documentary support in the field of transport legislation and promote :

- optimum utilisation and harmonisation of the existing transport systems
- improved use of the equipment, facilities and terminals
- a reduction in commercial risk and cross-frontier delays
- a competitive transport and compatible information system related to the exchange of commercial, customs and regulatory computerised data
- advice where necessary in joining international institutional training

Activities in the above fields should be directed towards achieving:

1. <u>The introduction of legislative changes to national transport laws and regulations</u>

- The updating or editing of all legislation including directives relating to transportation
- The drafting of new laws governing transport and trade
- The definition of the right to transport and the conditions under which it may be exercised
- The terms and conditions of transport and the environment under which it operates
- The conditions regulating competition in the transportation sector, and the role of the different modes in the framework of the market
- The acquisition of private and public resources to permit financing of necessary investments in the transport system
- The clarification of the role of the various public and political bodies responsible for regulation
- The clarification of the role of other semi-official or private entities providing transport and ancillary services
- The clarification of the rules applicable to private enterprises providing transport and ancillary services
- The clarification of the rules applicable to private operators/enterprises in the transport and ancillary fields
- The clarification of the relationship between national legislation and international conventions etc. in force in the transport sector

2. The regulation of the technical components in the transport sector

- The promotion of logistical chains.
- Normalisation of technical equipment, e.g. rolling stock, containers, mobile boxes, multimodal handing equipment.
- Definition of pricing principles applicable to public and private transport services, international transport, and to obligatory minimum service levels where applicable (e.g. frequency, and security).

3. The creation a Legal/Institutional Environment conducive to establishing good management practice in the movement of goods

- The revision of customs legislation in the context of evolving transport and information technologies
- Reducing the number of customs procedural services, simplifying customs procedures, simplifying banking procedures applicable to transit goods
- Adopting harmonised international documents
- Encouraging the establishment of private sector professional associations participating actively in the decision making process in the transport and trade sectors.
- Updating the regulatory framework for banking and insurance activities in the transport sector, on the basis of international practice.
- Encouraging private involvement and investment in the professional training process aimed at adapting transport managers to organisational change and at preparing logistics and international transport specialists.

4. The facilitation of Regional Co-operation in the development of infrastructure and services

- The encouragement of a joint approach between beneficiary states in project design and to international infrastructure financing
- The definition of the rights and obligations of infrastructure suppliers and users in the regional context.
- The establishment of support measures for regional sectoral and infrastructure projects.

5. The creation of regional harmonisation of the transport sector legal and regulatory framework

- Multimodal agreements
- International regulation of transport operations, including transit and equipment pooling activities

3. SCOPE OF WORK

3.1 Organisational Framework

To carry out the project it is proposed that an International Task Force (ITF) reporting to TACIS be established either in Brussels, or in the Contractors home office. This Task Force could consist of a core unit of Project Manager and a Transportation Legislation Expert, assisted by a Secretary Documentalist.

This International Task Force will be complemented by individual National Task Forces (NTF) in each TACIS State which comprise officials from the Transport and Justice Ministries. Each NTF will be assisted by a permanent local secretary/documentalist and by local well qualified short term experts, these assistants being appointed and remunerated by the Contractor, and be accountable to him.

It is anticipated that the NTFs will form the nucleus of future Trade and Transport Legislation Facilitating Committees in each TRACECA State. Their role would be to ensure maximum conformity between the laws of their individual States in this sector, as well as continuity of the work initiated by the ITF beyond the life of this project.

While remaining within this general framework, the Consultant's proposal must clearly explain his own detailed plan of action to address the projects' Objectives as defined in Section 2.

3.2 International Task Force (ITF)

It is a prerequisite for the successful execution of the project that two closely related conditions be fulfilled:

- there be effective communication links between the legislatures in the beneficiary states and a technical assistance team well versed in the theory and practice of international transport law.
- local legal professionals, and transport authorities and wherever possible practitioners should contribute actively in the formation of any proposed legislation.

To this end the ITF must establish a reasonably continuous presence in the region, and excellent close working relationships with their NTF counterparts.

The role of International Task Force is :

- to promote adoption of harmonised transport legislation and regulation and provide the outside expertise necessary for its formulation
- to provide the NTFs with documentation, model legislation, computer equipment and databases in conformity with the Consultants proposal or approved modified workplan (see Section 4.2 Deliverables)
- arrange for translation of all pertinent texts into the Russian language
- to establish a process of constant transport law development and updating
- to establish the long term framework and procedures of the NTF in each beneficiary state and relations between the respective NTF of the eight TRACECA states
- to provide training (see Section 3.7)

The ITF will establish co-ordination procedures with the TRACECA Project Management Team in Brussels. It will promote permanent links between the NTF and Western Institutions, such as the ECE in Geneva, to ensure continuity of information flow after the present contract is completed.

3.3 National Task Forces (NTF)

The contractor is to advise the Recipient State governments on the composition and appointment of their NTF, and agree with them a workplan, as well as relationships of the NTF with other governmental and non-governmental bodies.

The role of the NTF would be to present draft legislation to the legislature, to maintain close links with the ITF with the NTFs in the other beneficiary States, and with the TRACECA working groups. Ideally, at least one member of the NTF should also be a member of the TRACECA working group.

The NTF is to be supported by the following minimum resources to be provided by the Contractor:

- the ITF
- short term local consultants
- a permanent local secretary/documentalist, possessing appropriate qualifications including a good knowledge of English
- an office for the permanent secretary and experts, with telephone fax, computer (with standard/specialist software and e-mail), photocopier, and other equipment judged necessary by the Contractor. Preferably it should be located in a University legal faculty, or Transport Institute Legal Department and have access to a meeting room

The local offices are to act as the focal points for the projects activities in each Benficiary state.

All documentation, equipment, software and databases are to remain the property of the Ministries of Transport of each beneficiary state at the conclusion of the project.

To achieve harmonisation and an exchange of views between the NTF's and ITF two seminars of 2-3 days duration should be held annually in the region to be attended by up to 5 NTF members from each beneficiary state.

3.4 External Expertise

The exact composition of the ITF would depend on the proposals received from interested contractors, but it could consist of a qualified transport legal expert or transport administration/practitioner with wide practical experience of transport legislation and its implementation as full time team leader, assisted by a full time deputy team leader of similar experience and qualification, backed up by a roster of specialists for short term to medium term assignments.

All experts should preferably possess some experience in the Former Soviet Union. A knowledge of the Russian language is highly desirable.

The ITF would be supported by a specialist secretary/documentalist, with a good knowledge of Russian.

The consultant is free to compose his team of experts and specialists for short and medium term missions as he thinks fit. However the following domains of expertise should be clearly visible in his proposed staff list :

- General Transport Legislation drafting
- International Conventions - road, rail, sea and multimodal
- International Transport Legislation and practice
- International Insurance Law and Practice
- Limitation of liability-passenger and freight transport
- Railway code formulation, and Railway law
- Freight forwarding-Legal aspects and codes of practice
- Operator licensing legislation and practice
- Environmental issues e.g. noise, exhaust, axle loading
- Customs Legislation and procedures, including integration with the world trade systems
- Documentary requirements
- Transit tariff harmonisation
- Institutional strengthening
- Legal training programmes

The Contractors proposal must fully describe the experts to be assigned to the project, their precise domain of expertise applicable to the project , their individual roles in the achievement of the projects objectives, the timing, duration and location of their assignments. Time spent in the beneficiary states and at home office is to be clearly shown.

3.5 Local Expertise

The maximum possible use should be made of experienced national consultants of high academic standing, who should be closely involved in all aspects of the project. All TRACECA countries have institutions specialising in various aspects of transport legislation and planning. It is a firm requirement that organisation and methodologies include local experts and Institutions to:

- make full use of local experience, antecedent projects and data bases
- promote the emergence of a financially viable local consulting sector
- ensure the effective transfer of know-how to the beneficiary states
- ensure the enduring effect of project output

Consultants must make amply clear in their proposal the arrangements they have made to work with local entities.

3.6 Fields of Specific Consultancy Activity

Legislative requirements in the following sectors are common to all states.

1. General Transport Legislation, covering road, rail, air and where applicable, maritime.
2. Customs Legislation, including integration with the world trade systems.
3. Transport and international trade documentation for use in international trade, which should be common to all TRACECA states.
4. Freight forwarding
5. Institutional strengthening
6. Maritime Law, where applicable
7. Railway Law
8. Integration with world trading practices and international convention
9. Road transport legislation, including licensing, environment and safety legislation
10. Banking
11. Warehousing
12. Transit tariff harmonisation

The following schedule reflects specific legal reform needs advised during the preliminary fact finding survey, and should be considered as priority requests for technical assistance.

Most problems are encountered in all TRACECA states, but with varying degrees of severity of impact.

		AR	AZ	GE	KA	KYR	TAD	TUR	UZ
1.	Civil Law-Contracts, commercial codes bringing coherence to different laws, carrier client relationships convention binding forms way bills	*	*	*		*			
2.	Transport law framework modal codes normative acts and rules	*	*	*		*	*	*	
3.	Consistency of bi-lateral agreements and regional agreements	*	*	*		*	*	*	
4.	Legal aspects of Customs (additions to SAD, documentation, customs code, TIR, transit, traffic, inspections, customs information exchange, assistance to adopt new customs schedule and regime with regards to imports, exports, re-export I/E transformation, transit, temporary admission, harmonising documentation and standards)	*	*		*	*	*	*	*
5.	Insurance law, premium determination, insurance certificates, claims and their settlement	*	*	*	*	*	*	*	*
6.	Arbitration boards, commercial courts procedural advice, settlement of disputes	*	*	*	*				
7.	Privatisation laws, trade liberalisation (tariffs, bilateral exemptions; freedom of entry/exit, bankruptcy, freedom of tariff setting, non-discriminatory licensing)	*	*			*			*
8.	Russian road transport statute (contents and embodiments)	*	*	*		*	*		*
9.	Membership in new conventions, such as transport of dangerous goods, container pool, etc.	*	*		*	*	*	*	*
10.	COTIF/SMGS compatibility	*		*		*	*	*	

	(additional agreements required adaptation of rail domestic law to international law)								
11.	Draft Road Transport Bill, road international rules and regulations, contracts, waybills, documents and their legal basis, co-ordination of road carriage regulations	*				*	*	*	*
12.	Domestic transport documents		*						
13.	Institutional building expertise (directories and ministries concentration of responsibilities)		*						
14.	Advice on licensing, permits, road worthiness, license to act as haulage contractor, and to be a foreign trade actor			*			*	*	*
15.	Rail/Road Competition, pricing, fares, freight, rate system								*
16.	Financing methods to support restructuring, transfer of assets to new owners, promotion of small and medium enterprises in road freight sector								
17.	Setting professional associations such as freight forwarders associations, advice on standard contracts within the profession		*	*	*	*		*	
18.	Shipping codes, bills of loading		*	*				*	
19.	Combined transport convention			*					
20.	Banking expert, documentary credits, letter of credit practice, setting up effective system		*						
21.	Inland waterways legislation				*				
22.	Seamen's passports and officer rank status				*				
23.	INCO Terms meaning and exact method of application					*			
24.	FIATA documents and regulations					*		*	

3.7 Training

The ITF should assist the beneficiary states in introducing or expanding transport law training programmes at selected universities or institutes throughout the TRACECA region.

The ITF should promote regional seminars, workshops, conferences and on-the-job training aimed at improving and harmonising the legal trade and transport regime. It should make full use of the expertise and material already available in international institutes such as the ECE.

The ITF will assist in the introduction of a training programme covering the following identified urgent requirements, and mobilising the ITF experts or external consultants when visiting the beneficiary countries

SUBJECT	*AR*	*AS*	*GE*	*KA*	*KY*	*TU*	*TA*	*UZ*
Training of the Top level executives (transport legislation concepts, principles and prospects)								*
Training private sector lawyers, and legal advisers (drafting transport business and international law)	*	*						
Training in the operational aspects of international law technicalities	*	*				*		
Training in European transport legislation								*
Training operators in the transport, freight forwarding, and in the issuing of convention related documents for all	*	*	*	*	*	*	*	*
Training in EDI		*			*			*
Training of documentalists	*	*	*	*	*	*	*	*
Specialist foreign language training	*	*	*	*	*	*	*	*

3.8 Other Related Projects

Several related reports prepared by western Consultants precede this project:

- Organisation for the Transfer of a Legal Framework for Transport and Trade in the Region TRACECA (TACIS "Mercadal")
- Technical Assistance in the Reform of Transport Law Kazakhstan (TACIS)
- Central Asia outline Transport Strategy Kazakhstan, Kyrgyzstan, Turkmenistan, Uzbekistan EBRD/TACIS
- ESCAP Studies

At the time of writing the following projects, sharing certain domains of interest with this legal framework project are expected to commence shortly.

- Trade facilitation, Customs Procedures, Freight Forwarding, TACIS
- Forwarding-Multimodal Transport Systems, TACIS
- Programme of Economic Integration between the Republics of Kazakhstan, Uzbekistan, and Kyrgystan (CACOM), Regional Governmental Initiative supported by TACIS
- Transit Treaty for Central Asia sponsored by UNCTAD and ESCAP

Other related projects are or may expected to commence within the time frame of the present project.

The consultants appointed to carry at this project are to co-ordinate their work closely with all other related activities within the TRACECA region, especially with the Trade Facilitation, Customs Procedures and Freight Forwarding Project.

3.9 Logistics

The consultant shall be responsible for arranging necessary living accommodation transportation, telecommunications, equipment, document reproduction, printing, secretarial services, office space, and all other inputs required for the purpose of executing the project.

It is specifically noted that telecommunications between Europe and the TRACECA member states are of low standard. As the achievement of project objectives will require excellent communications between the ITF and NTF, the Contractor should make clear in his proposal that his workplan is not sensitive to such difficulties.

4. TIME TABLE AND REPORTING

4.1 The project's total duration is two years.

4.2 Technical Deliverables

The Contractor will catalogue in his proposal the individual Deliverables by which he proposes to address the full range of legislative issues raised in the Objectives and Scope of Work, and his schedule for their provision.

Technical Deliverables may be model legislation, draft legislation, seminar manuals, databases, or any other tool which the Contractor proposes to utilise. The Contractors Work Schedule must indicate his follow-up activities with the NTF, to promote and guide legislation

All Technical Deliverables must be provided in both English and Russian, in numbers and formats to be agreed with TACIS.

4.3 Reports

4.3.1 All Reports are to be delivered in the numbers, languages and locations as follows :

	Bound English	**Russian**	**Loose-leaf English**	**Loose-leaf Russian**	**Diskette (English + Russian)**	
TACIS Brussels	5		1	1	1	1
Traceca CU (per state)	1	5	1	1	0	

The word processing programme to be used will be agreed with TACIS.

4.3.2 Reporting is to be in accordance with standard TACIS guidelines. These foresee.

4.3.3 A Project Inception Report shall be issued within 2 months of the start of the project.

It shall summarise initial activities and propose any modifications to the methodology and work plan.

In particular it will describe the establishment of the NTF.

Moreover it will adapt to the work plan and needs of each individual TRACECA state taking into account the parallel activities of other international assistance programmes, avoiding duplication of effort, and addressing unfilled needs.

4.3.4 Periodic/Status Reports

Periodic Status Reports will be submitted to TACIS on a quarterly basis, and will cover the operational progress of the project, the programme for the following quarter and administrative aspects of the project.

Any deviation from the Contractors schedule or difficulties encountered should be noted, as well as actions necessary to compensate them.

4.3.5 Annual Report

After 12 months a detailed report will be submitted by the Project Manager to TACIS recapitulating all the activities undertaken since the start of the project.

4.3.6 Final Report

A Draft Final Report on the operational and technical contribution to the project will be submitted by the Project Manager to TACIS at least one month before the end of the project. Any comments on the Draft Final Report will be issued by TACIS Brussels within six weeks of its receipt. The Final Report incorporating any modifications will be issued one month thereafter, i.e. 2,5 months after receipt of the Draft Final Report by TACIS.

EUROPEAN UNION - TACIS

Technical Assistance to the Southern Republics of the CIS and Georgia - TRACECA

TRADE AND TRANSPORT SECTORS

Terms of Reference

for

Forwarding - Multi-modal Transport Systems

Operating Freight Transport on Traceca route

Final Recipients:
TRACECA Region Ministries of Transport

Forwarding - Multi-modal Transport Systems
Operating Freight Transport on Traceca route
(TRACECA Project No. 8)

CONTENTS

1. Introduction and Background

1.1 During May 1993 a conference was held in Brussels organised by the Commission and attended by authorities of the eight Republics of the south of the former USSR:

- Armenia,
- Azerbaijan,
- Georgia,
- Kazakstan,
- Kyrgyzstan,
- Tadjikistan,
- Turkmenistan,
- Uzbekistan.

They are the Beneficiary States of this programme.

The objectives of the conference were :

- to stimulate cooperation among the participating Republics in all matters pertaining to the development and improvement of trade within the Region
- to promote the Central Asian - Trans Caucasian - Europe Transport Corridor
- to identify problems and deficiencies in the Region's trade and transport systems
- to define, in terms of contents and timing a Technical Assistance Programme to be financed by the European Union (EU).

TRACECA (Transport Corridor Europe Caucasus Asia) was thence created as a component of the TACIS interstate programme.

1.2 The "Brussels Declaration" issued at the conclusion of this conference recommended the European Union to address in the TACIS programme variously expressed needs for feasibility studies and technical assistance projects.

Regional sectoral Working Groups (trade, rail, road, maritime), composed of experts and officials from each TRACECA state and the EU, have been established as part of the TRACECA programme. They meet periodically in the Region. They have inaugurated specific projects including this present one, and will monitor results.

A strategic study for Central Asia has recently been completed by the EBRD under TACIS financing (see 3.4).

1.3 Transport demand has declined since the break up of the FSU. East-West transit links are little exploited and North-South links were artificially discontinuous at the old borders of the FSU.

Radical Institutional transformations are taking place in the region. The transport system has been particularly affected by these, especially the rail sector which is loosing market share to the benefit of road transport.

Tariff structures under the old regime were detached from economic considerations. It is by no means easy for regional authorities to inaugurate a market-based system.

1.4 While the present macro-economic situation in the region appears moribund, there is strong private sector interest in large-scale regional industrial investments. The area is rich in natural resources, including substantial reserves of petroleum. There is an undoubted potential for rapid development of certain poles, which would immediately overstrain the present transport system.

The newly independent states are intensely interested in developing national systems, and there is a very real risk that this could lead to restrictive regulation of cross-border transport and trade, to the detriment of overall efficiency.

1.5 This project is aimed to provide Technical Assistance for the development of intermodal transport to rail and other transport organisations in the region.

Containerisation and related techniques have become an integral part of the transport systems of all modern economies, offering faster handling and transit times and reduced transport cost. Intermodal services in the region are currently based upon use of domestic small box containers, and service is poorly developed. The use of 20-foot ISO containers is minimal, and the ability to handle 40-foot containers is severely limited. At the present time, freight marketing is limited to local efforts, and there is no control or coordination of marketing for intermodal services.

1.6 The development of container and intermodal transport is essential for the countries concerned, both for domestic reasons and to become fully integrated in international trade. The vast size and the land-locked position of many of the countries offer particular reasons to take advantage of containerisation and integrated intermodal transport. The same holds for the benefits of safety from pilferage and protection from damage en route that container transport offers in door-to-door services.

1.7 The central TRACECA project scenario is based upon the east-west corridor passing through the Caspian Sea. The interests of beneficiary states both in the Caucasus and in Central Asia include north-south routes, into Russia and into the ECO countries to the south.

2. Objectives

There are several interrelated objectives or outputs:

2.1 Provide consultancy advice and technical assistance in order to solve existing problems in the organisation of multi-modal transport within the TRACECA area and in connection with East-West and North-South international routes

2.2 Set up an intermodal freight transport group, covering all TRACECA countries, and carry out with this group a study visit to EU.

2.3 Identify a number of specific rail corridors and existing intermodal platforms that are judged appropriate to stimulate intermodal services in the region, and select the most promising corridor to set up a case study project.

2.4 Design intermodal services in the selected corridor in cooperation with the national and local authorities and train the staff involved in appropriate intermodal technology and commercialisation.

2.5 Develop proposals to improve intermodal services in the region, including the necessary technical and financial measures to be taken

The Consultant's work is expected to emphasise in particular :

- Technical and economic assessment of the feasibility of establishing a well functioning and efficient intermodal transport network in the area
- Transfer of intermodal technology know-how, especially in the area of the ISO container handling and new transport techniques
- By means of a case study, provide assistance to rail and intermodal transport organisations in the area to design and operate commercially oriented intermodal services.

3. Scope of Work

To meet the stated aims, the work will be organised in 3 phases. These phases may be overlapping. The study is expected to be carried out by a multidisciplinary team, involving expertise in intermodal management, engineering, operations and intermodal marketing.

3.1 **Phase 1** : Analysis § Recommendations for Improvement of Systems

3.1.1 After redefining the work plan as necessary, Phase 1 will then provide :

-a detailed survey of the multi-modal transport system and terminals in the region, including localisation and equipment of key installations, train service, traffic volumes, tariffs and present organisation
-a preliminary assessment of the state of the existing systems, covering analysis of management, technological, operations, marketing and commercialisation topics.
-strengths and weaknesses of the existing situation
-a summary of the present experience with multi-modal transport in EU-countries will also be compiled and be available (in the Russian language) before the study visit
-recommendations for improvement of systems

3.1.2 The current intermodal infrastructure, technology, facilities and systems will be assessed mainly through discussions with the staff of the regions' organisations and through field visits.

The assessment will extend to a quantitative overview of multi-modal operations, current flows and costs, on the principal domestic and international Regional corridors. The existing sites most appropriate for case studies in later phases of this project are to be identified.

A parallel project, the Regional Traffic Forecast Model study (see 3.4 Other Related Projects) will carry out a comprehensive review of traffic on all modes throughout the Region. Synoptic long term forecasts of traffic (including multi-modal) will be made. Sites of highest long term interest for multi-modal infrastructure development will be identified, and investments analysed to feasibility level if necessary, within that project. This present Forwarding and Multi-Modal study is to concentrate on immediate technology transfer and operations management, using the existing system, as described within this Scope.

3.1.3 The strengths and weaknesses of the existing situation will be highlighted in perspective of the local environment and aspirations.

3.1.4 The specifications for improvement should emphasise, among others, promoting the use of a single technology in an international perspective. A single transport documentation and waybilling system for both domestic and international freight should also be aimed for. Collaboration with the Transport Legal Reform, Trade Facilitation projects, is to be foreseen (see 3.4 Other Related Projects).

3.1.5 The study will concentrate on inter-urban movements of goods in the international multi-modal corridors of interest. The primary mode of interest is rail, but road feeder and distribution services are also included, as are maritime services (including Inland Water Transport), if relevant.

3.1.6 The consultants are required to propose a detailed technical analysis approach to the study as part of their Methodology.

3.2 **Phase 2** : Study visit in EU countries

3.2.1 An intermodal freight transport group will be set up. The study visit participants will be drawn from all TRACECA countries and will be selected by the Consultant in consultation with the TRACECA Management and National authorities.

The study tour will cover several railroads and intermodal organisations in EU-countries. The proposal will indicate the proposed study visit programme, which should cover at least two countries and last about 2 weeks for 14 participants.

