



**EUROPEAID**  
CO-OPERATION OFFICE

**Review of Railway Rehabilitation  
in Central Asia**  
(EUROPEAID/116151/C/SV/MULTI)

**Inception Report**  
**April 2004**

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## Report cover page

Project Title: **Review of Railway Rehabilitation in Central Asia**  
Project Number: **65290 – EuropeAid/116151/C/SV/Multi**  
Countries: **Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan**

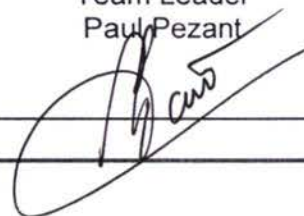
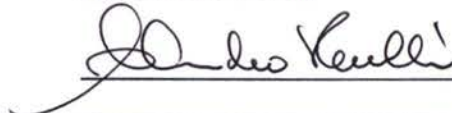
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## ABBREVIATIONS

ADB	Asian Development Bank
BC	Border crossing
CAR	Central Asian Republic
CIS	Commonwealth of Independent States
EAEC	Euro Asian Economic Community
EBRD	European Bank for Reconstruction and Development
EC	European Commission
ECE	UN Economic Commission for Europe
ECO	Economic Cooperation Organisation
ECMT	European Council of Ministers of Transport
EDD	Unified Transit Tariff
EIRR	Economic Internal Rate of Return
EU	European Union
FSU	Former Soviet Union
GDP	Gross Domestic Product
IMF	International Monetary Fund
IRU	International Road Transport Union
IsDB	Islamic Development Bank
JBIC	Japanese Bank for International Cooperation
KAZ	Kazakhstan
KGZ	Kyrgyz Republic
KTZ	Kazakhstan Temir Zholy (Kazakhstan national railways)
KZT	Kazakhstan Tenge
MOTC	Ministry of Transport and Communications
MTT	International Railway Tariff
OSJD	Organisation for the Cooperation in Railways (based in Varshaw)
PRC	People's Republic of China
SPECA	Special Programme for the Economies in Central Asia
TA	Technical Assistance
TACIS	Technical Assistance for the Commonwealth of Independent States
TAJ	Tajikistan
TAR	Trans-Asian Railway
TEU	Twenty Foot Equivalent Unit
TIR	Transport International Routier
TOR	Terms of Reference
TRACECA	Transport Corridor Europe Caucasus Asia
UIC	Union International des Chemins of Fer (based in Paris)
UN	United Nations
UNDP	United Nations Development Programme
UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific
USAID	United States Agency for International Development
USD	United States Dollar
UTY	Uzbek Temir Yullari (Uzbekistan national railways)
UZB	Uzbekistan
WTO	World Trade Organisation

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## ANNEX

*Form A : OVERALL OUTPUT PERFORMANCE PLAN*

*Form B : OVERALL PLAN OF OPERATIONS*

*Form C : PLAN OF OPERATIONS FOR THE NEXT PERIOD*

*WORK PROGRAMME*

## 1. PROJECT SYNOPSIS

Project Title:	Review of Railway Rehabilitation in Central Asia
Project Number:	65290 – EuropeAid/116151/C/SV/Multi
Country:	Kazakhstan, Kyrgyz Republic, Tajikistan, Uzbekistan

**Wider project objectives:** The development of viable, secure, safe and competitive transport routes linking the countries of Central Asia with Europe and other neighbouring countries. Strengthened border management capacity facilitating economic development, the movement of people and goods and the prevention of organised crime.

The object of the project is to carry out:

Module A / Analysis of the relevant national railway transport plans and any regional railway transport planning provisions.

Module B / Preparation of Technical and Economic Justifications to support and to attract the investments for the rehabilitation of railway lines in the Kyrgyz Republic, Kazakhstan and Uzbekistan for the purpose of increasing transportation capacities of these areas.

**Specific project objectives:**

The project will carry out:

**Module A /**

- Overview of relevant traffic flows and forecasts, with special attention on freight transport from Central Asia towards Europe especially through TRACECA corridor;
- Identification of weaknesses and bottlenecks;
- Investigation on the cross-border elements, including co-operation in exchange of data and in customs (also with Afghanistan);
- Evaluation of multi-modal dimensions and possibilities for interoperability;
- Harmonisation of standards and of operating procedures, with particular attention to compatibility with EU standards, in particular with regard to safety and security standards for the transportation of dangerous goods and oil products.

**Module B /**

Technical and Economic Feasibility Studies for the rehabilitation and construction of new railways lines. Pursuant to the Technical and Economic Justification data there will be prepared the loan applications to the lending banks for the allocation of investments to implement the projects.

**Planned outputs:**

**Module A /**

- Recommendations concerning multimodal transport
- Recommendations on harmonisation of standards and operating procedures and interoperability.
- Recommendations on improvements of border-crossing procedures.
- Traffic forecasts.
- Tentative prioritisation of recommended actions.

**Module B /**

- Technical and economic feasibility study of the railway line sections previously identified.
- Draft tender document for the same sections.

**Project activities:**

**Module A /**

- A.1 – Collection and review of transport and economic studies.  
Data collection
- A.2 – Overview of traffic flows
- A.3 – Identification and review of physical, geopolitical, social and environmental issues
- A.4 – Analysis of national railway transport plans and regional railway transport planning provisions.
- A.5 – Traffic forecasts – Identification of capacity bottlenecks
- A.6 – Investigation of border-crossing issues –  
Recommendations for improvement at borders
- A.7 – Review of multimodal transport – Identification of development bottlenecks – Recommendations for improved services
- A.8 – Harmonisation of standards and of operating procedures –  
Recommendations on standards adaptation and improved interoperability
- A.9 – Selection of railway section to be submitted to feasibility study under Module B
- A.10 – A.11 – A.12 and A.13 – Refining traffic forecasts and recommendations
- A.14 – Tentative prioritisation of recommended actions

**Module B /**

- B.1 Traffic Analysis
- B.2 Technical Feasibility
- B.3 Environmental Impact
- B.4 Economic Viability
- B.5 Detailed Design
- B.6 Rehabilitation/construction implementation schedule
- B.7 Draft tender documents preparation

**Project starting date:** 1 March 2004

**Project duration:** 18 months

## 2. ANALYSIS OF THE PROJECT

### 2.1 Project Context

#### 2.1.1 Background

The rail networks in Central Asia have about 22,100 km of main line, of which about 5,000 is double track and 4,000 is electrified. Due to reductions in revenue, maintenance has been deferred and the condition of track has deteriorated. The ability of the railways to adjust tariffs according to market conditions is limited by government controls and social policies (for example, to limit fares for passenger transport). Nevertheless in recent years several new lines have been constructed in many parts of the region, especially in Turkmenistan and Uzbekistan, in order to reduce dependence on transit routes through neighbouring countries. Many more such lines are planned in future years although it is recognised that, due to financial constraints, most are long-term prospects. In the short-term considerable priority is given to rehabilitating the regional rail network.

The number of rolling stock has declined as the fleet has been cannibalised to avoid purchasing new spare parts and units. The remaining fleet is of old technology with rather high operating costs. Now that growth in demand has resumed, shortages of wagons are being reported and consideration is being given to investing in new locomotives and wagons.

#### 2.1.2 Summary of Inception Period and Outcome

The project started on March 1, 2004. During the month of March the Consultant visited all four countries covered by the project i.e. Kazakhstan, Kyrgyz Republic, Tajikistan and Uzbekistan. Meetings were held with project beneficiaries and organisations directly interested in the project.

In Kazakhstan a kick-off meeting took place at the office of the Beneficiaries KTZ in Astana in presence of a deputy chairman and of nine representatives of various departments. At the Ministry of Transport and Communication there was a meeting with a chief of department of the newly-created Railway Committee as the Committee Director.

In the Kyrgyz Republic project implementation was discussed with the Project Beneficiary "Kyrgyzjeldorstroi", a Directorate under the Ministry of Transport and Communications that has the responsibility for developing the railway network with the goal of linking the north and the south of the country across national territory. Meetings also took place with the First Deputy Minister of Transport.

