



Ministry of Infrastructure



Ministry of International Trade



**PAN-EUROPEAN CORRIDOR VIII
SECRETARIAT**

CORRIDOR VIII

PRE-FEASIBILITY STUDY ON THE DEVELOPMENT OF THE RAILWAY AXIS

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Forewords

Minister of Infrastructure Italy

In the general framework of the EU enlargement to new Member States, the process of definition of a new European Transport Planning Strategy has been completed in December 2005 with the publication of the report “Networks for peace and development”, carried out by the High Level Group for “Wider Europe for Transport”. The aim of the strategy is to better link the European Union to the new neighbouring Countries, Far East and North Africa. The HLG report is indeed the result of a multinational political effort to extend the concept of European Neighbourhood Policy into the transport field.

This report is part of the EU new general strategy, expressed in the 2001 White Paper “European Transport Policy: time to decide” and in the 2006 mid-term review of the 2001 White Paper on Transport, bestowing upon alternative transport modes the fundamental goal of shifting the freight traffic from the road network to the railway and maritime networks. In this context, the promotion of rail freight corridors has been explicitly included among priority actions.

In this general framework, Corridor VIII has been confirmed as integral part of one of the five new European Transnational Axes, namely the South Eastern Axis.

The Italian Government has always been committed to the implementation of Corridor VIII in a process of intense multinational cooperation with the Countries of the Balkan Region. This Study is a confirmation of the above mentioned multinational approach among Albania, Bulgaria, FYR Macedonia, Greece, Italy and Turkey, as also stated in the Corridor VIII Memorandum of Understanding.

For the Balkan regions, the development of an East-West axis is therefore a necessary economical and political instrument, as it improves inter-regional stability and is bound to achieve a positive impact on relationships and exchanges among concerned Countries.

However, the betterment and improvement of existing infrastructures has to be fulfilled in terms of networks and connecting nodes, of multi-modality and logistics, especially aimed at implementing competitiveness and eliminating physical and non-physical barriers.

The Apulia region, through Corridor VIII, plays a fundamental role in overcoming those barriers and actively representing the Italian Southern Eastern platform, connecting Italy to the Balkans, thus improving the role of Italian Southern regions aimed at strengthening relationships with Southern European Countries.

I believe this Study is an outstanding feat carried out by a Multinational Working Group, supervised by the Italian Ministry of Infrastructure, coordinated by the Corridor VIII Secretariat and with the technical support of the Italian National Railway Agencies RFI and Italferr. The letters from the

Ministers of Transport of the participating Countries acknowledge the importance of the Study and express agreement with the goals and actions identified.

Thanks to its methodology based on multinational cooperation, it represents an invaluable testimony of technical and political cohesion, thus constituting a tangible foundation for future financing and actual completion of hereby established priority projects.

The implementation of Rail Corridor VIII, in the general framework of the SEE Transnational Axis, will contribute to an efficient and environmentally friendly East-West transport Corridor in the Southern Balkans, a more satisfying transport mode balance in the development of EU transport networks, a bridge between Europe and Far East and a factor for peace and development of the intraregional economies.

This joint effort constitutes both a political achievement and a step towards the completion of South Eastern European Transnational Transport Axis, whose constitution is crucial for all future relationships between Italy and the Balkan regions, as well as for the wider Euro-Mediterranean basin.

Antonio Di Pietro



Minister of Public Works, Transports and Communications Albania

Honorable Colleague,

Allow me to express my sincere greetings and wish You successes in your work.

I acknowledge the rail project study Durres-Skopie-Sofia, which is moreover a proof of the assistance and support of the Italian Government in the implementation of the major project of Corridor VIII. The Understanding Memorandum, undersigned in Bari, which was followed with the establishment of the Corridor VIII Secretariat, and later on the meeting of Ministers of the four countries in Plovdiv are giving concrete results.

On this occasion, I would like to recall the fact that due to the Italian Government financing, important parts of this project in the Albanian territory are already at the executive phase or are financially covered. Such are the road segments that link two ports of Corridor VIII to the Balkan region, Durres and Vlora or the upgrading project of Port of Vlora, etc.

Meanwhile the study submitted by the Secretariat of Corridor VIII, which is a product of the common work of the respective experts and administrations of our countries, marks a new phase in its development by raising it at a level of an intermodal transport artery. I am convinced that this Study will serve as an important argument for the necessary financing near the relevant institutions and organisms. I am informed that a similar study is being performed from the Secretariat of Corridor VIII for the road infrastructure.

Expressing my full support for the presented study, I would also wish this study be accompanied at the same level with the next study on ports.

Seizing this opportunity, please accept, dear colleague, the assurances of my highest respect and consideration.

Sincerely,

Sokol Olldashi



**Minister of Transport and Communications
fYR Macedonia**

Dear Colleague,

Allow me to present to you my compliments and at the same time to express my gratitude for the overall activity related to promoting and developing of the projects of Corridor VIII, recognized in the High Level Group Final Report.

Furthermore, I would like to stress my compliments addressed to the Study for technical Assessment of feasibility of Corridor VIII railway border Crossings within the CEI region and at the same time to support the Technical Secretariat of the Corridor VIII for their contribution regarding the development of transport projects along Corridor VIII.

Looking forward to a future good co-operation the Ministry of Transport and Communications avails itself of this opportunity to renew to the Ministry of the Transport and Communications of Italy the assurances of its highest consideration.

Sincerely,

Mile Janakieski



Minister of Transport and Communications Bulgaria

Dear Minister,

First of all, let me express my gratitude for your activity related to the promotion and development of the infrastructure along transport Corridor VIII. During the official meeting between the Bulgarian and Italian Prime-Ministers, Mr. Romano Prodi stressed on the importance of the further construction of Trans-European transport Corridor VIII. The connection between the Adriatic and the Black seas holds out great prospects for the economic development. Mr. Sergey Stanishev underlined that the main Bulgarian national priorities are the development of the transport, communications and power engineering infrastructure in the country and the region.

Main priority of our transport policy is the development of the Trans-European Transport Corridors crossing Bulgaria.

I would like to express my full support for the proposed Study “Technical Assessment or feasibility of Corridor VIII railway border crossings within the CEI region”. I am confident that the Study will have significant contribution for the launching in due time of important infrastructure projects on Corridor VIII.

Anticipating the successful implementation and the results of this Study, I avail myself of the opportunity to renew to you the assurance of my highest commitment to the project.

Your future contribution and support, not just for this project will be of great help for us.

I am looking forward to our future fruitful cooperation.

Sincerely yours,

Peter Mutafchiev



Minister of Transport Turkey

Dear Minister,

I would like to express my pleasure for the conclusion of the pre-feasibility Study on Rail Corridor VIII, namely “Technical Assessment of feasibility of Corridor VIII railway border crossings within the CEI region.”

Turkey being conscious of its regional and historical responsibilities, has always given its supports to the development of the transport infrastructure in its region of which the Balkans constitute a privileged part. In this way, we actively participate in multilateral transport infrastructure activities relating to South-East Europe such as Pan-European Transport Corridor VIII. Also we have close cooperation on transport within the framework of bilateral relations with the countries in the region.

As it is known, regional transport axes in the context of Euro-Asian transport linkages have been redefined by the conclusions of the High Level Group chaired by Ms. Loyola de Palacio. South-eastern Trans-national Axis, which is one of four major land based axes proposed by the High Level Group and comprises also Corridor VIII, connects Europe to Asia, Middle East and Far East over Balkans and Turkey especially through rail and road infrastructures.

It is my sincere belief that the present Railway Report would make significant contribution for launching and financing important projects on Corridor VIII and then South-Eastern Axis.

Wishing similar successful studies on the infrastructures of other transport modes on the Corridor, I avail myself of this opportunity to renew to your Excellency the assurances of my highest consideration.

Sincerely,

Binali Yildirim



President of Puglia Region Italy

Against all odds, Puglia region has never ceased believing in the concreteness of Corridor VIII.

The European Union is today more than ever the new horizon for the democratization and stabilization processes in the Balkan area. A clear mandate for all of us is to ponder the historical, ethnic and economic background we share with nearby South Eastern Countries. This is especially true for Apulians, precisely because Puglia is becoming more and more a natural counterpart for the Balkan people, while thanks to Corridor VIII the Mediterranean basin can increase its potential as market area instead of an imaginary border.

This railway study on Corridor VIII border crossings, besides its already acknowledged technical significance, bears a strong ethical mandate: the joint effort of railway experts from the Ministries of Transport of Albania, FYR Macedonia, Bulgaria and Turkey: following the same path established with the Maastricht treaty of 1992 and the Amsterdam agreement of 1997, which constitute the legal foundation for completing road, railway, air and ports infrastructure networks. The mission of an integrated European transport network bound to overcome national borders and decrease infrastructural differences was a clear sign of the European Governments' foresight in pursuing common interests. A foresight that demands constant affirmative actions.

This study is indeed the evidence that those actions have gone through a common working methodology: the exceptional results presented here were devised by a multinational working group of Albanian, Macedonian, Bulgarian, Turkish and Italian railway experts delivering updated and insider views of current and forthcoming projects, especially aimed at improving the Tirana-Skopje-Sofia axis, where current border missing links are the main issue.

In addition, the experts' group activity has the merit of having thoroughly monitored the existing situation regarding the status of infrastructures and on-going projects, a precious commitment that lead to a consistent array of technical parameters, economical evaluations, project priorities and recommendations that will set future common references both for Member Countries and, hopefully, for the EU programming bodies.

This necessary priority list will undoubtedly render an essential backing for the Balkan cohesion process, a task that deserves an intense effort to put a joint pressure on Brussels authorities to implement European unity, because if Corridor VIII is above all a necessary transport axis, its realization will significantly increase economical as well as cultural exchanges among nearby and yet diversified cultures.

As regards Puglia, an improved geographical and cultural proximity with these regions, coupled with an adequately modernized infrastructural network, will boost economical growth and therefore augment the Southern Mediterranean marketplace, thus overcoming isolation and preparing the ground for future prosperity.

Nichi Vendola



Chairman - Corridor VIII Steering Committee Head of Department - Ministry of Infrastructure Italy

After less than three years since the establishment of the Corridor VIII Secretariat, it is my pleasure to introduce the "Technical assessment of feasibility of Corridor VIII Railway border crossings within the CEI region" as a meaningful result of the activity of a Multinational Working Group representing Corridor VIII member Countries, conducted under the Supervision of the Ministry of Infrastructure, the General Coordination of the Secretariat and the Technical assistance of RFI and Italferr.

The background framework for the Studies on Transport Infrastructures of Corridor VIII was set in Articles 9 and 10 of the MoU of Understanding signed in Bari (Italy) on 9 September 2002.

The general programme of studies to be conducted by the Secretariat has been approved by the Steering Committee in the 3rd Meeting held in Tirana on 27th May 2005.

Priority sectors for studies and projects were defined as follows:

- Railroads: Cross-border areas, missing links, rehabilitation and upgrading of existing alignment;
- Roads: Cross-border areas, bottlenecks, maintenance and upgrading of existing alignment;
- Ports: Ports infrastructures, intermodal transport and logistics.

The present study on the Railway sector started in July 2005. Titled "Technical Assessment of Feasibility of Corridor VIII Railway Border Crossings within the CEI Region", the study has been financed by Italian law 84/2001 for Technical Cooperation in the Balkans (Corridor VIII Secretariat budget), and co-financed by the CEI-Central European Initiative.

The study has been conducted by an International Working Group including 2 high-level representatives from each participating Country (Ministries of Transport and National Railway Agencies of Italy, Albania, FYR Macedonia, Bulgaria and Turkey). The Corridor VIII Secretariat coordinated general activities of the Railway Working Group (RWG), while technical support was provided by RFI and Italferr, Italian National Railways agencies. The RWG held five meetings, one of which was a one week field inspection along the alignment of Corridor VIII, from Durres to Sofia.

The Final report includes:

- 1) An updated assessment on actual railway conditions and existing or on-going projects along Corridor VIII railway route.
- 2) A generally agreed definition of a Multinational Coordinated Project Durres-Skopje-Sofia (DSS Rail Project), with a first estimate of investment costs, implementation phases, cost/benefit analyses and feasible funding instruments.



3) A series of recommendations, jointly defined by the RWG, addressed to National Governments, including a request to approve and endorse the DSS Project, including a list of short term initiatives (Crash Program).

This Report follows a first study, published on September 2005 , “Corridor VIII, analyses of railway infrastructure”, in which the potentiality of Corridor VIII was analyzed on the background of the bilateral and multilateral agreements undersigned by the concerned Member States and in the light of the Wider Europe conclusions.

The timeliness and originality of this second Railway study mainly derives from two innovative approaches: the bottom-up methodology in identifying priority actions jointly implemented among participating Countries and a coordinated planning synthesis using consistent parameters (both technical and economical) applied to all national contexts throughout its completion.

The inclusion of Corridor VIII as an integral component of the South Eastern European Transnational Axis by the High Level Group for “Wider Europe for Transport” and the subsequent Plovdiv Declaration of Ministers of Transport (March 2006) confirmed the strong interest of Member Countries to develop joint efforts for the completion of Corridor VIII.

In this regard, the effort of the multinational Railway Working Group who completed the present study has set a fundamental benchmark to overcome the historical lack of accessibility among the Countries and plan appropriate exit strategies from historical border crossing issues.

The contribution of participating Member Countries was a valuable input: the Ministries of Transport of Albania, FYR Macedonia, Bulgaria and Turkey have submitted substantial reference material, such as National Transport Plans, state-of-the-art of current and forthcoming infrastructure projects, as well as future development programs.

In consideration of this fruitful cooperation, I am confident that programs and priorities established here will find positive feedbacks at national and European levels, in the perspective of a common activation of the IPA (Pre accession instruments) and ENPI (European Neighbourhood and Partnership Instrument) funds envisaged to improve communication networks throughout the European Union and neighbouring Countries.