3.2.2 The purpose of the study visit is:

- to examine the organisation and operation of multi-modal transport in Western countries will be examined from a technical and a commercial point of view
- to familiarise the participants with intermodal technologies currently used and under development in the West
- to visit relevant freight forwarding and shipping companies

3.3 **Phase 3** : Case Study (selection and execution) and Training

3.3.1 This part of the project is considered as the core of this technical assistance effort and should involve a maximum of local participation.

The aims of the case study are :

-to provide short-term solutions to fluidify international intermodal traffic in the selected corridor
-to work intensely together with the local organisations to design intermodal services in the selected corridor and train the staff involved in appropriate intermodal technology and commercialisation
-to gather information regarding medium term solutions to set up advanced systems for intermodal transport in line with the latest international practice.

3.3.2 Selection of intermodal corridor and sites for the purpose of implementing the case study :

A number of specific rail corridors and sites that are judged appropriate to stimulate intermodal services in the region will be evaluated. Given the radical economic changes underway, a detailed traffic analysis based on extrapolation of trends is not appropriate.

The selection will be based on conclusions of Phase 1, and will in particular require to coordinate the evaluation of intermodal engineering and marketing findings.
The selection of the intermodal corridor and sites will take into account:

- demand
- macro-economic and socio-economic projections
- the intermodal transport system (infrastructure, vehicles, organisation) characteristics

The selection is to be developed in consultation with the TRACECA Management and National authorities.

3.3.3 Execution of intermodal case study:

During its implementation, the case study will concentrate on :
-solving, at least partially, specific problems related to the current organisation of intermodal transport
-training
-proposing recommendations for future development of intermodal services

The case study execution will start with a "work" part, carried out by the consultants in close cooperation with the selected counterparts, and a "training" part that will include training on one or several sites in the region. These two parts may be run in parallel.

The following topics will be addressed and included:

- setting up of a marketing organisation for the promotion and sales of the intermodal transport products
- carry out a market survey study for the intermodal move of containers to indicate where the use of rail will be viable
- organise sales training
- organise personal sales campaign with potential industrial clients, freight forwarders and shippers
- determine market-based tariffs and railroad costs
- determine the type, schedule and frequency of service on the selected corridor
- review and give advice on container terminal organisation and operation
- give advice on container terminal infrastructure and handling equipment
- design the operation of economic, efficient, safe and reliable intermodal train services
- give advice on the organisation of road delivery to and from terminals
- give advice for the necessary accounting and waybilling systems, including international services, covering document flows and forms used in intermodal traffic
- work out proposals for the ownership and management of intermodal transport systems
- proposals for the further development of rail and intermodal transport, both within the region and in an international perspective. The consultant will concentrate on options that make better use of existing capacity and also identify options for investment and finance

During the case study, progress review and on-the-job training will be continued. The consultant will then also assist the counterparts involved with the project to set future objectives and devising the means to achieve them.

The case study should result in setting up :

- a door-to-door intermodal service in the selected corridor (must be large enough for intermodalism)
- an intermodal marketing organisation
- a specification of technically uniform and internationally acceptable standards for physical handling and transport
- a proposal for uniform and internationally acceptable standards for document handling, tariffs and waybilling

3.3.4 The consultant will clearly specify in his proposal the nature and the cost of training aids, hardware and software that he intends to supply to support the implementation of the study.

3.4 Other Related Projects

4.4.1 Several related reports prepared by Western consultants precede this project.

They include:

Rail Management Restructuring Studies TACIS	Armenia, Turkmenistan, Azerbaijan	
Rail Sector Survey	Russia, Ukraine, Kazakhstan & Bielorussia	EBRD
Roads & Road Transport Study	Russia, Ukraine, Kazakhstan & Bielorussia	EBRD
Central Asia Outline Transport Strategy	Kazakhstan, Kyrgyzstan, Turkmenistan, Uzbekistan	EBRD/TACIS
Caspian and Black sea Port Studies	Georgia, Azerbaijan, Turkmenistan, Kazakhstan	EBRD / TACIS / OTHERS
ESCAP studies	Asia	UN

3.4.2 At the time of writing, the following projects, sharing certain domains of interest with this one, are expected to commence shortly:

Regional Traffic Forecasting Model, Review of Int'l Route Capacity, and a TRACECA Corridor Feasibility Study Europe - Asia	TRACECA
Trade Facilitation, Customs Procedures, Freight Forwarding	TRACECA
Infrastructure Maintenance - Railways	TRACECA
Inland Terminals - Railways	TRACECA
Rolling Stock Maintenance-Railways	TRACECA
Transport Legal Reform	TRACECA
Implementation of Pavement Management Systems	TRACECA
Improvement of Roadside Services	TRACECA

The Regional Traffic Forecasting Model, above mentioned and referred to in 3.1.2, is expected to include :

- identify the best positioned centres for development of multi-modal nodes
- a specific road/rail and multi-modal feasibility study *evaluation* of the Horges/Druzhba-Turkmenbashi-Baku-Batumi/Poti corridor, including links to Kyrgyzstan, Tadjikistan, Armenia and north-south direction links taking into consideration the interest of each TRACECA state. Options for improvements to bottlenecks along the corridor are to be identified (e.g. relief of congestion points, bypasses of urban areas,...).

Other related projects are or may be expected to commence within the timeframe of this present one.

3.4.3 The Consultants appointed to carry out this project are to coordinate their work closely with all other related activities within the TRACECA region. A full collaboration with such projects will be required.

The preceding listing of related projects must not be considered limitative.

3.5 Local Participation

3.5.1 National consultants should be deeply involved in all aspects of the project. All TRACECA countries have Institutions specialising in various aspects of transport planning and engineering.

It is a firm requirement that Organisation and Methodologies include local experts and Institutions to:

- make full use of local experience, antecedent projects and data bases
- promote the emergence of a financially viable local consulting sector
- ensure the effective transfer of know-how to the Beneficiary states
- ensure the enduring effect of project output

3.5.2 Consultants should base their activities largely in the TRACECA region, carrying out the project in collaboration with a local technical organisation(s), and employing both senior and junior professional staff, from several TRACECA states.

The Consultants Methodology should fully explain his training and know-how transfer programme within the project.

Consultants must make amply clear in their proposal the arrangements they have made to work with local entities.

3.6 Foreign Expertise

The Consultant is free to compose his expatriate team for this project as he sees fit, but the following domains of expertise should be clearly visible in his proposed staff list:

- intermodal engineering
- intermodal operations (railways and other modes)
- intermodal transport management
- intermodal marketing
- intermodal transport planning
- intermodal transport economics

3.7 Logistics

The Consultant shall be responsible for arranging necessary living accomodation, transportation, telecommunications, equipment, surveys, investigations, document reproduction, printing, secretarial services, office space and all other input required for the purposes of the work.

4. Time Table and Reporting

4.1 The project is to be completed within a period of eleven months.

4.2 It is important that reports should not be considered the principal project output, and should not distract from the achievement of the defined project Objectives. Reports may be considered as management tools.

4.3 All reports are to be delivered in the numbers, languages and locations as follows:

	Bound		Loose-leaf		Diskette
	English	Russian	English	Russian	(Eng.+Rus)
TACIS Brussels	5	1	1	1	1
TRACECA CU (per state)	1	5	1	1	0

The word processing programme to be used will be agreed with TACIS.

4.4 Reporting is to be in accordance with standard TACIS Guidelines.

These foresee:

Project inception report

An Inception Report shall be issued within 2 months of the start of the project. It shall summarise initial findings and propose any modifications to the methodology and work plan. In particular it will adapt the work plan to the needs of each individual TRACECA state taking into account the parallel activities of other Technical Assistance programmes, avoiding duplication of effort, and addressing unfilled needs.

It will also confirm or modify institutes/organisations/consulting bodies to be directly involved in the implementation.

Project progress report

This report will be submitted at the end of month 6. It will cover technical progress to date, and will include, in particular, the results of Phase 1 and 2 above mentioned.

One month will be allowed for TACIS to consider the contents and to orient the final phase of this project.

Final Report

The Draft Final Report will be submitted at the end of month 11.

Any comments on the Draft Final Report will be issued by TACIS Brussels within six weeks of its receipt. The Final Report incorporating any modifications will be issued one month thereafter (2,5 months after issue of the Draft Final)

All Reports must include an Executive Summary.

EUROPEAN UNION - TACIS

Technical Assistance to the Southern Republics of the CIS and Georgia - TRACECA

TRADE AND TRANSPORT SECTORS

Terms of Reference

for

Infrastructure Maintenance 1
-
Railways

Pre-investment study and Pilot train
Baku - Tbilisi - Batumi - Poti
Bridge over Kura river

Final Recipients:
TRACECA Region Ministries of Transport

Infrastructure Maintenance 1
Railways
-
Pre-investment study and Pilot train
Baku - Tbilisi - Batumi - Poti
Bridge over Kura river

(TRACECA Project No. 14b)

CONTENTS

1. Introduction and Background

1.1 During May 1993 a conference was held in Brussels organised by the Commission and attended by authorities of the eight Republics of the south of the former USSR:

- Armenia,
- Azerbaijan,
- Georgia,
- Kazakstan,
- Kyrgyzstan,
- Tadjikistan,
- Turkmenistan,
- Uzbekistan.

They are the Beneficiary States of this programme.

The objectives of the conference were :

- to stimulate cooperation among the participating Republics in all matters pertaining to the development and improvement of trade within the Region
- to promote the Central Asian - Trans Caucasian - Europe Transport Corridor
- to identify problems and deficiencies in the Region's trade and transport systems
- to define, in terms of contents and timing a Technical Assistance Programme to be financed by the European Union (EU).

TRACECA (Transport Corridor Europe Caucasus Asia) was thence created as a component of the TACIS interstate programme.

1.2 The "Brussels Declaration" issued at the conclusion of this conference recommended the European Union to address in the TACIS programme variously expressed needs for feasibility studies and technical assistance projects.

Regional sectoral Working Groups (trade, rail, road, maritime), composed of experts and officials from each TRACECA state and the EU, have been established as part of the TRACECA programme. They meet periodically in the Region. They have inaugurated specific projects including this present one, and will monitor results.

A strategic study for Central Asia has recently been completed by the EBRD under TACIS financing (see 6.).

1.3 National and Regional Technical Assistance projects carried out, approved or prioritised to date, are mostly aimed at halting a deterioration of the existing transport system due to maintenance difficulties, and obsolescence. Few consider reinforcing capacity. In fact transport demand has declined since the break up of the FSU.

Radical Institutional transformations are taking place in the region. The transport system has been particularly affected by these, especially the rail sector which has been fragmented into national entities.

1.4 The splitting up of the FSU and the creation of new independent railways profoundly distorted the organisation of railway transport and the execution of railway maintenance, repair and replacement activities in the TRACECA states.

Tariff structures under the old regime were detached from economic considerations. It is by no means easy for regional authorities to inaugurate a market-based system.

1.5 This project is aimed to provide Technical Assistance and Training to all rail organisations in the region in the following activity areas :

-infrastructure maintenance, repair and upgrading
-rolling stock maintenance, repair, replacement and construction, including procurement and/or local production of spare parts
-operations and commercial performance of railway transport

1.6 After consultation of the TRACECA states, and taking into account the restructuring efforts to be addressed and / or already under way regarding the Transcaucasian railway link, three Modules were identified for execution under the present project (Modules A to C hereafter), budgetted at 1.2 Mecu in total:

MODULE A : Pre-investment study for the rehabilitation of the main Transcaucasian rail route (Baku - Tbilisi - Batumi - Poti) between Azerbaijan and Georgia

MODULE B : Pilot freight train service on the main Transcaucasian rail route

MODULE C : Feasibility study and Initial design for the repair and reconstruction of a key bridge on the Transcaucasian rail route : bridge over Kura river (Poyli area) in Azerbaijan

2. Project Objectives

2.1 The general objectives of this project are threefold :

(i) Determine the requirements for rehabilitation of the main Transcaucasian rail route between Azerbaijan and Georgia and the level of reconstruction and investments required to rebuild and re-equip the line to the service level required for the most likely future traffic volumes and revenues.

(ii) Provide technical assistance and spare parts for the organisation of a freight pilot train service, EU to act as a catalyst between Azeri and Georgian authorities and railways to :

- Foster cooperation and revive the economic situation in the Caucasus region
- Streamline and increase commercial through traffic on the Transcaucasian rail line
- Improve the operational and financial situation of both railway networks.

(iii) Provide technical assistance regarding the repair of the existing rail bridge over Kura river, and carry out feasibility study and initial design for the construction of a new rail bridge

2.2 The three modules are interrelated e.g. the findings regarding infrastructure and rolling stock condition (Modules A and C) impact upon the operational and commercial performance targets of the pilot train service (Module B) and vice versa.

2.3 Proportional balance of modules in the total project

The project contains theoretical and practical elements. Emphasis should be directed towards visible and technical issues, in particular towards the tasks of Module B.

2.4 The consultant will clearly specify in his proposal the nature and the cost of equipment and supplies, training aids, hardware and software that he intends to deliver to the beneficiaries to support the implementation. It is suggested that 25% of the total budget of the project will be used to this purpose.

3. MODULE A : Pre-investment study for the rehabilitation of the main Transcaucasian rail route (Baku - Tbilisi - Batumi - Poti) between Azerbaijan and Georgia - Module Objectives and Scope of Work

3.1 Introduction

The Caucasus region is hit by several conflicts, and this has had a detrimental effect in the past years on the economies of the countries concerned, and on rail traffic in particular. Practically the only international trains which have been in operation on the Transcaucasian line between Georgia and Azerbaijan in the past years were food aid trains transported under EU or UN sponsorship. Food aid traffic made up more than 80% off all rail freight traffic in Georgia during 1994-1995. Situation was slightly better but comparatively similar in Azerbaijan.

It is no secret that, resulting from the political conflicts and economic downturn in the whole region, the Transcaucasian line is suffering from a state of disrepair of infrastructure (track, signalling, buildings,...), lack of available wagons and locomotives, etc.

Currently, the stability in the region in increasing, and the need for a significant pre-investment study, covering the rehabilitation of Transcaucasian rail lines, is emerging.
This module will concentrate on assessing pre-feasibility for the rehabilitation of the main Transcaucasian rail route (Baku - Tbilisi - Batumi - Poti)

3.2 Objectives and Main outputs

Carry out a pre-investment study in order to determine the requirements for rehabilitatation of the main Transcaucasian rail route between Azerbaijan and Georgia (Baku - Tbilisi - Batumi - Poti).

As final output, the study will provide the recommended reconstruction tasks and levels of investments required to rebuild and re-equip the line to operate to service standards required for the most likely future traffic volumes and revenues.

3.3 Scope of Work

The pre-investment study will cover the Poti - Batumi - Tbilisi - Baku rail link and will comprise :

3.3.1 Institutional / Organisational pre-feasibility

The railway policies of all concerned governments will be examined, in particular regarding :

- regulation of freight and passenger services, service and tariff levels
- intentions regarding rehabilitation of the line
- subsidies and investments planned
- future railway management structure

The road transport situation and policies in the Transcaucasian region (e.g. regarding road construction and maintenance, evolution of road vehicle usage, road user charges, etc.) have to be examined as well. Evolutions in this area may be complementary and / or in competition with the railway transport policy under consideration. The same holds for the planned rehabilitation and construction of pipelines in the region.

Policy direction recommendations for railway investments will be included in the report.

3.3.2 Commercial pre-feasibility

(a) Traffic volume forecasts.

Traffic volume potential (passengers, tonnage, number of trains, etc.) on the rail line shall be identified per line section, commodity category, and type of transport (for freight : individual wagonload and block train) for 20 years ahead.

This estimate shall be based upon economic analysis, taking into account different hypothesis regarding the localisation of existing and potential customers and industries.

(b) Revenue forecasts.

The current situation regarding rail tariffs shall be examined. Recommendations regarding future tariff structure and -levels and the utilisation of through tariffs for international traffic will be examined.

3.3.3 Technical pre-feasibility

A detailed survey of the existing situation of infrastructure (track, signalling, telecommunication, buildings, etc.) and rolling stock situation, repair and maintenance facilities, spare parts availability, procurements channels, etc. will be established. The weakest elements have to be identified, and prioritised in function of future traffic.

The required technical repair, upgrading and reconstruction work will be assessed for the various traffic volume hypothesis.

Recommendations shall be made regarding :

- the infrastructure rehabilitation (or discarding)
- the rolling stock numbers that have to be made operational (or discarded)
- the workshops that have to be rehabilitated, restructured (or closed)
- the operational and training measures needed

One option shall include the bare minimum of rehabilatation work needed, indicating the geographical and technical priorities.

General layouts and descriptions of the proposed repair works and construction of new fixed installations with their main characteristics will be worked out, as well as a tentative realisation schedule.

A proposal for organisation and staffing of future operations will be included.

3.3.4 Financial pre-feasibility.

The financial pre-feasibility of the different options shall be assessed (costs and revenues). Training costs for maintenance and operations staff should be included, as many qualified staff have left.

(a) Construction and equipment cost

On the basis of the descriptions of the proposed installations, specifications of special equipment, sketches of the special structures, etc., the major construction and equipment cost items have to be identified and quantity and cost estimates for works and supplies have to be prepared. These will take into account local and foreign costs, and will include the necessary reserves for contingencies and price increases.

These estimates have to be prepared in the schedule of expenditure form according to the execution schedule of each of the alternatives.

(b) Maintenance costs

Costs for maintenance and periodical replacements of fixed equipment will be calculated on a year by year basis for a suggested 20 year period.

(c) Estimates of benefits and disbenefits

In a brief study, the consultant will estimate the benefits and disbenefits of each of the alternatives considered. If possible and necessary, this study should include also indirect benefits and disbenefits of the project. The main purpose is to demonstrate the methods used in the West; it is expected that precise evaluations may not be possible.

(d) Economic and financial feasibility

The economic and financial feasibility of the different options will be assessed.

- Economic profitability of each alternative will be calculated from the point of view of the national community, taking into account both the operator, as the users and other economic agents.

  This calculation will be in accordance with the rules recommended by the Intenational Union of Railways and the International Finance Organisations

- Financial profitability calculations will be made in a similar way but from the single viewpoint of the operator
  Revenue forecasts will be combined with traffic volume forecasts to establish overall financial forecasts, including investments.

- A sensitivity test will examine the effect of alterations to the basic assumptions, such as traffic levels and implementation costs, on the return of the proposed work

(e) Financing possibilities

Financing possibilities shall be examined and considered. It should be examined whether consortia of potential customers are willing to share part of the investment cost in infrastructure, rolling stock or other.

3.3.5 Further selection criteria that impact upon feasibility

The consultant will examine other factors that may impact upon the feasibility of rehabilitation, such as:

- Government policy and regulations
- Supply of materials and equipment
- Possibilities of local contractors
- Local and foreign funding sources
- Proposal for the management of the rehabilitation programme

3.3.6 Ranking of alternatives and recommendations

The proposed solutions will be classified according to economic and financial criteria, and will also include criteria not assessable in monetary terms.

From this classification, recommendations as to the solution to be implemented and its implementation schedule will be drawn up.

The module will then have reached a basic decision point, which should be reviewed by local authorities and TRACECA management.

4. MODULE B : Pilot freight train service on the main Transcaucasian rail route - Module Objectives and Scope of Work

4.1 Introduction

During several years since the breakup of the FSU, conflicts in and around the region have virtually deprieved Georgian and Azeri Railways from significant international traffic. As an example, border crossings at the Georgian - Azeri border haven fallen from 1990 levels of 35/35 trains to under 4/4 trains per day. Georgian railways remain isolated from a westwards connection into Russia due to the conflict in Abhazia.

Azeri Railways international connections with Russia have been disrupted several times due to the conflict in Chechnia, and the southern part of the network has lost all traffic due to the conflict with Armenia.

This stresses the economic importance of the main Transcaucasian rail route for the economies in the region.

Currently, the stability in the region in increasing, and there is a prospect for increased economic activity in the region. For example, transport of supplies and equipment from Georgian ports into Azerbaijan and Central Asia, and export of "early" petroleum and refined oil products from Azerbaijan to regional and world markets will have to rely on more performant and frequent transport services than currently available.

The Module B : Pilot freight train service on the main Transcaucasian rail route should therefore be regarded as a EU sponsored catalyst in the region to support the development of a commercially oriented transport service.

4.2 Objectives and Main outputs

Provide technical assistance for the organisation of a pilot train service, the purpose of which is :

- Foster cooperation and revive the economic situation in the Caucasus region
- Streamline and increase commercial through traffic on the Transcaucasian rail line
- Improve the operational and financial situation of both railway networks.
- EU to act as a catalyst between Azeri and Georgian authorities.

More specifically, the project aims at providing technical assistance to Azeri and Georgian railways in preparing and putting into operation a high-quality international freight train service, and monitor the operation of this service during a period of three months.

As side objectives, particular attention should be paid to:

- Reliability and commercial attractivity of the freight train service
- Implementing realistic price levels
- Reduction of product losses
- Making available sufficient operational capacity
- Reduction of terminal, transport and border crossing delays

4.3 Scope of Work

4.3.1 This module is considered a major element of the present project and should involve a maximum of local participation.

4.3.2 Selection of origin-destinations, commodities and sites for the purpose of implementing the freight pilot train service :

(a) The Consultant will indicate an intial origin-destination pair and type of commodities of the transport service at the time of his Proposal.

(b) A number of specific origin-destinations, commodity types and sites that are judged appropriate will be evaluated at the start of the project. At the latest at the time of the Inception Report, the final selection will be confirmed or altered.

The selection will be upon findings from other Modules, and take into account in particular :

- demand
- macro-economic and socio-economic projections
- technical characteristics (infrastructure, vehicles, organisation) of the transport system

The selection is to be developed in consultation with the TRACECA Management and National authorities.

4.3.3 Implementation of the freight pilot train service

During its implementation, the case study will concentrate on :
-solving, at least partially, specific problems related to the current organisation of freight train services
-rehabilitation and maintenance of rolling stock, tracks and infrastructure
-training
-management organisation and procedures
-proposing recommendations for future development

The following topics will be addressed and included:

- Explore the political, economic and technical possibilities to streamline commercial traffic on the main Transcaucasian rail line (Azeri and Georgian territory).
  Technical possibilities will largely depend on the condition of the track, availability of rolling stock, repair capacity that can be organised, etc. (see also Modules A and C)
- Define, in close cooperation with local authorities, organisational measures and the bare minimum of technical repair work needed on the infrastructure (track, signalling, buildings,...), refurbishing work to rolling stock (freight wagons and locomotives), etc. in order to run a high quality commercial freight train service on the line. Given the catalyst role of this project, a limited number of regular scheduled block trains, operated with adequate safety and security, is considered a realistic target for this project.
- Setting up of a marketing organisation or promotional effort to sell transport products
- Carry out a market survey to indicate where the use of rail will be viable
- Organise sales training

- Organise personal sales campaign with potential industrial clients, freight forwarders and shippers
- Determine market-based tariffs and railroad costs
- Supply essential spares and consumable products to support the implementation of the project, execute repair of infrastructure and rolling stock, and operate the trains
- Coordinate and monitor the execution of the repair and refurbishing works
- Coordinate and monitor the organisations in the running of the train service during three months
- Determine the type, schedule and frequency of service of the selected service
- Review and give advice on terminal organisation and operation
- Give advice on terminal infrastructure and handling equipment
- Design the operation of economic, efficient, safe and reliable train service
- Give advice for the necessary accounting and waybilling systems, covering document flows and forms used in international traffic
- Work out proposals for the operation and management of the transport service
- Proposals for the further development of rail transport, both within the region and in an international perspective. The consultant will concentrate on options that make better use of existing capacity and also identify options for investment and finance

During the implementation phase, progress review and on-the-job training will be executed. The consultant will also assist the counterparts involved with the project to set future objectives and devising the means to achieve them.