In Tajikistan the Project Beneficiary, the Department of Railways of the Ministry of Transport, arranged meetings with various officials of the Tajik Railways including a vice-chairman as well as a visit of a coach repair workshop to illustrate the effort made to improve the conditions of passenger transport.

In Uzbekistan the contact with the Uzbek Railways (UTY) Project Beneficiary is through its Department of External Economic Relations. The Consultant was regularly kept informed of the progress in defining the structure for project work. The vice-chairman in charge of international relations has been designated as counterpart for the Consultant. Unfortunately



the official in that position has recently retired and by the end of the Inception Period the successor had not yet been nominated.

The main project office has been set up in Tashkent. By the end of April it was fully operational.

### **2.1.3 Expectations of the Beneficiaries**

The position of the beneficiaries in regard to the project has not always been clearly expressed. This could be partly due to the fact that Module A has not yet been fully understood.

The Kyrgyz Beneficiary showed a keen interest in the project. This particularly applies to Module B that covers most of the existing Kyrgyz railway network. Its rehabilitation will be needed to put it a level consistent with the planned development of a network with a national coverage.

For Kazakhstan the project is only one among many inputs to the ambitious plans to modernize and develop the very extensive network left by the Soviet Union. Kazakhstan now much relies on its own resources but welcomes external contribution in fields requiring international cooperation such as forecasting regional traffic. KTZ has no objection to letting the project investigating the rehabilitation of the railway line section mentioned in the TORs, namely Beineu-Aktau although it is already proceeding with an upgrading of this section by improving signalling and increasing capacity. The rehabilitation should however be envisaged within the framework of their long-term plans for network development that includes the construction of a new line linking Aktau and Beineu more directly to the centre of the country and possibly the development of a standard (European) gauge all the way from China to Turkmenistan and further Iran and Turkey.

The subdued reaction to the project noted in Tajikistan may be partly explained by the fact that no part of the Tajik railway network is included in Module B. Actually what the Tajiks submitted to the Consultants was a list of projects for which they are seeking financing.

So far the point of view of Uzbekistan has not been explicitly formulated. However if the idea is confirmed that UTY might not seek international financing for rehabilitation of the network north of Navoi it may not have much use for a feasibility study at international standards of the Kungrad-Beineu railway section. Anyway the matter will be reviewed under Module A and there is good hope that a section of real interest for UTY could be identified for timely inclusion in Module B.

In summary for Module B the interest for a feasibility study for the lines listed in the TORs appears confirmed in Kazakhstan and the Kyrgyz Republic. For Uzbekistan the matter is subject to later review.

## **2.2 Main Problems / Deficiencies**

### **2.2.1 Railway infrastructure in Kyrgyz Republic**

The high cost of carrying goods between the north and the south of the country is a major problem for the Kyrgyz Republic. Trains between the two zones should cross three other countries and five borders. For instance the transport cost of fuel carried from a refinery in the south to Bishkek can represent nearly half of the production cost. The rehabilitation of the

highway between Bishkek and Osh has substantially improved the situation. However for bulk cargo the railway still is the only economic transport mode on long distance. It is therefore understandable that the Kyrgyz government is envisaging the construction of a new line in national territory in spite of the very cost of crossing mountainous areas. It is wisely considered that the huge investment cost could be reduced to more affordable amounts if the construction of the new national line could be combined with the opening of an international link between PRC and the Ferghana Valley. In such case the north-south connection could itself become an international route in its own right.

The envisaged new lines will be connected with the network of Kazakhstan and Uzbekistan by the existing line sections, Lugovaya-Bishkek-Balykshi in the north and Karasu - Jalal-Abad and Karasu – Osh in the south. Maintenance of those lines cannot be deferred for much longer. But the required rehabilitation must be undertaken in a long-term perspective.

### **2.2.2 Railway connection to Aktau Port**

Aktau port has become increasingly important for Kazakhstan since it is the only major sea port of the country and is the base for the development of the national shipping company. It is also the head of one of two TRACECA routes across the Caspian Sea with now a regular ferry connecting Kazakhstan with Baku. In this perspective its hinterland extends to Uzbekistan and Western Siberia. Port throughput has been growing fast in recent years. It nearly doubled between 1999 and 2001 to reach 4.6 million tonnes. However almost 95% is oil export. Dry bulk only amounted to 250,000 tonnes, two third of it using the ferry. A large proportion of the trade between Kazakhstan and Iran passes by Aktau.

The Beineu-Aktau railway line linking the port to both Kazakhstan and Uzbekistan has been in poor condition for many years. A feasibility study carried out under a TRACECA project in 1997 showed that the rehabilitation was amply justified. That rehabilitation was at the top of the investment priority list presented in 1992 by the TACIS project called "Support to the development of a transit corridor policy in the Republic of Kazakhstan". Work has recently been undertaken by KTZ. The plans under consideration to build a more direct link between central Kazakhstan and Aktau will increase the importance of the railway line leading to the port.

### **2.2.3 Railway infrastructure in Uzbekistan**

Shortly after independence Uzbekistan draw plans to make its railway network less dependent on its neighbours. At first it was Turkmenistan and now the attention turns to Tajikistan. It also wanted to use as much as possible its own territory in its relations with Russia and Europe. Hence the construction of a new line linking Uchkuduk to Urgench and further to Nukus and Kungrad bypassing Turkmenistan. Further north the line section connecting Uzbekistan with Aktau and Russia is already 25 years old and certainly requires attention if it is to become part of a major international route. However this may compete for scarce resources with construction projects such as the direct connection to Afghanistan under construction and later the envisaged bypassing of Northern Tajikistan. UBY has been borrowing significant amounts from ADB for network rehabilitation in recent years and will certainly carefully ponder the relative advantages of using international funds and local resources.

#### **2.2.4 Transit across Central Asia**

After the opening of the railway connection between Kazakhstan and China at Druzhba-Alashankou there were high expectations that this was a new route between East-Asia and Europe that could compete with the Transiberian Railway and could attract large volumes of transit traffic. However this did not materialise. New hopes are raised by bold plans to further develop infrastructure in various directions. One is the construction of a new rail line linking the PRC with the Freehand Valley across the Tien-Shan range. The other the construction of a standard gauge track all the way from PRC to Iran across Kazakhstan and Turkmenistan allowing wagons to move seamlessly between the Far-East and Europe. However there is no guarantee that infrastructure by itself will generate substantial transit as long as crossing four or five countries will be as many hurdles.

#### **2.2.5 Border-crossing**

Actually crossing borders in Central Asia has become a problem of a dimension that was difficult to foresee at the demise of the Soviet Union. In soviet times, movement of passengers was submitted to administrative constraints but goods moved unhindered across the soviet republics. The introduction of national borders slowed down the movements of goods. It sometimes resulted in inefficient use of an infrastructure that had been designed to operate without administrative constraints such as for instance the ferries across the Caspian Sea.

Numerous efforts have been done to alleviate border-crossing problems particularly with the support of international organisations such as UNECE, ADB or World Bank or with technical assistance provided by notably TACIS/TRACECA. Unfortunately matters were further complicated by security concerns that may become dominant in some case. For instance justifications put forward by Uzbekistan for the opening of a direct railway link between Tashkent and Ferghana provinces included not only hard currency saving but minimizing the risk of terrorist infiltration.

#### **2.2.6 Refocusing TRACECA**

The TRACECA programme was launched in 1993 but started actual work in 1995. At the beginning it was covering eight countries that were in the same situation of having recently gained political independence after the demise of the Soviet Union. In that first period the goals could be seen as:

- Assisting the three countries in the Caucasus and the five ones in Central Asia in the transition from full integration in the Soviet Union to progressive integration in a wider market economy by providing access to EU experience and know-how. It is widely recognized that this well-timed phase of technology transfer had been largely successful.
- Ensuring the availability of an alternative route between Europe and Central Asia by supporting the rehabilitation of infrastructure and the resumption of normal operation along routes crossing Caspian Sea and Caucasus that had been efficiently operated in soviet times. The reopening of ferry services between Aktau and Baku in 2000 could be seen as the final major step in providing an emergency-case alternative to the routes across Russia and Iran.