Gaetano Fontana



Pre-feasibility Study on the development of the railway axis

ERRATA CORRIGE

The following table provides a comprehensive list of corrections within this report

	Page	Line	Ref:	Errata Corrige
1	9	18	within text - Macedonian	f.Y.R. Macedonian
2	19	12	index - picture 12 - Macedonian	f.Y.R. Macedonian
3	21	10	within text - Macedonian	f.Y.R. Macedonian
4	21	29	within text - Macedonian	f.Y.R. Macedonian
5	21	30	within text - Macedonian	f.Y.R. Macedonian
6	23	7	table cell - Macedonian	f.Y.R. Macedonian
7	23	8	table cell - Macedonian	f.Y.R. Macedonian
8	52	2	within text - Macedonian	f.Y.R. Macedonian
9	55		picture 12 caption - Macedonian	f.Y.R. Macedonian
10	57		picture 18 caption - A1 - Macedonian	f.Y.R. Macedonian
11	57		pict.18 caption - A2 - Macedonia	former Yugoslav Republic of Macedonia
12	57		pict.18 caption-M-3/M-4/M-5-Macedonia	former Yugoslav Republic of Macedonia
13	58	1	within text - Macedonian	f.Y.R. Macedonian
14	59	23	within text - Macedonian	f.Y.R. Macedonian
15	59	28	within text - Macedonia	former Yugoslav Republic of Macedonia
16	59	41	within text - Macedonian	f.Y.R. Macedonian
17	60	31	within text - Macedonian	f.Y.R. Macedonian
18	61	8	within text - Macedonian	f.Y.R. Macedonian
19	70	14	withing text - Macedonia	former Yugoslav Republic of Macedonia
20	72		Map in Fig.32-Republic of Macedonia	Thessaloniki and Piraeus (Corridor X) Burgas, Varna, Durres, Bari, Brindisi (Corridor VIII)
21	82	20	table cell - Macedonian	f.Y.R. Macedonian
22	82	21	table cell - Macedonian	f.Y.R. Macedonian
23	82	22	table cell - Macedonian	f.Y.R. Macedonian
24	86	9	table cell - Republic of Macedonia	former Yugoslav Republic of Macedonia
25	89	29	within text - Macedonian	f.Y.R. Macedonian
26	98	14	table cell - Macedonian	f.Y.R. Macedonian
27	98	16	table cell - Macedonian	f.Y.R. Macedonian
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33	101	26	table cell - Macedonian	f.Y.R. Macedonian
34	102	13	table cell - Macedonian	f.Y.R. Macedonian
35	102	25	table cell - Macedonian	f.Y.R. Macedonian
36	105	22	table cell - Macedonian	f.Y.R. Macedonian
37	105	34	table cell - Macedonian	f.Y.R. Macedonian
38	107	25	table cell - Macedonia	former Yugoslav Republic of Macedonia
39	107	33	table cell - Macedonian	f.Y.R. Macedonian
40	108	26	table cell - Macedonian	f.Y.R. Macedonian
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46	114	2	table cell - Macedonian	f.Y.R. Macedonian
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48	115	4	table cell - Macedonian	f.Y.R. Macedonian
49	115	7	table cell - Macedonian	f.Y.R. Macedonian
50	115	24	table cell - Macedonian	f.Y.R. Macedonian
51	115	26	table cell - Macedonia	former Yugoslav Republic of Macedonia
52	116	14	table cell - Macedonian	f.Y.R. Macedonian
53	116	28	table cell - Macedonia	former Yugoslav Republic of Macedonia
54	126	18	within text - Macedonian	f.Y.R. Macedonian
55	126	28	within text - Macedonian	f.Y.R. Macedonian
56	171	col.1 - cell 7	annex 6-table cell-Macedonian	f.Y.R. Macedonian

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Abbreviations and acronyms

CARDS	Community Assistance for Reconstruction, Development and Stability in the Balkans
CEI	Central European Initiative
CERPEM	Centro Ricerche per il Mezzogiorno – Research Center for Southern Italy
DPS	Dipartimento per le politiche dello sviluppo – Department for Development Policies, Italian Ministry of Finance
DSS	Durres- Skopje- Sofia
EC	European Commission
ENPV	Economic net present value
EU	European Union
FNPV	Financial net present value
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit – Technical arm of the German Development Agency
HLG	High Level Group
IFI	International Financial Institution
IPA	Instrument for Pre-Accession Assistance
ISDEE	Istituto di studi e documentazione sull'Europa Comunitaria e l'Europa orientale – Studies and Documentations Institute on the EU and East Europe
ISPA	Instrument for Structural Policies for Pre-Accession
ITALFERR	Italian National Railroad Engineering Company
MOU	Memorandum of Understanding
MTC	Ministry of Transport and Communications
PHARE	Programme of community aid to central and east European countries
PON TRASPORTI	Programma Operativo Nazionale Trasporti – Italian National Transport Plan
RAILPAG	Railway Project Appraisal Guidelines
REBIS	Regional Balkans Infrastructure Study
RFI	Rete Ferroviaria Italiana – Italian Rail Network Infrastructure Manager
RO-RO	Roll on – Roll off
RWG	Corridor VIII Railway Working Group
SCC	Circulation Control System
SEETO	South East Europe Transport Observatory

TEN-T	Trans-European Transport Network
TERFN	Trans-European Rail Freight Network
TINA	Transportation Infrastructure Needs Assessment
TIRS	Transport Infrastructure Regional Study
TPPF	Transport Project Preparation Facility
TTFSE- II	Trade & Transport Facilitation in Southeast Europe – II
UIC	Union Internationale des Chemins de Fer – International Union of Railways
UNECE-TER	United Nations Economic Commission for Europe – Trans European Railway
USTDA	U.S. Trade and Development Agency

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The study has been carried out by a Multinational Working Group composed of 2 high level technical representatives nominated by each Member Country (see list below), under the general coordination of Corridor VIII Secretariat, with the technical support of RFI S.p.A. (Italian National Rail Infrastructure Company) and Italferr S.p.A. (Italian National Railroad Engineering Company) and the general supervision of the Italian Ministry of Infrastructure.

The following Ministries of the Member Countries also provided logistical support and hosted the field work during the meetings: Albanian Ministry of Public Works, Transport and Telecommunications; Bulgarian Ministry of Transport and Communications; Macedonian Ministry of Transport and Communications.

The CEI - Central European Initiative co-funded this study, also providing logistic support during the 4th Railway Group meeting held at their Trieste Headquarters.

The implementation of the study has been promoted by Mr. Gaetano Fontana, Chairman of Corridor VIII Steering Committee. Mr. Roberto Ferrazza, head of the TEN-T and Pan-European Corridors Unit, at the Italian Ministry of Infrastructure supervised the activity of the Working Group.

The Corridor VIII Rail Working Group was composed by the following Countries and Organizations representatives:

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Executive summary

General scenario and goals

From Pan European Corridors to Transnational Axes

The EU enlargement, with the accessions of 10 new Member States on May 1, 2004 and of Romania and Bulgaria on January 1, 2007, made the external borders of the Union move further towards East and South, bringing several new neighbouring Countries to the EU.

In this new situation, EU transport policy to connect neighbouring Countries needed to be redefined, as most of Pan European Transport Corridors were now included in the EU and became part of the Trans European Network.

The High Level Group, chaired by Ms Loyola de Palacio, in its Final Report “Networks for Peace and Development – Extension of the major trans-European transport axes to the neighbouring countries and regions” (November 2005), identified five major transnational axes. “These axes extend and complement the major axes of the trans-European transport network by interconnecting them with the networks of the neighbouring countries. They are also those which contribute most to promoting international exchanges and traffic as well as enabling regional cooperation and integration”.

In this general new strategic perspective, it must be emphasized that the main alignment of Corridor VIII has been identified as an integral component of the South Eastern European Transnational Axis, that several projects on Corridor VIII have been identified by the HLG as short term (projects ready to start before 2010) and that the port of Durres in Albania has been identified as one of the ports of the Motorways of the Sea in the lower Adriatic.

General goals

In the foreword of the White Paper “European Transport Policy: time to decide” (2001), one of the major strategic lines of development for the European Transport Network is thus defined: “Europe must bring about a real change in the Common Transport Policy. The time has come to set new objectives for it: restoring the balance between modes of transport and developing intermodality”.

In the 2006 mid-term review, the EC confirmed the continuity of the policy lines identified in the 2001 White Paper on Transport. Particularly relevant for this study, is the inclusion among the priority actions of the promotion of rail freight corridors, the removal of technical barriers to interoperability in rail transport and the monitoring of the rail market.

Rail Corridor VIII, once completed, will concur, together with Road Corridor VIII, and in the general framework of the South Eastern European Transnational Axis, to the development of a Transport Network in the Balkan Region that is both a bridge between Europe and Far East and a factor for peace and development of the intraregional economies.

Development Potential of Rail Corridor VIII

The potential development of freight traffic on Rail Corridor VIII, as part of a regional Balkan transport network, has been evaluated in different studies, both at a regional level and at a national and even sub-national level. These evaluations bring to very diversified results, that vary from pessimistic to optimistic (under certain conditions).

As described in chapter 3, in general it could be observed that the traffic potential is difficult to evaluate at this stage, given the lack of a comprehensive feasibility study extended to the whole Corridor. We must consider that, up to now, only partial evaluations on the market potential of rail freight traffic on Corridor VIII have been made and most of the existing studies maintain a national perspective.

However, putting all known elements together in a coordinated frame, new positive indications on development potentials are clearly identifiable and encourage further investigation.

The making of the Study on Rail Corridor VIII

The study has been carried out by a Working Group composed by 2 high level technical representatives (Ministry of Transport and National Railway Agency) appointed by each Member Country, with the technical support of RFI and Italferr, both belonging to the Italian National Railroads Group, under the general coordination of the Secretariat and the supervision of the Italian Ministry of Infrastructure.

The RWG carried out its activity between July 2005 and March 2006. In the development of the Study, all available National Programs and specific Projects related to the alignment of rail Corridor VIII were examined, together with the main general regional Studies such as TIRS, REBIS, TPPF and the SEETO Master Plan. The Working Group also collected information on the current status of the rail infrastructure and on programs and design documents concerning all Corridor sections.

The exercise was particularly meaningful since for the first time the information has been collected following a common methodology and common analytical parameters.

After the first joint analysis of the collected information, the Working Group carried out a field inspection on the part of Corridor VIII identified as the most critical: the Durres-Skopje-Sofia section. This inspection of the physical infrastructure, together with several meetings both with Government Representatives and top managers of Rail National Agencies, allowed the Working Group to arrive to an updated assessment of the current situation of physical infrastructure and of the existing studies and projects.

As a result of the joint evaluation, a Coordinated Rail Project Durres-Skopje-Sofia (DSS Rail Project) was defined and unanimously approved by the Group.

The proposed framework of the DSS Rail Project can be summarized as follows:

Basic hypotheses:

- rail management of the Durres-Skopje-Sofia section could break even with the hypothesis of transporting 1.5-2 million tons of freight for an average distance of 500 km.
- Besides the financial evaluations, we must also consider that the DSS Rail Project will have a huge impact on the socio-economic integration in the South Balkans, as well as important economic impacts on national economies.

Implementation:

- about 1,200 million € total investment and about 15 years to full completion;
- It should be deployed in phases. Three phases are proposed:

1st PHASE: starting the construction of the missing links and opening rail communication between Southern Adriatic and Balkan Region.

- construction of the missing link Lin-Struga (Albanian-fYR Macedonia cross-border);
- completing the construction of the section Kumanovo-Kriva Palanka (fYR Macedonia)
- rehabilitating Albanian section Durres-Lin to minimum safety standard;
- construction of two intermodal terminals in Struga (fYR Macedonia) and in Radomir or Gjeshevo (Bulgaria).

2nd PHASE: completing the construction of Rail Corridor VIII Missing Links.

- completion of the 2 missing links: Struga-Kicevo (fYR Macedonia) and Kriva Palanka-Gjeshevo (fYR Macedonia-Bulgaria cross-border);
- construction of an Intermodal Terminal in Skopje.

3rd PHASE: achieving an efficient Rail Corridor VIII pursuant to European standard parameters.

- investing on existing sections requiring upgrading.

Results of the Study

The main results of this Study are the following:

- 1) an updated Assessment of present status and ongoing processes, including data, maps, photographic documentation, Country reports, studies, projects and international initiatives.
- 2) a framework for the DSS rail project, including estimation of investment costs (per rail section, Country, temporal phases), predictable operating costs and revenues under different management options, possible financial sources available to the project, expected economic impact on Countries involved.
- 3) a set of jointly defined Recommendations to National Governments to proceed with the implementation of Rail Corridor VIII, including the request to jointly support the DSS Rail Project and identify a “Crash Program” of initiatives.

Final considerations

The results of this exercise appear to be particularly relevant because:

- 1) It has been conducted by a Multinational Working Group, composed of High level Representatives of Member Countries, guaranteeing at the same time internal technical consistency and general harmonization with the National and Regional Transport Plans and Programs. The result has been a very fruitful multinational cooperation exercise.
- 2) For the first time a great deal of information and projects from different Countries have been put in a consistent frame focusing on the alignment of Corridor VIII, thus allowing to have a more comprehensive perspective within which the single projects, identified by each Country, acquire a general consistency.
- 3) From this first Study, the case for a Rail Corridor VIII gains a new interest from a financial and economic point of view. However, two conditions are essential for the development of the initiative: a full feasibility Study to be jointly activated and, more generally, a joint political support to be provided by the Member Countries to the DSS Rail Project.



Chapter 1 - Introduction

1.1 Study background

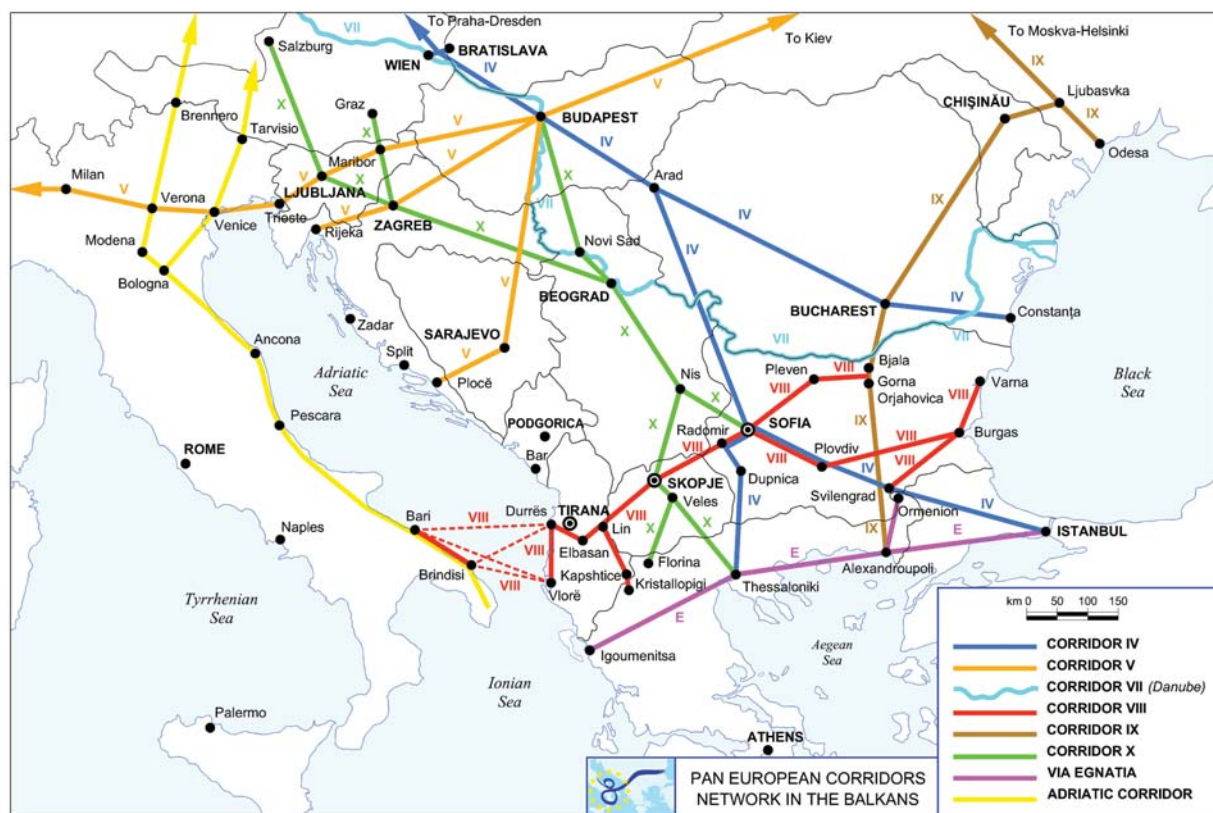
General Framework

Following the political changes occurred in the Federal Republic of Yugoslavia, in 1992 the Republics of Albania, fYR Macedonia and Bulgaria agreed on a transport Corridor Durres – Tirana – Gostivar – Skopje – Kumanovo – Gueshevo – Sofia – Burgas in a Memorandum of Understanding (South Balkan Development Initiative, Bechtel Report on “East-West Transport Corridor Feasibility Study, 1997). This is the forerunner of Corridor VIII.

Political and financing difficulties slowed down the development of this infrastructure project, even though the international community and various donors began to analyze and discuss the development opportunities linked to the creation of this Pan-European axis, capable of stabilizing this part of the South-East region and improving East-Westbound freight traffic.