5. MODULE C :

Feasibility study and Initial design for the repair and reconstruction of a key bridge on the Transcaucasian rail line : bridge over Kura river (Poyli area) in Azerbaijan

- Module Objectives and Scope of Work

5.1 Introduction

The rail bridge over Kura river is an essential part of the Tbilisi - Baku rail line, and the importance of this bridge for the whole of the Transcaucasian rail line can not be overstressed.

The existing bridge was built by FSU engineers in 1925 (according to a design from 1907). Total length of the bridge is ca. 200 m composed of 1x11.52 + 1x34.0 + 1x87.0 + 1x55.0 + 1x11.52 profile steel and rivet-shear connections resting on 4 piers. The bridge is carrying a single track electrified rail line (double track beyond the bridge heads).

The bridge lacks maintenance on various parts of the structure. The bridge was said to be worn out and would be closed in the future.

A new bridge of similar design was planned to be built nearly. Earthworks were carried out and new steel profiles were brought to site from Moscow some 4 years ago, but no further activities were undertaken since.

5.2 Objectives and Main outputs

(a) Technical assistance for the repair of the existing rail bridge

(b) Feasibility study and initial design for the construction of a new rail bridge

The results of this Module will be closely linked to Module A : Pre-investment study for the rehabilitation of the main Transcaucasian rail route (Baku - Tbilisi - Batumi - Poti)

5.3 Scope of Work

(a) Technical assistance for the repair of the existing rail bridge over Kura river

- Survey and assess the present situation and wear
- Indicate safety, carrying capacity and expected life of various components of the existing bridge.
- Recommend urgent repair work
- Recommend other repair work, if any, to extend the life of the existing bridge
- Indicate the degree of urgency to undertake the construction of a new bridge.

(b) Feasibility study and initial design for the construction of a new rail bridge over Kura river

- Establish traffic forecasts for future rail traffic. This estimate will be based upon regionwide economic analysis (see also 6.), taking into account different hypothesis, in particular the potential oil and fuel supply from Baku, and possible pipeline alternates.
- Examine the site implantation options from technical viewpoint (land levelling and stability, localisation of approaching rail and road routes)
- Determine construction criteria (maximum admitted axle load and train load, maximum speed) from future rail traffic requirements
- Recommend the construction technology to be used, including, in particular, assessing the possibility to use the profiles already available
- Ranking of alternatives : proposed alternate solutions will be classified according to technical, economic and financial criteria, and criteria not assessable in monetary terms. From this classification, recommendations as to the solution to be implemented and its implementation schedule will be drawn up.
- Draw up initial design proposal(s) for the construction of a new bridge, including foundations, superstructure and approach routes
  Layouts and technical descriptions of proposed fixed installations with their main characteristics will be worked out (with alternates if relevant)

- Assessment of construction cost. On the basis of the descriptions of the proposed installations, the major construction and equipment cost items have to be identified and quantity and cost estimates for works and supplies have to be prepared. These will take into account local and foreign costs, and will include the necessary reserves for contingencies and price increases.
- Investigate the organisational measures that will be required to carry out the work
- Assessment of availability and supply of materials, equipment, logistics and labour
- Recommendations regarding project design and construction management, and possible contractors
- Establish financial requirements, and proposals how to cover them
- Draw up tentative project plan

6. Other Related Projects

6.1 Several related reports prepared by Western consultants precede this project.

They include:

Rail Management Restructuring Studies	Armenia, Turkmenistan, Azerbaijan	TACIS
Rail Sector Survey	Russia, Ukraine, Kazakstan & Bielorussia	EBRD
Roads & Road Transport Study	Russia, Ukraine, Kazakstan & Bielorussia	EBRD
Central Asia Outline Transport Strategy	Kazakstan, Kyrgyzstan, Turkmenistan, Uzbekistan	EBRD/TACIS
Caspian and Black sea Port Studies	Georgia, Azerbaijan, Turkmenistan, Kazakstan	EBRD/TACIS/OTHERS
ESCAP studies	Asia	UN

6.2 At the time of writing, the following projects, sharing certain domains of interest with this one, are expected to commence shortly:

Regional Traffic Forecasting Model and Review of Int'l Route Capacity	TRACECA
Forwarding - Multi-modal Transport Systems	TRACECA
Rolling Stock Maintenance - Railways	TRACECA
Inland Terminals - Railways	TRACECA
Transport Legal Reform	TRACECA
Trade Facilitation, Customs Procedures, Freight Forwarding	TRACECA

Other related projects are or may be expected to commence within the timeframe of this present one.

6.3 The Consultants appointed to carry out this project are to coordinate their work closely with all other related activities within the TRACECA region. A full collaboration with such projects will be required.

In particular coordination and exchange of data with the Traffic Forecasting project and the Rolling Stock Maintenance project is to be foreseen.

The preceding listing of related projects must not be considered limitative.

7. Local Participation

7.1 National consultants should be deeply involved in all aspects of the project. The TRACECA countries involved have Institutions specialising in various aspects of transport planning and engineering.

It is a firm requirement that Organisation and Methodologies include local experts and Institutions to:

- make full use of local experience, antecedent projects and data bases
- promote the emergence of a financially viable local consulting sector
- ensure the effective transfer of know-how to the Beneficiary states
- ensure the enduring effect of project output

7.2 Consultants should base their activities largely in the TRACECA region, carrying out the project in collaboration with a local technical organisation(s), and employing both senior and junior professional staff, from several TRACECA states.

The Consultants Methodology should fully explain his training and transfer of know-how programme within the project.

Consultants must make amply clear in their proposal the arrangements they have made to work with local entities.

8. Foreign Expertise

The Consultant is free to compose his expatriate team for this project as he sees fit, but the following domains of expertise should be clearly visible in his proposed staff list:

- rail infrastructure construction and repair experts (track, bridges, signalling, telecom)
- rail infrastructure planning
- rolling stock management
- investment planning
- transport economics
- workshop management, engineering and equipment
- rail operations
- rail transport planning and management
- rail freight marketing

9. Logistics

The Consultant shall be responsible for arranging necessary living accommodation, transportation, telecommunications, equipment, surveys, investigations, document reproduction, printing, secretarial services, office space and all other input required for the purposes of the work.

10. Time Table and Reporting

10.1 The project is to be completed within a period of fourteen months.

10.2 All reports are to be delivered in the numbers, languages and locations as follows:

	Bound		Loose-leaf		Diskette
	English	Russian	English	Russian	(Eng.+Rus)
TACIS Brussels	5	1	1	1	1
TRACECA CU (per state)	1	5	1	1	0

The word processing programme to be used will be agreed with TACIS.

10.3 Reporting is to be in accordance with standard TACIS Guidelines. These foresee:

Project inception report

An Inception Report shall be issued within 3 months of the start of the project. It shall summarise initial findings and propose any modifications to the methodology and work plan. In particular it will adapt the work plan to the needs of each individual TRACECA state taking into account the parallel activities of other Technical Assistance programmes, avoiding duplication of effort, and addressing unfilled needs.

It will also confirm or modify institutes/organisations/consulting bodies to be directly involved in the implementation.

It will firm up or alter, if required, the arrangements planned for the pilot freight train service part of the work (see Module B above)

Project progress report

This report will be submitted at the end of month 7. It will cover technical progress to date

One month will be allowed for TACIS to consider the contents and to orient the further phase of this project.

Final Report

The Draft Final Report will be submitted at the end of month 14.

Any comments on the Draft Final Report will be issued by TACIS Brussels within six weeks of its receipt. The Final Report incorporating any modifications will be issued one month thereafter (2,5 months after issue of the Draft Final)

All Reports must include an Executive Summary.

EUROPEAN UNION - TACIS

Technical Assistance to the Southern Republics of the CIS and Georgia - TRACECA

TRADE AND TRANSPORT SECTORS

Terms of Reference

for

Infrastructure Maintenance 2 :

- **Feasibility study for upgrading of Sayak - Balkhash - Mointy line**
- **Proposals and Training to improve Freight and Passenger traffic on Traceca route**
- **Feasibility study for Chardzhev bridge**

-

Railways

Final Recipients:
TRACECA Region Ministries of Transport

Infrastructure Maintenance 2
+Proposals and Training to improve Freight and Passenger traffic on Traceca route
-
Railways
(TRACECA Project No. 14a)

CONTENTS

1. Introduction and Background

1.1 During May 1993 a conference was held in Brussels organised by the Commission and attended by authorities of the eight Republics of the south of the former USSR:

- Armenia,
- Azerbaijan,
- Georgia,
- Kazakstan,
- Kyrgyzstan,
- Tadjikistan,
- Turkmenistan,
- Uzbekistan.

They are the Beneficiary States of this programme.

The objectives of the conference were :

- to stimulate cooperation among the participating Republics in all matters pertaining to the development and improvement of trade within the Region
- to promote the Central Asian - Trans Caucasian - Europe Transport Corridor
- to identify problems and deficiencies in the Region's trade and transport systems
- to define, in terms of contents and timing a Technical Assistance Programme to be financed by the European Union (EU).

TRACECA (Transport Corridor Europe Caucasus Asia) was thence created as a component of the TACIS interstate programme.

1.2 The "Brussels Declaration" issued at the conclusion of this conference recommended the European Union to address in the TACIS programme variously expressed needs for feasibility studies and technical assistance projects.

Regional sectoral Working Groups (trade, rail, road, maritime), composed of experts and officials from each TRACECA state and the EU, have been established as part of the TRACECA programme. They meet periodically in the Region. They have inaugurated specific projects including this present one, and will monitor results.

A strategic study for Central Asia has recently been completed by the EBRD under TACIS financing (see 6. Other Related Projects).

1.3 National and Regional Technical Assistance projects carried out, approved or prioritised to date, are mostly aimed at halting a deterioration of the existing transport system due to maintenance difficulties, and obsolescence. Few consider reinforcing capacity. In fact transport demand has declined since the break up of the FSU.

Radical Institutional transformations are taking place in the region. The transport system has been particularly affected by these, especially the rail sector which has been fragmented into national entities.

1.4 The splitting up of the FSU and the creation of new independent railways profoundly distorted the organisation of railway transport and the execution of railway maintenance, repair and replacement activities in the TRACECA states.

Tariff structures under the old regime were detached from economic considerations. It is by no means easy for regional authorities to inaugurate a market-based system.

1.5 This project is aimed to provide Technical Assistance and Training to all rail organisations in the region in the following activity areas :

-infrastructure maintenance, repair and upgrading
-operations and commercial performance of railway transport

1.6 After consultation of the TRACECA states, and taking into account the restructuring efforts to be addressed and / or already under way, three Modules were identified for execution under the present project (identified as Modules A to C hereafter), budgetted at 1.2 Mecu in total :

MODULE A : Feasibility study for the upgrading of the Sayak - Balkhash - Mointy line in Kazakhstan

MODULE B : Proposals and Training to improve the rail freight and passenger service on Traceca and Europe-Asia routes from operational and commercial point of view

MODULE C : Feasibility study for a key bridge on Traceca route: Including the full inspection of an existing rail bridge, and review of an existing feasibility study for a new road-rail combined bridge over the Amudarya river (Chardzhev area) in Turkmenistan

2. Project Objectives

2.1 The general objectives of this project are threefold :

(i) Provide feasibility study for the Sayak - Balkhash - Mointy line upgrading.

(ii) Survey, training and recommendations to investigate and improve the overall rail traffic service quality on TRACECA and Europe - Asia main rail route

(iii) Feasibility study for the development of the Amudarya road and rail crossing at the Chardzhev site

2.2 Proportional balance of modules in the total project

The three modules are equally balanced in the project.

2.3 The consultant will clearly specify in his proposal the nature and the cost of equipment and supplies, training aids, hardware and software that he intends to deliver to the beneficiaries to support the implementation. It is suggested that 20% of the total budget of the project will be used to this purpose.

3. MODULE A : Feasibility study for the upgrading of the Sayak - Balkhash - Mointy line in Kazakhstan

3.1 Introduction

The Sayak - Balkhash - Mointy single track line is an essential part of the TRACECA and Europe - Asia main rail routes.

It is the continuation of the railway line Urumqi - Druzhba - Aktogay, linking China with Kazakhstan, and the Aktogay - Sayak section. This rail line connects, most importantly, further westwards towards the port of Aktau on the Caspian Sea, to the Traceca region south and to Russian border points in the north-west.

Improving transport capacity on east-west links fits in the framework of national and regional developments. At the purely national level, Kazakhstan wants to improve a short east - west route, the only alternate today being a long detour to the north passing over Russian territory. Investments for the port of Aktau are already planned, as is the upgrading of the Druzhba - Aktogay rail section.

The Aktogay - Sayak single track section, which is not part of the technical upgrading project, but evidently has to be included in the regional economic analysis, is 184 km long and was completed in 1986-87. This is basically a new line, comprising only a few crossing and loading/unloading stations, and does not require technical upgrading. This section is equipped with a centralised dispatching system.

The construction of the Sayak - Balkhash part is related to the Sayak copper deposit, and a copper smelter at Balkhash. The Sayak - Balkhash part was constructed in 1964; transport sharply dropped after the copper excarvation activities were abandoned.

The Sayak - Balkhash - Mointy single track section is 208 + 131 km long and in a serious state of disrepair. There are 3 + 6 intermediate loading and unloading stations.

3.2 Objectives and Main outputs

Provide feasibility study for the Sayak - Balkhash - Mointy line upgrading.

The following outputs are judged to be the most important :

- Traffic forecasts are to be worked out very thoroughly
- Economic and financial analysis is to be carried out according to international standards, and should be linked to the possible commercialisation and restructuring of Kazakhstan railways
- Technologically advanced solutions are to be proposed.

Design work is not the core part of the technical assistance effort

3.3 Scope of Work

The feasibility study for the Sayak - Balkhash - Mointy line upgrading will include :

3.3.1 Traffic forecasts

Traffic volumes (tonnage, number of trains, etc.) on the rail line shall be identified per line section for the years ahead. This estimate will be based upon economic analysis, e.g. the localisation of the potential customers and the volume of through traffic, taking into account different hypothesis.

The traffic volume forecast should be drawn up for the whole of Aktogay - Sayak - Balkhash - Mointy, as part of the national and international rail network.

Particular attention has to be paid to the effects of variations of the general level of traffic, due to changes in the execution schedule of other transport infrastructure upgradings (e.g. Druzhba terminal, Druzhba - Aktogay line, etc.).

This part of the work should be worked out very thoroughly. The consultant will rely upon locally gathered information, information available from other projects (see 6. Other related projects), and especially take into account the international dimension of the future traffic on this line.

3.3.2 Technical feasibility

A description and survey of the existing situation of infrastructure (track, signalling, buildings,...) is to be established first.

Documenation for system planning is currently centralised at the Kazguiprozheldortrans Institute in Almaty. Visual inspection and preliminary topographical surveys will complete as required the basic data.

Technical repair, upgrading and required reconstruction work (on track, signalling, buildings,...) will be assessed for the various traffic volume hypothesis and according to the prevalent construction criteria (maximum axle load and train load, maximum speed, etc.). Track doubling on some sections could be considered, depending upon the perspective of the future traffic of the line.

General layouts and descriptions of the proposed repair works and construction of new fixed installations with their main characteristics will then be worked out.

3.3.3 Economic and Financial analysis

(a) Construction and equipment cost

On the basis of the descriptions of the proposed installations, specifications of special equipment, sketches of the special structures, etc., the major construction and equipment cost items have to be identified and quantity and cost estimates for works and supplies have to be prepared. These will take into account local and foreign costs, and will include the necessary reserves for contingencies and price increases. These estimates have to be prepared in the schedule of expenditure form according to the execution schedule of each of the alternatives.

(b) Maintenance costs

Costs for maintenance and periodical replacements of fixed equipment will be calculated on a year by year basis for a suggested 20 year period.

(c) Estimates of benefits and disbenefits

In a brief study, the consultant will estimate the benefits and disbenefits of each of the alternatives considered. If possible and necessary, this study should include also indirect benefits and disbenefits of the project. The main purpose is to demonstrate the methods used in the West; it is expected that precise evaluations may not be possible.

(d) Economic and financial feasibility

The economic and financial feasibility of the different options will be assessed.

- Economic profitability of each alternative will be calculated from the point of view of the national community, taking into account both the operator, as the users and other economic agents.
- Financial profitability calculations will be made in a similar way but from the single viewpoint of the operator
- A sensitivity test will examine the effect of alterations to the basic assumptions, such as traffic levels and implementation costs, on the return of the proposed work

The calculation will be in accordance with the rules recommended by the Intenational Union of Railways and the International Finance Organisations

3.3.4 Other selection criteria

The consultant will examine other factors that may impact upon the feasibility of implementing the proposals, such as:

- Government policy and regulations
- Supply of materials and equipment
- Possible contractors
- Local and foreign funding sources

Where, as of mid 1995, the railway system is virtually an integral part of state property, the restructuring and commercialisation of Kazakhstan railways may impact in the long run upon the management system, construction, operation, tariffs applied, etc. related to this project.

3.3.5 Ranking of alternatives

The proposed solutions will be classified according to economic and financial criteria, and will include criteria not assessable in monetary terms.

From this classification, recommendations as to the solution to be implemented and its implementation schedule will be drawn up. Reports will be drawn up in bankable form.

This work being completed, the module will have reached a basic decision point, which should be reviewed by local authorities and TRACECA management.

3.3.6 Initial engineering design stage

During the remainder of the project, and depending upon the selected way forward, the consultant will work out with the local authorities the following tasks :

- Initial engineering design for the most favourable option
- Project plan
- Provide procurement / tendering advice
- Financing Strategy and Programme
- Proposal for the management of the upgrading programme

Final engineering design and preparation of tender documents are not included in the scope of work.

4. MODULE B : Proposals and Training to improve the freight and passenger service on Traceca and Europe-Asia route from operational and commercial point of view

4.1 Introduction

4.1.1 In the past, railway production schedules were drawn up on a centralised basis in Moscow. Today, the railway production schedules are drawn up on a decentralised basis. They have to be more flexible and be tailored to the needs of the customers, who will decide more freely upon the most appropriate transport mode for their requirements.

4.1.2 Railway schedules of the various organisations have to be co-ordinated and matched to ensure an attractive and efficient offer in an international perspective.

4.2 Objectives and Main outputs

Survey, training and recommendations to investigate and improve the overall rail traffic service quality on TRACECA and Europe - Asia main rail route

4.3 Scope of Work

The study focusses in particular upon operational and commercial improvements on the main Traceca route in all five railways East of the Caspian Sea study (Turkmenbashi - Dushanbe - Bishkek - Druzhba)

4.3.1 Survey of the existing situation

- Examine the existing freight train capacity, train schedules, overall transit times, tariffs and fares, and actual performance of the rail transport operations on the mentioned route. This task will require gathering of data from railway administrations regarding the theoretical and actual timetable, to be completed by witnessing and / or sample testing of transport on the route.
- Examine the current organisation how train schedules are determined and operated in the railways along the route. This will require contacts at railway headquarters level, but probably also in districts or lower departmental levels.
- Examine the current commercial organisation of the railways along the route
- Examine the tariff structure in international rail traffic
- Inventorise and evaluate the international cooperation from operational and commercial point of view
- Inventorise delays at the border stations on the route (railway technical causes and other), their causes, and formulate proposals how to decrease or overcome them

4.3.2 Study visit to two European railways

(a) The study visit participants will be drawn from the five railways concerned and will be selected by the Consultant in consultation with the TRACECA Management and National authorities.

(b) The purpose of the study visit is to show the participants the operations and commercial organisation of Western railways related to international traffic, and more in particular :

- the organisational and technical arrangements for deciding operational transport schedules (individual wagonload and block train schedules)
- the systems and tools used (manual and computerised) to assist the middle and senior management levels to draw up train schedules, rolling stock allocation and staff rostering decisions
- the systems and tools used to monitor execution of the train service, transport quality and performance indicators
- the practice of planning and deciding international freight and passenger schedules, taking into account commercial, technical and financial requirements; the distribution within and outside the organisation of these decisions to all interested participants
- the joint use of rolling stock and maintenance facilities between EU railways
- the commercial marketing and sales functions of EU railways
- the experience of working in the market in relation with customers and in competition with other transport modes
- the operational, technical and commercial cooperation between EU railways

(c) The study visit will cover two EU railways. The proposal will indicate the proposed study visit programme, which should last about 2 weeks for 8 participants.

4.3.3 Propose adjustments, on the five railways concerned, to improve the international movement of freight and passengers, the overall transport quality and transit times, etc. on the main Traceca route.

Adjustments could include :

- Changes and improvements implementable in the short-term e.g. regarding train schedules, harmonisation of the tariff structures, etc.
- Suggestions in a broader context e.g. infrastructure and rolling stock improvements, modernisation of telecommunications, improved cargo transportation services, setting up a computer network on the Traceca route, changes in the railway organisation, etc.
- Suggestions for adjustments external to the railway organisations e.g. legal protection of transported cargo, other areas which require co-ordinated government initiative.

Technical assistance will be aimed at :

- identifying the changes required in the railway organisation to tailor the transport product to the requirements of the market place
- technical changes recommended in the current method how to draw up train timetables, rolling stock and staff schedules.
- definition and evaluation commercial performance

5. MODULE C :

Feasibility study for a key bridge on Traceca route: Including the full inspection of an existing rail bridge, and review of an existing feasibility study for a new road-rail combined bridge over the Amudarya river (Chardzhev area) in Turkmenistan

5.1 Introduction

5.1.1. General

(a) Present crossings of the AmuDarya river at Chardzhev comprise a rail bridge and a pontoon crossing for road traffic, with a ferry in reserve. These crossings constitue vital transport links for local and international traffic.

The crossings are situated in a wide alluvial plain. The river flow is influenced by irrigation works upstream, but is still subject to flooding. There is some navigation.

(b) The rail bridge was built at the turn of the century (1898-1901) with materials brought in by ship and rail from Kransnovodsk. It comprises approximately 25x55metre spans of simply supported steel trusses with convex upper chords. The spans are supported on cylindrical steel piers. In addition to a rail track the trusses carry HT power pylons. The rail bridge is a masterpiece of railway engineering, and is at the same time a very strategic part of central Asia rail and transport network, as it is the only rail bridge across the Amudarya river.

There are currently no speed restrictions on the bridge. From a distance the bridge shows no signs of age, distress or any other inadequacy, but the bridge is reportedly suffering from age and structural wear. Especially the foundations are said to be too light for the current rail traffic, as they were originally built for 16 T axleload, which has increase over the years to 25 T. It is said that the bridge is worn out and will have to be closed in the not so far future.