- Supporting the development of a commercially viable route across the Caspian Sea and Caucasus with continuation to Europe across the Black Sea. The growing dominance of crude oil on the route seemed to have blurred the objectives. But the situation may change when the Baku-Ceyhan pipeline opens. Anyway the idea has been gaining ground that the two main beneficiary countries, Georgia and Azerbaijan, should take the leading role in developing the corridor across Caucasus.

In addition the TRACECA membership changed from the initial homogeneous group of eight countries to a much more heterogeneous group of thirteen stretching from Mongolia in Far-East Asia to European countries such as Bulgaria and Romania that may soon join the EU. The evolution may be seen as positive but it is not without influence on TRACECA goals and priorities. If for instance Iran joins - as seems increasingly likely - the TRACECA map will cover at least two competing corridors between Central Asia and Europe. In the new context upgrading the rail ferry across Van Lake in Turkey might for example be given a higher priority than improving ferries across the Caspian Sea.

Those issues have been raised here because it is believed that they cannot be ignored by the present project particularly on the definition of priorities from an EU perspective.

### 2.3 Situation of Local Operators

In Kazakhstan and Uzbekistan the Partners / beneficiaries are the national railways KTZ and UTY. In the Kyrgyz Republic the Beneficiary is the State Directorate on New Railway Lines Designing and Construction under the Ministry of Transport and Communication, "Kyrgyzjeddorstroi". In Tajikistan it is the Ministry of Transport through its Department of Railways.

In Kazakhstan and Uzbekistan far-reaching restructuring has been taken place in recent years. Much less so in the other two countries.

In Kazakhstan reforms are based on the principle that increased competition would lead to improvement in services and reduction in the need to regulate tariffs. The policy for railways is defined by the recently created Railway Committee of the Ministry and Communication. The national railways underwent a series of major changes. The three former soviet companies were grouped in a single national company Kazakhstan Temir Zholy (KTZ). In 2001-2002 took place a divestiture of non-core activities and a release of non-essential assets. Competition was introduced in ancillary activities i.e. maintenance and repair of infrastructure and rolling stock. Changes are presently made to separate infrastructure from operations with the long term goal that various operators could have access to the infrastructure. The creation of private operators that could compete with KTZ with their own rolling stock is encouraged. In the end much of what will remain of KTZ might be privatized.

The Uzbek Railways undertook restructuring in parallel with thrusts to rehabilitate main lines with outside financial assistance and to construct new lines considered as of strategic importance to the country. The state joint-stock company Uzbek Temir Yullari (UTY) was created in 1994. In 1997 passenger services were detached and put under a separate company. In 2000 a marketing department was created. A major step was made in March 2001 with a Government decree on demonopolisation and corporatisation of railway transport. UTY activities are separated into natural monopoly elements (infrastructure, traction, dispatching, power supply, signalling and communications) which remain in UTY under 100% state ownership, potentially competitive elements (freight services, passenger services, container and refrigerated services, locomotives and wagons maintenance and

repair workshops), scheduled for partial or total privatisation and social services for railway employees remaining after most of them have been transferred to local government authorities. A state agency is created to regulate safety in rail transport.

In Kyrgyz Republic the responsibility for railways is shared between the Kyrgyz Railways and "Kyrgyzjeldorstroi" both under the Ministry of Transport and Communication. The division of tasks that does not appear straightforward. This is particularly true for railway lines rehabilitation that is the subject of the present project.

In Tajikistan the Department of Railways of the Ministry of Transport has the responsibility for defining the policy for railway transport in coordination with plans for other modes. The network is operated by the Tajik Railways.

As far as it is known the railways in the four countries make some profits. In Tajikistan a significant part of the revenues come from the payments made by Uzbekistan for the transit across northern Tajikistan. In Kyrgyzstan revenues from international traffic seem to be cross-subsidising domestic operations. In Uzbekistan the construction of new lines represents a substantial part of railway expenditure. As long as not all of it is financed from the national budget UTY has to find resources in its own budget. On the other hand major rehabilitation is in large part financed from ADB loans. In Kazakhstan the construction of new lines is normally financed from the national budget. For the time being no borrowing from IFIs seems to be under consideration for infrastructure maintenance or development.

In all countries national railways revenues much depend on the government policy on tariffs. Since the railways are often in a situation of monopoly any changes in domestic tariffs are subject to approval by anti-monopoly committees or equivalents.

## **2.4 Target Groups**

The target groups are defined by the Terms of Reference as:

- Traders as rehabilitation of important railway sections will facilitate trade and exchange of goods.
- General public as the improvement of railway transport improves the life of citizens.

## **2.5 Commitments**

The project beneficiaries / Partners are expected to appoint a senior member of their staff to liaise with the Consultant and to ensure that staff of the appropriate level is made available to work alongside the staff of the Consultant. They may be requested

- To provide office facilities, furnishing and telephone equipment and lines with national and international access. In fact the facilities in the main project office in Tashkent will be funded from the Provision for incidental expenditure.
- To provide such assistance to the Consultant as necessary to arrange visas for expatriate personnel and customs clearance and inland transport for imported equipment and existing topographic maps. Actually such assistance has generally been kindly provided by either the EC delegations or the TACIS Coordination Units.

### 3. PROJECT PLANNING

#### 3.1 Relations with Other Projects

A number of TRACECA projects have relations with the present project. Those completed in the nineties include:

- Railways infrastructure maintenance (Central Asia);
- Central Asian railways restructuring and telecommunications studies;
- Rail Tariffs and timetable;
- Intermodal transport;
- Intermodal services implementation and transit facilitation;
- Transport legal and regulatory framework;
- TRACECA trade facilitation;
- Regional traffic forecasting model;
- Traffic forecasting and feasibility studies.

However many changes have occurred since those projects took place so that findings, collected data and recommendations are often of a limited interest. The last mentioned has however left a database that has been partly updated after completion of the project.

More recent TRACECA projects recently completed or on-going comprise:

- Railways telecommunications;
- Rail links between the Ferghana Valley, Bishkek and Kashgar;
- Harmonisation of border crossing procedures;
- Border crossings between Moldova and Ukraine;
- Unified policy on transit fees and tariffs;
- Common legal basis for transit transport

A first review of project reports was already done and will continue in more depth. It appears that the present project could provide a follow-up to certain achievements of those projects. This is particularly true for border crossing facilitation.

Several IFIs have or had activities of direct relevance to the project. That includes World Bank trade facilitation programme, financing of rolling stock renewal by EBRD and several ADB TA projects.

ADB has been particularly active in the railway sector in Uzbekistan where it provided two loans for railway rehabilitation and carried out a number of technical assistance projects. A PPTA project is just starting to prepare a third loan. In addition two recent ADB projects have direct relevance for the present project:

- Reassessment of Regional Transport Strategy in Central Asia; and
- Regional co-operation in Transport Projects in Central Asia.

The latter examined the financing of road rehabilitation and railway construction between PRC and the Ferghana Valley. It will be completed after a meeting in Beijing that was expected to take place during the spring but is being delayed.

## 3.2 Project Purpose, Goals and Objectives

### Module A

A result of Module A is described as identification of strategic priorities. Now a strategy is related to a decision-making entity. In the same way priorities are defined in relation with goals and objectives that are those of persons, organisations or countries. What is a priority for one country may not be so for another country. For instance building a railway line bypassing Tajikistan may be seen as a legitimate priority for Uzbekistan but it is clearly not a priority for the regions as a whole.

Goals should therefore be defined for Module A. Targets groups are too loosely defined to constitute a reference. Beneficiaries are not a homogeneous group. For instance national railways are part of it in Kazakhstan and Uzbekistan but not in the Kyrgyz Republic. Moreover what is a goal for a railway in a country may not be in the others. For instance building a railway line between Kashgar and the Ferghana valley is seen as a paramount goal by the Kyrgyz Republic whereas it is perceived negatively by Kazakhstan.

A possible set of goals for Module A could be to propose measures and orientation contributing to ensure to Central Asia:

- improved access to world markets, particularly European Union, and
- a dominant position in transit across the Euro-Asian continent, particularly in the trade between Europe and East Asia in a long-term perspective.

Different sets of goals could of course be envisaged. Notably with closest reference to the policy of the EC towards Central Asia.