The concept of Pan-European Corridors, linking Europe to neighboring Countries, first surfaced in 1991 during the Pan-European Conference of Prague. Successively, at a second conference in Crete

Figure 1 - Pan - European Corridors in the Balkan Region



Source: Corridor VIII Secretariat



held in 1994, long-distance transports Corridors were defined as priorities for infrastructure development. A tenth Corridor and the Pan-European Transport Areas for maritime basins were added at the third conference in Helsinki, held in 1997. (High Level Group Report, Karel Van Miert).

Corridor VIII is the southernmost among the West-East Pan-European Corridors, linking the Adriatic/Ionian to the Black Sea Pan-European Transport Areas.

A proof of renewed interest in Corridor VIII came on September 2002, when Italy, Albania, FYR Macedonia, Bulgaria, Greece and Turkey signed in Bari (Italy) a Memorandum of Understanding, aimed at reinforcing the necessary political will between Member Countries for this long term infrastructure-building project (see Annex n.1 Text of MoU).

The main alignment of Corridor VIII, as defined in the MoU, runs from the southern Italian ports of Bari and Brindisi, the Albanian ports of Durres and Vlora, the cities of Tirana, Skopje, Sofia, Plovdiv, to the Bulgarian ports of Burgas and Varna (Black Sea), thus connecting the Italian Adriatic Transport Corridor, the Adriatic branch of Motorway of the Sea and the Mediterranean Transport Area to the Black Sea Pan-European Transport Area.

Figure 2 – MoU Corridor VIII Alignment



Source: Corridor VIII Secretariat

According to the MoU, Corridor VIII also includes the following sections:

1. Kafasan-Kapshtice/Kristallopigi, connecting to the Trans-European Network;
2. Byala/Gorna Oriahovica-Pleven-Sofia, connecting to Corridors IV and IX;
3. the road connection Ormenion-Svilengrad-Burgas, connecting to Corridors IV, IX and Trans-European Network.

Along its route Corridor VIII is interconnected with Pan-European Corridors IV, IX and X.

The Corridor VIII main alignment has been included as an integral part of the South Eastern Transnational Axis and the port of Durres is identified as one of the three ports of the Motorways of the Sea along the Eastern Adriatic coast.

HIGH LEVEL GROUP
South Eastern Axis

Multimodal axes *

- Trans-national axis
- Axes towards other countries
- Inland waterway axis
- Motorways of the sea
- Motorways of the sea ports

TEN-T network

- TEN-T Road
- TEN-T Railway
- TEN-T Inland waterway

TEN-T priority axes

- Road priority axis
- Railway priority axis
- Inland waterway priority axis

Priority project numbers

- Road project
- Railway project
- Multimodal / Logistic centre project
- Inland waterway project

0 50 100 150 km

* To be reviewed and updated in 2010 Cartography © TREN 09/12/2010

Source: European Commission, Report from the High Level Group chaired by Loyola de Palacio, November 2005.

- the section Lin-Kapshtice/Kristallopigi (cross border Albania-Greece)
- the section Durres-Vlora
- the section Skopje-Pleven-Byala/Gorna Orjahovica (connection between Corridor VIII and IX).
- The road connection Burgas-Svilengrad-Ormenion

MoU goals and actions

The Memorandum of Understanding on Pan-European Corridor VIII (Annex. n.1) includes in its objectives the study and harmonization of the technical parameters and the scheduling of the projects to be carried out along the axis of the Corridor, along with the exchange of information, the formulation of regulations for investments, prerequisites for a more efficient use of funds, and technical assistance from both public and private entities.

The MoU indicates a “Start-off Phase”, which includes the following activities:

- complete inventory of existing studies;
- state of the infrastructures on the Corridor and on-going works along them;
- complete inventory of existing information system;
- first assessment on infrastructure and other needs.

The task of coordinating and promoting initiatives for the implementation of the Corridor is carried out by a Steering Committee of Representatives of the participating Countries, chaired by Italy.

The 1st Steering Committee, held in Rome in June 2003, decided the establishment of a Standing Secretariat. Specific tasks of the Secretariat include supporting the Steering Committee, as well as the Member Countries, in the formulation and development of coordinated projects/programs for the implementation of Corridor VIII.

The Secretariat, financed by Italian funds (Law n. 84 / 2001), has been established on October 2004 as a Project, administratively managed by FdL Servizi, financed by the Ministry of Economic Development and operationally supervised by the Ministry of Infrastructure.



Picture 1 - Premises of Corridor VIII Secretariat

The Secretariat of Corridor VIII is based in Bari, Italy, at the Headquarters of Fiera del Levante. The Secretariat's Staff includes 4 experts: Project Manager-Coordinator, Economist, PR Officer, and Administrative Assistant.

The 2nd Steering Committee, held in Bari in December 2004, approved the Plan of Action proposed by the Secretariat.

The Plan of Action, in accordance with indications contained in the MoU, has defined the initiatives to be taken in 2005-2006 along the following lines:

- Supporting the Steering Committee and Member Countries in identifying and developing infrastructure projects for the Corridor and submitting projects to EC and IFIs, as well as implementing the activities approved by the Steering Committee;
- Implementing studies approved by the Steering Committee, coordinating working groups on railway, road construction and sea-based transportation;
- Creating a network of high level technical representatives of the Ministries of Transport from Member Countries aimed at achieving multinational technical cooperation;
- Developing a data base focused on Corridor VIII and disseminating information to Stakeholders;
- Coordinating with other Corridors' Secretariats and Regional Agencies operating in the Balkans (SEETO, UNECE-TER, TTFSE II);
- Facilitating collaboration with and involvement of the private sector;
- Preparing and carrying out a Communication Plan.

The 3rd Steering Committee, held in Tirana, Albania, on 27th May 2005, approved the Secretariat's Plan of Studies (2005-2006).

Priority sectors for studies and projects were defined as follows:

- Railroads: Cross-border areas, missing links, rehabilitation and upgrading of existing alignment;
- Roads: Cross-border areas, bottlenecks, maintenance and upgrading of the existing alignment;
- Ports, Intermodal and Logistics: ports infrastructures, transport intermodal and logistic organization.

The present Study, carried out by the RWG under the general coordination of the Secretariat, with the technical support of RFI and Italferr and supervision by the Italian Ministry of Infrastructure, is the first one to be implemented in the framework of the Secretariat Plan of Studies.

1.2 Study scope

This Study is aimed at achieving a joint assessment by Corridor VIII MoU signatories Countries of the state of rail infrastructure along the Corridor VIII alignment on some railway border crossing connections (actually corresponding to missing links between Member Countries, and in particular: Albania-fYR Macedonia, fYR Macedonia-Bulgaria and Albania-Greece) and at evaluating the opportunity of a full Feasibility Study on the development potential of Rail Corridor VIII.

For this reason such evaluation was carried out by a working group of experts from the national Ministries of Transport and Railroad Agencies of the concerned Countries as a multilateral cooperation exercise.

The final result of this work is therefore an updated assessment of Rail Corridor VIII including an appraisal of the present situation (physical state, projects being implemented and projects planned both by national authorities and by international organizations), the identification and preliminary evaluation of viable projects, pursuing a higher level of detail compared to existing studies and projects. This study is intended to be a basic shared document, approved by participating Member Countries, to be submitted to the European Commission and IFI's in order to move towards a jointly agreed implementation of the East-West Rail Corridor in the Southern Balkans.

The Working Group was composed by two Representatives for each Member State (usually one from the Ministry of Transport and one from the National Railroad Agency).

The agreed working program was originally established as follows:

- a) Five working sessions, over a period of 6 months (to be held in Bari, on the premises of the Secretariat, and in the proximity of the cross-border areas); actually, two working sessions were merged into a 5-days field inspection along the rail alignment of Corridor VIII.
- b) Desk work to be carried out by each national group between the sessions.

Participating Countries were: Albania, Bulgaria, Italy, fYR Macedonia and Turkey.

The Steering Committee Representative from Greece communicated that Greece was not participating in the Study, confirming nevertheless the interest in receiving information about the results.

1.3 Financing

The budget of the Study amounted to € 93,200.

Of the total sum, 70% has been financed by the budget of the Secretariat, which operates with the resources of the Italian Law for the stabilization in the Balkans (L. 84/2001).

The Central European Initiative (CEI) contributed by co-financing the remaining 30%, having evaluated the study consistent with the “Economic Development” goals of the CEI Plan of Action 2004-06. In particular developing project ideas on railroad cross-border facilities was considered a priority issue in the area on “Transport”.

Furthermore Albania, Bulgaria and fYR Macedonia are all priority CEI Countries according to the Sarajevo Declaration “having the greatest need for accelerated economic development or recovery”.

During the field inspection National Representatives of Albania, fYR Macedonia and Bulgaria supplied transport facilities and other services to the Working Group, thus fulfilling the request expressed by CEI to partially contribute to the project co-financing.

1.4 Methodology

General aspects

One of the first issues arising during the Study planning phase was agreeing upon a proper methodology to reach its proposed goals. After careful reviewing, the Working Group opted for a methodology based on a coordinated approach among national teams of experts.

This approach ensured that the relatively small budget (previously mentioned), integrated by fYR Macedonia, Bulgaria and Albania with *en nature* contributions, would allow the Working Group to operate properly and efficiently.

This decision resulted in the creation of a multinational Working Group that shared an operational working plan over a 6 months period.

Therefore, by invitation of Mr. Gaetano Fontana, Chairman of the Steering Committee, the National Administrations of Albania, Bulgaria, Italy, fYR Macedonia and Turkey each appointed their national team, composed of two members representing the National Ministry of Transport and the National Railway Agency.

An action Plan was defined, setting out the main activities to be performed.

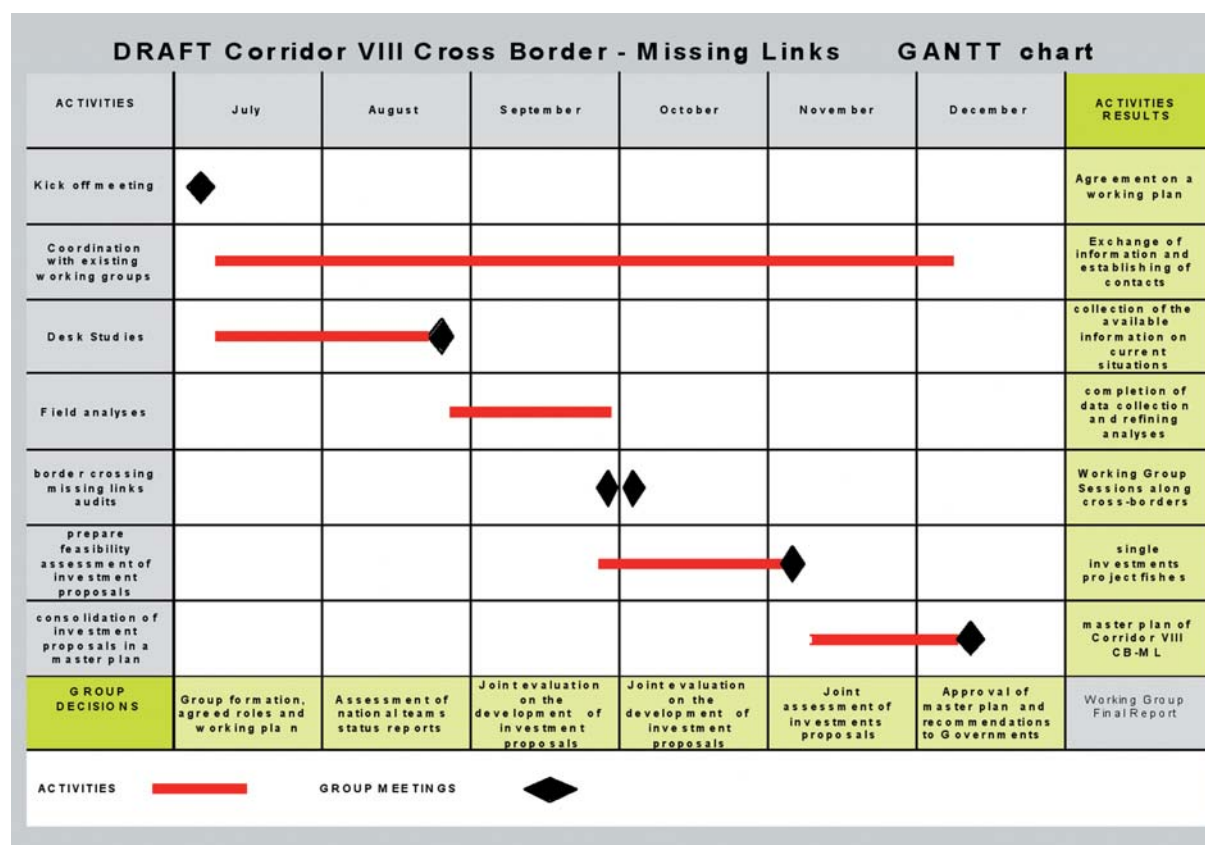
The first phase of activities consisted in collecting all available studies, data and projects on the Corridor VIII Railway existing alignment and missing links.

The second phase of activities was aimed at integrating this desk information with a field inspection by surveying the current situations on the railway alignment.

At the same time the Secretariat developed a coordination activity with other existing Agencies operating in the Balkan region, such as SEETO, UNECE-TER, World Bank TTFSE II and the European Commission DG TREN, in order to assure consistency and coordination in the general goals and priority criteria for identification of initiatives.

The final phase of activities was aimed at jointly identifying a common and shared framework of issues, goals, priorities, initiatives and projects in order to respond to local and national issues while at the same time being consistent with larger development goals, as defined by Regional Agencies.

Figure 4 - Action Plan of Corridor VIII Rail Working Group



Source: Corridor VIII Secretariat

Having carried out these activities, on the state of the art of technical documents, the Working Group then elaborated and completed an up-to-date examination of the current situation to be used for identification of a shared list of priority projects as well as recommendations to Governments concerning the implementation stage.

The final phase of the Working Group activities concentrated on the identification of a jointly defined DSS Rail Project and recommendations for its implementation.

A detailed description of contents and results of the meetings is reported in Annex 5.

Description of the meetings

In the **1st Meeting**, held in Bari on 4-5 July 2005, the methodological basis for work was identified and an operational plan was agreed upon.

The Countries representatives presented the situations and the projects concerning the cross border areas and the existing railway along the alignment of Corridor VIII.

As a first result of the discussion on cross border situation and Member Countries priorities, the Working Group agreed on establishing continuity of the main rail alignment of Corridor VIII as the highest priority for the work of the Group.

Two cross-border areas between Albania and fYR Macedonia, and between fYR Macedonia and Bulgaria were identified as the main object of the study.



Picture 2 - Working Group Meeting in Bari

In the **2nd Meeting**, held in Bari on 22-23 September 2005, the collected documents were thoroughly examined, with the aim of performing a coordinated and consistent evaluation of the whole alignment. The joint work developed by the group brought to a first preliminary definition of categories of projects to be identified and evaluated along the alignment of the Corridor (see annexes 6 and 7):

- 1) Missing links, corresponding to non existing segments of the alignment.
- 2) Critical sections, corresponding to existing sections presenting a critical situation which makes it impossible to guarantee a continuity of the alignment for regular freight and passengers traffic.
- 3) Sections to be upgraded and modernized in order to obtain a common international standard.

This definition brought to two very important preliminary results:

- 1) the broadening of the notion of “missing link” with the aim to identify all the sections (existing or non existing), that presently are critical in the perspective of guaranteeing the continuity of traffic along the Corridor alignment from Bari/Brindisi and Durres to Burgas and Varna.
- 2) The need to concentrate the Study on the most critical part of Corridor VIII: the Durres-Skopje-Sofia segment.



Picture 3 - Working Group - Field Inspection

The 3rd **Meeting**, actually corresponding to the Field Inspection, took place in the week of October 3-7, 2005. The inspection was focused on the 537 km from Durres through Skopje to Sofia, following the decisions taken in the second meeting.