(c) The pontoon crossing is located approximately 1 km west of the rail bridge. The crossing is precarious, particularly for heavy vehicles. It is shut down for several days each year due to floods. Approach roads are indirect and encumbered by urban traffic.

(d) In 1982, a feasibility study for a new combined bridge was prepared by the Moscow Bridge Institute Guiprotransmost.

Three site options have been considered. The preferred site is close to the existing rail bridge.

Three technical options are formulated in the abovementioned study : a continuous steel truss, simply supported prestressed concrete beams, and simply supported steel trusses. All options comprise 18x110 metre spans, supported by concrete piers on deep piles (+/- 42 metres). The road and rail bridges sit on the same pile caps, but are separate structures. The solutions proposed appear typical and practical FSU standard bridge designs. Reportedly the intention was to build the common foundations and the road bridge first, then the rail bridge at some later date.

Geotechnical profiles are shown in the existing feasibility study.

(e) The planning of a new bridge will currently be influenced by the following factors :

- Road : The requirement to improve the crossing for road vehicles at Chardzhev

- Rail :

  - The outcome of the investigation regarding the life span of the existing rail bridge at Chardzhev, and the recommendations regarding its replacement

  - The new rail line Chardzhev - Kerki, and the planned rail bridge at Kerki. A trade-off between rail investments required at Chardzhev and Kerki to ensure the rail crossing of Amudarya river must be considered.

5.1.2. Security Clearances

The feasibility study and the existing site are both subject to security restrictions dating back to Soviet days. As a condition for carrying out this study, the Recipient State will be asked to make available the full feasibility study and security clearances for access by engineers to the existing bridge. The Consultant may allow for a maximum of one man.month of time to obtain the report and clearances. If after two weeks prior notice of his arrival in Ashgabad, plus two weeks in Ashghabad, all reports and clearances necessary to complete the work have not been issued to him, then the project will be put in abeyance and eventually abandoned, with a commensurate reduction in the contract price.

5.2 Objectives

The objective is to produce a comprehensive feasibility study for the development of the Amudarya road and rail crossing at the Chardzhev site, with full justifications for technical and investment recommendations made.

Supporting objectives are to:

- Inspect and assess the useful remaining life of the present rail bridge, recommend maintenance and reinforcement measures if appropriate
- Review the existing Moscow Bridge Institute feasibility report for technical validity, including environmental impact, and developing variants if appropriate
- Carry out a full economic analysis of the crossing, including traffic surveys, projections, and toll potential
- Develop an implementation plan for presentation to International Financial Institutions (IFI).

Furthermore, know-how transfer to the Recipient State is a prime objective, and local counterparts should be fully involved in all aspects of the project.

5.3 Scope of Work

5.3.1. Traffic Forecasts

The Consultant will establish forecasts for future road and rail traffic. These will be based on validated records, traffic counts, and O/D surveys which are to be conducted by the Consultant, as well as Regional economic development scenarios based on or compatible with IFI projections. Scenarios for traffic development with a new fixed crossing and without are to be projected.

The Consultant must also estimate potential future toll revenues from an eventual road (and/or rail) bridge.

The Consultant is to explain in his tender his data collection, user survey, traffic and revenue forecasting methodology (see also Section 6.2)

5.3.2. Inspection of the Existing Rail Bridge

The Consultant will carry out a thorough inspection of the existing rail bridge. He will estimate the future useful life span of the bridge taking into account the expected intensity of traffic both in load and volume.

He will determine items, methods and costs to carry out urgent repairs, if any.

He will review actual maintenance practice, make recommendations on future systematic maintenance, as well as any exceptional requirements.

He will determine the technical and economic feasibility to extend the life of the existing bridge, given current and future traffic flows.

He will prepare an estimate of the cost of future maintenance requirements, for the full anticipated life of the rail bridge.

For the future rail flows, the effect of the new rail line Chardzhev - Kerki, and the possible future rail crossing at Kerki should be taken into account.

5.3.3. Review of Existing Feasibility Study - Other crossing Options

The existing feasibility study for a new combined bridge is to be reviewed, and if necessary added to, to include aspects such as:

- design standards
- traffic capacity
- geotechnical conditions
- hydrological conditions and navigation requirements
- cost of construction and maintenance costs
- construction techniques
- required mobilisation of resources both local and foreign
- land aquisition, compensation payments, social impacts
- environmental impacts using recognised guidelines

The approach routes to the fixed crossings by road and rail, are to be examined for bottlenecks and necessary minimum improvements required to match an improvement in the river crossing itself.

A simple and practical solution for a fixed crossing is to be recommended, taking into account the limited funds that will be available to carry out the work, and the enormous competing demands for transport infrastructure investment throughout the Region.

Other options than a new combined road-rail bridge could also be considered, depending upon the road traffic potential and the lifespan of the existing rail bridge : e.g. a shuttle train service for road vehicles.

5.3.4. Economic Analysis

The Consultant is to calculate Vehicle Operating Costs (VOC) and Train Operating Costs (TOC) for representative vehicle categories. Cost of passengers times is also to be estimated.

A comprehensive cost-benefit study will be performed for the various crossing development options retained. This will include NPV, IRR, and other convential economic indicators. The various forecast traffic scenarios will all be considered, as well as the full costings of construction, maintenance and use.

The analysis will be performed with and without taking into account the cost of passengers time.

The sensitivity of the analysis will be fully explored.

A thirty year cost-benefit stream should be considered.

5.3.5 Recommendations for implementation

Alternative implementation plans depending on different strategies for ownership and development of a new bridge (or other type of crossing) are to be presented. This is to consider the various options for full public ownership, build operate transfer (BOT) or other formats. The most advantageous alternative for the Recipient State is to be identified.

A full financial development plan for the road and rail fixed crossings is to be made. Toll revenues at various toll levels are to be considered. Toll collection systems are to be recommended.

The optimal phasing of construction is to be recommended.

The further necessary steps for project implementation are to be described, including legal framework, tendering procedures, and site procurement.

5.3.6. Conceptual Design Documents

The final technical recommendation including drawings and specifications will be presented, in English and in Russian, in a format and in sufficient detail for tendering, for final design and construction. All available geotechnical, hydrological and other technical data will be collated in the technical recomendation, to allow tenderers for final design and construction to present alternative technical solutions. While the present Consultant is to verify all data for the credibility of the feasibility study, the eventual builders of the bridge are to be be responsible for all aspects relating to geotechnical and structural stability.

6. Other Related Projects

6.1 Several related reports prepared by Western consultants precede this project.

They include:

Rail Management Restructuring Studies	Armenia, Turkmenistan, Azerbaijan	TACIS
Rail Sector Survey	Russia, Ukraine, Kazakstan & Bielorussia	EBRD
Roads & Road Transport Study	Russia, Ukraine, Kazakstan & Bielorussia	EBRD
Central Asia Outline Transport Strategy	Kazakstan, Kyrgyzstan, Turkmenistan, Uzbekistan	EBRD/TACIS
Caspian and Black sea Port Studies	Georgia, Azerbaijan, Turkmenistan, Kazakstan	EBRD/TACIS/OTHERS
ESCAP studies	Asia	UN

6.2 At the time of writing, the following projects, sharing certain domains of interest with this one, are expected to commence shortly:

Regional Traffic Forecasting Model and Review of Int'l Route Capacity	TRACECA
Forwarding - Multi-modal Transport Systems	TRACECA
Inland Terminals - Railways	TRACECA
Trade Facilitation, Customs Procedures, Freight Forwarding	TRACECA
Transport Legal Reform	TRACECA

Other related projects are or may be expected to commence within the timeframe of this present one.

6.3 The Consultants appointed to carry out this project are to coordinate their work closely with all other related activities within the TRACECA region. This particularly applies at the Inception Report stage, when preceding reports by others should be fully assmilated (TACIS will not provide copies of preceding reports for tender preparation). Duplication of effort is to be avoided.

In particular coordination and exchange of data with the Traffic Forecasting project is to be foreseen

The preceding listing of related projects must not be considered limitative.

7. Local Participation

7.1 National consultants should be deeply involved in all aspects of the project. All TRACECA countries have Institutions specialising in various aspects of transport planning and engineering. Regarding the bridge, it is however unlikely the find the necessary experience in Turkmenistan.

It is a firm requirement that Organisation and Methodologies include local experts and Institutions to:

- make full use of local experience, antecedent projects and data bases
- promote the emergence of a financially viable local consulting sector
- ensure the effective transfer of know-how to the Beneficiary states
- ensure the enduring effect of project output

7.2 Consultants should base their activities largely in the TRACECA region, carrying out the project in collaboration with a local technical organisation(s), and employing both senior and junior professional staff, from several TRACECA states.

The Consultants Methodology should fully explain his training and transfer of know-how programme within the project.

Consultants must make amply clear in their proposal the arrangements they have made to work with local entities.

8. Foreign Expertise

The Consultant is free to compose his expatriate team for this project as he sees fit, but the following domains of expertise should be clearly visible in his proposed staff list:

- infrastructure planning
- infrastructure construction and repair experts (track, bridges, signalling, telecom)
- rail operations
- rail transport planning and management
- rail freight marketing
- rolling stock management
- workshop management, engineering and equipment
- investment planning
- rail transport economics
- road transport economics

9. Logistics

The Consultant shall be responsible for arranging necessary living accommodation, transportation, telecommunications, equipment, surveys, investigations, document reproduction, printing, secretarial services, office space and all other input required for the purposes of the work.

10. Time Table and Reporting

10.1 The project is to be completed within a period of twelve months.

10.2 All reports are to be delivered in the numbers, languages and locations as follows:

	Bound		Loose-leaf		Diskette
	English	Russian	English	Russian	(Eng.+Rus)
TACIS Brussels	5	1	1	1	1
TRACECA CU (per state)	1	5	1	1	0

The word processing programme to be used will be agreed with TACIS.

10.3 Reporting is to be in accordance with standard TACIS Guidelines. These foresee:

Project inception report

An Inception Report shall be issued within 2 months of the start of the project. It shall summarise initial findings and propose any modifications to the methodology and work plan. In particular it will adapt the work plan to the needs of each individual TRACECA state taking into account the parallel activities of other Technical Assistance programmes, avoiding duplication of effort, and addressing unfilled needs.

It will also confirm or modify institutes/organisations/consulting bodies to be directly involved in the implementation.

It will firm up or alter, if required, the arrangements planned for the study visit part of the work.

Project progress report

This report will be submitted at the end of month 6. It will cover technical progress to date.

One month will be allowed for TACIS to consider the contents and to orient the further phase of this project.

Final Report

The Draft Final Report for Module C will be issued at the end of Month 8.

The Draft Final Report for the other Modules will be submitted at the end of month 12.

Any comments on the Draft Final Report will be issued by TACIS Brussels within six weeks of its receipt. The Final Report incorporating any modifications will be issued one month thereafter (2,5 months after issue of the Draft Final)

All Reports must include an Executive Summary.

EUROPEAN UNION - TACIS

Technical Assistance to the Southern Republics of the CIS and Georgia - TRACECA

TRADE AND TRANSPORT SECTORS

Terms of Reference

for

Rolling Stock Maintenance

-

Railways

Final Recipients:
TRACECA Region Ministries of Transport

Rolling Stock Maintenance - Railways
(TRACECA Project No. 15)

CONTENTS

1. Introduction and Background

1.1 During May 1993 a conference was held in Brussels organised by the Commission and attended by authorities of the eight Republics of the south of the former USSR:

- Armenia,
- Azerbaijan,
- Georgia,
- Kazakstan,
- Kyrgyzstan,
- Tadjikistan,
- Turkmenistan,
- Uzbekistan.

They are the Beneficiary States of this programme.

The objectives of the conference were :

- to stimulate cooperation among the participating Republics in all matters pertaining to the development and improvement of trade within the Region
- to promote the Central Asian - Trans Caucasian - Europe Transport Corridor
- to identify problems and deficiencies in the Region's trade and transport systems
- to define, in terms of contents and timing a Technical Assistance Programme to be financed by the European Union (EU).

TRACECA (Transport Corridor Europe Caucasus Asia) was thence created as a component of the TACIS interstate programme.

1.2 The "Brussels Declaration" issued at the conclusion of this conference recommended the European Union to address in the TACIS programme variously expressed needs for feasibility studies and technical assistance projects.

Regional sectoral Working Groups (trade, rail, road, maritime), composed of experts and officials from each TRACECA state and the EU, have been established as part of the TRACECA programme. They meet periodically in the Region. They have inaugurated specific projects including this present one, and will monitor results.

A strategic study for Central Asia has recently been completed by the EBRD under TACIS financing (see 3.10).

1.3 National and Regional Technical Assistance projects carried out, approved or prioritised to date, are mostly aimed at halting a deterioration of the existing transport system due to maintenance difficulties, and obsolescence. Few consider reinforcing capacity. In fact transport demand has declined since the break up of the FSU.

Radical Institutional transformations are taking place in the region. The transport system has been particularly affected by these, especially the rail sector which has been fragmented into national entities.

Tariff structures under the old regime were detached from economic considerations. It is by no means easy for regional authorities to inaugurate a market-based system.

1.4 This project is aimed to provide Technical Assistance to the rail organisations in the region in order to contribute to solving :

-acute rolling stock maintenance and repair problems
-rolling stock replacement and construction problems
-shortage of spare parts problems

1.5 The splitting up of the FSU and the creation of new independent railways profoundly distorted the execution of rolling stock maintenance in the TRACECA states.

The current problem has several aspects; technical, financial and economical :

1.5.1 Technically, TRACECA countries had very few major rolling stock maintenance and overhaul workshop infrastructure established compared e.g. to Russia and Ukraine. In the past, the majority of heavy maintenance work was carried out in huge facilities located outside the region.

Some of the Republics are now left without adequate overhaul and repair centres for their own rolling stock. In other cases, existing facilities are overdimensioned for the current needs; because before, they had many Republics as their clients. Some facilities are used well beneath capacity or currently stand idle.

Meanwhile, relationships with workshops situated in other Republics or in Central and Eastern Europe have profoundly changed, as some of these facilities are also affected by a restructuring process or have been closed.

1.5.2 Regarding the facilities established for production of new rolling stock, the situation is similar to above.

1.5.3 Regarding spare parts, the Republics in this region previously were supplied most of their spare parts from Russia and Eastern European countries.

The present supply of spare parts has become very difficult. Local production of spare parts is non-existent, or, where it exists, is often adversely affected, because basic raw or half-finished materials or components are lacking, or because workshop machinery and tools are no longer adequately serviced or supplied.

1.5.4 Financially, operation of the workshops and carrying out of maintenance and repair work, or procurement of sufficient quantities of spare parts, or purchase of new rolling stock are all compromised by the precarious financial situation of the railways in the TRACECA region in general. This has been caused by traffic downturn, and by the economic and organisational changes in the region. Purchase from abroad is generally difficult because of the lack of foreign currency to pay suppliers in either Russia, Ukraine or in Central and Eastern Europe.

1.5.5 Economically, many of the newly independent states are currently interested in developing national systems. The aim to become self reliant is often a priority of national industrial and economic policy. This carries in itself a very real risk of restrictive national measures to the detriment of overall efficiency, and of economically unjustified developments. Some of the railways do not have sufficient size to justify a development of all required facilities.

1.6 Despite the many problems, restructuring is under way in various states, and the way forward seems to include :

1.6.1 The conversion, restructuring and/or improving the equipment of existing rolling stock maintenance facilities and manufacturing complexes to the new requirements. This process may benefit from technical assistance, technology transfer and investment, possibly under joint-venture agreements.

1.6.2 Coordination and cooperation between the networks on a regional and wider basis.

2. Objectives and Main outputs

The objectives and main outputs of this project are the following :

2.1 Survey the rolling stock maintenance and manufacturing sector of the TRACECA region and provide recommendations to solve existing problems.

2.2 Provide recommendations for local manufacturing and adequate supply of spare parts and components.

2.3 Provide guidance to rail organisations in the region for the establishment of commercially viable rolling stock maintenance and manufacturing, within the framework of a market-oriented railway system.

2.4 Set up a railway rolling stock group, covering all TRACECA countries, and carry out with this group a study visit to EU.

2.5 Select a rolling stock maintenance (or manufacturing) case study project, and make specific recommendations that are judged appropriate to be implemented in the selected area.

2.6 Design a detailed reorganisation plan in the selected area in cooperation with the national authorities, and train the staff involved in appropriate management techniques.

A major result of this project should be to emphasise the need to foster co-operation between the different railways in the region and bring about a greater sharing of facilities between themselves for the maintenance, repair and manufacturing of rolling stock. Duplication of facilities need to be avoided by adopting a regional approach to maintenance of rolling stock and the local manufacture of items regularly used.

3. Scope of Work

To meet the aims stated above, the scope of work will include :

3.1 Gather detailed data regarding the existing fleet

Provide a detailed rolling stock inventory per state (wagons, coaches, diesel and electric main line and shunting locomotives, diesel and electric multiple units). This will include breakdowns per category, main technical and usage characteristics, age profiles, ownership and maintenance responsibility.

3.2 Estimate the required fleet

Rolling stock inventory requirements will be derived and re-assessed from traffic volumes and usage. Future rolling stock inventory requirements will be derived from traffic forecast evolution and from commercial requirements. The expected variations in rolling stock maintenance parameters (see 3.3 hereafter) and operational utilisation parameters will have to be assessed.

It is evident that future rolling stock requirements will be impacted by the share of international trade that is expected to be realised, and what type of rolling stock will be needed to meet these requirements. Also new emerging requirements (e.g. multimodal transport and other less standardised traffic types) will have to be included.

A detailed estimate of the future fleet size and composition for the next ten years, broken down in yearly intervals and will be produced by state.

Where appropriate, a range of possible scenarios will be proposed.

Data is to be exchanged with a parallel project, the Regional Traffic Forecast Model study (see 3.10 Other Related Projects), which will carry out a comprehensive review of traffic on all modes throughout the Region and include a synoptic of long term forecasts of traffic

The existing or planned programmes to scrap rolling stock, to convert existing, or purchase new rolling stock will be inventorised or recommended.

The option to chose between continued maintenance of rolling stock, compared to conversion of existing rolling stock or purchase of new rolling stock is an important economic issue, and the consultant shall address this in detail as part of the case study with the local parties involved (see 3.7 Case study).

3.3 Maintenance strategy § organisation - Gather data § prepare recommendations

(a) This will require assessment of the existing regulations on inspection and periodic service of rolling stock, maintenance levels, the definition of the maintenance services to be carried out, and the implementation of maintenance strategy.

(b) The scope of work in the technical area will be comprise :

- Providing a description of the existing maintenance strategy § organisation.
  It can be expected that a thorough investigation will only be necessary initially in one state, given the previous homogeneity of the system. The study will then verify the conformity of the other states to initial findings.

- Draw up a concise description of maintenance services

- Highlight specific difficulties that the states currently experience in implementing their maintenance strategy

- Strengths and weaknesses of the currently implemented strategy will be evaluated and compared to Western practise
  This should include gathering data about the key ratios, periodicity's and resources (human and material) that are allocated

- Recommendations for changes, where appropriate, will be drawn up

- An appreciation of the overall organisation of maintenance, research § development, supporting information systems, supply of spare parts, equipment and tools used, staff development, etc. is to be included

There is however little doubt that, technically, the maintenance strategy and organisation, as herited from the FSU, was well developed.

(c) Maintenance management - Economic and commercial aspects

These aspects were not highly developed in the FSU system and constitute a major difference between former and market-based management practises.

A transfer of knowledge of Western practises in economic and commercial aspects of maintenance management is to be carried out, and this aspect will be addressed in detail in the case study to be set up in close cooperation with local staff (see 3.7 Case study)

3.4 Determine the future overall rolling stock maintenance § replacement requirements

The future fleet size to be maintained, as well as requirements for new types of rolling stock that will have to be built, purchased or converted from existing stock will be determined.

In a first stage, forecasts of fleet maintenance § replacement requirements will be calculated per state.

In a second stage, the consultant will take into account the impact of the existing or potential shared use of rolling stock by more than one state (pool) :

- The currently existing pool arrangements between several or all TRACECA states, or with other FSU states, will be documented, including their composition and management structure
- The future planned evolution regarding technical uniformity and pool usage will be investigated or as such recommended.
- The impact and the possible reduction on the total required fleet size of poolage will have to be estimated.

Revised fleet forecasts for the TRACECA region will then be produced.

Two key outputs are expected :

- Future detailed maintenance workload estimates for all rolling stock, based upon the fleet forecasts (3.2 above) and the knowledge of current and future maintenance practises (3.3 above)
- Future requirements for new rolling stock

The forecasts will be detailed in physical (units/year) and in financial terms and the impact, also financially, of cooperation on a regional and wider basis shall be amply documented.

3.5 Spare parts supply and manufacturing requirements

The existing problems and requirements regarding the supply and manufacturing of spare parts and components in the TRACECA region shall be surveyed and analysed.

This analysis shall include technical, economical and financial aspects.

- rolling stock maintenance and overhaul
- rolling stock manufacturing
- spare parts and component manufacturing

(a) The scope of work will include :

-an inventory and detailed survey of the major facilities existing in the region, including localisation, technical equipment, organisational status, actual tasks, capacity, actual output and utilisation, workforce, main customers and suppliers
-an assessment of the state of the existing facilities, covering analysis of management, technological, financial and operations topics
-strengths and weaknesses of the existing situation
-a summary of the current problems, present experience in the new economic environment, modernisation planned or under way

(b) The current infrastructure, technology and facilities will be assessed mainly through discussions with the staff of the regions' organisations and through field visits.

(c) The strengths and weaknesses of the existing situation will be highlighted in perspective of the local environment and aspirations.

3.7 Prepare recommendations regarding the future structure and size of the sector

(a) In order to meet the short- and medium-term requirements of the individual railways, and of the region as a whole, three plans will be prepared :

- a plan comprising the most justifiable distribution of number, site, tasks and capacity of the major workshops.
  This plan will indicate the major shifts from the existing situation that are proposed. A work allocation plan for the existing facilities will be prepared. Modernisation of equipment that is deemed necessary will be indicated.
- a plan covering the enterprises for the construction of new rolling stock
- a plan covering the spare parts supply and manufacturing

The restructuring and rationalisation plans will include organisational, financial and economical evaluations of the proposed options, including restructuring, capacity balancing and task distribution at national and regional level.

The future outputs for the different facilities and enterprises will be estimated. The necessary technical and financial measures to be taken will be detailed.

(b) The specifications for improvement should emphasise, among others, promoting the use of a single technology in an international perspective.

(c) Organisation proposals may differ from state to state, and should be tested against local feasibility.

Organisational scenarios that can be envisaged will include, where appropriate :

- Changes that can be introduced without major alterations to the existing management system
- Reform of the present departmental structure, including the introduction of production incentives
- Creation of "autonomous" facilities, with or without private equity
- Leasing or Joint-Venture agreements

The study will inventorise current or planned reconversion and privatisation projects.

3.8 Case study

(a) One of the major objectives of the TRACECA programme is to foster cooperation in the region. To this end, a maximum of local participation in the consultant's work is to be foreseen, to achieve effective technical cooperation and lasting results. A case study, involving more than one state railway, will be an integral part of the work.