If the proposed set is accepted the purpose of Module A could be defined as:

*Review of recent trends and existing plans and on that basis formulation of recommendations and provision of short-term technical support for actions in specific areas of railway transport with the objective of ensuring for Central Asia improved access to world markets particularly European Union and a dominant position in transit across the Euro-Asian continent particularly in the trade between Europe and East Asia in a long-term perspective.*

The specific areas as defined in the Terms of Reference consist of:

- Multimodal transport.
- Inter-operability.
- Border-crossing including co-operation in exchange of data and in customs.
- Harmonisation of standards and of operating procedures in particular with regard to safety and security standards for the transportation of dangerous goods and oil products.

The recommendations will be based on forecasts of potential traffic.

### Module B

The purpose of Module B seems clear. It is to carry out the technical and economical feasibility study for selected railway line sections in various countries and to prepare

tendering documents as a basis for financing of works assumingly by International Financial Institutions.

### **3.3 Project Approach**

The approach proposed by the Consultant has been described in the Technical Proposal. However after review of the present situation and discussions with project beneficiaries the need appeared of proposing some adaptations. The revised approach is described below.

#### **3.3.1 Module A**

##### **A.1 – Collection and review of transport and economic studies. Data collection**

Review of existing data and studies was started during the Inception Phase. It showed that there was a wealth of information available from various sources particularly ADB and TRACECA. However existing data does not fully fulfil project needs. Data collection on a large scale is still required. The data forms have been prepared during the Inception Phase. The collection will be launched in early May. It will largely rely on the sub-contractors but the success will much depend on the support provided by project Partners.

##### **A.2 – Overview of traffic flows**

In a first step an overview of traffic flows in Central Asia will largely be based on readily available information particularly the data collected by the TRACECA Traffic and Feasibility Studies Project and the subsequent updating campaigns. However as the project data collection progress a picture of recent trends will be added. The graphic presentation of the flows will be made by using the SEPTRAN software.

##### **A.3 – Identification and review of physical, geopolitical, social and environmental issues**

The future configuration of the transport system cannot be simply the result of matching supply with demand. It is also depending on other not so quantitative considerations such as the possibly conflicting geopolitical strategies of various actors. This is particularly true in Central Asia that is a subject of interest and pressure from all the major world powers. At the same time as EU is quite legitimately trying to establish mutually beneficial relations with Asia on the other end of the continent PRC may be pushed to reinforce the transport network linking it to Central Asia in order to counter what it sees as encroachment by other powers.

In recent years investments in railway infrastructure has been motivated more by the wish of minimizing the dependence on neighbouring countries than to meet transport demand at the lowest cost. Such important considerations will be developed as far as it is needed to fulfil project objectives.

##### **A.4 – Analysis of national railway transport plans and regional railway transport planning provisions.**

The analysis of whatever information is available on national transport will be done. However there is some uncertainty about how far such information will be released by every country since it might considered as confidential.



## A.5 – Traffic forecasts – Identification of capacity bottlenecks

The review of existing traffic data showed that what is readily available is not sufficient to support traffic forecasting by flow assignment and there is much doubt that the necessary information could be collected in a short time. For this reason it is proposed to produce a first set of forecasts at two levels:

- regional and international flow forecasts would be prepared by making the synthesis of not necessarily homogenous information obtained from various sources such as IFIs or recent studies. For example forecasts of traffic between PRC and Central Asia would largely be taken from the TRACECA "Rail links between the Ferghana Valley, Bishkek and Kashgar" complemented if possible by subsequent Chinese studies on the same subject.
- traffic forecasts by line section obtained by projection of recent trends adjusted for known development in the hinterland area.

Wherever possible the result of the two approaches will be merged and homogenised by using the SEPTRAN software.

A major objective of this first wave of forecasts would be to identify possible capacity bottlenecks. As it is always costly to remove bottlenecks that have not been foreseen in due time the emphasis will be on determining potential future traffics particularly under optimistic assumptions.

## A.6 – Investigation of border-crossing issues – Recommendations for improvement at borders

As noted in paragraph 2.2.5 the difficulties encountered at border is a major hindrance to regional transport in spite of the assistance provided by numerous agencies. The TRACECA programme already supported a number of initiatives to improve border crossing procedures. In addition to the projects mentioned in sub-chapter 3.1 the subject has been given much attention by TRACECA since it is a prerequisite to the development of international transport corridor. It is at the root of the "Basic Multilateral Agreement (MLA) on International Transport for the Development of the Transport Corridor Europe – Caucasus - Asia" with its annexes on international rail transport. The Third Annual Meeting of TRACECA Intergovernmental Commission held in Yerevan on October 9-10 2003 was even more specific with the adoption "Technical Annex on the International Customs Transit procedures in the Corridor Europe – Caucasus – Asia for the carriage of goods by rail using the "SMGS" railway bill".

The Consultant's primary line of action is to build on what was so far done under TRACECA. It seems that most of the previous projects gave most of their attention to road border-crossing. It is particularly the case of the "Harmonisation of Border-Crossing Procedures" Project. And even more of the project related to border crossing between Moldova and Ukraine. In the latter case little attention was given to railway crossing after noting that they were not presenting major problems.

Actually this confirms the findings of a member of the project team in late 2002 that there were no serious border-crossing hurdles in regional railway transport. The main complain was the requirement by customs of a guarantee deposit for the goods crossing a country. A fresh review will be made of the situation. Whenever problems are found some remedial actions will be proposed. It could include improvements to Crossing Border Procedures

(CBP) with possibly detailed application to the railway line sections that will be studied in Module B.

Since a deterrent to trade or to the use of a specific route is generally not a single or even a few border crossings but a series of crossings an idea under consideration is to attempt to determine which changes should be done to present procedures so that Chinese companies shipping manufactured goods to Europe would use Trans-Asian Railway corridors either through Kazakhstan or through the Ferghana Valley with temporarily road transport between Kashgar and Osh as long as the last connecting railway section has not been built.

#### **A.7 – Review of multimodal transport – Identification of development bottlenecks – Recommendations for improved services**

In mature market economies a large proportion of rail transport uses containers whereas in Central Asia remains relatively low even after the substantial increase of recent years. There structural reasons to this situation particularly the fact that countries such as Kazakhstan are major producers of raw materials and half-products. But there are also so obvious reasons such as the problem of the optimal management of containers.

Several TRACECA projects already dealt with containers such as the 1997 study that had a wide scope. Later on the Traffic and Timetable project looked at ways to improve container services on TRACECA routes. Application was made on the Baku-Poti route with actual operation of block container trains. But the service was later interrupted apparently because of low demand. However the development of container use progressed in specific areas such as the transport of cotton from Uzbekistan. When the demand became sufficient container trains could be operated in direction of exports markets such as those between Tashkent and Bandar-Abbas or Istanbul.

The lack of data of wide coverage makes difficult to have a broad view of the present situation. The 1996 traffic forecasting study collected data on containers movements but for reasons that are not clear the 2000-2001 Traffic and Feasibility Studies project did not pay much attention to containers. The first step is therefore to collect information on multimodal transport.

The second step will be to analyse the data to identify bottlenecks in the development of multimodal transport. On the basis of that analysis recommendations will made on how the development could be sped up.

For successful development of container transport along major international routes such as between East Asia and Europe the existence of powerful operators with agreements with the railways of the various countries crossed is essential. An interesting model could be the Inter-container operator in Europe. The planned study tour in Europe could make possible to provide concrete illustrations to the recommendations.

#### **A.8 – Harmonisation of standards and of operating procedures – Recommendations on standards adaptation and improved inter-operability**

The first railway lines in Central Asia were built with Russian standards. Those later become part of the soviet railway system subject to strict standards. There was no problem of interoperability within the system that extended from the Pacific Ocean to Central Europe. Moreover the OSJD organisation ensured a certain coordination with other socialist countries that was member of the organisation including China and the European socialist countries. Concrete problems of inter-operability appeared in the nineties with railways of different

gauge at the Kazakhstan-PRC border in Druzhba-Alashankou and at the Turkmenistan-Iran border at Seraks.