The Group inspected the whole railway alignment starting from Tirana-Durres in Albania, through Skopje in fYR Macedonia to Sofia in Bulgaria. The visited sites included:

- 1) In Albania: Tirana, Durres, Rrogozhine, Elbasan, Librazhd, Lin, border area.
- 2) In fYR Macedonia: border area, Struga, Kicevo, Gostivar, Skopje, Kumanovo, Beliakovc, Kriva Palanka, border area.
- 3) In Bulgaria: border area, Gujeshhevo, Kjustendil, Radomir, Sofia.

The field inspection was a way to verify the hypotheses identified in the previous meetings and complete the information on the rail alignment physical status and projects by means of:

- 1) direct inspection of the sites;
- 2) meetings with National Railways Agencies.

The field work proved to be very useful. A first important result was to create strong cooperation and confidence among members of the Working Group and to ensure greater visibility of the multinational WG to national Transport Authorities.

The Meetings with the Ministers of Transport of Albania, fYR Macedonia and Bulgaria (Deputy Minister) were a very important part of the trip. These gave the opportunity to officially present the Multinational Working Group to national Transport Authorities, to enquire about national priorities and to assess a political commitment on the project by each Member Country.

In the 4th **Meeting**, held in Trieste at the CEI Headquarters on 14-15 November 2005, the Working Group, based on the results of the field inspection, confirmed that by capitalizing on existing studies and projects, on the experience and findings so far developed by the Group and on the favourable response from Member Countries, it was possible to propose a “Coordinated Multinational Railway Project on Corridor VIII”.



Picture 4 - Working Group Meeting- CEI Headquarters

In particular, the Group agreed on the following points:

1. Several Studies and Projects concerning the missing links between Albania and fYR Macedonia and between fYR Macedonia and Bulgaria already exist.
2. In order to **pursue the objective of establishing an operational continuity of Rail Corridor VIII**, besides planning the completion of missing links, it is necessary to plan the rehabilitation and upgrading of some existing sections, mostly between Durres and Sofia (Durres-Lin in Albania, Kicevo-Gostivar in fYR Macedonia and Gueshevo-Radomir in Bulgaria)
3. In this context, it appeared necessary to envisage a **General Coordination Project: Durres-Skopje-Sofia** (DSS Rail Project) which could put the single projects, elaborated at national and local level, in a general consistent framework, jointly agreed upon through multinational cooperation.

As a result of the meeting, the Working Group approved a *Draft Outline* of the *Final Report* proposed by the Secretariat.

The **5th Meeting**, held in Rome on 27-28 March 2006, has been dedicated to present and discuss the first Draft of the Final Report, developed by the Secretariat according to the outline approved in the previous meeting, including an up-to-date Assessment of present Status of Corridor VIII Rail Alignment between Durres, Skopje and Sofia, a Proposal for a DSS Rail Project specified by temporal Implementation Phases, recommendations that the Group will propose to the relevant Ministries and a proposal for a Crash Programme.

The first Draft of the Final Report, with annexed Figures and Pictures, was distributed to all participants both on paper and on CD, in order to allow modifications and integrations by the Group Members.

Thanks to this preliminary team work, Group members subsequently corrected, integrated and amended the Draft Final Report, then submitted all modifications to the Secretariat in Bari, so that a Final Report (in a Pre-Print format) could be completed and submitted for official approval to the relevant Ministries, before proceeding with its publication.

The present final version of this study incorporates all the final observations expressed by the Ministries of participating Member Countries. In the forewards, the official letters of the Ministers are included, expressing approval for goals and results of this study.

In conclusion, considering that:

- a) Rail Corridor VIII has been recognized as an integral component of the South Eastern European Axis proposed by the High Level Group on Wider Europe, and that many projects composing the DSS Rail project are included in List 1- projects to be implemented in the short to medium term, ready to start before 2010;
- b) Rail Corridor VIII can contribute to pursue the general objectives of stabilization and integration of Southern Balkans, thus fostering the intraregional development of the area;
- c) A renewed international political willingness to develop Corridor VIII has been recently reaffirmed (Joint Statements by Ministers of Transport of Corridor VIII, Plovdiv, 8 March 2006 and the mutual commitment by the Italian and Bulgarian Prime Ministers, Sofia on January 2007);

the conditions are now in place for a realistically successful implementation of the DSS Rail Project as a Multinational Coordinated Project.



Chapter 2 - Current situation

2.1 Main existing regional studies

The Working Group collected and examined in depth the main regional studies concerning transport in the Balkans, focusing its attention on the East-West alignment in general and East-West rail alignment in particular.

The main regional studies dealing with transport infrastructure issues in the Balkans are TIRS, REBIS and TPPF. Even though they were analyzed in depth for this study, they are recalled here only as a reference without describing their content in detail.

2.1.1 Transport Infrastructure Regional Study in the Balkans (TIRS)

The TIRS study (2002) is the most comprehensive picture of the infrastructure situation in the Balkans and includes the entire Rail Corridor VIII.

According to this study:

“Corridor VIII may be clearly split into two different parts:

- East of Sofia, it is composed by continuous highway and railway lines, supporting important traffics to and from Turkey and/or the Bulgarian ports on the Black sea.
- West of Sofia, it is composed by a succession of heterogeneous sections of roads and railways, continuous for roads and discontinuous for railways. Potential through traffic or international transport demand is low.

This part of Corridor VIII is like a juxtaposition of short transport links of local or national interest. Expected development of Corridor VIII reflects this duality.

The Eastern part of Corridor VIII should continue to develop high capacity and standard infrastructures, but according to the actual level of traffic: further construction of motorways may still be postponed, whereas upgrading of railway infrastructure (projects Bu-R-01 and Bu-R-07) should be rapidly implemented.

On the Western part of Corridor VIII, the different highway projects considered in the first categories will result in the middle term in a continuous highway infrastructure at standard level (projects Al-H-03 and Ma-H-03/07/10/12). Conversely, the implementation of a continuous rail link still appears to remain a long term perspective, except perhaps between Kumanovo and Sofia (projects Ma-R-01 and Bu-R-05) if the complementary analysis recommended for TIRS 2 is conclusive”.

The study classified projects in different categories:

- Projects under Category I are deemed to be immediately eligible for financing and should be implemented immediately.
- Projects under Categories II-a and II-b necessitate some additional analyses before they may be approved for financing. Category II-a includes the most worthwhile and well-defined projects whilst Category II-b contains more questionable projects.
- Category III includes all projects which should be discarded for the moment.



Figure 5 - TIRS Study: MAP 21-AL



Figure 6 - TIRS Study: MAP 21-MA

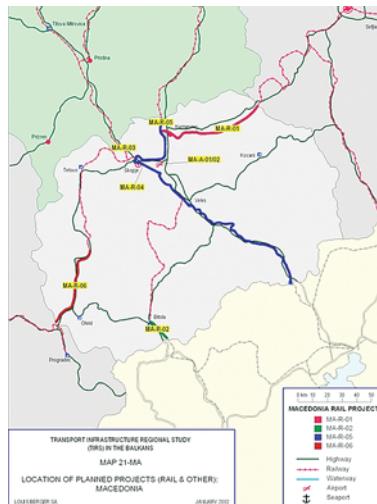
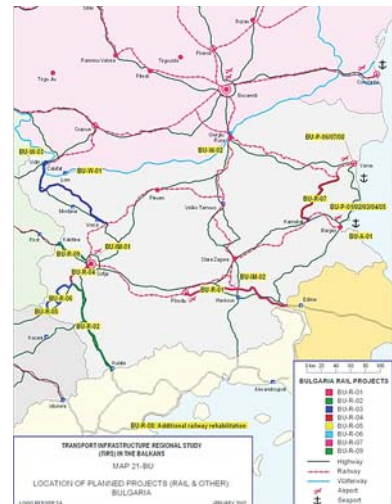


Figure 7 - TIRS Study: MAP 21-BU



Source: Transport Infrastructure Regional Study in the Balkans (TIRS)

Following this general evaluation, the two rail projects of interest for the main alignment of Corridor VIII in Albania were classified in the third category.

The projects, reported in the above TIRS map, are:

- AL-R-02: Corridor VIII missing link
- AL-R-03: Upgrading Durres-Qafe Thanes (Lin)

The study also reports two other Rail projects, the rehabilitation of Shkoder–Hani Hotit (AL-R-01), classified as first category, and the rehabilitation of Durres-Vlora (AL-R-04), which was included in category II-b.

The priority appears therefore to be assigned to the North-South connection Albania-Montenegro.

As far as fYR Macedonia is concerned, the study classifies the construction of Kicevo-Qafe Thanes/Lin (project Ma-R-06) in the third category and the completion of Kumanovo-Beljakovci-Deve Bair (project Ma-R-01) in category II-b. These are the projects of interest for the East-West Corridor VIII alignment.

The rehabilitation of Tabanovci-Gevgelija (Ma-R-05) and the rehabilitation of Bitola-Kremenica (MA-R-02) were identified as Rail priority projects in fYR Macedonia. They both are projects along rail Corridor X.

In Bulgaria two rail projects of interest of Corridor VIII West of Sofia were identified: the railway border link with fYR Macedonia, classified as a category III (Bu-R-05) and the Gueshevo-Radomir upgrading classified as a category II-b (Bu-R-06).

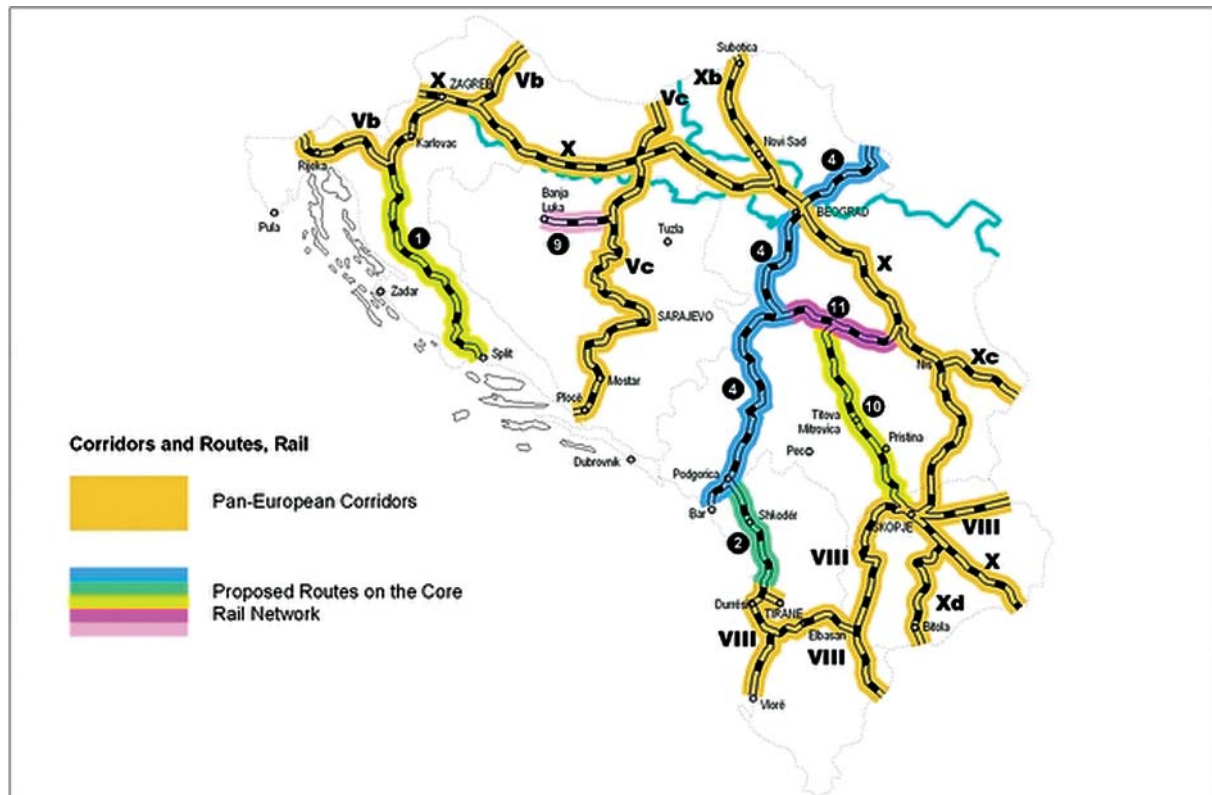
In Bulgaria, East of Sofia, two priority rail projects concerning Corridor VIII were considered: the upgrading Sofia-Dupnitsa (Bu-R-04), which is also part of Corridor IV, and the completion of double tracking the Karnobat-Sindel (Bu-R07) segment, which is the rail connection between Burgas and Varna. The other rail priority projects refer to the North-South alignment along Corridor IV.

2.1.2 Regional Balkans Infrastructure Study (REBIS)

The study was developed between June 2002 and July 2003. The region observed by the study includes Albania, Bosnia and Herzegovina, Croatia, fYR Macedonia, Serbia and Montenegro, including Kosovo which is under U.N. administration.

The study focuses on developing the so called “Core Regional Network”, which however, covers only half of Corridor VIII disregarding any complete East-West alignment; it does not therefore consider projects along this direction. As a consequence, rail traffic projections refer mainly to Corridor X and to the branches of Corridor V.

Figure 8 - REBIS Study - Core Regional Network



Source: Regional Balkans Infrastructure Study (REBIS)

No meaningful international traffic projections are made on Rail Corridor VIII and consequently no projects are identified.

The only exception is the entire section Kumanovo-Deve Bair that is considered in construction (project Ma-R-01) which is, however, only partially true, since the section from km 66 to the Bulgarian border is at feasibility study level and the works on the sections from Kumanovo to Km 66 (7 Km before Kriva Palanka) are presently stopped, lacking financial resources.

2.1.3 Transport Project Preparation Facility in the Balkan Region (TPPF)

This project (2004) is the natural follow-up of the Rebis project, which developed a list of 60 short-term priority projects and carried out pre-feasibility studies for 20 of them.

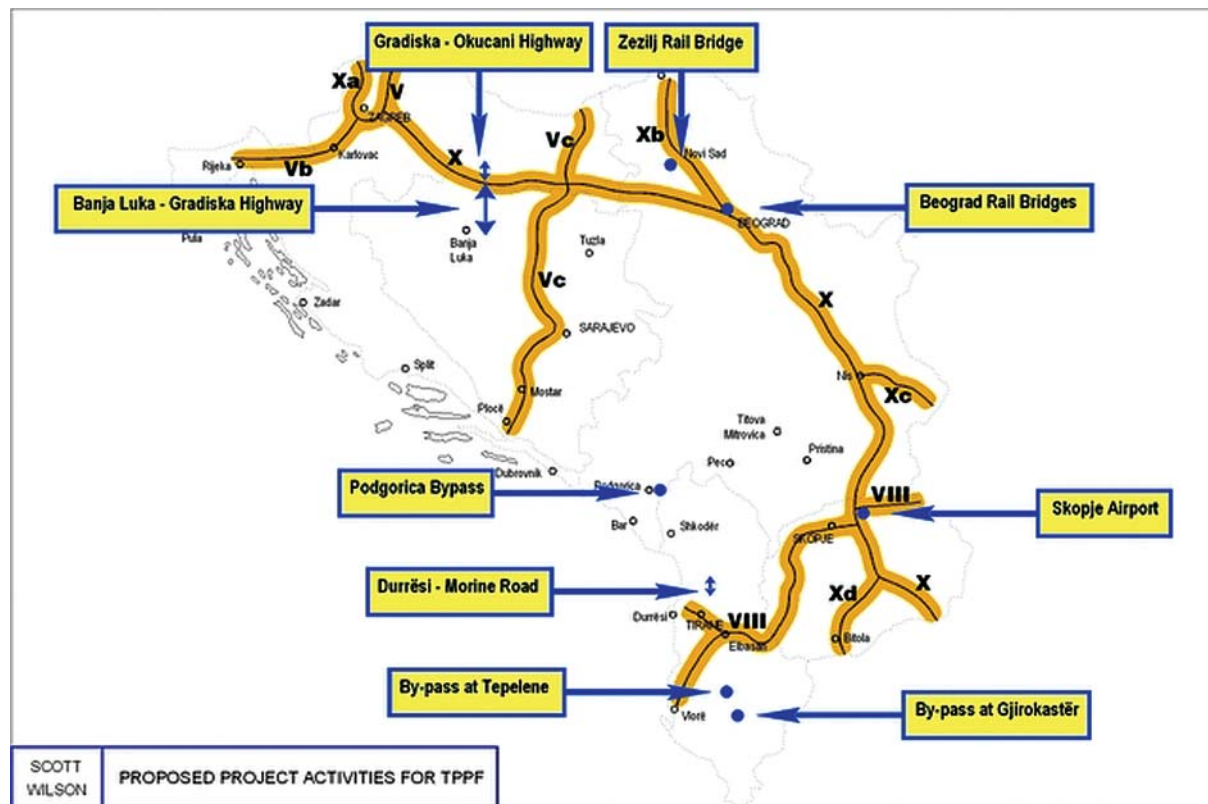
The TPPF study then, during 2004, selected 14 of these projects, evaluated them in detail and expressed recommendations for the beneficiary Countries and IFIs.