(b) The aims of the case study are :

-to work closely together with the local organisations to carry out the review and prepare recommendations
-to provide short-term solutions to the stated problems in the area selected
-to gather information regarding medium term solutions to the stated problems
-to identify a number of specific recommendations that are judged appropriate to be stimulated in the selected area.
-to design a detailed reorganisation plan in the selected area in cooperation with the national authorities
-to train the staff involved in appropriate management techniques

The case study shall provide assistance to rail organisations in the region to execute rolling stock maintenance and manufacturing services on a commercial and market-oriented basis.

(c) The case study will parallel the consultants' main activities (item 3.1 to 3.7 above), but need be carried out in only two states (or more, if considered appropriate by the consultant). It will also be restricted to a limited technical area, e.g. workshops for locomotive maintenance, to be chosen by the consultant.

(d) Execution of case study :

During its implementation, the case study will concentrate on :
-solving, at least partially, specific problems
-training
-proposing recommendations for future development

The case study execution will include a "work" part, carried out by the consultants in close cooperation with the selected counterparts, and a "training" part that will include training on one or several sites in the region. These two parts may be run in parallel.

(e) The consultant will include in his proposal the technical and geographical area of the case study. He will establish a detailed proposal for the topics he intends to address and for the work he intends to carry out.

(f) The consultant will clearly specify in his proposal the training aids and equipment, hardware and software, he deems necessary to implement the case study.

3.9 Study visit in EU countries

(a) A rolling stock transport group will be set up. The study visit participants will be drawn from all TRACECA countries and will be selected by the Consultant in consultation with the TRACECA and National authorities.

The study tour will cover several railroads and rolling stock manufacturers in EU-countries.

The proposal will indicate the proposed study visit programme, which should cover at least two countries and last about 2 weeks for 16 participants maximum.

(b) The purpose of the study visit is:

- to examine the organisation and execution of rolling stock maintenance and manufacturing in Western countries
- to familiarise the participants with technologies currently used and under development in the West

(c) The timing of the study visit is left at the discretion of the consultant.

3.10 **Other Related Projects**

3.10.1 Several related reports prepared by Western consultants precede this project.

They include:

Rail Management Restructuring Studies	Armenia, Turkmenistan, Azerbaijan	TACIS
Rail Sector Survey	Russia, Ukraine, Kazakstan & Bielorussia	EBRD
Roads & Road Transport Study	Russia, Ukraine, Kazakstan & Bielorussia	EBRD
Central Asia Outline Transport Strategy	Kazakstan, Kyrgyzstan, Turkmenistan, Uzbekistan	EBRD/TACIS
Caspian and Black sea Port Studies	Georgia, Azerbaijan, Turkmenistan, Kazakstan	EBRD/TACIS/OTHERS
ESCAP studies	Asia	UN

3.10.2 At the time of writing, the following projects, sharing certain domains of interest with this one, are expected to commence shortly:

Regional Traffic Forecasting Model, Review of Int'l Route Capacity, and a TRACECA Corridor Feasibility Study Europe - Asia	TRACECA
Forwarding - Multi-modal Transport Systems	TRACECA
Infrastructure Maintenance - Railways	TRACECA
Inland Terminals - Railways	TRACECA
Trade Facilitation, Customs Procedures, Freight Forwarding	TRACECA
Transport Legal Reform	TRACECA

Other related projects are or may be expected to commence within the timeframe of this present one.

3.10.3 The Consultants appointed to carry out this project are to coordinate their work closely with all other related activities within the TRACECA region. A full collaboration with such projects will be required.

The preceding listing of related projects must not be considered limitative.

3.11 Local Participation

3.11.1 National consultants should be deeply involved in all aspects of the project. All TRACECA countries have Institutions specialising in various aspects of transport planning and engineering.

It is a firm requirement that Organisation and Methodologies include local experts and Institutions to:

- make full use of local experience, antecedent projects and data bases
- promote the emergence of a financially viable local consulting sector
- ensure the effective transfer of know-how to the Beneficiary states
- ensure the enduring effect of project output

3.11.2 Consultants should base their activities largely in the TRACECA region, carrying out the project in collaboration with a local technical organisation(s), and employing both senior and junior professional staff, from several TRACECA states.

The Consultants Methodology should fully explain his training and transfer of know-how programme within the project.

Consultants must make amply clear in their proposal the arrangements they have made to work with local entities.

3.12 Foreign Expertise

The Consultant is free to compose his expatriate team for this project as he sees fit, but the following domains of expertise should be clearly visible in his proposed staff list:

- rolling stock management
- rail operations
- rolling stock engineering
- workshop management
- workshop engineering and equipment
- rolling stock and spare part manufacturing
- rail transport planning
- rail transport economics

3.13 Logistics

The Consultant shall be responsible for arranging necessary living accommodation, transportation, telecommunications, equipment, surveys, investigations, document reproduction, printing, secretarial services, office space and all other input required for the purposes of the work.

4. Time Table and Reporting

4.1 The project is to be completed within a period of twelve months.

4.2 All reports are to be delivered in the numbers, languages and locations as follows:

	Bound		Loose-leaf		Diskette
	English	Russian	English	Russian	(Eng.+Rus)
TACIS Brussels	5	1	1	1	1
TRACECA CU (per state)	1	5	1	1	0

The word processing programme to be used will be agreed with TACIS.

4.3 Reporting is to be in accordance with standard TACIS Guidelines. These foresee:

Project inception report

An Inception Report shall be issued within 2 months of the start of the project. It shall summarise initial findings and propose any modifications to the methodology and work plan. In particular it will adapt the work plan to the needs of each individual TRACECA state taking into account the parallel activities of other Technical Assistance programmes, avoiding duplication of effort, and addressing unfilled needs.

It will also confirm or modify institutes/organisations/consulting bodies to be directly involved in the implementation.

It will firm up or alter, if required, the arrangements planned for the case study part of the work (see 3.8 above)

Project progress report

This report will be submitted at the end of month 6. It will cover technical progress to date, and will include, in particular, the results of parts 3.1 to 3.5

One month will be allowed for TACIS to consider the contents and to orient the further phase of this project.

Final Report

The Draft Final Report will be submitted at the end of month 12. It will, in particular, include the results of the case study and of parts 3.6 and 3.7 of the scope of work

Any comments on the Draft Final Report will be issued by TACIS Brussels within six weeks of its receipt. The Final Report incorporating any modifications will be issued one month thereafter (2,5 months after issue of the Draft Final)

All Reports must include an Executive Summary.

EUROPEAN UNION - TACIS

Technical Assistance to the Southern Republics of the CIS and Georgia - TRACECA

TRADE AND TRANSPORT SECTORS

Terms of Reference

for

IMPROVEMENT OF ROAD TRANSPORT SERVICES

Final Recipients:
TRACECA Region Ministries of Transport
(Armenia, Azerbaijan, and Georgia)

CONTENTS

1. Introduction and Background

1.1 During May of 1993 a conference was held in Brussels organised by the Commission and attended by authorities of the eight Republics of the south of the former USSR:

- Armenia,
- Azerbaijan,
- Georgia,
- Kazakstan,
- Kyrgyzstan,
- Tadjikistan,
- Turkmenistan,
- Uzbekistan.

The objectives of the conference were :

- to stimulate co-operation among the participating Republics in all matters pertaining to the development and improvement of trade within the Region
- to promote the Central Asian - Trans Caucasian - Europe Transport Corridor
- to identify problems and deficiencies in the Region's trade and transport systems
- to define, in terms of contents and timing a Technical Assistance Programme to be financed by the European Union (EU).

TRACECA (Transport Corridor Caucasus Europe Central Asia) was thence created as a component of the TACIS interstate programme.

The "Brussels Declaration" issued at the conclusion of this conference recommended the European Union to include in the TACIS programme technical assistance to road transport operations, including vehicles, automotive supplies and the services sector, upon which operators depend.

For geographic and logistic convenience this present project is limited to the Caucasus. There are three Recipient States; the Republics of Armenia, Azerbaijan, and Georgia.

1.2 Road transport in the USSR used to be administered by republican ministries of road transport which also provided common carrier transport services. The road transport industry of the FSU exhibited a high degree of vertical integration and monopoly, characterised by own-account operations.

Restructuring is underway. A private sector has emerged spontaneously and some new enterprises have grown quite large in a short period.

The pattern of privatisation of state assets varies from country to country. However, all carriers now operate with a high degree of autonomy from any state control, their accounting is separate, and they must survive without subsidy. In some cases an ad hoc privatisation of vehicles has taken

place, where individuals have put their own money into maintaining their nominally state owned vehicle, and now act as proprietors.

In any case the existing assets concerned are largely obsolete and not adapted to long-distance haulage.

1.3 The preponderance of commercial vehicles operating in the region originate in the FSU. The range of vehicles which were available in the past was limited. Pick-up trucks and full size heavy goods vehicles were not manufactured.

Operators are very interested in expanding their present minor participation in international trucking. Most of their vehicles do not conform to Western standards of efficiency, fuel (petrol/diesel), emission and safety. However the total costs (depreciation and operation) of vehicles imported from the West is relatively high.

1.4 The likely evolution of demand by market segment for trucking is not known. Such information would be an invaluable reference, for business plans proposed by operators in the sector.

Certain current data-base services are available in the Region. Historic data from the days of the FSU is of little value for present purposes.

Transit traffic from Iran and Turkey through the Region has developed. Operators are typically nationals of those two countries, and use Western heavy goods vehicles.

A Ro-Ro service between the ports of Poti and Varna was opened in July 1995. Trade with Central Asia based on barter agreements passes through Iran on trucks. Thus traffic patterns in the region is are evolving, and the trucking industry can adapt to such changes. If the present political stability holds then growth could be rapid.

1.5 Local maintenance, mechanical and bodywork overhaul facilities were part of highly over-centralised para-statal organisations.

The technical capacity of certain plants is impressive, covering full overhaul and small scale parts fabrication. Retreading is under-exploited.

The management structures and the capacity of existing facilities as well as their geographic concentration do not correspond with the evolving market economy needs. They also suffer at present from extremely depressed demand, due to the macro-economic situation.

1.6 Managers of enterprises in the region are for the most part aware of the deficiencies of their equipment and of the organisational structure which they have inherited. In a vibrant local market, or with outside financial assistance they would acclimatise to a free-market system with little difficulty. However neither of these prerequisites are in place.

2. Objectives

The overall objective of the project is to facilitate development of the domestic and international road transport industries within the Recipient States. They are particularly interested in gaining an equitable market share of international traffic.

Supporting objectives are as follows:

- determine the size and segmentation of the Recipient States market for inter-urban and international road transport; make medium-term projections
- determine the size and characteristics of the truck fleet appropriate to match the market demand
- advise and assist in procurement of trucks, taking fully into account the required mechanical availability of vehicles and all of the support services and spare parts supply channels required
- promote adherence to all relevant international conventions on road transport (UN/ECE; TIR, temporary importations, hazardous goods,...)
- advise on restructuring and re-deployment of assets belonging to former state-owned enterprises
- identify and propose remedies for legislation, price controls, monopoly situations, restrictive transit agreements or other regulatory handicaps which hinder the development of the industry
- provide advice on subjects related to the foregoing, such as international transit documentation, fleet management, stock control, information technology

The end scenario desired is a broadly based industry composed of viable private autonomous operators, both carriers and common support service providers, matched to the foreseen demand for national and international road transportation.

3. Scope of Work

3.1 Modus operandi

The Consultant will:

- carry out studies leading to determination of:
  - the present level of activity in the trucking industry
  - the truck fleet owned by the recipient states, and the structure of that ownership
  - the structure and capabilities of the automotive services and supplies industry
- based on the foregoing:
  - enter into close contact with operators and credible entrants to the industry, and mount collaborative pilot projects
  - identify opportunities for investment, of interest to International Financial Institutions (IFI) through their Small and Medium Enterprise (SME) agencies or otherwise, as well as to private enterprises, local and foreign
  - prepare business plans, and actively promote negociations for business development
- carry out the project in close collaboration with local operators throughout, conduct seminars, and thus ensure a full transfer of technical know-how, and familiarisation with European commercial practice, to the local industry

The elements which follow form a suggested framework for carrying out the project. The activities described are not to be considered limitative, nor is sequence imposed by the order below. The contractor is welcome to enlarge upon the activities described and to introduce his own approach in his methodology , for achieving the project objectives.

3.2. Studies

Data bases available, data collection and processing methods including validation should be described in the contractor's proposal. The objectivity of data sources is to be assured.

This phase of the project is not to be prolonged, or given more emphasis than is needed to generate fully credible low-demand/high demand scenarios to be used for the ensuing work.

3.2.1. Commercial Vehicles Supply and Demand.

It will be necessary to catalogue State by State the current commercial vehicle fleet units in operation. Type, ownership, usage, mileage, age and other characteristics are to be determined.

The market segmentation for common carrier services is to summarised. Forecasts of demand are to be established. Existing and desirable levels of service to be provided by operators are to be described. Standard commodity and vehicle type descriptions are to be used.

Transport by outside carriers is to be taken into account (eg.Turkish, Iranian or other).

Disequilibriums between supply and demand are to be highlighted and quantified.

International haulage into Western Europe is of particular interest to operators.

Urban transport and distribution is not a concern of the TRACECA programme. Intercity passenger transport will be considered by other projects and is not within this scope of work.

3.2.2. Automotive Parts and Services

An investigation of the automotive support industry is to be carried out. Present distribution channels for vehicles, automotive parts, and service facilities are to be determined.

Components of this study should consider:

- the availability of servicing, overhaul and repair facilities
- local parts manufacturing both small and medium scale
- tyre retreading

This section of the study should determine the ability of the local automotive industry to support transport operations with Western type heavy goods vehicles.

The former state transport enterprises possess extensive ancillary facilities such as offices, service bays, warehouses, lodging for drivers, etc., many of which may be redundant to a focused transport enterprise operating in free market. The consultant should make an inventory of these assets, for eventual recommendations for their redeployment or divestiture within the context of the broader study objectives.

Market opportunities for providing support services to all transit vehicles are to be identified.

3.3. Business Plans

This section of the project is of prime interest to the Recipient States.

Recommendations should be made for the preparation of selected pilot or demonstration business plans, for common motor carriers and, possibly, for automotive supply and service enterprises which could provide essential operational support to the road transport industry. Fully private or so-called JS (ex-state) companies may be adopted.

A balanced focus of activities between the three Recipient States will obviously be necessary.

After approval by TRACECA management the consultant will work with the enterprises in the preparation of business plans. The plans will be prepared in accordance with the requirements of IFI/SME support agencies and venture funds. Assistance in their presentation to potential investors will be provided.

Also, foreign partners for joint ventures should be sought. Technical proposals encompassing outline projects conceived and resourced by West European transport sector partners, with substantiated interest in the region, could be considered.

Local companies are, as the principals, to be closely involved in all aspects.

Notably their managements should be instructed in:

- the preparation of dossiers for soliciting investment capital
- the standard contracts for commercial vehicle procurement (purchase, leasing,...)
- conditions offered (or to be negotiated) for after-sales service, parts supply, guarantees, training of mechanics and managers, technical assistance (eg.estimation of vehicle operating costs,...)
- the European market for commercial vehicles (new, factory reconditioned, second-hand,...)

A straightforward manual for investment decisions in capital equipment is to be produced, based on a typical business plan.

3.4. International Conventions / Regulatory Environment

This section of the work is to be carried out in particularly close collaboration with the TRACECA Transport Legal Framework programme. It should complement that project with the technical, operational and commercial assistance to the regions operators.

The Recipient States are in the process of adhering to International Conventions on road transport. However, they lack experience of the working of the Conventions, and of the obligations they impose.

The Consultant is to assist the Recipient States in adhering to the full range of UN/ECE or other Conventions of relevance to them. Assistance is to include active liaison between the international bodies concerned (eg.UN/ECE, IRU, FIATA,...), and the Recipient State agencies for affiliation. This activity has been specifically requested by Azerbaijan.

The Consultant will come into close contact with a wide range of operators and authorities within the motor transport sector. Based on these contacts he is to identify and propose remedies for any price controls, monopoly situations, restrictive transit agreements or other regulatory handicaps which hinder the development of the motor transport industry, or entry into it.

3.5. Direct Technical Assistance and Seminars

The Consultant is to provide direct advice on operational matters, technical assistance using case studies, and merging the business plan studies with know-how transfer. For this reason the Consultant should allow for prolonged presence by his experts in the Recipient States.

During the course of the project the Consultant is to organise several on-site seminars for local transport industry managers and officials. These should allow full diffusion of methodology for business plans beyond the pilot studies elected in Section 3.3.

Other subjects of interest for seminars may be derived from the projects Objectives, to cover operational management principles, documentation, banking and insurance procedures connected with TIR and the CMR.

Typical operating targets for competitive road transport within the EU are to be imparted (mechanical availability, utilisation rates,etc). The structure and workings of the road haulage market in the EU is to be explained (and examined for potential applications in the region), including the many specialist services such as brokering for back-hauls, vehicle-off-road, etc., which allow efficient operations.

A review of current advanced technology for road transport operators may be provided. This should catalogue and briefly explain software packages for road operators, logistics programmes, and telematics systems for fleet management. Poor telecommunications in the Caucasus are a very severe hindrance to efficient motor transport operations. The level of sophistication of many Western products may be beyond immediate means, but the awareness of technologies should be imparted to mangers for reference, and for possible development of local emulations.

The Consultants Methodology should fully explain his training and know-how transfer programme within the project.

3.6 Other Related Projects

Certain reports prepared by Western consultants precede this project. They include:

Roads & Road Transport Study	Russia, Ukraine, Kazakhstan & Bielorussia	EBRD
Central Asia Outline Transport Strategy		TACIS/EBRD

At the time of writing the following projects within a similar domain of interest are expected to commence shortly:

Transport Legal Reform	TRACECA
Trade Facilitation, Customs Procedures, and Freight Forwarding	TRACECA
Dolphin (road transport and spare parts)	TRACECA
Regional Traffic Forecasting Model	TRACECA

Contact with TACIS, EBRD and other SME support programmes should be fully developed.

The Consultants appointed to carry out this project are to co-ordinate their work closely with all other related activities within the TRACECA region. This particularly applies at the Inception Report stage, when preceding reports by others should be fully assmilated (TACIS will <u>not</u> provide copies of preceding reports for tender preparation). Duplication of effort is to be avoided. The listing above must not be considered limitative.

3.7 Local Participation

Consultants should base their activities, especially the writing of business plans, largely in the TRACECA region, carrying out the project in close collaboration with local motor transport enterprises. Local consultants should be engaged to assist in the work.

3.8 Foreign Expertise

The Consultant is free to compose his expatriate Team for this project, mobilising long and/or short term participants, as he sees fit. The following domains of expertise should be clearly visible in the proposed staff list:

- business management of SME in the road transport sector
- road transport fleet operations management
- international road transport conventions
- automotive services and supplies

3.9 Logistics

The Consultant shall be responsible for arranging necessary living accommodation, transportation, telecommunications, equipment (IT and other), surveys, investigations, document reproduction, printing, secretarial services, interpretation, translation, office space and all other input required for the purposes of the work.

4. Time Table and Reporting

4.1 The project is to be completed within a period of ten months. Study and technical assistance activities should be substantially completed within seven months. A final three months of intermittent follow-through activities relating to International Conventions and the Business Plans may be foreseen.

Task durations and staff assignments are to be clearly shown on planning schedules in the proposal. Time on-site and at home office should be clearly visible. Milestones for output and key dates for data acquisition are to be indicated.

4.2 Publication of Reports and Deliverables

The output of the project is to be the unrestricted property of TACIS and cannot be considered confidential by the Consultant or any other participants.

4.3 Deliverables

The contractor will catalogue in his proposal the Deliverables by which he proposes to address the full range of issues raised in the Objectives and Scope of Work, and his schedule for their provision.

Technical Deliverables may be Business Plans, documentation packages, model procedures, seminar manuals, databases, or any other tool which the Contractor proposes to utilise.

All Deliverables must be provided in both English and Russian, in numbers and formats to be agreed with TACIS.

4.3 All reports are to be delivered in the numbers, languages and locations as follows:

	Bound		Loose-leaf		Diskette
	English	Russian	English	Russian	(Eng.+Rus)
TACIS Brussels	5	1	1	1	2
TRACECA CU (per state)	1	5	1	1	0

The word processing programme to be used will be agreed with TACIS (and DOS compatible).

4.4 All reports are to be prefaced by an Executive Summary, and be in accordance with standard TACIS Guidelines. These foresee:

Project Inception Report

An Inception Report will be issued within two months of the commencement of the project. It will summarise initial findings and propose any modifications to the methodology and work plan. In particular it will:

- adapt the work plan to the needs of each individual TRACECA state taking into account the parallel activities of other Technical Assistance programmes, avoiding duplication of effort, and addressing unfilled needs
- nominate the enterprises and describe the business plans to be prepared

Project Progress Report

This report will be issued at the end of month 7.

It will be the most substantive of the three reports to be issued. It will contain the full results of studies outlined in Section 3.2, and in separate annexes the Business Plans of Section 3.3.

Final Report

The Draft Final Report will be submitted at the end of month 10.

Any comments on the Draft Final Report will be issued by TACIS Brussels within six weeks of its receipt. The Final Report incorporating any modifications will be issued one month thereafter (2,5 months after issue of the Draft Final)

5. Budget

The budget for this project is 250 000 ecu.

EUROPEAN UNION - TACIS

Technical Assistance to the Southern Republics of the CIS and Georgia - TRACECA

TRADE AND TRANSPORT SECTORS

Terms of Reference

for

IMPROVEMENT OF ROAD TRANSPORT SERVICES, CENTRAL ASIA

Final Recipients:
TRACECA Region Ministries of Transport
(Kazakhstan, Kyrgyzstan, Tadjikistan, Turkmenistan, Uzbekistan)

CONTENTS

1. Introduction and Background

1.1 During May of 1993 a conference was held in Brussels organised by the Commission and attended by authorities of the eight Republics of the south of the former USSR:

- Armenia,
- Azerbaijan,
- Georgia,
- Kazakstan,
- Kyrgyzstan,
- Tadjikistan,
- Turkmenistan,
- Uzbekistan.

The objectives of the conference were :

- to stimulate co-operation among the participating Republics in all matters pertaining to the development and improvement of trade within the Region
- to promote the Central Asian - Trans Caucasian - Europe Transport Corridor
- to identify problems and deficiencies in the Region's trade and transport systems
- to define, in terms of contents and timing a Technical Assistance Programme to be financed by the European Union (EU).

TRACECA (Transport Corridor Caucasus Europe Central Asia) was thence created as a component of the TACIS interstate programme.

The "Brussels Declaration" issued at the conclusion of this conference recommended the European Union to include in the TACIS programme technical assistance to road transport operations, including the automotive supplies and services sector, upon which operators depend.

1.2 A project with similar though not identical aims to this one is to commence shortly in the Caucasus (Armenia, Azerbaijan, Georgia). The Beneficiary States of this present project are the Central Asian States (Kazakstan, Kyrgyzstan, Tadjikistan, Turkmenistan, Uzbekistan, see also section 3.6).

1.3 Road transport in the USSR used to be administered by Republican ministries of road transport which also provided common carrier transport services. The road transport industry of the FSU exhibited a high degree of vertical integration and monopoly, characterised by own-account operations, and large diversified carrier enterprises with extensive in-house support services, terminal networks etc.

Restructuring is underway. A private sector has emerged both spontaneously and with foreign technical assistance. The present economic crisis in the Region is imposing radical changes.