However wider problems of inter-operability appeared with the creation of national railways subject to national constraints in the five Central Asian countries. For telecommunications or for rolling stock for instance there is a risk that every country may chose the supplier making the best financial conditions regardless of decisions taken in neighbouring countries.

On the other hand European countries started with substantial difference in standards and are now trying to harmonise them. The EU experience could therefore be valuable to Central Asian even if present levels of services remain very different. A complex concept of Interoperability has for instance been developed in Europe in the nineties for high speed rail system while a similar concept for conventional rail system is still under elaboration. Ensuring inter-operability requires not only technical measures but also adaptation in legislation and institutional arrangements.

The inter-operability issue will be analysed in detail. Hurdles to seamless operation across Central Asia and beyond will be identified. Present standards will be reviewed on that basis recommendations will be done on how to improve interoperability and harmonise standards.

As requested by the TORs particular attention will be paid to compatibility with EU standards, in particular with regard to safety and security standards for the transportation of dangerous goods and oil products.

Past experience on standards harmonisation will be taken advantage of particularly the work carried out under the auspices of the United Nations – Economic Commission for Europe that resulted in the adoption of the AGC (European Agreement on Main International Railway Lines) and the AGTC (European Agreement on Important International Combined Transport Lines) both taking into consideration various national standards including the Russian ones.

#### **A.9 – Selection of railway section to be submitted to feasibility study under Module B**

Four sections of a total length of about 1200 km are listed in the TORs as follows.

- Jalal-Abad – Kara-Su – Andijan (79 km - Kyrgyzstan and Uzbekistan)
- Osh – Kara-Su – Andijan (72 km - Kyrgyzstan and Uzbekistan)
- Lugovaya – Bishkek – Balykchi (322 km – practically Kyrgyzstan)
- Aktau – Beyneu – Kungrad (700 km – Kazakhstan and Uzbekistan)

Discussions with beneficiaries in Kazakhstan and Republic Kyrgyz seemed to show that there was no objection to the proposed list. The opinion of the Uzbek Beneficiary has not been officially expressed yet.

The Consultant understanding is that the distribution by countries should remained more or less unchanged that is that approximately 350 km should be in Uzbek territory.

The Tajik Ministry of Transport did not explicitly express interest in being included in Module B but they handed over to the Consultant a list of projects with cost estimates. The only existing railway section included in the list is the 110 km long Bekobod-Kanibadam section for which track doubling on 40 km and electrification is envisaged. For that section a feasibility study funded by ADB was already carried out in 2000. It could be reviewed by the Consultant if required. But the key issue remains an agreement between Tajikistan and Uzbekistan on the utilisation of the line to carry Uzbek transit traffic at acceptable conditions.

The TORs do not specify the criteria to be used for the selection of sections to be included in Module B. Beneficiaries acceptance is arguably the main one. But it is not clear if for instance the section should necessarily be on a TRACECA corridor.

#### **A.10 – A.11 – A.12 and A.13 – Refining traffic forecasts and recommendations**

It is expected that the discussions of the Interim Report will make it possible to better define what could be the contribution of the Consultant in the complex fields of harmonisation of standards, multimodal transport and facilitation of border crossing. On that basis recommendations will be adjusted and refined as required.

#### **A.14 – Tentative prioritisation of recommended actions**

As explained in Sub-Chapter 3.2 prioritisation requires the definition of goals and criteria. It is hoped that as project progresses the basis for prioritisation of actions will become clearer.

### **3.3.2 Module B**

#### **B 1 - Traffic Analysis**

The traffic analysis will proceed in two steps.

- The first step will aim at estimating potential traffic as a basis for the definition of alternatives for rehabilitation. This is essential to take the full measure of the problems. For instance rehabilitation parameters for the Bishkek-Balykshi railway section depend on whether the line will be extended or not. With a slight increase in traffic no major realignment should probably be justified. But the situation changes if the section becomes part of an international route. Traffic forecasts at this stage will essentially be derived from Activity A.5.
- The second step is the forecasting of the most likely traffic levels as a basis for assessing economic and financial feasibilities of rehabilitation. Activity A.10 should provide a good basis. But some refinements taking into consideration economic development in the immediate hinterland will probably be needed.

#### **B.2 Technical Feasibility**

Several alternative rehabilitation scenarios will be defined corresponding to various levels of quality of service and traffic volume. The alternatives have to be "meaningful" in terms of costs, performances or induced benefits.

The following sub – tasks will take place:

- Preliminary site investigations and review of existing studies; after a careful examination of existing studies and meetings with people in charge of line operating, line reconnaissance will be carried out aiming at getting a clear and synthetic picture of the problems of the line in order to generate suitable alternatives and to outline a possible plan for integrative surveys if needed;
- Plan for sub-surface investigations; in those cases where existing information is not suitable and additional data is needed, a plan for sub-surface investigations will be prepared; it will take into account the service operation constraints along the line and the

climatic constraints and it will be detailing: location, technical specifications, quantities and costs;

- Study of alternatives to be evaluated; after the activities above described, possible alternative solutions for the rehabilitation will be generated with the specific aim of tailoring interventions on present and future needs of the line; this sub-task is crucial since it will be giving the input for the following sub-tasks;
- Alignment design; the alignment alternatives will be identified at a scale (i.e. 1:25.000) suitable for making it possible to estimate satisfactorily the difficulties due to crossings of urban areas, of morphologically uneven areas, of stations, of existing plants and of the major interferences; if needed specific inspection visit will be performed and standard to be adopted after discussions with the Beneficiaries; main output will be general chorography, lay-out, profile and typical sections;
- Civil works and stations design; the sub-task concerns several aspects in case they are unsuitable for matching the new performance requirement and in case the new alignment requires changes (i.e. positioning), the upgrading of structures (i.e. bridges, culverts, etc.), the upgrading of the permanent way, embankment and cutting sections, level crossing, etc.; the sub-task includes also the design of the stations for what concerns: the lay-out (i.e. main and crossing tracks modifications); track equipment (i.e. turnout), platforms, structures internal to the station (i.e. overpasses/underpasses for pedestrians), etc; for all the aspects typical drawings will be produced, in addition, if needed, specific assessment will be undertaken in order to overcome topical issues;
- Technological aspects of the line; the sub-task concerns the definition of typologies, characteristics and performances of the safety and signalling plants, remote controls, telecommunications; for all those aspects typical drawings and scheme layouts will be produced; in addition the possibility of electrifying the railway lines has to be considered; in that case, typical drawings of the system, of the contact line components and an electric scheme of the plant will be provided.
- Cost estimates; for the level of a feasibility study a parametric costs estimate is normally carried out; the sub-task is to aim at studying three different aspects (investment, maintenance and operation) of the alternative options; for investment the estimation will be performed using unit construction rates by similarity with other works already carried out and quantities estimated in the previously described sub-tasks; also costs for maintenance and operation will be estimated by similarity with other situations;
- Preliminary implementation schedule; the Consultant will determinate a realistic rehabilitation implementation schedule for the alternative solutions of the priority sections; this will be used mainly for the purpose of the cash-flowing within the economic analysis; a more detailed analysis will be carried out in the following stage 2 of Module B.

### B.3 Environmental Impact

The social and environmental impact analysis will analyse positive and negative impacts of the projects and will determine appropriate mitigation measures for the environmental sector.

On the basis of the information collected on the receiving environment (physical, ecological, visual and socio-economic conditions in the border study area and data required and the components to identify and assess the main effects of the project), the Consultant will determine the Study Area for the environmental impact analysis, the Area of Influence of the project and the Sensitive Areas.

Afterwards the Consultant will determine all potential direct and indirect impacts related to:

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- project location and design (modification of disruption of natural drainage patterns, change in groundwater elevation, design of alignments, pavements, bridges etc.),
- construction works (loss of areas, possible landslides, erosions, stream and lake sedimentation, water logging at borrow pits / quarries, construction spoils, air pollution, fuel and oil spills, noise, vibration, light, heat, radiation) and
- project operation (impacts on land, air and water including estimation of expected residues and emissions by type and quantity regarding water, air and soil pollution, noise, vibration, light, heat, radiation etc).