Given the general approach followed by TIRS and REBIS, the TPPF study did not take into consideration any rail project concerning Corridor VIII.



We could consider that the only mentioned project connected in some way to Rail Corridor VIII development is the Durres Port Master Plan; unfortunately it was then decided to defer the study by one year, so in the end the TPPF study did not include any Corridor VIII related projects.

Figure 9 - TPPF Study - Selected Projects



Source: Transport Project Preparation Facility in the Balkan Region (TPPF)

In conclusion, existing international studies usually mentioned on issues on infrastructures in South Balkans, namely TIRS, REBIS and TPPF, consider the north-south connections as priorities, mainly along Corridor IV and Corridor X, and choose to postpone investments on Corridor VIII east-west alignment.

2.2 Rail Corridor VIII description

The Corridor starts from the ports of Bari and Brindisi in Italy, and through the port of Durres and Vlore in Albania reaches the capital Tirana. The rail connection continues on towards the boundary between Albania and FYR Macedonia.

Along this first section, in Albanian territory, junctures are located at Rogozhine and Lin. The first branch begins at the juncture of the main connection south of the city of Rogozhine and after having passed through the town of Fier, reaches the port of Vlora. The second branch begins at the juncture of the main connection south of Lin, providing a connection to the Greek town of Kristallopigi, after having passed through Pogradec and Kapshtice in Albanian territory.

After crossing the border between Albania and FYR Macedonia, the main route continues northward, passing through the city of Tetovo and ultimately reaching the capital city of Skopje; from there the



route continues moving East, running along the main line, which crosses all of northern fYR Macedonia, up to the zone bordering on Bulgaria. Having crossed the border, the route continues in Bulgarian territory, moving north East and reaching the capital, Sofia; from here it moves eastward once more, passing through all of central Bulgaria, crossing cities and towns such as Plovdiv and Stara Zagora, until it reaches the port of Burgas on the Black Sea.

Figure 10 - Rail Corridor VIII main alignment and connections with other rail corridors



Source: Corridor VIII Secretariat

Two junctures are located along this section: the Sofia and Karnobat junctions. The first branch starts from the juncture at Sofia along the main alignment, it provides a connection first to the city of Pleven and then to Levski; from this point it reaches the town of Gorna Oriahovica which provides a connection to Corridor IX. The second branch leaves the main alignment at the juncture north of Karnobat, connecting the Corridor and the port of Burgas to the port of Varna.

Rail Corridor VIII forms a network with Rail Corridors X, IV and IX. The interconnection nodes are in Skopje, with Corridor X; in Sofia, with Corridor IV; and in Gorna Oriahovica, with Corridor IX.

Along this alignment there are five missing links:

- Lin station (Albania) – fYR Macedonia border
- Pogradec station (Albania) – Greek border
- Kicevo station (fYR Macedonia) – Albanian border
- Kumanovo station (fYR Macedonia) – Bulgarian border
- Gueshevo station (Bulgaria) – fYR Macedonia border.

All missing links are West of Sofia and four of them are located along the previously described main alignment.

As mentioned earlier, the Working Group collected information on the current status of the rail infrastructure, on planning and technical design documents concerning all the sections of the Corridor. (see annex 6, Projects Status Report Table and 7, Technical Status Report Table).

The exercise was particularly meaningful, because the information was collected following a common methodology and common technical parameters, with a strong focus on Corridor VIII.

As described in Chapter 1.4, the Rail Working Group concentrated its analysis on the part of Corridor VIII main alignment running between Durres Skopje and Sofia, which accounts for about half of the total rail corridor length, identified as the most critical part of the corridor. After the first joint analysis of the collected information, the Working Group carried out a common field inspection on this part of Corridor VIII (see annex 5, detailed Description of Working Group Meetings).

2.3 The Durres-Skopje-Sofia section: technical description

The entire line, including missing links, is 586 km long, of which 139 km are in Albania, 309 are in FYR Macedonia and 138 km are in Bulgaria. The line is composed by a single track segment, suitable for diesel traction trains.

The entire line from Durres to Sofia has been divided in 17 sections, identifying 3 main categories: the existing railways on which no immediate intervention has been envisaged, the sections already built which require rehabilitation or upgrading and, finally, the sections where the rail line is completely missing or is currently under construction.

Figure 11 - Rail Sections Durres-Skopje-Sofia in the context of Corridor VIII

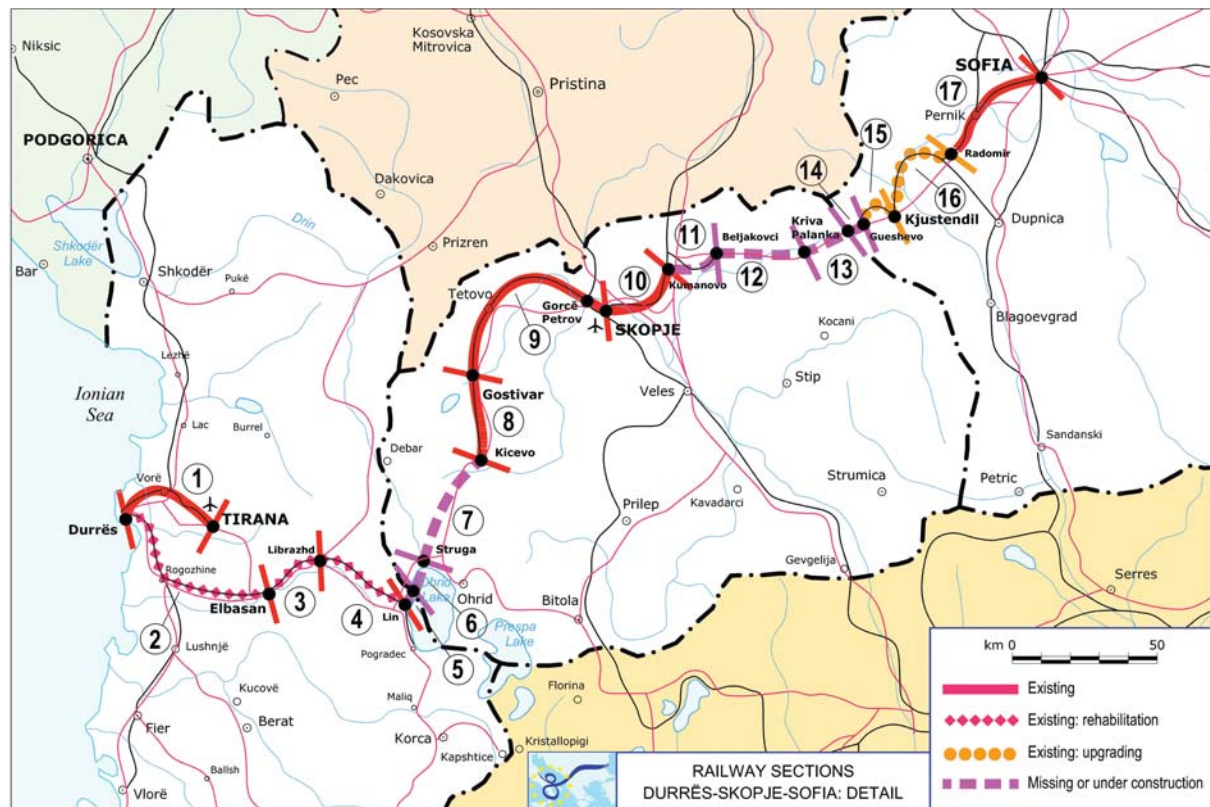


Source: Corridor VIII Secretariat



On each section, 34 basic technical parameters have been used in order to describe the present status, such as total length, tunnel, bridge and viaduct length sections, various measure of speed for freight and passenger trains, track inclinations, weight tons per axis, etc. (see Annex n. 7, Technical Status Report Table)

Figure 12 - Rail Sections Durres-Skopje-Sofia: detail



Source: Corridor VIII Secretariat

The following paragraphs will describe the present situation more in detail.

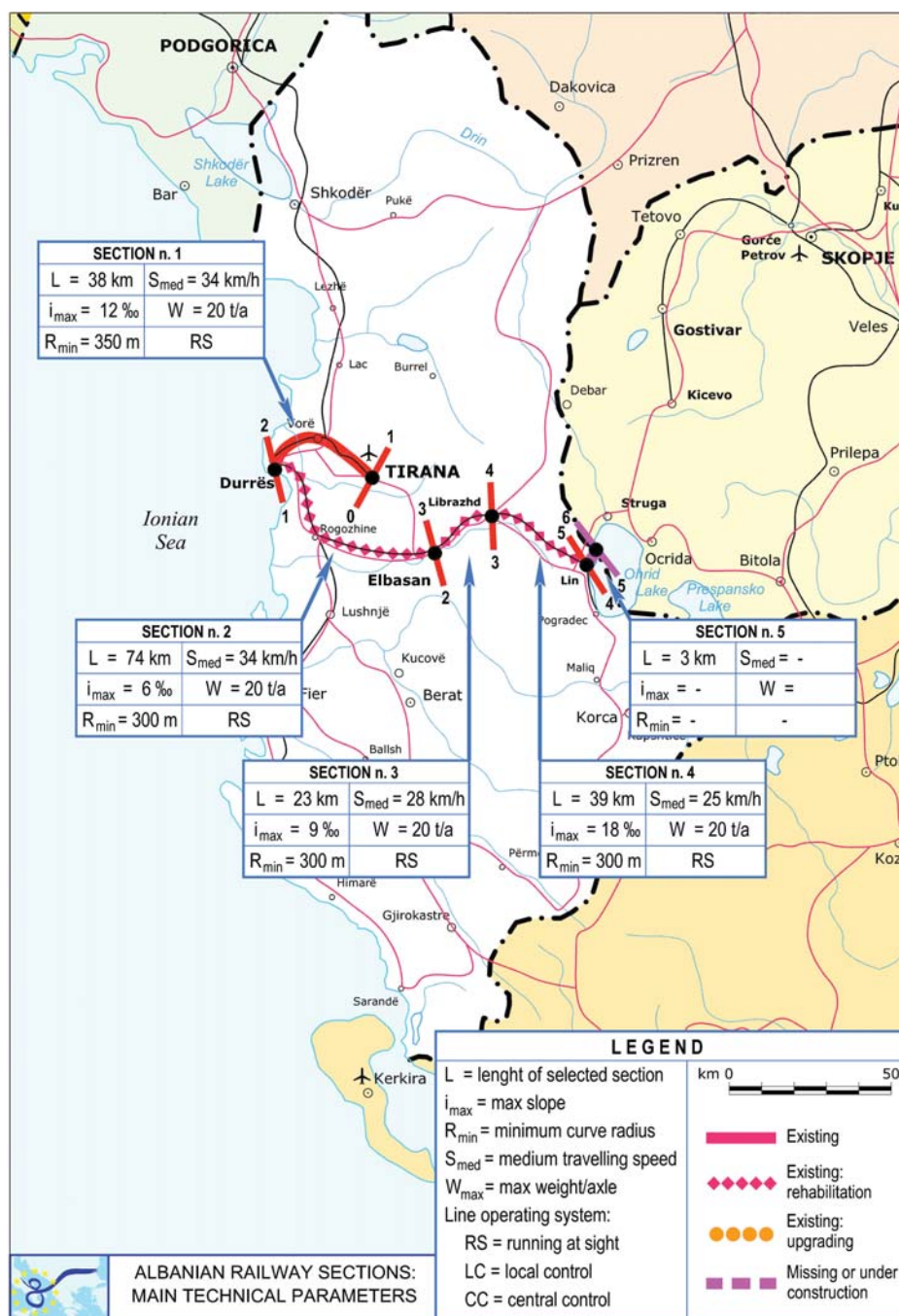
Albanian rail sections

Five sections have been identified, Tirana-Durres (existing), Durres-Elbasan-Librazhd-Lin (requiring rehabilitation), from Lin to the border with FYR Macedonia (missing).

Section Tirana-Durres (Section 1)

The direction leads through a flat or slightly undulating hilly country and most part of it is straight. The rail line was repaired in 1998 but upgrading was done only between stations, consequently all stations still retain their old superstructure.

Tirana is a terminal station and it is very well positioned in relation to the urbanization of the city since it stretches directly from the main city artery. The main station building is in fair condition compared to its surroundings. However, the area in front of the station is not satisfactory in width, overall condition and connection to other means of transport.


Figure 13 - Albanian rail sections: Durrës - Elbasan - Lin - fYR Macedonia border


Source: Corridor VIII Secretariat

Section Durrës - Rrogozhinë – Elbasan (Section 2)

The rail line crosses a flat, sometimes slightly undulating, hilly country. This section ends in a wide valley and thus a favorable direction and inclination of the alignment can be kept. The maximum slope is 6‰.

This track is made by light rails with a weight of 43 kg/m, wooden sleepers and nail fastenings. The bearing plate has 5 holes for nails but the Sudop Praha study reports that in most cases there are only 3 nails holding the rail. "In some sections every fifth wooden sleeper is replaced by a double-block



concrete sleeper, so that proper gauge is assured even for the part of the track with nail fastenings. Other components of the track are in similar conditions (totally unsatisfactory) such as in other sections. Maximum speed is limited to 34 kilometers per hour”.



Picture 5 - Railway junction at Rrogozhine station

Sections Elbasan – Librazhd – Lin (Sections 3 and 4)

The rail line crosses mountainous terrain, causing the alignment as well as the inclination to be mostly unfavorable. The smallest radius of horizontal curves is 300 m and maximum inclination is 18 ‰.

The superstructure is made from light rails fixed with nails to wooden sleepers such as in other sections. Maximum speed is limited to 27 kilometers per hour, in the section Elbasan-Librazhd, and 24 kilometers per hour, in the section Librazhd-Lin. Other components of the track and the stations are in similar unsatisfactory conditions.

The station in Lin is situated on the border of the Ohrid Lake, about 2-3 km from the FYR Macedonia border.

Most tunnels and bridges can be found in this section.

All tunnels have concrete facing. However, some parts of the tunnels have no facing – they lead directly through the rock massif. Most of the tunnels have a square section and a rounded upper arc. Elliptical sections are an exception. Most of the tunnels have no traces of leaking water. However, in some cases there is the need for additional insulation. Surface of lining, portals and wing walls show visible signs of carelessness, but no visible failures were found, such as cracks and deformations.