The pattern of privatisation of state assets varies from country to country. For example, Kazakh carriers must now operate with a high degree of autonomy and generate their own investment capital, whereas in Uzbekistan and Turkmenistan more centralisation is apparent, and some quite substantial investments in new fleets have been made. In all cases managements are dynamic and ambitious, but are little prepared for operations in a truly competitive environment.

Small operators typically use obsolete trucks not adapted to long-distance haulage.

Support services, such as mechanical servicing, forwarding, and clearing houses for backhauls, are inadequate. It is an open question whether, or at least how fast, demand for support services will stimulate adequate response from entrepreneur suppliers. Uzbekistan is particularly concerned with the development of roadside services. In Kazakhstan a project for post-privatisation support to small road hauliers has been provided by non-European aid agencies.

1.5 The majority of commercial vehicles operating in the region originate in the FSU. The range of vehicles types available has been extremely limited. Pick-up trucks, full size heavy goods vehicles and specialised bodies are not manufactured.

This fleet is ageing and the mechanical availability of these vehicles is excessively low. This situation constitutes a financial burden on trucking enterprises, which reduces the competitiveness of the sector.

Operators are very interested in expanding their present minor participation in international trucking. Most of their vehicles do not conform to Western standards of efficiency, fuel (petrol/diesel), emission and safety. Operators are inclined to see re-equipment as a solution for all their problems. However, the total costs (depreciation and operation) of vehicles imported from the West is relatively high.

1.6. Components manufacturing is presently carried out locally on a relatively small scale, and using dated equipment.

Large stocks of certain spare parts are reportedly held in certain of the beneficiary states, but unevenly distributed relative to need. Whatever, the distribution system is underdeveloped.

Local maintenance, engine and transmission overhaul facilities are devolving from centralised para-statal organisations. They tend to be over-centralised, so that the management organisation, the capacity of existing facilities and their geographic dispersion do not correspond with the evolving market economy needs.

There are national aspirations to enter the vehicle assembly market. One major European truck manufacturer has arranged local assembly of a certain number of heavy goods vehicles (38 tonne). Reportedly, these do not match the present market, and a reorientation of the product line to be offered is underway.

1.7 The likely evolution of demand by market segment for trucking is not known. Such information would be an invaluable reference, for business plans proposed by operators in the sector.

Transit traffic has developed throughout the Region (from Iran, Turkey, Pakistan, Western Europe,....) Operators are typically nationals of those countries, and use Western heavy goods vehicles.

1.8 Federation(s) for road transport carriers exist, at least nominally, and IRU membership applications are in progress.

The Federations do not appear to have a broad membership base within industry.

1.9 All states are seeking adhesion to international conventions, such as to allow them the TIR facility. They are interested in the full range of international conventions for road transport.

1.10 A number of specific external factors burden the road transport industry at present and add to its problems. These include the inconvertibility of currencies (Turkmenistan, Uzbekistan), interdiction on cash transactions (Uzbekistan) and high import duties (Kazakhstan). In practical actions related to the present technical assistance these factors must be accommodated.

2. Objectives

The overall objective of the project is to facilitate development of the domestic and international road transport industries within the Recipient States.

To this end this project sets out to:

- determine the size and segmentation of the Recipient States market for inter-urban and international road freight transport, at present and as may be foreseen in the medium term
- determine the size and characteristics of the truck fleet appropriate to match the market demand
- advise and assist on investment decisions in vehicles, and support services industries
- advise on restructuring and re-deployment of assets belonging to former state-owned trucking and automotive supply enterprises
- promote an active free market for trucking services
- promote the development of a range of automotive technical support (overhaul, spare parts, roadside services,...)

Certain institutional and regulatory aspects must be considered along with the above objectives:

- promote adherence to all relevant international conventions on road transport (UN/ECE; TIR, temporary importations, hazardous goods,...)
- identify and propose practical remedies for legislation, price controls, monopoly situations, restrictive transit agreements or other regulatory handicaps which hinder the development of the industry
- provide advice on subjects related to the foregoing, such as international transit documentation, fleet management, stock control, information technology
- provide recommendations for licensing of common carriers in the Recipient States
- provide recommendations for the technical certification of vehicles (weight, size, safety, emissions,...)
- promote harmonious regulation and concerted policy between the Recipient States

The end scenario desired is a broadly based industry composed of viable private autonomous operators, both carriers and common support service providers, matched to the foreseen demand for national and international road transportation.

3. Scope of Work

3.1 General

The Consultant will:

- carry out studies leading to determination of the:
  - present level of activity in the trucking industry
  - truck fleet owned by the Recipient States and the structure of that ownership.
  - structure and capabilities of the automotive supplies industry
  - clearing-house, forwarding, back-haul or other trucking brokerage services on offer, particularly to SME trucking companies

- enter into close contact with selected enterprises and credible entrants to the industry, and mount collaborative pilot projects.

- formulate recommendations for operator licensing (carriers) and vehicle certification, based on EU standards and DG7 recommendations.

- conduct seminars:
  - for know-how transfer
  - to answer questions on Western practice and international regulations
  - to bring together enterprise managers and officials from across the Region:
    - to consider regulatory questions of common interest
    - to promote a free and open Regional market for trucking services
    - to highlight restrictive practices with common disbenefits
    - to highlight unfair competition

The elements which follow form a loose framework for carrying out the project. The activities described are not to be considered limitative, nor is sequence imposed by the order below. The contractor is welcome to enlarge upon the activities described and to introduce his own approach in his Methodology, for achieving the project objectives.

3.2. Studies

Data collection and processing methods including validation should be described in the contractor's proposal. The relative economic importance of States, Oblasts and main transit corridors should be taken into account, to concentrate on those of highest Regional interest.

Based on the Regional needs and capacity analysis implied in this study, and the site investigations that the contractor would have conducted, carriers, automotive service providers, parts fabrication enterprises and/or specialist operational brokerage services should be identified for possible development assistance, as described in Section 3.3.

The study phase of the project is not to be prolonged, or given more emphasis than is needed to generate fully credible, segmented, low-demand/high-demand scenarios, and to select enterprises or entities to assist in Section 3 activities.

3.2.1. Commercial Vehicles Supply and Demand.

It will be necessary to determine State by State (or by Oblast for the most developed regions) the size of the commercial vehicle fleet actually operational. Type, ownership, usage, and other characteristics are to be summarised.

The market segmentation for common carrier services is to determined, estimates and forecasts of demand are to be established. Existing and desirable levels of service to be provided by operators are to be described.

Mismatches between supply and demand are to be highlighted and quantified.

Forecasts of the future evolution of the commercial vehicle fleet are to be made, taking into account the age of the fleet, regional disparities, the economic situation of operators and their clients.

The future model range and pricing plans of Russian and Bielorussian truck manufacturers, as well as European manufacturers, are to be taken into account

As well as common carriers, this study should to the extent possible cover vehicles presently utilised for own account transport be they privately or state held. Underutilisation of vehicles in the traditional enterprises and on state farms has been reported.

3.2.2. Automotive Parts and Services

An investigation of the automotive support industry is to be carried out. Present distribution channels for vehicles, automotive parts, and service facilities are to be determined.

Components of this investigation should consider the availability of servicing, overhaul and repair facilities, and local parts manufacturing.

The former state transport enterprises possess extensive ancillary facilities such as offices, service bays, warehouses, lodging for drivers, etc., many of which may be redundant to a focused transport enterprise operating in free market. The consultant should make an inventory of these assets, for eventual recommendations for their redeployment or divestiture.

Market opportunities for providing support services (lodging, fuel, mechanical services,..) to transit vehicles are to be reviewed. This is of particular interest to Uzbekistan. Traffic thresholds, service area separation distances, etc. for profitably operation of such facilities, based on EU experience, would provide authorities with planning guidelines.

3.2.3. Commercial Services; Freight Brokering Services(FBS)/Commercial Transport Centres (CTC)/Vehicle Off Road (VOR)

A non-European aid agency has provided technical assistance for dealerships in vehicles (initially auctioned privatised vehicles, CTC), and in the establishment of autonomous centres for brokering road transport services (FBS). Both are reported to have been financially successful. The CTC survive but the FBS disappeared sometime after assistance ceased. A more efficient market for trucking services was reported to have been created by the FBS, particularly in serving the agricultural sector. The need for improved market mechanisms remains. The project concerned Kazakhstan and Kyrgystan.

Road freight forwarding offices dating from the FSU still function but service only the traditional established carrier enterprises.

The Consultant is to appraise the potential of surviving successful entities (or other SME candidates) for diversification of their activities into support services, particularly freight brokering, but also spare parts distribution, and possibly break-down assistance (VOR).

3.3. Business Plans and Direct Technical Assistance

In the Project Progress Report, recommendations should be made for the preparation of selected business plan projects and active pilot business development assistance.

After approval by TRACECA management the contractor will work with chosen enterprises in the preparation of such plans, and provide active on-site management assistance in business development.

The intention is not to provide a business incubator. The project should support proven dynamic managements in pilot business development, into new or geographically expanded activities. Competitive attitudes should be encouraged. Chosen companies should be eager to collaborate and voluntarily provide facilities for the Consultant. Indicators for success of the businesses should be established, and incentives provided to encourage success (fax, computers,... specifically designated in the project budget and from the end-of-project close down). Salaries should not be paid to local participants in pilot developments.

Foreign partners for joint ventures or business twinning exercises should be sought. Tender proposals encompassing outline projects conceived and resourced by EU sectoral partners could be considered.

At least half of the project resources (Consultants man.months, incentives and other) should be designated for activities under this heading.

3.4. Licensing and Technical Standards

This section of the work is to be carried out in particularly close collaboration with the TRACECA Transport Legal Framework programme concerned with legislation. It should complement that project with the technical, operational and commercial input for regulation.

European Union standards should be transposed and a schedule for their adoption proposed for local circumstances as far as possible and appropriate.

The close involvement of local Research Institutes is essential, to promote local acceptance of the results *(see Section 3.4)*. Co-authorship of the proposals would be desirable.

3.4.1. Licensing

Recommendations for Regional licensing of motor transport carriers are to be made. These should be based on quality of service, and business standards, rather than quotas or zoning.

3.4.2. Technical Standards

Recommendations for common TRACECA regional technical standards for vehicles are to be made, including aspects such as safety, environmental and maximum size of units. They should take into account the present fleet mix, its age, new models currently available, manufacturers plans for the future, and a realistic time-table for the adoption of new regulations.

The recommendations should cover in outline the control facilities which should be set up before any technical regulation may be applied.

3.5. Seminars

During the course of the project the contractor is to organise on-site seminars for local transport industry managers and officials. These are to cover a wider audience than participants in activities foreseen under Section 3.3. Synergies with Section 3.3 are to be developed.

The Recipient State National Federations should be drawn into these activities and the opportunity taken to explain and expand the role of such Federations to correspond with EU models. Regional collaboration between Federations is to be encouraged.

Subjects of interest would include:

- typical operating targets for competitive road transport within the EU (mechanical availability, utilisation rates, manning ratios, etc.)
- vehicle operating costs
- the structure and workings of the road haulage market in the EU
- banking and insurance procedures connected with TIR and the CMR.
- specialist services such as brokering for back-hauls, vehicle-off-road,
- the standard contracts for commercial vehicle procurement (purchase, leasing,...)

- conditions offered (or to be negotiated) for after-sales service, parts supply, guarantees, training of mechanics and managers, technical assistance (eg.estimation of vehicle operating costs,...)
- the European market for commercial vehicles (new, factory reconditioned, second-hand,...)

A seminar manual should be produced which would also serve as a straightforward Management Handbook on road freight transport operations.

At least one Regional seminar should be organised to promote Regional harmonisation. Costs (participants transport, accommodation,...) are to be foreseen within the project budget.

3.6 Other Related Projects

The TRACECA project should dovetail with this programme, in addressing downstream issues facing the new operators. Co-ordination with SME support programmes should also be developed.

Several related reports prepared by Western consultants precede this project. They include:

Roads & Road Transport Study	Russia, Ukraine, Kazakhstan & Bielorussia	EBRD
Central Asia Outline Transport Strategy	Kazakhstan, Kyrgyzstan, Turkmenistan, Uzbekistan	EBRD/TACIS
Freight Brokering Services in Shymkent and Kustanai		USAID

At the time of writing the following projects within a similar domain of interest are expected to commence shortly:

Transport Legal Reform	TRACECA
Dolphin	TRACECA

Programme of Economic Integration between the Republics of Kazakhstan, Uzbekistan, and Kyrgystan (CACOM), Regional Governmental Initiative supported by TACIS

The TACIS Dolphin project is of particular interest and has commenced in Uzbekistan and Turkmenistan, addressing for those two States only, certain of the business development issues which this Region wide project covers. Regulatory issues are not addressed in Dolphin.

The Consultants appointed to carry out this project are to co-ordinate their work closely with all other related activities within the TRACECA region. This particularly applies at the Inception Report stage, when preceding reports by others should be fully assimilated (TACIS will <u>not</u> provide copies of preceding reports for tender preparation). Duplication of effort is to be avoided. The listing above must not be considered limitative.

3.7 Local Participation

National consultants and local Institutes should be involved in every aspect of the project. All TRACECA countries have Institutes specialising in various aspects of roads planning and engineering. It is a requirement that Organisation and Methodologies include local experts and Institutes to:

- make full use of local experience, antecedent projects and data bases
- promote the emergence of a financially viable local consulting sector
- ensure the effective transfer of know-how to the Beneficiary states
- ensure the enduring effect of project output

Consultants should base their activities, including the writing of reports, largely in the TRACECA region, carrying out the project in close collaboration with local technical organisations, and employing both senior and junior professional staff, from several TRACECA states.

The Consultants Methodology should fully explain his training and know-how transfer programme within the project.

Consultants must make amply clear in their proposal the arrangements they have made to work with local entities.

The close involvement of local Research Institutes in the proposals for licensing and technical standards proposals is vital for local acceptance of the output. Proposals should be co-authored, or prepared by authoritative local partners with the European Consultants assistance.

National Road Transport Carriers Federations are to be drawn into all project activities to the extent possible.

3.8 Foreign Expertise

The Consultant is free to compose his expatriate Team for this project, mobilising long and short term participants, as he sees fit. The following domains of expertise should be clearly visible in the proposed staff list:

- project management
- road freight haulage company management
- automotive support services management
- road transport regulation

3.9 Logistics, Accommodation, Equipment.

The Consultant shall be responsible for arranging necessary living accommodation, transportation, telecommunications, equipment (IT and other), surveys, investigations, document reproduction, printing, secretarial services, interpretation, translation, office space and all other input required for the purposes of the work.

Equipment used to support the Consultants activities should be left with Beneficiary State organisations at termination of the project (computers, software, communication equipment). The Consultant should detail in his proposal the equipment which he intends to provide and its cost to the project. This covers general equipment required for his own activities, as well as specific equipment to mount pilot projects.

4. Time Table and Reporting

4.1 The project is to be completed within a period of twelve months.

Task durations and staff assignments are to be clearly shown on planning schedules in the proposal. Time on-site and at home office should be clearly visible. Milestones for output and key dates for data acquisition are to be indicated.

4.2 Publication of Reports

Technical output is to be the unrestricted property of TACIS and cannot be considered confidential by the Consultant or any other participants.

4.3 Technical Deliverables

The contractor will catalogue in his proposal the individual Deliverables by which he proposes to address the full range of issues raised in the Objectives and Scope of Work, and his schedule for their provision.

Technical Deliverables may be specific reports, model procedures, manuals, databases, or any other tool which the Contractor proposes to utilise.

A Technical Deliverable containing the Licensing and Technical Standards of Section 3.4 should by or before month six, to allow assimilation in the Transport Legal Framework Project..

All Technical Deliverables must be provided in both English and Russian, in numbers and formats to be agreed with TACIS.

4.3 All reports are to be delivered in the numbers, languages and locations as follows:

	Bound		Loose-leaf		Diskette
	English	Russian	English	Russian	(Eng.+Rus)
TACIS Brussels	5	1	1	1	2
TRACECA CU (per state)	1	5	1	1	0

The word processing programme to be used will be agreed with TACIS (and DOS compatible).

4.4 All reports are to be prefaced by an Executive Summary, and be in accordance with standard TACIS Guidelines. These foresee:

Project Inception Report

An Inception Report will be issued within two months of the commencement of the project. It will summarise initial findings and propose any modifications to the methodology and work plan. In particular it will adapt the work plan to the needs of each individual TRACECA state taking into account the parallel activities of other Technical Assistance programmes, avoiding duplication of effort, and addressing unfilled needs.

In particular the activities of the Dolphin project are to be taken into account.

Project Progress Report

This report will be issued no later than the end of month 5.

It will contain the results of studies outlined in Section 3.2, and the proposal for pilot business development.

Final Report

The Draft Final Report will be submitted no later than the end of month 12.

Any comments on the Draft Final Report will be issued by TACIS Brussels within six weeks of its receipt. The Final Report incorporating any modifications will be issued one month thereafter (2,5 months after issue of the Draft Final)

5. Budget

The budget for this project is set at a maximum of ECU 600 000.

EUROPEAN UNION - TACIS

Technical Assistance to the Southern Republics of the CIS and Georgia - TRACECA

TRADE AND TRANSPORT SECTORS

Terms of Reference

for

The Dolphin Project

Final Recipients:

Ministries of Transport of the Republics of

Turkmenistan and Uzbekistan

Summary :

Technical assistance for improving road side services, spare parts procurement and distribution in Turkmenistan, Uzbekistan in collaboration with a Russian commercial vehicle producer.

Background

Uninterrupted vehicle performance frequently depends on external factors such as the level of supporting services in a national market. These include the availability of spare parts. In the case of spares originating from other Republics of the CIS, their availability is not always easy to secure.

Objectives

The project will be to identify potential sourcing and payment including, if necessary, barter arrangements for spares from other Republics of the FSU.

The project will be also examine available transport services, their effectiveness and alternative services to be developed including door-to-door deliveries; always seen from the eyes of the transport operators.

During phase one of the project, the present situation of transport equipment availability versus demand, as well as the revenue to cost of operation ratio of the recipient fleets will be analysed. Other objectives are supply chain evaluation, short local parts production runs, distribution planning associated with the location and the number of depots, assessing information technology requirements for control of warehousing and transport operations, fleet size & mix, load planning, vehicle route scheduling and customer service level surveys.

Objectives for the conclusion of the project are:

- To set up working relations between Turkmenistan, Uzbekistan, and outside transporters and manufacturers to give road side assistance to each other across borders; to organise payment for parts and labour on a « netting basis » including barter arrangements. An equitable division of the Consultants' efforts between the beneficiary States is to be assured.

- To establish a way to handle door-to-door parts shipments, responding to requests from 'unit down' incidents as well as normal demand from scheduled repair/maintenance.

Tasks

Module A - Transport Services, Operations & Logistics

Assessment of the actual situation in recipient countries (Turkmenistan, Uzbekistan) and formulating the problem areas, generating proposals for action and forecasting consequences of proposed solutions, and evaluating them conceptually.

Module B - Operational Concept

Designing an organisational and operational concept for the transport company (ies) including.

- Analysis of capacity and demand, cost of operation and revenue situation.
- Fleet management, service, maintenance, spare parts & lubricants.
- Supply chain evaluation.
- Assess information technology requirements for control of warehousing and transport operations.
- Planning of fleet size and mix, load planning and vehicle route scheduling, door-to door services.
- Establish customer service level definitions.
- Simulation of warehousing and transport requirements using contractor's in-house software.
- Introduce methods for carrying out cost and efficiency surveys and improve warehousing and distribution operations.
- Specify duties and job descriptions of the different functions.
- Describe reporting lines.

Module C - Part Procurement & Distribution

Analysis of units in operation by size/GVW, type, make, parts consumption, fast moving items, recommended stock lists of essential drive line components, historical data on parts usage/incident rates. Definition of parts requirements and assessing sourcing situation in Central Asia, interchangeability of parts, volume forecasts, pricing levels and payment patterns. Proposing methods for volume purchases, involving Government support and methodology for « paying in kind » for items sourced from neighbouring countries.

Encouraging « wholesale » buying for other operators, designing parts supply chain embedded in door-to-door delivery services - see Module B.

Deliverables and Reports

An Inception Report will be presented one month after the commencement of work, using the standard TACIS format.

A Progress Report comprising a Conceptual and Functional Analysis will be presented upon completion of Module C. It should indicate the expected benefits of the project and their transferability across the Region into other national contexts.

The project will establish a «stand-alone business » pilot operation based on the concept of Modules A to C. It will demonstrate to TACIS and to other TRACECA regional transport enterprises, a system for parts shipment including payment, corresponding with the project objectives. The system will cover relationships between Uzbekistan, Turkmenistan, Russia/Belorussia or elsewhere in the FSU.

The viability and advantages of the pilot operation will be explained in the form of a Manual, which can be used as a basis for similar enterprises across the Region. It must allow interested enterprises to estimate costs, as well as to demonstrate the logistics and administration of the system. The Manual will constitute the Final Report and be issued first as a Draft with a final approved version, including any revisions, issued one month later. These Reports will be issued and distributed as follows:

Inception:

5 copies in English to TACIS in Brussels
2 copies in Russian to TACIS in Brussels
2 copies in English to the CU in Turkmenistan and in Uzbekistan.
2 copies in Russian to the CU in Turkmenistan and in Uzbekistan.

Progress and Final:

5 copies in English to TACIS in Brussels
2 copies in Russian to TACIS in Brussels
2 copies in English to each TRACECA Republic CU (16 copies in all)
5 copies in Russian to each TRACECA Republic CU (40 copies in all)

Organisation and Workplan

The Contractor will nominate in his proposal the Recipient State organisations, and the external suppliers, who will collaborate on the pilot demonstration. He will agree with the respective Ministers of Transport the composition of the recipient fleets (own account, Government and /or private) during the first month of the project.

The Contractor will likewise describe in his proposal the EU organisations who will participate in the project, provide CVs of the staff to be assigned, and explain the duration and content of their individual roles. The Lead partner of the participating organisations, as well as the Project Manager, is to be nominated.

In the absence of a developed local Consulting industry, the participation of local road transport research and academic Institutes is encouraged, to ensure the broadest diffusion of the technical assistance provided. Such Institutes are established in both Tashkent and Ashghabad. The Contractor will also make recommendations for, and promote the formation of a Regional Road Transporters' Federation.

He will prepare an outline schedule showing the activities, milestones in project output and any key dates for procurement, inter-state agreements or other exogenous factors, essential for project success, to be forthcoming.

The following timetable is suggested.
end of month 3 - Finalise Module A
end of month 9 - Finalise Modules B&C (issue Progress Report)
end of month 12 - Connecting the recipients' fleets in Turkmenistan, and Uzbekistan to collaborate "cross-border" and to demonstrate door-to-door delivery (issue Final Report)

Budget

The maximum budget available is ECU 295 000. This amount is fixed and shall cover the full contribution of the Commission.