The analysis consists of comparing the expected changes in physical, ecological, visual and socio-economic environment with and without the project. For each type of potential impact and for every Sensitive Area the analysis will predict the effects of project:

- significance of impact effects (predicted surpassing of established criteria/standards, duration of surpassing, geographic extend of an effect, cumulative nature of the effect, community tolerance and preferences in relation to costs and benefits of the project);
- characteristic of impacts effects including location (on site; off site), magnitude and duration of impacts (short, long term);
- effects impact type (negative, positive, direct, indirect, cumulative, interactive, isolated).

The Consultant will outline the project alternatives regarding quality and quantity of impacts on the environment. Furthermore, the Consultant will identify feasible and cost-effective mitigation measures that may reduce environmental impacts during construction and operation.

It is worth mentioning that the quality of the works to be undertaken (rehabilitation) generally is conservative enough to be considered of low impact for the environment.

#### **B.4 Economic Viability**

The Consultant will undertake evaluation of the economic viability of the projects and will rank the alternative options. Any project aimed at improving rail infrastructure and operations generates impacts on overall transport system efficiency. These impacts result from changes in the consumption of resources used for the production of transport services and/or from potential traffic diversion from one mode to another.

The measurement of the economic worth of the different project options proposed for the rehabilitation of the priority sections will be carried out based on the traditional approach which compares one or more "with project" scenarios against a reference situation (so called "without project" option).

For each project alternative, on yearly basis, relevant incremental benefits compared to the "without project" option will be calculated, together with an estimate of the extra use of resources (economic costs) necessary to achieve the corresponding benefits. The comparative quantification of the costs and the benefits will be performed over a certain time horizon.

The estimate of economic investment and operating costs of each proposed project will be based on the assessment of the opportunity-cost of the resources or alternatively it will be based on production factors valued at market prices, net of indirect taxes and subsidies.

As far as benefits, the projects are expected to produce significant impacts on three different stakeholders:

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- Rail users benefits will be calculated on the basis of the reduction in generalised cost of travel, including money expenditure, time spent and, when possible, the value of elements which affect the modal choice such as comfort and reliability of the mode
- Rail operators' benefits will be calculated in terms of changes in infrastructure operating and maintenance costs and changes in train operating costs.
- Benefits accruing to the rest of the society will be identified and quantified according to the availability and reliability of input data and they will consider: potential changes in air and noise pollution and potential reduction in accidents.

Incremental benefits and costs, accruing at different times will be comparable applying appropriate discounting procedures.

The economic value of each project will be assessed and summarised through the use of the following indicators:

- Net Present Value (NPV);
- Internal Rate of Return (IRR);
- Benefit/ Cost Ratio (BCR).

The use of the above mentioned indicators will allow for an economic comparison between alternative projects and a consequent ranking.

For each project, sensitivity tests and risk analysis aimed at assessing the robustness of the relevant results to alternative future scenarios will also be carried out.

Furthermore, in order to assess the financial implications of each proposed project, a cash-flow analysis will be performed by the Consultant. Differently from the cost-benefit approach, financial appraisal values will be based on market prices (including relevant taxes) and will disregard any project effects other than those directly quantified on a commercial basis.

A summary measure of the financial profitability of the Project will be provided through the elaboration of traditional indicators such as FIRR and FNPV.

The selection of the best alternative will be conducted on the bases of the technical, economic, financial, environmental considerations. The ranking of the alternative scenarios will be conducted by the Consultant in close connection with the Beneficiaries. The selection of the best alternative has to be in any case in line with criteria adopted by the international financial institutions in order to facilitate the following step of the project such as bargaining with IFIs and EC.

### **B.5 Detailed Design**

Detailed design will be carried out for the improvement option selected during the preceding phase of Module B. The design will be prepared under the usual arrangement that the Contractor for the implementation will be designing and providing works and plants (i.e. FIDIC – Contract for Design-Build). Those works and plants will be in accordance with the Contracting Authority requirement and may include any combination of civil, mechanical, electrical and construction works.

The activity will be aiming at the proper definition of the technical specification to be included in the tender dossier and at the proper assessment of implementation costs to be used also vis-à-vis the funding entities. At the stage of the Inception Report, the level of knowledge of the topics for which the lines should be rehabilitated doesn't allow the outlining of a proper detailed program. In general terms, the development of the present activity is to consider the following tasks:

- Field investigation only for those sections in which the information available is not sufficient for the development of the detailed project (this concerns topography, geotechnics, geology, hydraulic, etc) and for the proper assessment of costs;
- Alignment design will be based on the output of the technical feasibility study previously carried out and it will be mainly integrating and detailing the situation for sections deemed to be problematic for whatever reasons (i.e. geotechnical instability, snow avalanches risk, interaction with rivers, erosion caused by insufficient water drainage; etc.); this sub-task will allow a proper development of the here below sub-tasks;
- Civil works design; this includes design of bridges, culverts, formation, substructure, permanent way, drainages, stations, etc.; this implies a widening of the design already developed for structure deemed to be problematic for whatever reasons;
- Technological aspects of the line; this includes signalling and safety equipment, railway telecommunications installations, electrification, etc.; this implies refining the design already developed (i.e. the preparation of schematic lay-out of station for the purpose of designing safety devices; the preparation of schematic plans for electrical feeding, etc.);
- Bill of quantities and costs estimates; this sub-task will be based on the output of the previous ones and will be aiming at the proper estimation of the intervention costs; it is worth mentioning that figures generated within this sub-task will be used with the funding entities and within the tender procedure.

The drawings to be presented are generally typical drawings, lay-out and profiles of lines and stations, but as a consequence of specific problems along the lines they could be further developed depending on the topics.

#### **B.6 Rehabilitation/construction implementation schedule**

Given that a main concern of the client could be the respect of the operational needs of the lines to be rehabilitated, it will be of great importance to produce a working plan taking into account the impact of works on train operation and the need to minimise effects on the circulation of trains on the existing line.

Any railway modernisation project which is undertaken directly on an existing line such as in the case of this project can potentially have a significant impact on train operations over the existing tracks. This impact could fall into one or more of the following categories:

- daily interruption of train circulation on specific sections;
- failure of the existing sub-grade due to work procedures while widening the embankment;
- the necessity to occupy existing tracks in order to install new turnouts and crossovers;
- requirements to disconnect existing signalling when re-locating installations to make place for the new track and
- the need for the contractor's work trains to use existing track capacity to transport materials to the site.

On such basis, the works implementation program will be established taking into account the complex of technical, financial and operative aspects, in order to give continuity to works and ensure the use of the infrastructure for current transport.

As regards financial resources from funding sources, the Consultant will make its best estimate on the amounts, procedures and time required for actual availability for the project in order to organise works accordingly and avoid suspensions.



## B.7 Draft tender documents preparation

The preparation of the Tender Documents shall be carried out in compliance with international regulatory framework for tendering procedures. Despite a common philosophy, each IFI normally has its own Guidelines for Procurement or a standard document to be adapted time by time. Since at the stage of the preparation of the present Inception Report, the identity of the IFI which will be providing funds is not known, it is impossible to figure out exactly which documents will be prepared and for which railway section. Nevertheless, the drafting tender documents starting from the level of design of the present study is to be under the assumption that works contracts will be implemented as "design and built" process.

As far as the Technical Part of the Tender dossier is concerned, Bill of Quantities, Conceptual Drawings and Layouts, Technical Specifications will be generated and they will be based on the design requirements.

The Technical Specifications will be subdivided into the same sections as the Bill of Quantities and will cover each item listed in the same bill, giving for each one of them the description of the activity and of the materials to be utilized or provided, the acceptance tests, the construction method and relevant tolerance, and finally the method of measurement and the basis of payments.

In addition Technical Specifications and General Conditions shall contain general clauses covering the constraints on the use of site, constraints on working hours and details on the contract program. For part of the electrical and mechanical works, the Consultant will prepare functional specifications, more than technical specifications, allowing for an open competition and avoiding an orientation towards a specific technology and a restricted number of suppliers.

## 3.4 Intended Results

The list of planned outputs is provided in Chapter 1 "Project Synopsis" and in Form A "Overall Output Performance Plan" attached as annex.