All bridges are made of armored-concrete (both upper and lower part) with continuous gravel bedding. Simple beams were used in most cases, mostly without moldings and fencing. The end to end distance is 15 m – 30 m long. Virtually all of the bridges show signs of insufficient maintenance or reckless finishing of draining and insulation.

According to the Scott Wilson study, since there is no specialist equipment available for detailed material testing, only visual inspections have been used to highlight the areas of degradation. It seems that two



tunnels have been identified as having particular areas of concern: the tunnel no.1 in Murrash, where a small landslide has occurred, and the tunnel in Qafe-Thane which has a crack in the concrete wall.

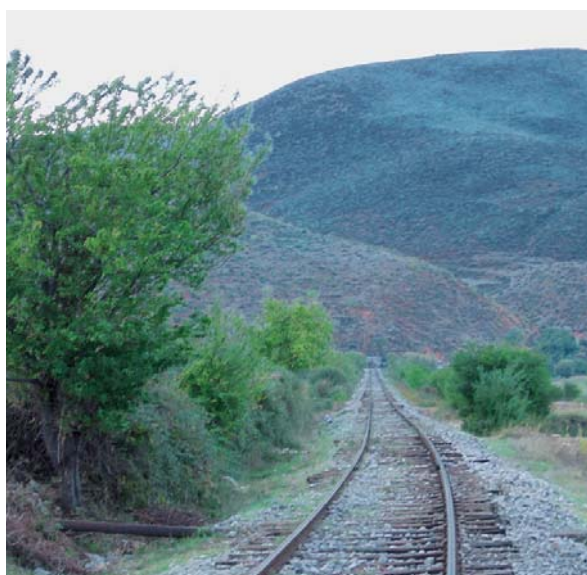


Picture 6 - Viaduct towards Lin

According to the feasibility study on the missing link between Lin, in Albania, and the fYR Macedonia border, the Institute of Transport Studies of the Republic of Albania, in addition to the tunnels Murrash 1 and Thane Pass, also assesses the tunnels Xhyre 3, Perrenjas 3 and Piskupat as “partly cemented with problems”.

Section Lin – fYR Macedonia border (Section n.5)

This section, 2-3 km long, is one of the missing links along the rail Corridor VIII alignment.



Picture 7 - Existing rail north of Lin Station



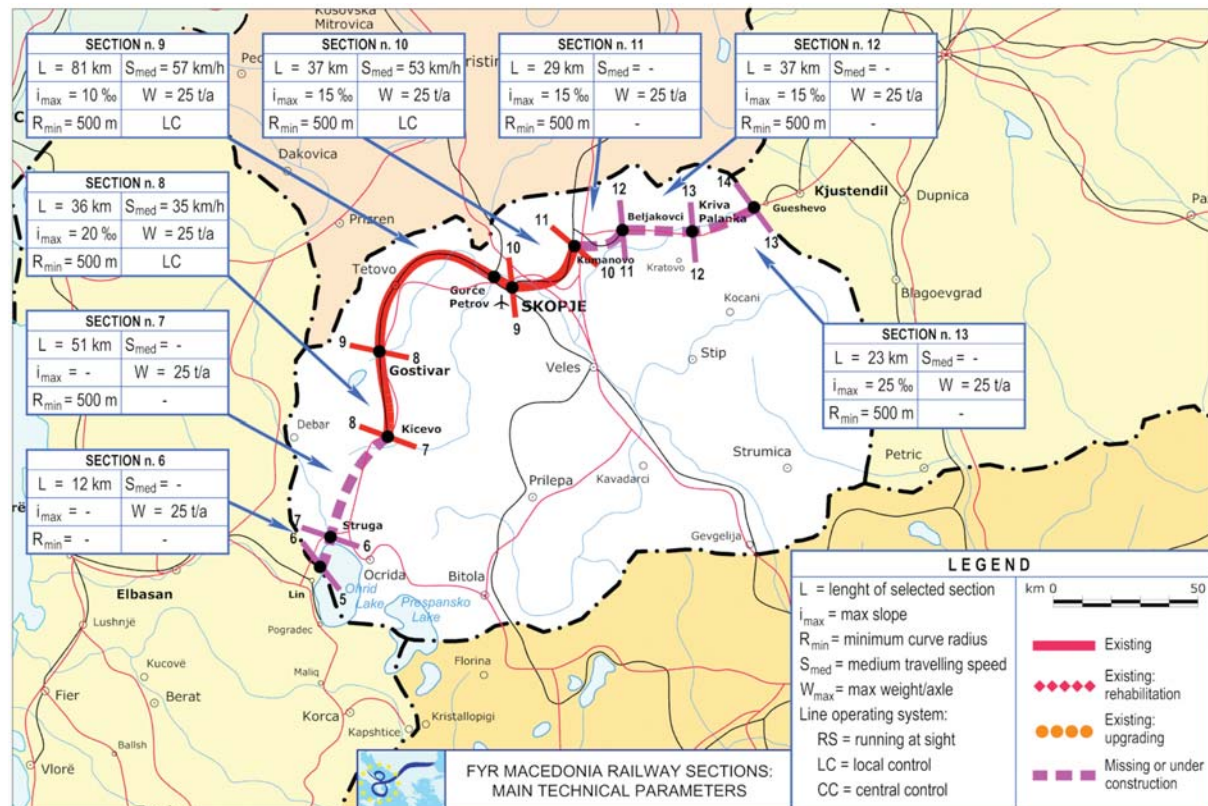
Figure 14 - Albania - fYR Macedonia cross border rail missing link.



fYR Macedonia rail sections (from Section n. 6 to Section n. 13)

Eight rail sections have been identified: Albanian border-Struga-Kicevo (Sections n. 6-7, missing link), Kicevo-Kumanovo (Sections n. 8-9-10, existing with minor upgrading between Kicevo and Gorce Petrov), Kumanovo-Beljakovci-Kriva Palanka (Sections n. 11-12, under construction) and Kriva Palanka-Bulgarian border (Section n.13, missing).

Figure 15 - fYR Macedonia Rail Sections: Albanian border – Skopje – Bulgarian border



Source: Corridor VIII Secretariat

Albanian border-Struga-Kicevo (Sections n.6 and n.7)

These sections, which are 66 km long, are missing. Section n.6, from the Albanian border to Struga, is 12 km long, while section n.7, Struga-Kicevo, is 54 km long.

Kicevo-Gostivar-Gorce Petrov-Skopje-Kumanovo (Sections n. 8-9-10)

This alignment is the existing, 154 km long, central part of rail Corridor VIII in fYR Macedonia. West of Skopje, there are the Kicevo-Gostivar (36 Km) and the Gostivar-Skopje (81 km) sections; East of the capital city there is the Skopje-Kumanovo section (37 km).

The speed is about 60 km/h and only the section Skopje-Kumanovo is electrified, the others are suitable for diesel engines only.

The signaling-interlocking system and the telecommunication equipment are twenty years old but still in good shape.

Louis Berger, in its study "Investment Options in the Transport Sector component 5: Rail Link to Albania", investigated the 103 km West of Skopje (the section Kicevo-Gorce Petrov) for upgrading the line Kicevo-Skopje in order to achieve a sustainable speed of 100 km/h.

The cost estimates for a minimum rehabilitation project is 12 million € and 33 million € for a full



Picture 8 - Kicevo Station: terminal of the existing fYR Macedonia railway towards Albania

project. Financial returns, however, are in favor of the minimum project, which should be implemented by the time the corridor is complete. According to the Macedonian Rail Agency, the amount should be higher, about 63 € mil, 66% of which will be spent for civil works.

Section Kumanovo-Beljakovci (Section n.11)

This line is under construction. Design parameters are the following:



Picture 9 - Rehabilitated section Kumanovo - Beljakovci

- Speed: 100 km/h
- Min curve radius: 500 m
- Max axle load: 250 KN
- Max inclination: 15 %
- Bridges: 8, total length 224 m
- Rail station: 1

This section, which is 29 km long, is completed for about 35 %, in terms of financial resources already spent, i.e. 13 million € over a total sum of 37 million € required to reach Klecevce. From this village a 6 km rail track, including a new bridge, must be constructed to reach Beljakovci. Some 29 million € are needed to complete this section, including signaling and electrification as well as an intermediate rail station.

Section Beljakovci - km 66 (Kriva Palanka) (Section n.12)

This 37 km long section is also under construction. Basic technical parameters are the following:



Picture 10 - Viaduct in construction on the section n.12 Beljakovci-Kriva Palanka

- Speed: 100 km/h
- Min curve radius: 500 m
- Max axle load: 250 KN
- Max inclination: 15 ‰
- Bridges: 33, total length 3,985 m
- Rail stations: 3
- Overpasses: 8, total length 273 m
- Tunnels: 15, total length 3,437 m
- Embankments: 12,295 m
- Cuttings: 16,509 m

The section Beljakovci-km 66 (Kumanovo is km 0) ends 7 km before reaching the town of Kriva Palanka. This section is completed for about 58 %, in terms of financial resources already spent: 90 million € over 155 million € of total resources required. The last constructed bridge is about 7 km before Kriva Palanka. Some 66 million € are needed to complete the single electrified line including signaling and telecommunications.

Works have stopped two years ago because of lack of funding. Construction materials are nearly entirely produced in FYR Macedonia and tendering was assigned to four local firms.



Section from Km 66 (Kriva Palanka) to Bulgarian border (Section n. 13)

This section, 23 km long and running through mountains, is missing. The rail line is at a stage of preliminary design and from the available technical documents the following parameters can be derived:

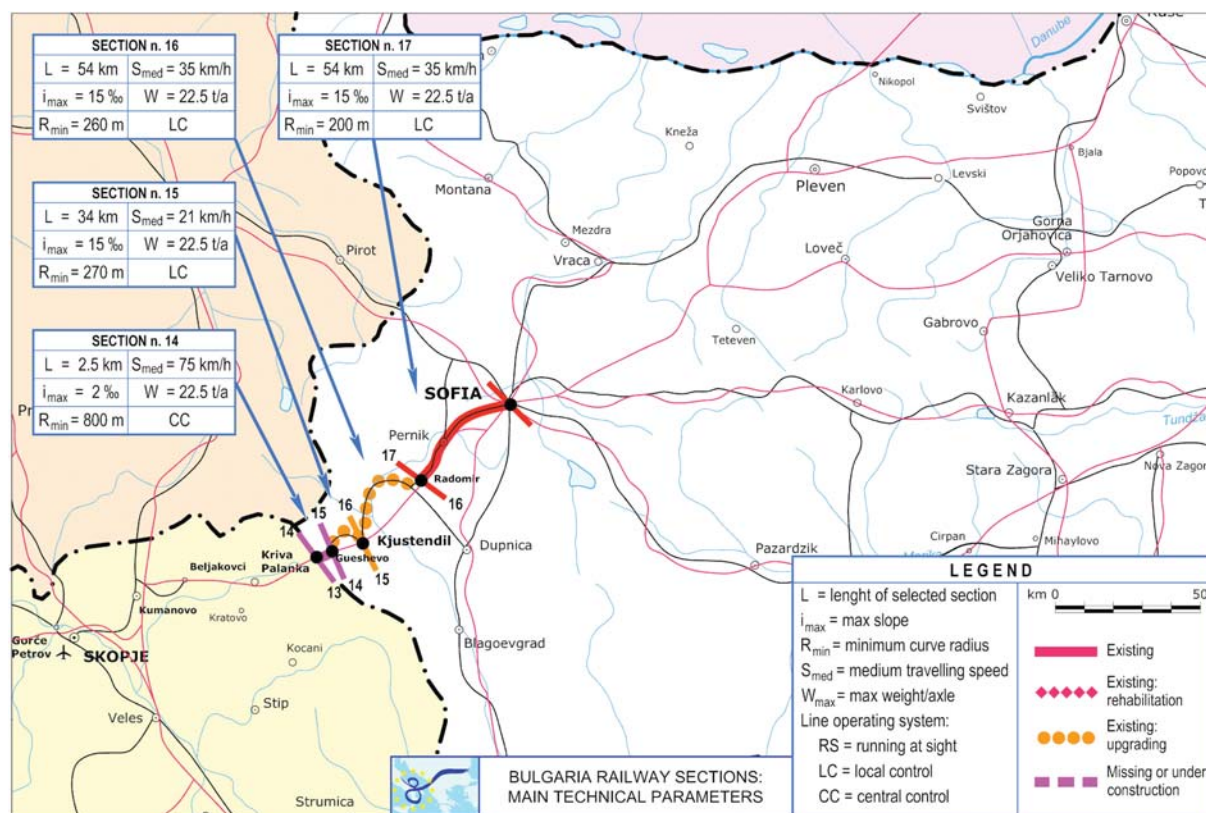
- Speed: 100 km/h
- Min curve radius: 500 m
- Max axle load: 250 KN
- Max inclination: 25 ‰
- Bridges: 41, total length 4,544 m
- Rail stations: 2
- Tunnels: 25, total length 8,593 m
- Embankments: 3,056 m
- Cuttings: 6,659 m

The investment costs amount to some 105 million € for a single electrified line. The main part of the required sum will cover the needed civil works (including the tunnel to reach the Bulgarian border), adding to about 95 million €.

Bulgarian rail sections

Four sections have been identified. Sections n.14: fYR Macedonia border-Gueshevo (missing), Sections n. 15 and 16: Gueshevo-Kustendil-Radomir (requiring upgrading), Section n. 17: Radomir-Sofia (existing with no intervention required).

Figure 16 - Bulgarian rail sections: fYR Macedonia border - Gushevo - Radomir - Sofia



Source: Corridor VIII Secretariat

fYR Macedonia border-Gueshevo (Section n.14)

This small section is 2.5 km long and can be considered under construction. It is also necessary to complete a tunnel of km 2.368 of which 1.194 in Bulgarian territory. From the tunnel there are only 600 m to reach Gueshevo station.



Picture11 - Unfinished border tunnel on Bulgarian side

Basic technical parameters are the following:

- speed: 100 km/h
- min. curve radius: 800 m
- max axle load: 22.5 t/axis
- max. inclination: 2 ‰
- tunnels: 1.194 km
- cutting: 73,500 m³
- trench: 101,690 m³



Picture12 - Gueshevo: Bulgarian - Macedonian common rail station

The project has been divided into three lots; funds were provided by PHARE with co-financing from the Bulgarian State budget:

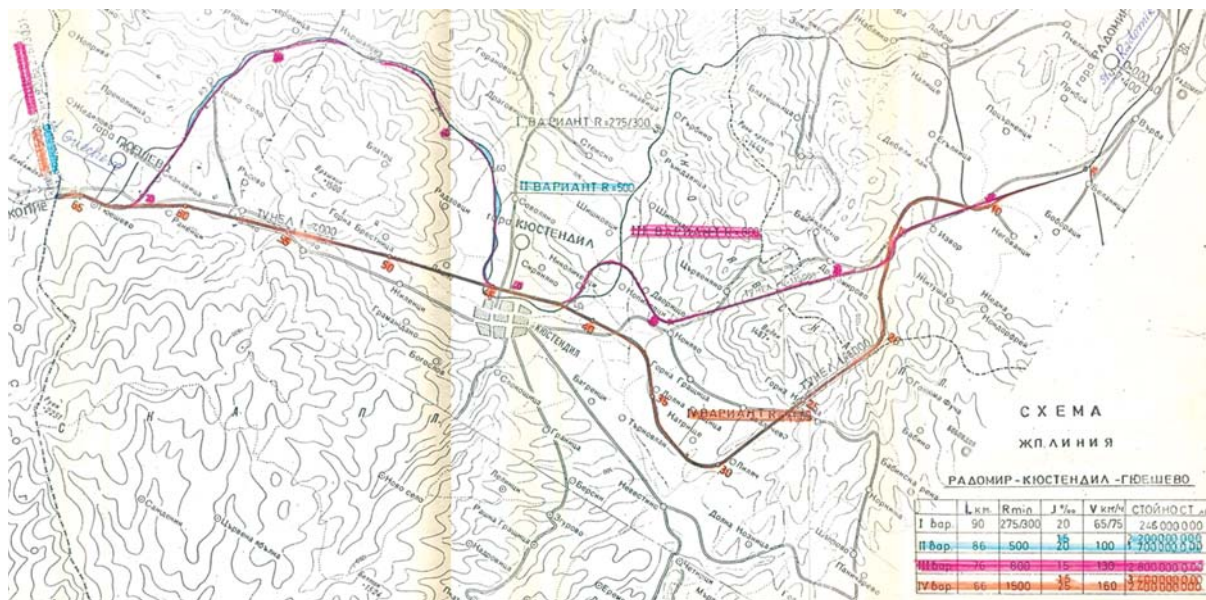
- Lot 1, the underground power supply installations and sewerage, has been partially completed;
- Lot 2 has been completed. It includes the Gueshevo rail station, complete with border police, customs, veterinary and sanitary services. The Gueshevo station will be an international common rail station.
- Lot 3, the border tunnel, is not constructed, except for the first 550 m, excavated in the years 1941-43.