EUROPEAN UNION - TACIS

Technical Assistance to the Southern Republics of the CIS and Georgia - TRACECA

TRADE AND TRANSPORT SECTORS

Terme of Reference

for

TECHNICAL ASSISTANCE FOR THE DEVELOPMENT OF THE PORT OF BAKU

MANAGEMENT ASSISTANCE AND TRAINING

Final Recipients :

TRACECA Region Ministries of Transport

TACIS - TRACECA PROGRAMME

TECHNICAL ASSISTANCE FOR THE DEVELOPMENT OF THE PORT OF BAKU

MANAGEMENT ASSISTANCE AND TRAINING

1. INTRODUCTION AND BACKGROUND

Since independence the Republic of Azerbaijan has recognised the importance of transport in the development of the country's economy. The government has therefore laid particular emphasis on the rehabilitation and modernisation of its transport infrastructure, including the Port of Baku.

The Port of Baku is the main sea-port of Azerbaijan. It occupies a key strategic commercial position on the Caspian Sea. The port has excellent sea, rail and road connections for passengers and cargo into and out of the countries of the Caucasus region, of the countries of Central Asia, of Russia, Iran and Turkey. It is a key element in the TRACECA corridor (Transport corridor Europe-Caucasus-Asia). The new political situation has led and will lead to major changes in the cargoes handled in the port and their origins and destinations. The port facilities and the associated transport systems will have to adapt accordingly and it will be necessary to introduce new technologies and operational techniques.

The majority of the cargo between the Caucasus region and Central Asia used and still uses today the ferry service between Baku (Azerbaijan) and Krasnovodsk (Turkmenistan). There is an ongoing shift from 100% rail transport to shared rail and road transport. The rail ferry takes trucks and wagons.

For yet unknown reasons the water level in the Caspian Sea is rising at an average annual rate of some 25 cm during the last years. This phenomenon commenced in 1975, be it at a less important rate of sea level rising. The alarming rise in the Caspian Sea level creates major difficulties in operating the ferry service. The ferry terminals in both ports will to be out of service within some 3 years if the sea level continues to rise.

Against this background the Governments of Azerbaijan and Turkmenistan obtained technical assistance from the European Commission under the TACIS - TRACECA programme for a survey of the Caspian Sea water level rise and its influence on the operating conditions of both ports. The project included a survey of infrastructure in both ports and an attempt to forecast the future traffic flows. This technical assistance was carried out by the group of consulting engineers Sofremer, HPC and Deti. The

final report is expected any time (May 1995). The study confirmed the urgent need to rebuild the ferry terminals in both ports.

The European Commission committed itself under the TACIS - TRACECA programme to prepare the redesign of the ferry terminals in both ports and to prepare the international tender documents for their reconstruction. Terms of reference for this study are under preparation.

Both projects deal with the immediate physical needs to keep the ports operational.

Since the dissolution of the Soviet Union, all ports of the New Independent States have to work in a new, free market oriented environment. The new environment has forced and still forces the Port to adapt new policies and work methods, and to think commercially. The Caspian Sea crossing and the TRACECA route have now to compete with other land traffic routes.

In this competitive environment a port must generate sufficient income from its business to cover its running costs and to keep its infrastructure and equipment in good working condition. Sufficient benefit should remain available to renew infrastructure and equipment and to safeguard future expansion. A financially independent and flourishing Port is a basic element in a country's economy, being no burden for the national budget.

The Port management has to tackle these new challenges. Exchange of ideas and experience between the management of the port of Baku and professionals in the port business from the European Communities can be beneficiary. This project insures this exchange of ideas and experience in the form of a training and management assistance programme.

2. OBJECTIVES

The general objective of this project is to support the Seaport Authority in transition to the market economy.
The specific objective of this project is to strengthen the Ports management in introducing new policies and working methods and to cope with the new challenges resulting from the new market oriented environment.
The areas of assistance and training focused by the project are:

- Development of strategic planning and marketing strategy
- Institution building
- Tariff structure and related cost covering of Port activities
- Port operation
- Costing and accounting system
- Human resources policy

Moreover, the programme includes the preparation of a legal framework to define the relations between Baku Seaport Authority, several specialised users and other interested parties. It includes the implementation of a modern financial management system to analyse all investments for short, medium and long term periods.

The successful and effective implementation of the proposals can only be achieved by high qualified experts, working side by side with officials of Seaport Authority and supported by a training programme.

The identified programme requests the following experts:

1. Assistant to General Manager of Seaport Authority
2. Assistant to Financial Director of Seaport Authority
3. Assistant to Port Operations Director
4. Management Training Adviser

3. SCOPE OF WORK.

1.1. ASSISTANT TO GENERAL MANAGER OF SEAPORT AUTHORITY

The Assistant to the General Manager will assist the General Manager of the Seaport authority as required, and in particular he will advise and assist on all matters concerning:

- Strategic Planning for the Port

  This entails the preparation and follow-up of the long term strategic view for the port. The long term strategic view shall take into account the economic evaluation of the country and it's natural (land borne and sea borne) hinterland, as well as the follow-up of changes in (i)shipping and its environment, (ii)new techniques of transport and (iii)new commercial attitudes in the world towards ports.

- Medium and Long Term Planning

  A long term planning shall be derived from the strategic vision developed in the country. The long term planning section will encompass and guide the short term plans (foreseen within 3 to 5 years). In view of the fast changing economic environment these plans will be developed in easily adaptable form, will follow the lines set out by Government and will incorporate realistically possible developments.

- Structural Investments

  The future major infrastructure investments, identified in the long term and medium term planning, will be set out and justified according to internationally recognised assessment methods.

- Institutional Changes

  All relevant information for the port will be gathered in order to stimulate and attract private investment. This material will be made available as well to local investors as to internationally interested parties. Modifications to existing legislation and publication of information aiming to promote private investments will be suggested to the authorities concerned.

- Computerisation

  Define a programme for the setting up of modern computer information and management systems for the different departments in the port and linking of the port to the international shipping information systems.

- Commercial and Marketing

  Defining the commercial policies of the port and work out a strategy for land use, port handling and storage pricing. Prepare a marketing plan for the port in view of attracting new clients.

- Supervision of investments

  Preparation of tenders, control of offers and follow-up and evaluation of budget control.

- Follow all accounting services (general and analytical) and see to the consistent relation between operations, accounts and cash in-outflow.

- Making in close collaboration with the Financial Department a detailed analysis of the tariff structure and propose such changes as might be found necessary to achieve sufficient margin and financial soundness of the Port's activity.

- Assist in the organisation and control of training programmes for personnel at all levels and of the setting of pay scales.

Profile

The Assistant to the General Manager will have experience in shipping and/or port for at least ten years at a level of manager, controller, or legal advisor. He will have a university degree in Economics, Engineering or Law, with additional training and/or practical experience in management. The Assistant to the General Manager is a high level posting in this difficult period of conversion of the economic environment. The personal assets required to function effectively will include good skills in human relational, an aptitude for communicational and firmness if necessary.

Duration
12 working months

A knowledge of Azerbaijani or Russian would be a major asset.

3.2. ASSISTANT TO FINANCIAL DIRECTOR OF SEAPORT AUTHORITY AND PAYMENT SCHEME ADVISER

The expert will have two areas to cover

1) As Assistant to the Financial Director he will assist the Financial Director as required- Specific tasks will include:

- Preparation of the financial sections of all investments' plans at medium and long term.

- Preparation of capital and operational budgets and their consistent follow-up during the year.

- Preparation of all financial documentation required for negotiations with all parties involved in lending operations (banks, bilateral or multilateral organisations) and private enterprises interested in direct investments (local or foreign). The financial documentation for the renewed ferry terminal shall be prepared in close co-operation with the designers.

- Preparation of balance sheets at the required intervals.

- Daily treasury management in local and foreign currencies.

- Making in close collaboration with the General Management of the Port a detailed analysis of the tariff structure and propose such changes as might be found necessary to achieve sufficient margin and financial soundness of the Port's activity.

- Preparation and control of training schemes for financial officers

2) Part of his job will be to advise on new payment schemes

It appears that the present incentive schemes are failing to achieve the desired level of port performance. Norms are increasingly difficult to define for different product handling and the introduction of containers and of Ro-Ro traffic make practical implementation nearly impossible. The present scheme discourages initiative and thus the development and use of improved cargo handling methods

The task of the Payment Scheme Adviser will be to advise the Manager of the Port on:

- Designing and implementing a workable flat pay system or equivalent system that is acceptable by dock labour whilst at the same time permitting normal profit levels for the stevedore and encouraging change and innovation to improve port performance.

- Preparing for the changes in advance by explaining and persuading management, supervisors and the dock workers the purpose and benefits of changes.

- Designing and implementing training programmes for supervisors and dock workers in preparation for a new pay system.

The task will therefore consist of an in depth study of the existing system so as to be able to suggest possible economic alternatives on the one hand whilst keeping social peace on the other.

The suggestions made will have to possess sufficient vision as to take account of the possibility that different parties other then the public port authority will make use of dock labour.

Profile

The candidate Assistant to the Financial Director and Payment Scheme Adviser will have a university degree in Finance and/or Economics with the preferable major in international finance. He will have at least five year of experience at financial management level of a medium sized company, involved in shipping or ports matters as well as a large number of years of experience in Port Pay systems either as Stevedore Manager or other senior role. He should have extensive negotiation skills between labour unions and management and be capable of making economically viable suggestions to all parties. He should have first-hand experience of training schemes for supervisors and workers, and will be required to liaison closely with the Management Training Adviser. Knowledge of financial negotiations at bilateral or multilateral level will be an asset.

The Assistant to the Financial Director and Payment Scheme Advisor requires to posses a good ability of training skills.

Duration
12 working months

A knowledge of Azerbaijani or Russian would be a major asset.

3.3. ASSISTANT TO PORT OPERATIONS DIRECTOR

The Assistant to the Port Operations Director will assist the Port Operations Director as required. His particular objectives will be to analyse port performance and to advise on and implement ways of improving performance, including schemes for improving co-ordination with rail and road transport. His involvement will include:

- All daily port operations planning, i.e.:

    - Ship berth allocation.
    - Gang (dock labour, tally) and equipment allocations.
    - Warehouse and storage area follow-up.
    - Contacts with ship's agents and forwarders and contacts with land transport organisations (rail, road) for removing import or bringing export-cargo.

- Productivity of all entities in the port.

- Control of all maintenance, storage areas, warehouses and equipment.

- Preparation of investment requirements in equipment and construction.

- Preparation and control of operational budgets and making suggestions for capital budget requirements

- Preparation of commercial handling contracts with shipping companies and shippers.

- Together with the Finance Department, preparing and controlling the follow-up of contracts to insure their profitability.

- Preparation and control of training scheme for the staff of the Operation Department.

Profile

The Assistant to the Port Operations Director should have at least five years of previous experience in port operations at management level. The ideal candidate would be a former stevedore company manager who is familiar with Ro-Ro and ferry services and who acquired more detailed management skills later.

Duration
6 working months

A knowledge of Azerbaijani or Russian would be a major asset.

3.4. MANAGEMENT TRAINING ADVISER

The Management training Adviser will assist and advise the Port Manager on all aspects of management training.

Management training is required to ensure a smooth transition from the very centralised form of control and management to more delegation of authority and acceptance of responsibility through all levels of management. These new responsibilities require the development of new skills at all management levels:

- Communication
- Delegation of authority
- Acceptance of responsibility and accountability
- Personnel instruction
- Leadership qualities

His tasks will be:

- To undertake the assessment of training needs for management.

- To arrange and assist in setting up training programmes inside the Port and in recognised training centres elsewhere in Baku and possibly abroad.
  This task includes:
  - -Engage trainers (Azerbaijani and foreigners as may be needed or suitable).
  - Arrange the training locations and related logistics and facilities.
  - Lead and supervise the training cessions.
  - Measure the effect of implemented training programmes, conclude and fine tune future programmes.

- To identify those personnel who could themselves become trainers in the long term and prepare (train) these trainers for their future task.

- To prepare a programme of permanent training and formation of the Port's personnel, including the set up of a proper structure inside the Human Resources Department of the Port.

- To start implementing the programme of permanent training and formation of the Port's Personnel.

He will be required to liaise closely with the other experts and especially with the Payment Schemes Adviser.

Profile

The Management Training Adviser will have at least five years experience in management training in a port or port related industry. He will have a university degree or equivalent educational achievement.

Duration
5 working months

A knowledge of Azerbaijani or Russian would be a major asset.

3.5. ORGANISATION OF TRAINING PROGRAMMES

The Consultant is responsible for the organisation of the training programmes identified and detailed as mentioned above.

The Contractor assigns and remunerates those trainers that cannot be found inside the Port's organisation. These trainers can be Azery or foreign specialist as may be suitable.

He must provide interpreters according to needs.

Three types of training programmes shall be worked out and organised:

1. Training programmes for lower management levels and for the Port's personnel

   Familiarisation of new management attitudes, new working methods, on job training, familiarisation with the new payment schemes, etc. will be organised inside the Port or nearby in Baku town as may be suitable. The Contractor is to provide the necessary equipment and organisation, trainers and interpreters, etc..

2. Training programmes for middle management levels and for future trainers:

   These training sessions should transfer to the participants sufficient background, information and enthusiasm for the proposed new management attitudes and working methods. The participants will be the future advocates for assuring continuity in the implementation period.
   These seminars are to be organised outside the port environment at a suitable location in Baku town.
   The Contractor provides the necessary equipment, accommodation, organisation, trainers and interpreters, etc..

3. Study trip to the EU for the senior management:

   The study trip should last about ten days and cover about five participants. Arrangements including payment for accommodation and travel to and inside the EU by participants are to be made by the Contractor.
   The aim of this trip is to allow the senior port managers to meet their counterparts of European harbours and other high level professionals.
   In depth discussions should be organised about the following topics:

   - Strategic port planning and related management policies
   - Medium and long term planning
   - Long term investment planning and related financial justification and planning
   - Institution building aspects

- Commercial and marketing attitudes in ports
- Relations between a port authority and private firms operating inside the port
- Cost and cost control - tariff strategy
- Human resources aspects in ports
- Etc.

3. The Contractor shall allow for sufficient high qualified interpreters to make individual meetings and discussions of the participants with EU professionals possible.

4. EXPERTS, DURATION, TIME TABLE OF THE PROJECT AND REPORTING

The Consultant will present the following information for the four key experts:

- The names and job-titles of staff to be made available as well as their position within the firm, with a detailed CV and description of their experience, including recent experience in countries of the Former Soviet Union.

- A work programme covering the periods of time during which each expert will be allocated to the project.

The duration of the project should not exceed 16 months. The total input of key experts for the project is 35 man/months. The Consultant can propose to shift some tasks from the scope of work of one (several) expert(s) to that of an (several) other expert(s), according to the background of the experts. He can propose to reduce the time one (several) expert(s) is (are) made available and increase the availability of one (several) expert(s) accordingly. In all cases the experts must work together as one team. The total time experts are made available should not be reduced.

The Consultant will present in his offer a work plan and a bar chart covering the input, methodology and expected results for the proposed four positions.

The Consultant will produce the following reports:

- An Inception report after one month

- Interim reports after 6 and 9 months

- A Final Report

The report will give an overview of tasks performed by each expert and of the results achieved. For each report an executive summary will be made.

All reports will be submitted for approval of the Ministry of Transport, and the TACIS - TRACECA staff at the Commission of the European Communities. English is the language of the contract governing the Consultants work and all reports shall be issued in English and Azery or Russian. Total number of reports should he 10 in English and 10 in Azery or Russian.

5. EQUIPMENT

The Consultant should allow for the provision of office equipment, including computers, computer software and equipment for communication and for the training sessions, necessary to carry out the assignment. Details should be included in his proposal.

At the end of the project, this equipment will be transferred to the Port Authority for further use.

6. LOCAL STAFF

The selected company should make arrangements with local bodies, organisations or consultants' firms, individual interpreters and trainers to set up suitable local staff and facilities for the training sessions. Provision should also be included for translation cost. The budget (reimbursable) for the sub-contracting of local expertise should be included in the offer.

EUROPEAN UNION - TACIS

Technical Assistance to the Southern Republics of the CIS and Georgia - TRACECA

TRADE AND TRANSPORT SECTORS

Terms of Reference

for

PORT NETWORK PLAN AND IMPROVEMENT PROGRAMME

RENOVATION OF THE FERRY TERMINALS OF BAKU AND KRASNOVODSK

Final Recipients:
TRACECA Region Ministries of Transport

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TACIS - TRACECA PROGRAMME

PORT NETWORK PLAN AND IMPROVEMENT PROGRAMME

RENOVATION OF THE FERRY TERMINALS OF BAKU AND KRASNOVODSK

1. INTRODUCTION AND BACKGROUND

The Port of Baku is the main sea-port of Azerbaijan. It occupies a key strategic commercial position on the Caspian Sea. The port has excellent rail and road connections for passengers and cargo into and out of the countries of the Caucasus region. The port of Krasnovodsk, in the vicinity of the town of Turkmenbashi, is the main commercial port of Turkmenistan on the Caspian sea. It is linked to it's Central Asian hinterland by the major road and rail systems of the region. The link between both Caspian ports ensures the connection between the Caucasus countries and the countries of Central Asia. The majority of the cargo shipped in both ports uses that link. It is a key element in the TRACECA corridor (Transport corridor Europe-Caucasus-Asia).

For yet unknown reasons the water level in the Caspian Sea is rising at an average annual rate of some 25 cm during the last years. This phenomenon commenced in 1975. The alarming rise in the Caspian Sea level creates major difficulties in operating the ferry service. The ferry terminals in both ports will to be out of service within some 3 years if the sea level continues to rise. Parts of the ferry terminals are in a bad condition and need major rehabilitation.

The Baku - Turkmenbashi link is a typical short sea link. Hence it is advantageous, as present practice, to use facilities that do not need transhipment. First priority should be given to the rail ferry link, for this reason. This ferry link can transport both trains and trucks. The other port facilities in both ports also need rehabilitation. However, their reconstruction should be planned within an overall master plan, taking into account future needs. When the present transition period, following independence, is stabilised, and when the transport facilities again take increasing amounts of cargo, it is

anticipated that the ports will generate sufficient income to finance these extra renovation works. Thus their debt level will be kept within reasonable limits. The growth of the petroleum industry allows optimism.

The majority of the cargo between the Caucasus region and Central Asia used and still uses today the ferry service between Baku (Azerbaijan) and Krasnovodsk (Turkmenistan). There is an ongoing shift from 100% rail transport to shared rail and road transport. The rail ferry takes trucks and wagons.

The ferry terminals of both Baku and Krasnovodsk have been designed by the "Kaspmorniiprojekt" institute in Baku. This institute has designed many port facilities in the F.S.U. (in the Black Sea, the Baltic Sea, the Pacific Ocean, the Caspian Sea). Since the dissolution of the Soviet Union and the creation of the new independent states, the institute has suffered considerably by loosing the major part of its customers and work load. However the institute still possesses important historical data. Kaspmorniiprojekt prepared in 1988 an overall plan for the reconstruction of Baku port. As the sea level is still rising, this project needs to be reviewed.

Against this background the Governments of Azerbaijan and Turkmenistan obtained technical assistance from the European Commission under the TACIS - TRACECA programme for a survey of the Caspian Sea water level rise and its influence on the operating conditions of both ports. The project included a survey of infrastructure in both ports and an attempt to forecast the future traffic flows. This technical assistance was carried out by the group of consulting engineers Sofremer, HPC and Deti. The final report was issued in July 1995. The study confirmed the urgent need to rebuild the ferry terminals in both ports.

The European Commission committed itself under the TACIS - TRACECA programme to prepare the redesign of the ferry terminals in both ports and to prepare the international tender documents for their reconstruction. The present terms of reference deal with this study.

Since the dissolution of the Soviet Union, all ports of the New Independent States have to work in a new, free market oriented environment. The new environment has forced and still forces the ports to adapt new policies and work methods, and to think

commercially. The Caspian Sea crossing part of the TRACECA route has now to compete with other land traffic routes.

The TACIS - TRACECA programme includes a project of technical assistance and training for the port of Baku, aiming to strengthen the port's management in tackling the new challenges. At the moment (September 1995), this project is tendered out and offers are expected soon. A comparable project is in the pipeline for the port of Kasnovodsk. Implementation should start end of September or early October 1995. This latter project is prepared by the EBRD and financed by the American Aid.

Most probably, the construction of the two renewed ferry terminals will be financed by loans from international institutions or banks. Part of the present project of rehabilitation of both ferry terminals consists in allowing both port management teams to evaluate the financial feasibility of designs the Consultant prepares.

The project beneficiaries are the future Owners of the terminals, i.e. Baku Port Authority for the Baku terminal and Krasnovodsk Port Authority for the Krasnovodsk terminal. In this document with Consultant is meant the successful consultant company that wins this tender.

2. OBJECTIVES

The first objective of this project is to safeguard the ferry link between Baku and Krasnovodsk against the threat of the rising sea level.
The second objective is to renew and modernise these facilities for further use.
Both terminals are incorporated in one project for several reasons.

1. The present terminals are of the same design and the same ships berth at both terminals.
2. It is expected and hoped that the design of two twin terminals in one contract will result in a better and more economical solution for the ferry link.

The project contains four phases:

First phase: Definition of the design parameters
During this phase, the Consultant must define the design parameters and have them approved by the Owners and Tacis.
Parameters that need to be defined cover aspects of port operation during construction and after the works, geotechnical aspects, seismic activity, capacity of the new terminals, sea levels to be taken into account, maximum slopes, type of ships, the interface between ship and ramps, access roads and tracks, need for storage areas and sidings, electricity supply, use of standards and codes of practice, etc.

Second phase: Design of the ferry terminals
In this phase the Consultant must design the new port works and discuss them with the Owners and Tacis until agreement is reached. This phase ends with the production of a detailed bill of quantities and a budget for the works.

Third phase: Economic and financial evaluation
In this phase, the Consultant's design is tested on its economic and financial merits in the macro economic environment. Credible high and low growth scenarios are to be assumed, compatible with the international financing institutions. A financial plan is to be prepared covering the depreciation period for all elements of the proposed investments in works and equipment. The Port Authorities are to carry out these evaluations with the full support and help of the Consultant.

It can be that the above mentioned evaluations force the designer to adapt his design to more acceptable economic and financial projections.

This phase ends with the presentation of design and supporting documents to an international financing institution for further action.

Fourth phase: Preparation of international tender documents

In this phase the Consultant prepares the international tender documents according to the standards of supporting financing organisations. The documents include the specification of all civil works, electro-mechanical and other equipment, sufficiently in detail for procurement by tender.

3. SCOPE OF WORK.

General aspects

In the design of ferry terminals the skills of a specialised designer of port infrastructures and that of a shipbuilding engineer must meet together.
The Consultant must provide during phase one and two the services of at least one experienced port design engineer and of one experienced shipbuilding engineer. Also, the input of a railway specialist, having experience with the Russian railway system will be required.

Phase three needs the input of a senior economist and experienced in economic and financial investment appraisals, preferably in the environment of the states of the former Soviet Union.

The drafting of international tender documents for the terminals is the job for an experienced expert in that matter.

The Consultant must be in close contact, throughout the project, with the port authorities. All the official documents, the Contractor has to prepare for this project, need the approval of the Owner (Baku Port Authority for the Baku terminal and Krasnovodsk Port Authority for the Krasnovodsk terminal) and of Tacis. The Owners and/or Tacis may seek advice of any organisation, private consultant or ministry to assist them on this matter. The approval of any document does not free the Consultant from his responsibility as designer.

All documents shall be prepared in English and Russia.