## 3.5 Planning for the Whole Duration of the Project

The Overall Plan of Operations is attached in annex as Form B. In the same annex is also included a Work Programme in form of chart.

## 3.6 Constraints, Risks and Assumptions

- **Multi-Country Approach.** In consideration of the interconnection of the several interventions, of the large number of countries and bodies involved and of the natural feed back that every single activity can/must have in respect to the others, the Consultant deems as absolutely necessary to stress from the very beginning of the project the importance of the involvement of Project Partners acting as facilitators and the continuous exchange of opinion with people in charge of the line operating.
- **Optimize the use of resources making use of all relevant existing data and studies.** A wealth of useful information and studies is supposed to be available to the Consultant. Furthermore the Consultant expects that Project Partners will give full technical and logistical support to the Contractor in order to elaborate the most comprehensive picture of the local situation.

## **ANNEX**

**Form A : OVERALL OUTPUT PERFORMANCE PLAN**

**Form B : OVERALL PLAN OF OPERATIONS**

**Form C : PLAN OF OPERATIONS FOR THE NEXT PERIOD**

**WORK PROGRAMME**

## Form A : OVERALL OUTPUT PERFORMANCE PLAN

Project title : Review of Railways Rehabilitation in Central Asia		Project number : EUROPAID/116151/C/SV/MULTI	Country : Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan	Page : 1 of 1
Planning period : 1 March 2004 to 31 August 2005		Prepared on : 30 April 2004	EC Consultant : ITALFERR S.p.A., via Marsala 53 – 00185 Rome - Italy	
Outputs (to be described and target dates indicated)		Agreed Objective Verifiable Indicators	Constraints and Assumptions C/A	
Draft recommendations concerning multimodal transport	31 <sup>st</sup> July 2004	Delivery of the Interim Report on Module A including those aspects	Reaching an agreement among several bodies; Availability of information and data needed for the proper development of the analysis; Reliability of existing socio-economic and traffic data;	
Draft recommendations on harmonisation of standards and operating procedures and interoperability	31 <sup>st</sup> July 2004			
Draft recommendations on improvements of border-crossing procedures	31 <sup>st</sup> July 2004			
Traffic forecasts – Identification of capacity bottlenecks	15 <sup>th</sup> July 2004			
Final recommendations concerning multimodal transport	15 <sup>th</sup> Dec. 2004	Delivery of the Final Report on Module A including those aspects	Relevant comments on Interim Report have been timely received; Reaching an agreement among several bodies; Availability of information and data needed for the proper development of the analysis; Reliability of existing socio-economic and traffic data;	
Final recommendations on harmonisation of standards and operating procedures and interoperability	15 <sup>th</sup> Dec. 2004			
Final recommendations on improvements of border-crossing procedures	15 <sup>th</sup> Dec. 2004			
Refined traffic forecasts	15 <sup>th</sup> Dec. 2004			
Tentative prioritisation of recommended actions	15 <sup>th</sup> Dec. 2004			
Technical and economic feasibility study of the railway line sections previously identified.	28 <sup>th</sup> Febr. 2005	Delivery of the technical and economic feasibility study for the selected railway sections	Agreement reached on the selection of railway line sections; Availability of information and data needed for the proper development of the analysis; Difficulties in field surveying activities;	
Draft tender document	31 <sup>st</sup> July 2005	Delivery of the draft tender documents for the selected railway sections	Availability of information and data needed for the proper development of the analysis; Identification of potential financing providers; Difficulties in field surveying activities	

## Form B : OVERALL PLAN OF OPERATIONS

Project title : Review of Railways Rehabilitation in Central Asia				Project number : EUROPAID/116151/C/SV/MULTI				Country : Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan				Page : 1 of 3					
Planning period : 1 March 2004 to 31 August 2005				Prepared on : 30 April 2004				EC Consultant : ITALFERR S.p.A., via Marsala 53 – 00185 Rome – Italy									
Project objectives :																	
<p><i>Over-all objectives: The development of viable, secure, safe and competitive transport routes linking the countries of Central Asia with Europe and other neighbouring countries. Strengthened border management capacity facilitating economic development, the movement of people and goods and the prevention of organised crime.</i></p> <p><i>Specific objectives: for Module A - Analysis of the relevant national railway transport plans and any regional railway transport planning provision; for Module B - Technical and Economic Justifications to support and attract the investments for the rehabilitation of priority railway sections for the purpose of increasing transportation capacities of these areas.</i></p>																	
No	MAIN ACTIVITIES	TIME FRAME												INPUTS			
		2004				2005				2006				PERSONNEL		EQUIPMENT AND MATERIAL	OTHER
		1	2	3	4	1	2	3	4	1	2	3	4	EC Consultant	Local Sub-contractors		
	<b>Module A</b>	X	XXX	XXX	XXX												
A.1	Collection and review of transport and economic studies. Data collection	X	XXX	X										60 wd	310 wd	6 Desktops, 2 Notebooks, 1 LAN, 1UPS, 6 printers, 1 fax machine, 6 telephone, 1 fotocopy machine, 10 desks, 4 cabinets	1 office manager, 1 technical interpreter, 4 draughtsmen, 1 driver  85 regional trips
A.2	Overview of traffic flows		XXX											58 wd	40 wd		
A.3	Identification and review of physical, geopolitical, social and environmental issues		X											20 wd	50 wd		
A.4	Analysis of national railway transport plans and regional railway transport planning provisions		X											40 wd	40 wd		
A.5	Traffic forecasts – Identification of capacity bottlenecks		XX	X										60 wd	50 wd		
A.6	Investigation of border-crossing issues – Recommendations for improvement at borders		XX	X										60 wd	40 wd		

Note: Relevance of a Study Tour will be assessed during Activities A.6, A.7 and A.8.

Project title : Review of Railways Rehabilitation in Central Asia	Project number : EUROPAID/116151/C/SV/MULTI	Country : Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan	Page : 2 of 3
Planning period : 1 March 2004 to 31 August 2005	Prepared on : 30 April 2004	EC Consultant : ITALFERR S.p.A., via Marsala 53 – 00185 Rome – Italy	

Project objectives :

*Over-all objectives: The development of viable, secure, safe and competitive transport routes linking the countries of Central Asia with Europe and other neighbouring countries. Strengthened border management capacity facilitating economic development, the movement of people and goods and the prevention of organised crime.*

*Specific objectives: for Module A - Analysis of the relevant national railway transport plans and any regional railway transport planning provision; for Module B - Technical and Economic Justifications to support and attract the investments for the rehabilitation of priority railway sections for the purpose of increasing transportation capacities of these areas.*

No	MAIN ACTIVITIES	TIME FRAME												INPUTS					
		2004				2005				2006				PERSONNEL		EQUIPMENT AND MATERIAL	OTHER		
		1	2	3	4	1	2	3	4	1	2	3	4	EC Consultant	Local Sub-contractors				
A.7	Review of multimodal transport – Identification of development bottlenecks – Recommendations for improved services		XX	X												60 wd	40 wd	6 Desktops, 2 Notebooks, 1 LAN, 1UPS, 6 printers, 1 fax machine, 6 telephone, 1 fotocopy machine, 10 desks, 4 cabinets	1 office manager, 1 technical interpreter, 4 draughtsmen, 1 driver  85 regional trips
A.8	Harmonisation of standards and of operating procedures – Recommendations on standards adaptation and improved inter-operability		XX	X												60 wd	40 wd		
A.9	Selection of railway sections to be submitted to feasibility study under Module B			X												20 wd	30 wd		
A.10 A.11 A.12 A.13	Refining traffic forecasts and recommendations			XX	XXX											100 wd	40 wd		
A.14	Tentative prioritisation of recommended actions				XX											60 wd	40 wd		

Note: Relevance of a Study Tour will be assessed during Activities A.6, A.7 and A.8.