Works to finalize the construction have been put on hold waiting for progress on the FYR Macedonia side and provision of funds. Bulgarian experts foresee an investment cost of about 10 million €.

Gueshevo-Kustendil-Radomir (Sections n. 15 and 16)

The segment Gueshevo-Radomir is 88 km long: the Gueshevo-Kustendil section is 34 km long, while the remaining Kustendil-Radomir section measures 54 km. The line is not electrified. This section has a nominal speed of 65 km/h but considering the actual traveling time and the short minimum curve radius (270 m), the real speed is between 25 and 35 km/h. The max weight per axis is 22.5 tons/axis load; tunnel profiles do not allow high volume containers.

Figure 17 - Technical design Gushevo - Radomir



Source: Bulgarian railways agency

Many options were analyzed by Bulgarian experts to upgrade this rail line: the chosen option, calling for a nominal speed of 130 km/h, was estimated at 220 million €.

Radomir-Sofia (Section n.17 bis)

This is a small rail section in common with Pan-European Corridor IV running within Bulgarian territory from Kalafat (Romania)-Vidin (Bulgaria) to Kulata (Greece). This branch of Corridor IV Vidin-Kulata rail line, 480 km long, has already been electrified but only 11 km are double track.

Radomir is therefore an important rail node connecting the North-South traffic along Corridor IV with the East-West traffic along Corridor VIII.



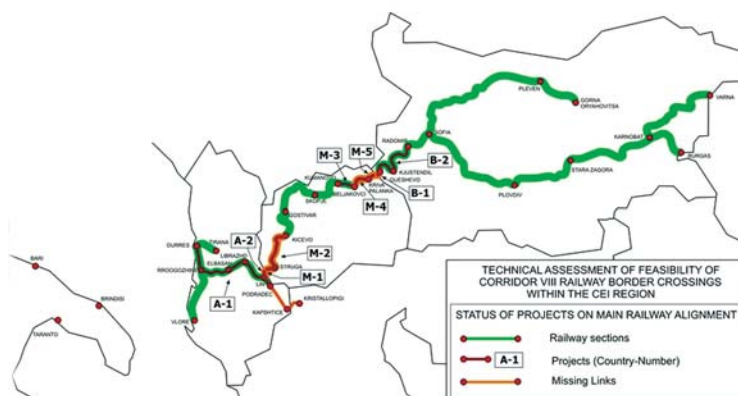
Picture13 - Radomir station: railroad junction between Corridor IV and Corridor VIII

2.4 Existing studies and projects on the DSS rail sections

Several studies, at different levels, have been already carried out on all missing and existing rail sections along Corridor VIII.

The following figure shows the location of the sections considered in the Studies (see references list).

Figure 18 - Studies along the DSS rail sections



A-1
Sudop Praha a. s. (Ministry of Transport and Communications Czech Republic), Feasibility Study Tirana-Durres-Elbasan-Lin-Macedonian Frontier Railway, Part 1: Study of possibilities and opportunities, 12/ 2001; Part 2: Marketing and Economic Study, 12/ 2002.

A-2
Republic of Albania, Ministry of Transport-Institute of Transport Studies, Feasibility Study of the Albania-Macedonia railway link, 2003.

M-1
Louis Berger SA, Investment Options in the Transport Sector (Phare MA 9710) Component 6c: Strategy for Developing Multi-Modal Terminals Final Technical Report, July 2002.

M-2
Louis Berger SA, Investment Options in the Transport Sector (Phare MA 9710), component 5: Rail Link to Albania, October 2002.

Source: Corridor VIII Secretariat Elaboration

M-3 M-4 M-5
Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ), Feasibility Study Railway Link Macedonia-Bulgaria, September 1995.

M-3 M-4 M-5
USTDA, Regional Railroad Interconnectivity Project- Feasibility Study, ARCADIS Geraghty & Miller Inc, January 2003.

B-1
Transproekt, Detailed design connection between Bulgaria and FYROM, 1997

B-2
Transproekt, Feasibility study for reconstruction, electrification of the Gyueshevo-Radomir railway line, 1992.

Missing link Lin- FYR Macedonia border

On the missing link between Lin, in Albania, and the FYR Macedonia border, a feasibility study has been developed in 2003 by the Institute of Transport Studies of Albania, Ministry of Public Works, Transports and Telecommunications.

According to this study, the Albanian-Macedonian lines will connect in the vicinity of the Ohrid Lake at height of 725 meters.

Developing this main option, the starting point of the new line will be the Lin Station, and then it will proceed in parallel, at a distance of 4.5 meters from the existing railway line, towards the railway station of Perrenjas. According to this variant, the railway line to be constructed will be 2.8 km long, carrying a price tag of 5.2 million €.

Another alternative was studied, calling for a direct connection from the Qafe Thanës tunnel. This alternative in particular takes into consideration three variants:

1. A connection directly out of the exit of Qafe Thanës tunnel;
2. A connection starting at 160 meters inside the Qafe Thanës tunnel;
3. A connection starting at 230 meters inside the Qafe Thanës tunnel.

Figure 19 - Technical design Lin - fYR Macedonia border



Source: Republic of Albania Ministry of Public Works, Transports & Telecommunication, Institute of Transport Studies, 2003

The preferred solution is the basic variant of the main alternative since it has a shorter return on investment and a higher efficiency.

The study forecasts an annual average freight traffic with fYR Macedonia of about 170,000 tons, which should be enough to justify the amount of investment.

Based on this study the two Countries, on November 2004 in Ohrid, have signed an agreement of joint co-operation confirming the rail gauge technical parameters (1435 mm) and the altitude of the connection point (725 meters). The agreement also states that the construction works of the Lin-Struga section are scheduled to start in 2007.

Furthermore, a technical protocol concerning the same segment has been signed in Ohrid by the representatives of the two national Railway Agencies on July 14, 2005.

For this section a detailed engineering design is already available.

Missing link Kicevo-Albanian border

The most recent study on this section is the Louis Berger technical report *Investment Options in the Transport Sector, component 5: Rail Link to Albania*. The study, financed by the Phare Program, was delivered in October 2002.

The object of the study was the whole line from Skopje via Kicevo (to be improved) to the Albanian border (to be constructed), to make it suitable for a 100 km/h nominal speed.

This speed was considered an appropriate standard for Corridor VIII, bearing in mind that other parts, such as the Skopje–Bulgaria section, are designed for 100 km/h.

The consultant recalls that “As a freight link, speeds beyond 100-120 km/h are unlikely to be required. (The UIC has found that in freight transport, top speeds of 100-120 km/h can compete with road)”.

The main purpose of this line would be, according to the Louis Berger’s Study, to carry freight over long distances, between Durres and Bulgaria, Romania or Turkey.

This line has a distinctive potential as a link between the Adriatic and the Black Sea (for example linking Italy and Russia, Italy and Georgia, etc.).

The study estimates an investment cost of 241 million € and a freight traffic growing from 1 million tons in 2010 up to 4/5 million tons in 2025.

The study concludes that:

“The investment of say 250 million € to complete the link Kicevo-Lin (including the cross-border connection with Albanian railways) is evidently justified on a number of grounds:

- potential long-term financial viability;
- economic gains to users and shippers of goods in all countries benefiting from the project, even on other routes that continue to be used in parallel (greater competitive pressures);
- transformation of the economic prospects of Durres port and Albanian and Macedonian railways;
- additional traffic and revenue for Bulgarian railways;
- direct employment generation in Albania and FYR Macedonia;
- new opportunities for economic activity in Albania and FYR Macedonia.

Completing this link will allow the true potential of the regional railway system to be exploited for the first time. The project should be developed in parallel with the Bulgaria-Macedonia link which is already under construction. The latter cannot succeed without the completion of the corridor as a whole”.

Missing link Kumanovo-Bulgarian border

The German Cooperation Agency (Deutsche Gesellschaft für Technische Zusammenarbeit) developed a full feasibility study for this section in 1995.

Design parameters were fixed at a 100 km/h speed, a minimum radius of 500 m and a maximum gradient slope of 15 ‰ in the section Kumanovo-Kriva Palanka.

For the section Kriva Palanka-Bulgarian border, due to the difficult morphological terrain with a maximum gradient slope of 25 ‰, the parameters were reduced at 80 km/h and a minimum radius of 300 m.

According to the estimates of this study, the capital costs, without rolling stock but including pre-investment costs, should amount to 346 million US\$ (about 288 million €). Financial return is slightly inferior to 1% so that direct operating costs are expected to be covered by revenues, but investment costs should be financed separately.

Such a project however will have an important impact on the Macedonian economy as a whole. GTZ evaluated an economic rate of return varying between 9% and 18% according to various scenarios.

In 2003 the U.S. Trade and Development Agency financed a new study prepared by ARCADIS

Geraghty & Miller. This study has determined that the project completion costs – that is, costs to finish the remaining missing link works – may be significantly less than previous estimates had indicated. Arcadis estimates indicate that the cost to completion is approximately 141 million US\$. In this amount however the completion of the section Kumanovo-Beljakovci for some 30 million US\$ is not included.

Current estimates by the fYR Macedonia National Rail Agency forecast that costs to carry out the planned works amount to some 235 million US\$ (195 million €).

The study concentrates on movements of coal and other minerals between central and Eastern Europe. It assumes the line will mainly transport regional transit traffic across the border between fYR Macedonia and Bulgaria rather than being a corridor linking Bulgarian and Black Sea ports and giving maritime access to points along the line.

Volumes of heavy freight - minerals, steels, and similar products - running over this section of the Corridor could grow to 5.8 million tons by 2020 (5.1 million tons by 2015).

Setting the rail transport rate at 70% of the truck rate for equivalent distance, the study estimates an internal rate of return between 13 and 15 per cent.

The final conclusion is that “The line cannot recover construction capital costs sufficiently to make it commercially attractive to a private operator or other entity expecting an attractive rate of return.

The line can however be attractive to a private operator or other entity that need not recover the costs of infrastructure. The operator may be able to finance new locomotives and possibly some required rolling stock”.

As a follow up the Ministers of Transport of Bulgaria and fYR Macedonia signed in September 2003 a Joint Declaration endorsing the results of the ARCADIS report.

Missing link Gueshevo- fYR Macedonia border

The last rail station in the territory of fYR Macedonia is planned to be Zidilovo, but it will be an intermediate rail station, while buildings in Gueshevo (Bulgaria), including border police, customs, veterinary and sanitary services, will be used as an international common rail station, located 2.5 km from the border.

The project, as it was already described before, has been divided into three lots: the common railway station, underground power supply installations and sewerage, the border tunnel.

Funds were provided by PHARE with co-financing from the Bulgarian National budget.

As previously said, works on finalizing construction activities have been put on hold waiting for progress on the Macedonian side. Bulgarian experts foresee an investment cost of about 10 million €.

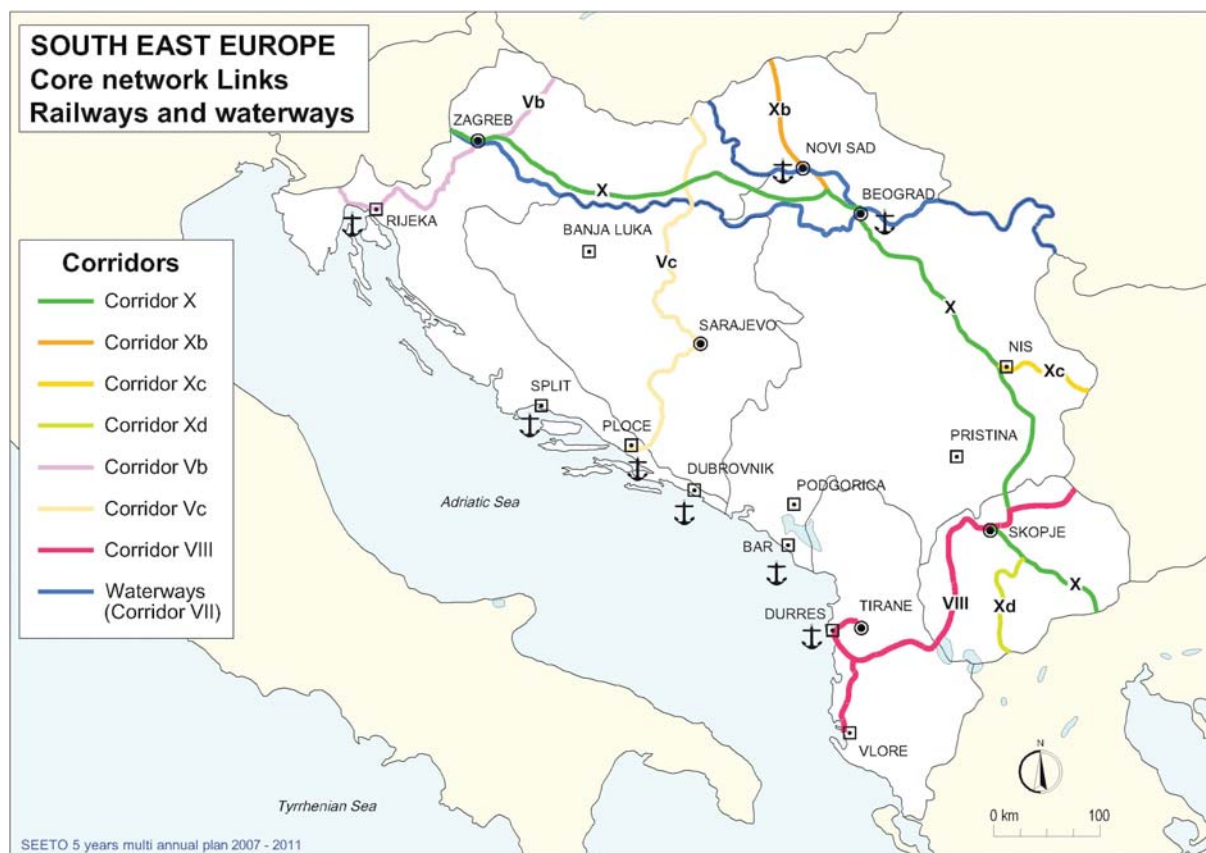
2.5. Regional Planning Agencies

2.5.1 SEETO - South East Europe Transport Observatory

The South East Europe Transport Observatory (SEETO) was set up following REBIS recommendations to promote the development of the Core Regional Transport Network in the Balkans.

A MoU was signed in Luxembourg on June 2004 by Albania, Bosnia and Herzegovina, Republic of Croatia, Serbia, Montenegro, fYR Macedonia, the United Nations Interim Administration Mission in Kosovo and the European Commission.

The region covered by SEETO includes only about half of the main Rail Corridor VIII alignment, Bulgaria not being included.