First phase: Definition of the design parameters

The design and tender documents must respect the following main design characteristics and boundary limits:

- Two ferry boats must be able to berth (as the present situation).
- During the construction of the new terminals one vessel must always be allowed to berth.

- The new facilities must be able to accept the existing ferries as well as new ferries of the same type.
- The terminal shall be designed to accept rail wagons as well as road vehicles (trucks and cars).
- A possible maximum sea level, to be used for the design, might be -24 and a possible minimum sea level -29 (reference is the zero of the Baltic sea). However, the Consultant should investigate the matter with existing documentation, form his personal opinion on the matter, discuss the question with the relevant authorities and get approval.
- The Consultant shall take into consideration that working at minimum sea level might need substantial deepening of the sea bottom.
- The approach rail tracks and roads must be designed at least 1.7m above the adopted maximum sea level. This minimum level of tracks and roads is to be proposed by the Consultant and to be approved by the Owners. It must take into account possible overtopping waves during storms.

Detailed geotechnical surveys have been done in both ports for the design of the previous ferry terminals and for other infrastructures in both ports. The reports of these surveys are in the archives of the Kaspmorniiproject institute and are available. The existing terminal structures are founded on driven piles. Since these surveys (in the sixties) there might be an accumulation of mud mixed with oil products on the sea bottom. The existence of such layer and their thickness has not been investigated as yet. There is need for a sound geotechnical dossier to allow a sound and economic design. It will be one of the major tasks of the Consultant to study existing data, to prepare a list of missing information and to organise and realise a survey and laboratory testing that produces the missing data. In his offer, the Consultant must make a suitable proposal for the survey and subsequent laboratory testing.

Every year, a bathymetrical survey is done in both ports. The results of these campaigns are available. In Krasnovodsk, at regular intervals, dredging works are needed.

Data on wave climate at the terminals is equally available in both ports.

The existing port structures show important corrosion. This proves the corrosive character of the Caspian Sea water. The Consultant shall investigate this aspect and define appropriate design parameters. The projected physical live of the new structures is 50 years. They should remain in good functioning order throughout that period, providing regular maintenance is done.

Together with the port authorities the Consultant shall define the operational parameters. The list below is not complete. Additional items can be added by the Owners or by the Consultant.

- Implantation of the new terminals.
- The capacity of the new terminals
- Kind of ships to be used.
- The levels of the access roads and rail tracks.
- The operating levels of the ramps.
- Maximum scouring depth to be taken into account in the design.
- The maximum admissible slopes of the ramps.
- Details of the interface between ship and ramp.
- Arrangements during construction, to keep the port and the ferry terminals working.
- Parking capacity needed for waiting trucks and cars.
- Rail sidings needed for waiting wagons.
- Electricity supply.

Typical design parameters such as design earthquake intensity, standards and codes of practice to be used etc. shall be proposed by the Consultant

This phase ends with the issue of a report that summarises the set of parameters and boundary conditions, to be used for the design.

The Owners and Tacis must approve this report.

If needed, the Consultant has to change these parameters until he, the Owners and Tacis are satisfied. However, the Consultant should bear in mind that he is responsible for his design of which these parameters are a key part.

Second phase: Design of the ferry terminals

The Consultant should endeavour to reuse in its new design as many parts of the existing facilities as physically possible and economically reasonable.

The design includes the following (non restrictive list) items:

- The access roads and rail tracks to the ferry terminal inside the fenced harbour area.
- The rail sidings needed for accommodating the queuing lines of waiting wagons.
- Parking areas for accommodating queuing trucks and cars.
- The defence of the shore against sea attack of the ferry terminals and the accesses.
- The access ramps, including electro-mechanical installations and power supply.
- Fendering system and devices for the ship-ramp connection.
- The sea bottom stabilising and scouring prevention layer.
- Auxiliary devices such as bollards, etc.

The design should be sufficiently worked out in detail for:

- Allowing international tenders.
- Allowing execution of the works without supplementary design work, except for the preparation of workshop details of the steel structures and detailed rebar lists. The principles of the steel structures and rebar arrangements are part of this scope of work of these TOR.
- Allowing to prepare an accurate and detailed bill of quantities.
- Allowing to prepare a realistic budget.

The output of this phase is to include preparation of a set of drawings and associated calculation notes. A separate set of these documents must be made for each terminal

On the basis of these design documents, the Consultant prepares a detailed bill of quantities and a budget. Prior to the budgeting exercise, the Consultant shall investigate the level of unit prices in the area for internationally tendered works. Aspects such as availability of aggregates, of cement, of reinforcing steel, cost of manpower, transport costs, cost of travelling and of accommodation, etc., influencing considerably the price levels need investigation.

This phase ends with the approval of the designed budget

Third phase: Economic and financial evaluation

The macro economic analysis assesses the benefits of each terminal, compared to the situation without the investment.

The construction of the new terminals will probably be financed by an international financing institution or eventually by an international bank. In order to facilitate negotiations for there financing, the attractiveness of both projected new terminals needs to be shown. Financing partners in the projects must gain the necessary confidence. The Port Authorities, helped by the Consultant, must estimate the running cost and the income of each terminal during its economic lifetime (25 years) and with the present level of tariff. Other possible sources of income and costs related to the terminal are identified and quantified. Based on this information, they assess the internal rate of return (IRR).

An assessment shall be made by the Port Authority, helped by the Consultant, of the burden of repayment of loan on the budget of the port. Income taxes, taxes on foreign exchange and other taxes and levies are to be incorporated in this analysis as well as possible government subsidy. Special attention shall be paid to the relation between the foreign exchange cash inflow, the expenditures in foreign exchange, the taxation and conversion obligations and the repayment of the new loan and of loans of the past.

The Consultant foresees a liaison person between the Owners and himself who is familiar with appraisal of investment programmes and with the accounting system in the countries of the former Soviet Union. He must assist both Port Authorities in the analysis.

It can be that the financial evaluation forces the designer to adapt his design in order to improve its financial appeal.

This phase will end with a design, supporting by the documents, that can be presented to international financing institutions for further follow up and action.

Fourth phase: Preparation of international tender documents

In this phase the international tender documents are prepared according to the standards of supporting financing organisations.
Provisionally, the Consultant can refer to the FIDIC system for execution of works as framework for the preparation of the international tender documents.

The system and the timing of advance payments and payments to the Contractor need the Consultant's special attention. It should allow the Contractor to limit the pre-financing of the project to reasonable limits. It should assure the Owners that the works will be finished according to the quality and quantities defined in the documents. A balanced equilibrium must be achieved.

4. EXPERTS, DURATION, TIME TABLE OF THE PROJECT AND REPORTING

The Consultant will present the following information in his offer:

- The names and job-titles of staff to be made available as well as their position within the firm, with a detailed CV and description of their experience, including recent experience in countries of the Former Soviet Union.

- A work programme covering the periods of time during which each expert will be allocated to the project.

- A work plan and a bar chart covering the input of experts, his methodology and the expected results of the four phases of the project.

The total project time should not exceed 12 months.

The Consultant will present in his offer a work plan and a bar chart covering the input, methodology and expected results for the four phases of the project. Between the phases, time should be allowed for discussion and approval of documents.

The Consultant will produce the following reports:

- A report after the first phase, giving the design parameters, calculation methods to be used and boundary conditions of the design for each port.

- A set of design drawings and calculation notes for each port after the second phase.

- A report giving the financial analysis, made by the Port authorities and monitored by the Consultant, for each terminal, after the third phase.

- The complete tender dossier for each terminal after the fourth phase

For each report an executive summary will be made.

All reports and documents will be submitted for approval to the Port Authority and to the TACIS - TRACECA staff. English is the language of the contract governing the Consultants work and all reports and documents shall be issued in English and in Russian. Total number of reports and documents shall be 10 in English and 10 in Russian.

5. LOCAL STAFF

The selected company shall make arrangements with local bodies, organisations or consultants' firms, and with individual interpreters according to its needs.

IMPLEMENTATION OF A RAIL FREIGHT TRAFFFIC MANAGEMENT AND INFORMATION SYSTEM

TRACECA PROGRAMME

Terms of Reference

November 1994

FOREWORD.

This document contains the formal proposal relating to the European Commission's Terms of Reference for the TRACECA - ACIS Project, of November 1994.

The proposal is set out in the standard form as required by the European Commission's Directorate General I - External Affairs, TACIS Programme.

The Railway Tracking modules of UNCTAD's Advance Cargo Information System (ACIS) have proven their value and suitability in numerous demanding environments similar to those found in the TRACECA region (Transport Corridor: Europe-Caucasis-Asia). The project team put forward in the proposal has several years experience of implementing ACIS in such challenging environments. Great stress is placed on leaving in place a system which is fully sustainable from local resources once the UNCTAD team completes implementation and withdraws.

In the TRACECA region, ACIS RailTracker modules will be introduced in a staged manner over two years, involving translation to the Russian language, as required.

A. TERMS OF REFERENCE

1. Background

Representatives of Armenia, Azerbaijan, Georgia, Kazakhstan, Kirgizstan, Tadjikistan, Turkmenistan, Uzbekistan and the Commission of the European Communities met in Brussels in May, 1993, for a joint working session on the co-ordination and development of the Transport Corridor: Europe-Caucasis-Asia (TRACECA). One of the major objectives of the meeting was to determine future Technical Assistance programmes within the framework of the TACIS Programme.

Proposals from the Representatives of the Participant States were discussed and analyzed. This resulted in the definition of projects which were considered to be of common interest to the region.

The Representatives of the TRACECA Region urged the European Union to include these selected projects in their Technical Assistance (TA) Programmes.

In the field of railway transport, the five most urgent projects, attached to the BRUSSELS DECLARATION, were in the following areas:

1. Infrastructure maintenance
2. Traffic flows analysis and models
3. Rolling stock maintenance
4. Freight traffic management and information systems
5. Training

During the TRACECA conference, the Regional Representatives frequently mentioned that substantial resources were spent on studies but that the region was going through a period of rapid and dynamic change. They insisted on a more practical approach, with concrete solutions to their management problems.

It is proposed that such an approach be followed for the installation of a Traffic Management and Information System. The United Nations Conference on Trade and Development (UNCTAD) has developed a powerful Cargo and Equipment Information System over the last few years (ACIS - Advance Cargo Information System). The system was introduced to the European Community in 1992, its performance in the field was evaluated on behalf of the European Commission in 1993 and was reported on most favourably. The system appears to suit the needs of the railways of the Central Asian and Caucasian Republics, based on its proven usefulness in equally demanding environments.

The Railway Tracking module of ACIS is called RailTracker. It monitors equipment and freight movements in near real-time, thus giving both an efficient tool for managing freight wagon operations and a powerful information system for the railways' customers on the exact position of their consignments. Managing wagon operations and providing cargo location information are both highly important factors in enabling a railway to become more efficient and to improve quality of service to customers. In addition, RailTracker provides detailed statistics on freight traffic that allow for the establishment of useful performance indicators.

RailTracker is an "entry-level" railway operations monitoring system. UNCTAD has developed the software in-house. However, the implementation of the system has been developed in coordination with a number of parties from the railway industry itself. UNCTAD considers such partnerships as fundamental since the functioning of ACIS thereby benefits from the continual input from railway management experts.

2. Objective

The long term objective of this project would be to install RailTracker on all railways on the main TRACECA freight corridors. Since these railways are interconnected, albeit with a sea-leg, the combination of RailTracker and the ACIS PortTracker module would ensure the creation of an integrated logistics chain for the railway mode across the entire corridor.

It is deemed wise to start this exercise through an initial project covering the entire interconnected networks but at different levels of implementation:

-install the full basic version of RailTracker on the Turkmenistan and Uzbekistan section of this major TRACECA corridor,

-install a consultation terminal in the headquarters of the railways of Georgia, Azerbaijan and Kazakhstan and in the Port of Krasnovotsk so that the latter can consult the database of Turkmenistan and Uzbekistan.

In this way, direct experience would be gained in different operating environments and inter-country working arrangements could be tested.

The project would be implemented in several major phases over two years, with the basic RailTracker modules being modified to use the Russian language, plus implementation in Turkmenistan in the first year. Implementation of RailTracker in Uzbekistan would be accomplished in the second year. In the latter half of the second year, the interlinkages between the two railways would be achieved together with the installation of the consultation terminals in Georgia, Azerbaijan and Kazakhstan.

Training activities would take place throughout the project: comprehensive training at user level in Turkmenistan and Uzbekistan Railways during the installation of RailTracker, initial training at user level in the railways of Georgia, Azerbaijan and Kazakhstan and in the Port of Krasnovotsk during the installation of the consultation terminal; final advance training (training of trainers) and continued technical support would take place towards the end of the project, at the conclusion of which the system would be fully supportable by local expertise, i.e. by the internal staff of the Turkmenistan and Uzbekistan Railways themselves.

3. Proposed Outputs

3.1 Installation

The project will install RailTracker on the railways of Turkmenistan and Uzbekistan, on the corridor from Tashkent in Uzbekistan through Achkhabad in Turkmenistan and RailTracker consultation terminal(s) in the railways of Georgia, Azerbaijan and Kazakhstan and in the port of Krasnovotsk in Turkmenistan. The basic RailTracker modules will provide operating and management information about rail traffic on the corridor. Installation will be in four main phases over a two year period including training and support activities.

During the first year, Phase 1 will involve country-specific missions to identify the requirements to customize the system, and Phase 2 will entail preparing a Russian-language version of the RailTracker basic modules. In parallel with these phases, Phase 3 will see completion of implementation in Turkmenistan and start of implementation in Uzbekistan. Year 2 will see completion of RailTracker implementation in Uzbekistan. During that second year, Phase 4 will involve the interlinkage of the system between the two railways of the corridor and the installation of the consultation module in the three other railways (Georgia, Azerbaijan, Kazakhstan) and in the Port of Krasnovotsk.

3.2 Operations Level

RailTracker will be installed in the traffic department of the target railways to record movements of rolling stock and transported goods. RailTracker is a small computerised information system operated by staff of the traffic departments, who will be referred to as the "users".

The system was developed to run on industry-standard microcomputers (Pcs) linked through a local-area network, using standard database and networking packages. RailTracker Pcs are dedicated strictly to traffic tracking - i.e., they are independent of other computer applications and cannot be used for other activities such as word processing.

In its first stages, RailTracker does not greatly affect the existing organisation of traffic control. Traffic staff continue to receive information directly from the main stations through existing facilities, e.g. radio, telephone, teleprinters, etc. or via the existing computer system. This information is entered into RailTracker in near real time, with delays normally limited to no more than a few minutes to an hour, depending upon the workload of the staff. The system can be consulted by users at any time, providing them with valuable assistance in direct proportion to the quantity, reliability and timeliness of the input data, factors that depend heavily on the level of training of traffic staff.

RailTracker also provides for goods tracking, since every consignment (e.g. a container) and its operations (loading, offloading, etc.) are monitored. This feature is implemented gradually.

The main sub-module of RailTracker is called RailTraffic, which records all operations of:

- wagons - attachment to and detachment from a train, entry or exit at a border,
- locomotives - attachment to and detachment from a train, entry or exit at a border,
- trains - composition of a new train, arrival at or departure from a station, end of a journey,
- consignments (transported goods) - consignment note, container identification, consignment items (individual tracking of different items in a single consignment), loading on or unloading from a wagon, entry or exit at a border.

Every operation is "stamped" with the date, time and station at which it occurs. Information on all the above operations are called primary, or source, data.

3.3 Management Level

From the primary data, the computer can calculate secondary data such as ton-kilometres. Management data can be directly derived from source data (e.g. number of wagons or axles on a train) or obtained from source data accumulated over a period of time (e.g. commercial speed on a monthly basis, ton-km per year, etc.). The latter information is called traffic statistics and performance indicators, and are built into the on-line software of RailTraffic and its associated sub-modules. On a monthly basis, a complementary module called RailStats produces a more comprehensive set of statistics, according to the definitions of the Unctad System of Railway Statistics and Performance Indicators.

3.4 Technical Level

The installation of RailTracker includes the basic stabilized versions of the following sub-modules: RailTraffic, RailStats, and ShopWindows (for consultations). These sub-modules run on Pcs under the DOS operating system and are interconnected via Novell NetWare with Ethernet cabling. They are programmed in a combination of the industry standard development packages Dbase, Clipper and C++. RailTracker installation also includes the required hardware, its maintenance throughout the life of the project.

3.5 Host Railways

In order to speed up the installation of RailTracker and guarantee its full use, certain commitments are required from the host railways. These include:

- seconding the necessary staff to serve as national counterparts to project experts;
- providing suitable office space at the different locations for project staff and computer equipment;
- providing free access to the railway internal telephone network;
- provide initial inventory of rolling stock;
- providing general support to project activities and security of project property.;
- repainting identification numbers on wagons, if and where necessary;
- editing RailTracker documentation in Russian to ensure use of proper, local terminology;
- taking the necessary measures to guarantee long-term system sustainability upon completion of the project.

This sustainability entails taking the necessary measures to ensure that trained staff are not moved without proper training of their replacement, that the PC computers are properly looked after (technical supervision from data processing department, maintenance of computer hardware, etc.), that the necessary facilities such as telecommunications are kept available, etc.

The successful application of railway computer technology to a broad base of users has a technical and managerial dimension. A strong commitment from senior management must be obtained in order to ensure the required interdepartmental collaboration.

The economic benefits from RailTracker as an efficient management tool to optimize the utilization of existing rolling stock will be derived from the improved decisions and actions that the operations managers will be able to take due to the instant availability of information on the position of wagons and other technical matters.

The secondment of railway staff with the relevant backgrounds, training and experience to operate the system is also a key element. No computerized system will solve a problem automatically without the necessary human inputs. The information held and processed by the wagon control system will be highly dependent on the quality, reliability and timeliness of the data entered by the railway staff. Moreover, staff changes can impede the results of any system if adequate training of replacements is not provided.

Telecommunications facilities play a crucial role in the operation of a wagon control system. The efficiency and even the viability of the system will depend on the ability of the project to secure at least the minimum communication available between data collection points, several times per day.

It is vital that middle and senior management receive training throughout the life of the project on the many uses of the system. In this way, they will be convinced of the benefits to be derived from it, and hence will become committed to its successful operation. This will also mean that they will ensure that staff seconded to the project will meet the requirements of the system as far as specific technical competence and work discipline are concerned.

4. Proposed Activities

RailTracker will be installed in four phases over a two year period (24 months) the final year scheduled to complete inter-railway linkages and provide continued technical support and training. At the end of this period, the system can be left totally in the hands of the local railway operating and support staff.

4.1 Phase 1: Project Start-up

During this phase, the initial steps will take place such as Project team set-up, introductory technical missions to TURKMENISTAN and UZBEKISTAN railways to complete an information file for customization of RailTracker software (to local needs), and to discuss setting up respective counterpart teams and implementation of host railway commitments.

Output 1: Information file with the necessary inputs to customize the system to the target railways (file parametrization, network topology, etc.).

4.2 Phase 2: Russian Version of RailTracker

This phase will involve translating the main screen layouts of the software into Russian, together with the user's manuals.

Output 2: The user interface of RailTracker software and user's manuals available in Russian. Fifty copies of the manuals will be printed.

4.3 Phase 3: Installation of the RailTracker system in TURKMENISTAN and in UZBEKISTAN

4.3.1. Organization and technical pre-requisites

This entails preparing the organizational and environmental aspects before actual system installation in the field, within each railway:

* establishment of respective counterpart teams
* organizational aspects (revision of documents, writing of instructions, etc.);
* information flows and reporting procedures between different operational sites;
* premises for computer hardware and for traffic staff using RailTracker;
* initial user training
* assess and establish telecommunications facilities;
* establishment of railway codes and rolling-stock files.

4.3.2. System Installation

On each railway:

* installation of basic hardware for central control
* installation of the following customized application software:
  - RailTraffic (covering rolling stock and goods), including the ACIS Toolkit utility module;
  - RailStats, including performance indicators.
* continuous on-the-job user training and monitoring.

Output 3.1: RailTracker in operation along the TRACECA corridor, independently in TURKMENISTAN railway.

Output 3.2: RailTracker in operation along the TRACECA corridor, independently in UZBEKISTAN railway.

4.4 Phase 4: Interlinkage and Consolidation.

4.4.1. Interlinkage

This phase will involve:

* interlinking the two RailTracker systems (installed in TURKMENISTAN and UZBEKISTAN railways) in such a way that they exchange information about transit traffic along the TRACECA corridor. Technically speaking this means that data will be exchanged between Railtracker computers several times a day using file transfer techniques.

Output 4.1: Two RailTracker systems interlinked.

4.4.2. Remote Access

This phase will involve:

* installing a single remote-access computer screen (terminal) in the Port of Krasnovotsk and in each of the following railway head Quarters : KAZAKHSTAN, AZERBAIJAN and GEORGIA; this will allow the port and each railway to access the information stored in the two RailTracker systems of TURKMENISTAN and UZBEKISTAN;
* assess and establish telecommunications facilities;
* training the relevant users to the use of RailTracker in the four sites (5 users per site).

Output 4.2: The Port of KRASNOVOTSK and the railways of KAZAKHSTAN, AZERBAIJAN and GEORGIA have access to RailTracker systems of TURKMENISTAN and UZBEKISTAN railways.

4.4.3. Continuous support.

This phase will involve continuous support to the Project after initial system installation, and Project monitoring:

* technical support from project management for applications software and data files;
* project monitoring by project headquarters;
* reporting from field sites to railways' headquarters at monthly intervals and overall reporting at quarterly intervals;
* hardware maintenance
* follow up (increased coverage, data reliability assessments and improvements, and possible further extension of system to contiguous railways of the region).

Output 4.3: Project Results Monitoring and Continuous Support

5. Calendar and Reporting

5.1. Calendar

Overall duration, once funding is obtained and the first field missions begin, will be two years (24 months) to implement RailTracker on the two railways identified (Turkmenistan and Uzbekistan), to complete inter-railway linkages, to provide consultation terminals in the three other railways (Georgia, Azerbaijan and Kazakhstan) and in the port of Krasnovotsk and to provide continued technical support and user training. The goal is to leave a completely operational system in the hands of local railway staff.

5.2. Reporting

- An Inception Report will be produced immediately after the initial technical missions to Turkmenistan and Uzbekistan have been completed in Phase 1 of the project. This will, in particular, give an account of the progress toward the customization of RailTracker to local software capacities, the setting up of counterpart teams and arrangements for logistical support from the host railways (office space, telecoms, etc.). Any departures from or necessary additions to the Terms of Reference must also be clearly explained.

- A progress report will be produced in English every six months. These will provide a comprehensive review of the progress of the project throughout the four phases of the project clearly describing any problems that may arise.

- A final project report will be prepared following completion of implementation on both railways and the inter-linkage of systems.

  Copies: five copies to TACIS in Brussels, 2 copies to each of TACIS Coordination Units in the countries involved, 2 copies directly to the recipient railways. Russian translations of the reports will be provided to the TACIS CUs and the recipient railways.

6. COST

The total cost of this project amounts to ECU 850.000.

7. INPUTS

The total inputs, over a period of 24 months, are estimated as follows:

* Railway experts : 16.5 man-months (including coordination and training)
* Information technology experts : 30 man-months (including coordination, training and translation activities)

Total: 46.5 man-months.