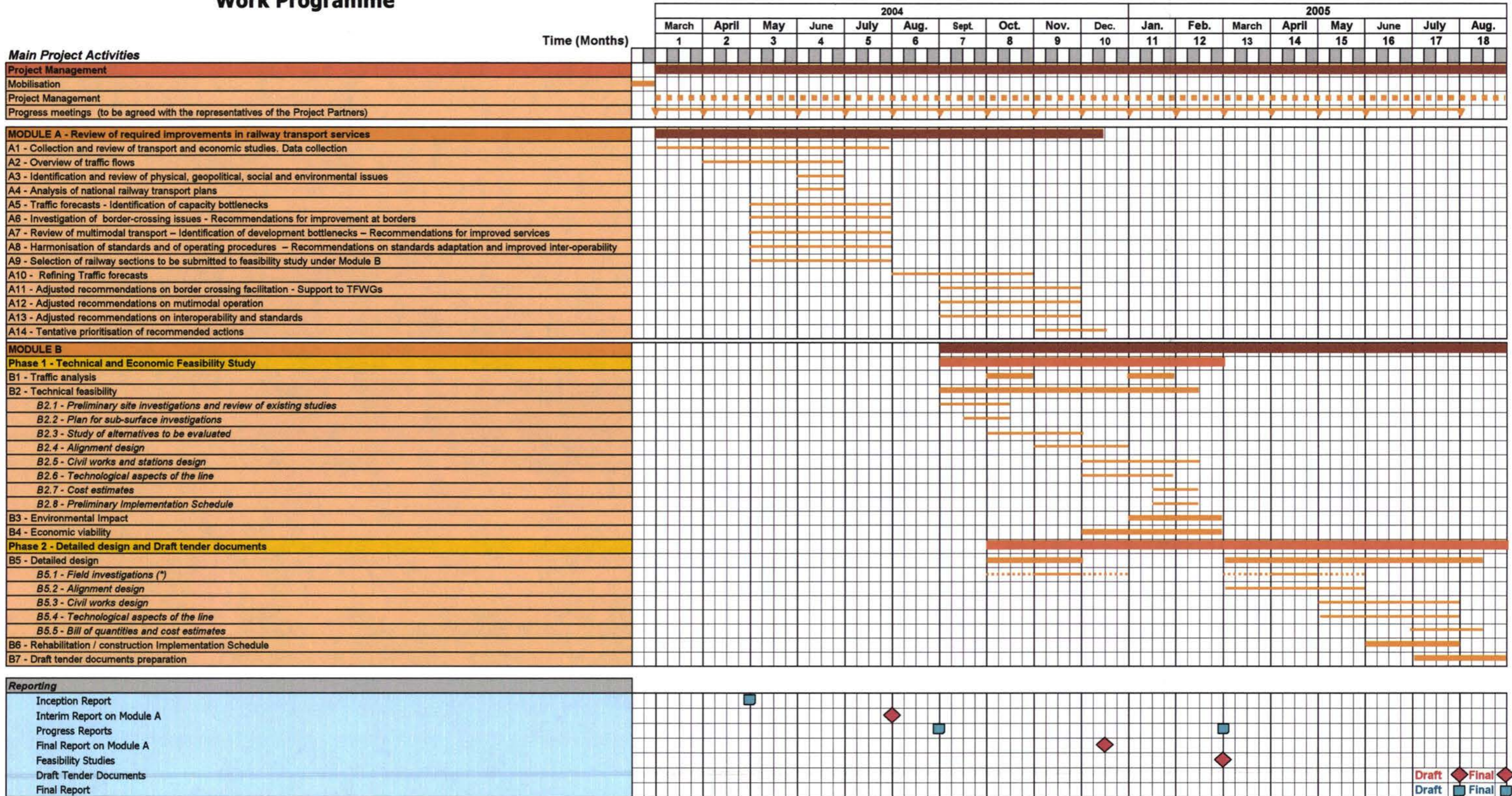
Project title : Review of Railways Rehabilitation in Central Asia				Project number : EUROPAID/116151/C/SV/MULTI				Country : Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan				Page : 3 of 3					
Planning period : 1 March 2004 to 31 August 2005				Prepared on : 30 April 2004				EC Consultant : ITALFERR S.p.A., via Marsala 53 – 00185 Rome - Italy									
Project objectives : <i>Over-all objectives: The development of viable, secure, safe and competitive transport routes linking the countries of Central Asia with Europe and other neighbouring countries. Strengthened border management capacity facilitating economic development, the movement of people and goods and the prevention of organised crime.</i> <i>Specific objectives: for Module A - Analysis of the relevant national railway transport plans and any regional railway transport planning provision; for Module B - Technical and Economic Justifications to support and attract the investments for the rehabilitation of priority railway sections for the purpose of increasing transportation capacities of these areas.</i>																	
No	MAIN ACTIVITIES	TIME FRAME												INPUTS			
		2004				2005				2006				PERSONNEL		EQUIPMENT AND MATERIAL	OTHER
		1	2	3	4	1	2	3	4	1	2	3	4	EC Consultant	Local Sub-contractors		
	<b>Module B</b>			X	XXX	XXX	XXX	XX									
B.1	Traffic Analysis				X	X								68 wd	40 wd	6 Desktops, 2 Notebooks, 1 LAN, 1UPS, 6 printers, 1 fax machine, 6 telephone, 1 fotocopy machine, 10 desks, 4 cabinets	1 office manager, 1 technical interpreter, 4 draughtsmen, 1 driver
B.2	Technical Feasibility			X	XXX	XX								260 wd	600 wd		
B.3	Environmental Impact					XX								50 wd	60 wd		
B.4	Economic Viability				X	XX								100wd	60 wd		
B.5	Detailed Design				XX	X	XXX	XX						300 wd	680 wd		
B.6	Rehabilitation/construction implementation schedule						X	X						60 wd	40 wd		
B.7	Draft tender documents preparation							XX						60 wd	50 wd		
												TOTAL	1496 wd	2200 wd			

Note: Field surveying needs will be assessed only after completion of Activity B.2.

### Form C : PLAN OF OPERATIONS FOR THE NEXT PERIOD

Project title : Review of Railways Rehabilitation in Central Asia				Project number : EUROPAID/116151/C/SV/MULTI				Country : Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan				Page : 1 of 1	
Planning period : 1 March 2004 to 31 August 2005				Prepared on : 30 April 2004				EC Consultant : ITALFERR S.p.A., via Marsala 53 – 00185 Rome - Italy					
		TIME FRAME 2004 (months)						INPUTS					
										PERSONNEL		EQUIPMENT AND MATERIAL	OTHER
No	ACTIVITIES	1 – March	2 - April	3 - May	4 - June	5 - July	6 - August	EC Consultant	Local Sub- contractors				
A.1	Collection and review of transport and economic studies. Data collection	XX	XX	XX	XX	XX	XX	XX	XX	60 wd	310 wd	6 Desktops, 2 Notebooks, 1 LAN, 1UPS, 6 printers, 1 fax machine, 6 telephone, 1 fotocopy machine, 10 desks, 4 cabinets	1 office manager, 1 technical interpreter, 4 draughtsmen, 1 driver
A.2	Overview of traffic flows		XX	XX	XX	XX		58 wd	40 wd				
A.3	Identification and review of physical, geopolitical, social and environmental issues				XX	XX		20 wd	50 wd				
A.4	Analysis of national railway transport plans and regional railway transport planning provisions				XX	XX		40 wd	40 wd				
A.5	Traffic forecasts – Identification of capacity bottlenecks			XX	XX	XX	XX	60 wd	50 wd				
A.6	Investigation of border-crossing issues – Recommendations for improvement at borders			XX	XX	XX	XX	60 wd	40 wd				
A.7	Review of multimodal transport – Identification of development bottlenecks – Recommendations for improved services			XX	XX	XX	XX	60 wd	40 wd				
A.8	Harmonisation of standards and of operating procedures – Recommendations on standards adaptation and improved inter-operability			XX	XX	XX	XX	60 wd	40 wd				
A.9	Selection of railway sections to be submitted to feasibility study under Module B					XX	XX	20 wd	30 wd				
A.10 A.11 A.12 A.13	Refining traffic forecasts and recommendations						XX	XX	25wd	10 wd			
TOTAL								463 wd	650 wd				

## Work Programme



**LEGEND**

- [Solid orange bar] Continuous activities
- [Dashed orange bar] Fragmented activities
- [Red diamond] Technical Report
- [Blue square] Administrative Report

(\*: to be executed according to the weather constraints)