**Figure 20 - SEETO Area**

Source: South East Europe Transport Observatory

In the Consultations held by SEETO in Zagreb on 20 October 2005, concerning the phase of project identification, the Corridor VIII Secretariat proposed to revise the list and timing of identified projects concerning the Rail Corridor VIII in the perspective of a more coherent overall framework, as defined in the “Durres-Skopje-Sofia Rail Project”.

In particular, considering that the development of Rail Corridor VIII will acquire a strong potential only if the whole alignment can be activated, the Secretariat additionally proposed that the SEETO Master Plan should also include projects regarding the following sections:

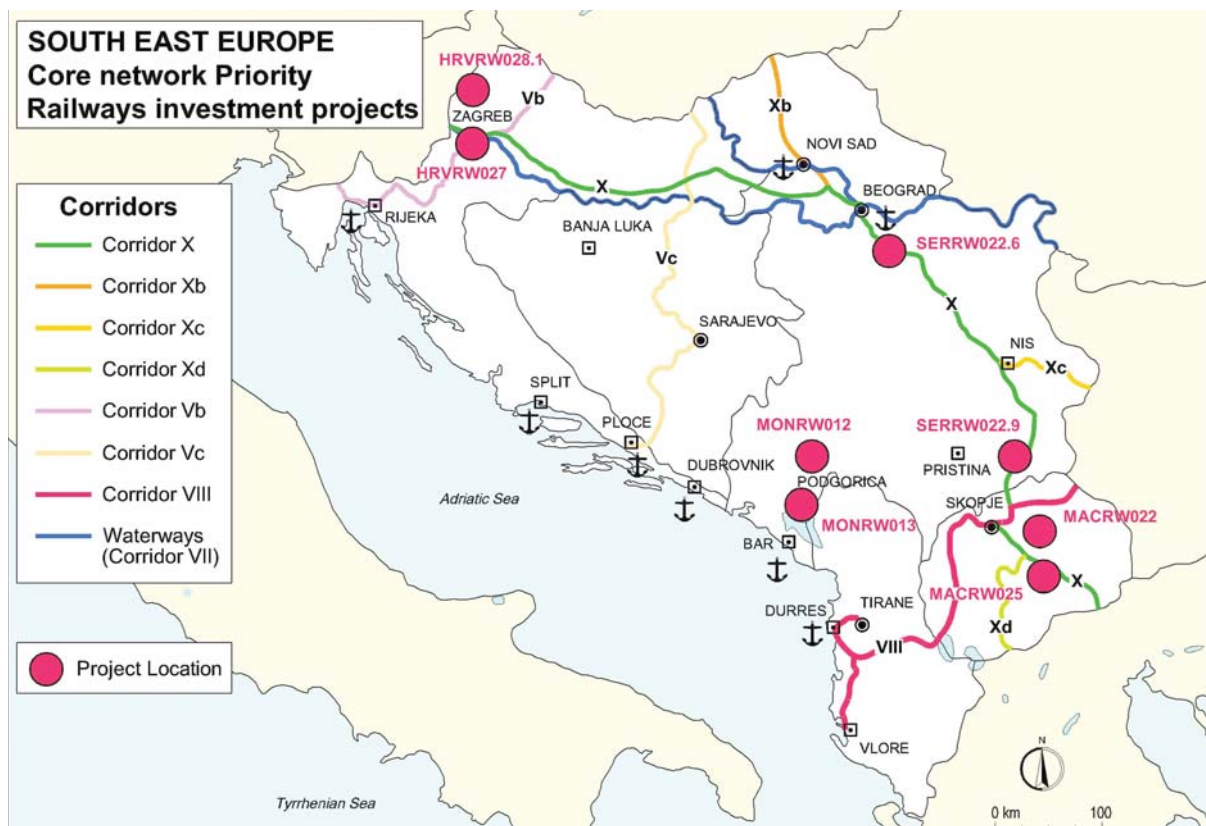
- Albanian missing link Lin-Macedonian border (3 km);
- Albanian section requiring rehabilitation, Durres-Lin (136 km).

Finally, taking into account that the perspective of the rail link Durres-Skopje-Sofia is in fact strongly conditioned by a full development of the port of Durres, furthermore the Secretariat recommended to develop the project fiches on the port of Durres, already included in the REBIS study:

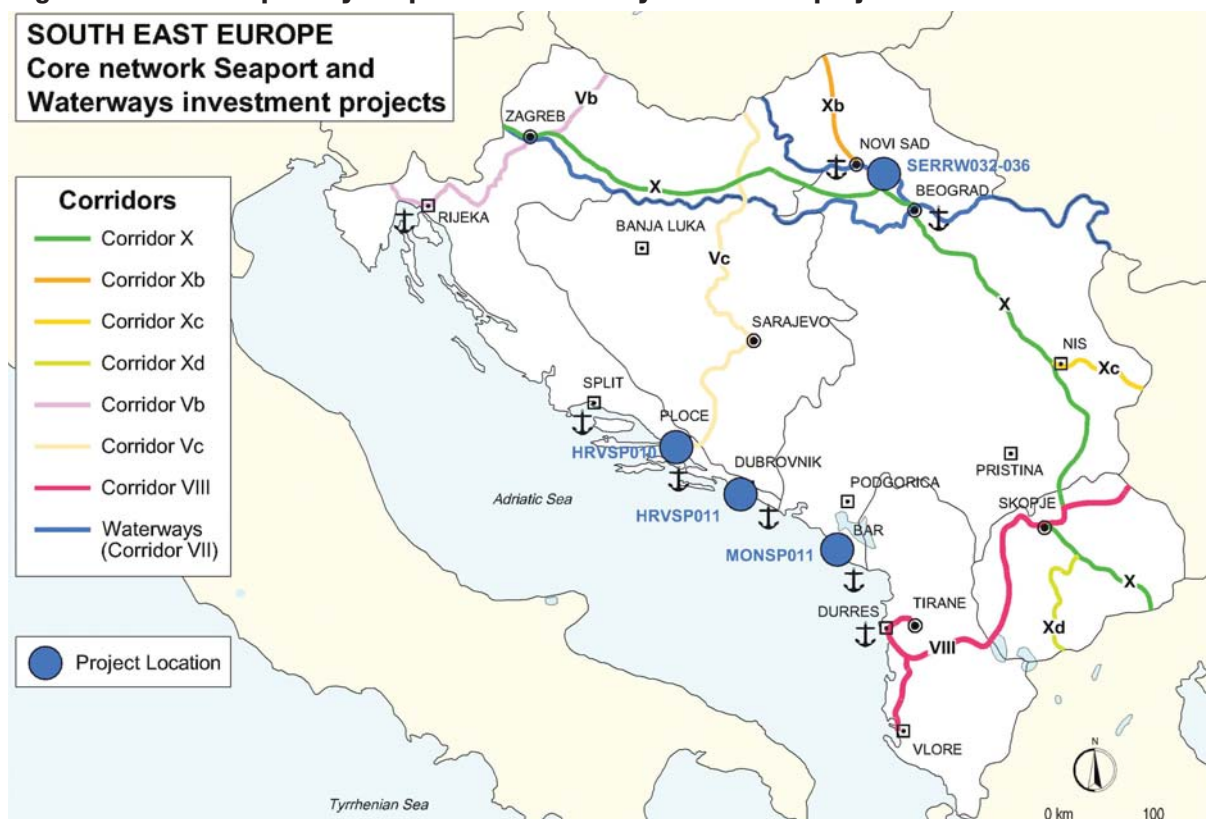
ALBSP017 (SEETO code) AI-P-01(REBIS code) Upgrade - Port of Durres and ALBSP018 (SEETO code) AI-P-03N (REBIS code) Dredging - Port of Durres.

At the end of 2006 the SEETO Secretariat prepared a second edition of a Five Multi Annual Plan 2007-2011 for the region, including the relevant missing Corridor VIII rail sections in fYR Macedonia and Albania.

In the final list of six priority projects, however, no rail projects for Albania or fYR Macedonia were included and, of course, no projects for Bulgaria.

**Figure 21 - SEETO priority railway investment projects**

Source: South East Europe Transport Observatory

Figure 22 - SEETO priority seaport and waterway investment projects

Source: South East Europe Transport Observatory



The SEETO Master Plan now includes all the relevant sections of Rail Corridor VIII located in Albania and fYR Macedonia, even though it still privileges the Northwest/Southeast axis along Corridor X.

Furthermore, the Port of Durres is not yet included among priority seaport projects.

As a matter of fact, the SEETO Railways and Intermodality Working Group, in its January 2007 Report to the Steering Committee, in its road map suggested the opening of the international rail transport market in South East Europe by the end of 2010.

Before that, the SEETO Declaration on Railways of December 1st, 2006 states that priority should be given to the harmonization of future arrangements for access charges to the railway network, as well as the elimination of delays at the railway border crossings.

2.5.2 UNECE-TER

The United Nations Commission for Europe TER Project is a sub-regional co-operation established in 1990 by the Governments of Central, Eastern and South Eastern Europe.

It represents the backbone of Pan-European Rail Corridors in the EU, as well as of TINA, thus representing an important instrument of institutional inter-country cooperation and coordinated actions of the EU and South Eastern Europe capable of playing a general but concrete role in the future European Transport Integration process.

The area covered by the project is larger than the Balkan region and does not include all the Signatory Countries of the MoU on Corridor VIII; furthermore, these Countries do not share the same roles. fYR Macedonia is a TER Observer Country, Albania does not participate to the project, while the others, Italy, Greece, Turkey and Bulgaria, are TER Member Countries.

Figure 23 - UNECE TER Members



Source: United Nations Economic Commission for Europe

The Budapest Office of UNECE prepared a Rail Master Plan for the whole area. This master plan has been presented in Brussels on October 25, 2005 at the 7th plenary meeting of the EU High Level Group on the extension of the major Trans-European Transport Axes to the neighboring Countries and regions.

In this Master Plan there are no Albanian rail projects, while those located in FYR Macedonia are vaguely described as “complete construction of railway towards Albania and Bulgaria” (Project ID Ma-R-1).

As far as Bulgaria is concerned, the Master Plan includes the modernization and electrification of the Radomir-Gueshevo railway section that is part of Rail Corridor VIII, West of Sofia.

This section has also been included in this study. The UNECE-TER Master Plan does not include, however, the Bulgarian missing link towards FYR Macedonia.

In conclusion, the final picture emerging from UNECE-TER and from the SEETO Master Plans shows the absence of a general strategic view concerning the East-West rail continuity along Corridor VIII and consequently a fragmentation in the identification of the priority projects along the alignment of Corridor VIII.

Figure 24 - UNECE TER Network



Source: United Nations Economic Commission for Europe

2.5.3 World Bank

The World Bank manages the program Trade and Transport Facilitation in South-East Europe (TTFSE) in the Balkan area. This program fosters trade by promoting more efficient and less costly trade flows across the countries in South East Europe and provides EU-compatible customs standards.

The program seeks to reduce non-tariff costs to trade and transport, to oppose smuggling and corruption at border crossings, and to strengthen and modernize the customs administrations and other border control agencies.



The participating countries include, besides Bosnia and Herzegovina, Croatia, Moldova, Romania, Serbia, Montenegro, all the Balkan signatories to the Corridor VIII MoU: Albania, Bulgaria and FYR Macedonia. The Trade and Transport Facilitation program in South East Europe consists of the following project components:

- Customs Services Procedures Reform,
- Trade Facilitation Development,
- Support to Integrated Customs Information System (ICIS),
- Improvement of Roads and Border Crossing Facilities.

Figure 25 - World Bank TTFSE Project

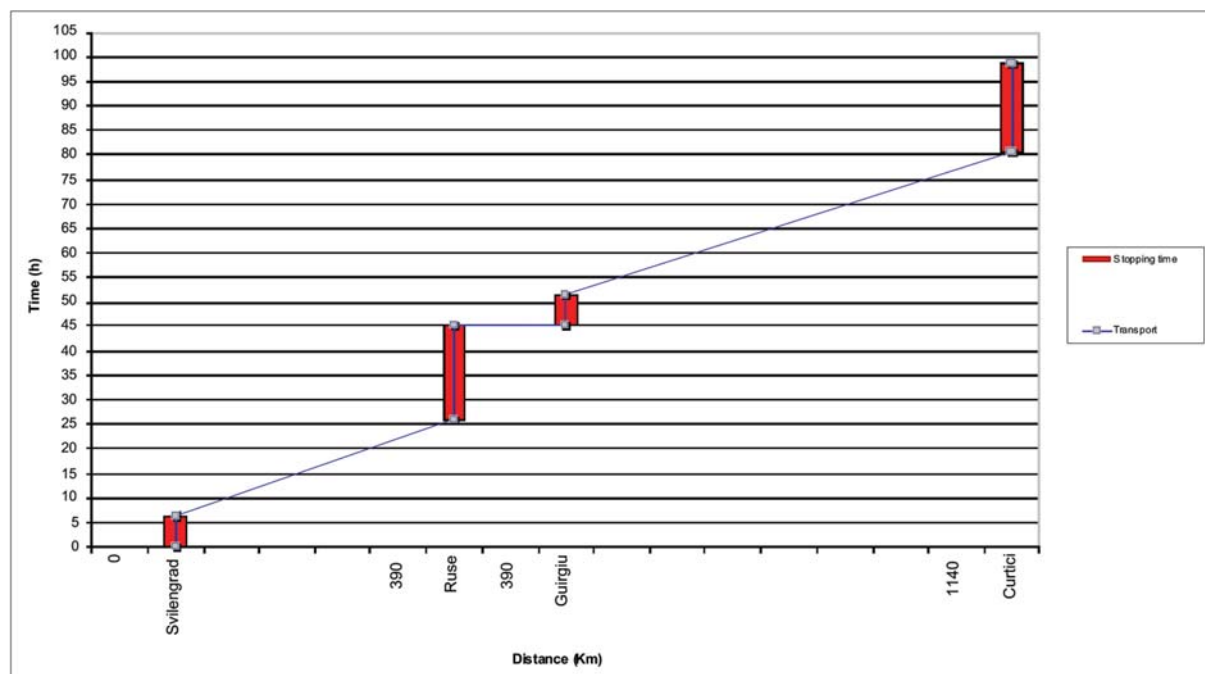


Source: World Bank, Trade and Transport Facilitation in South East Europe Project.

The issues of the TTFSE project are not directly relevant to the aims of the present Study, but the experience of the TTFSE program is certainly very important for the future implementation of new rail border crossings.

The Bulgarian participation to the program, for example, reports that in their experience they had to confront the coordination of five agencies which must collaborate: Border Police, Customs, Veterinary Control, Phito-Sanitary Control, and Taxes Agency.

The TTFSE program also gave empirical evidence of time breakdown between stopping time versus transport time, for example along Corridor IV rail line. The obstacles are at present so high that the potential benefits of reducing stopping time can reach 47 hours on the Svilengrad Curtici line (see Figure 26 below). TTFSE is now moving into a second phase –TTFSE II–, which will consolidate the achievements reached under the original Program while replicating and scaling them up.

Figure 26 - Stopping time vs. transport time along Rail Corridor IV

Source: World Bank, Trade and Transport Facilitation in South East Europe Project.

TTFSE II envisages support for :

- 1) infrastructure upgrades along the core TEN-T corridors (road, rail, ports) with a special emphasis on border crossing areas,
- 2) improvement of the efficiency and effectiveness of border control agencies and government transport related agencies (railways, ports authorities, toll agencies),
- 3) optimization of information flows among border agencies, across borders, within border agencies, and between those agencies and traders or transport operators, and
- 4) building-up the capacities of the private sector.

The TTFSE II Program, currently under deployment, is open to Albania, Bosnia and Herzegovina, Bulgaria, Croatia, FYR Macedonia, Romania, Serbia, Montenegro, and also to Turkey and Kosovo.

The Implementation Completion and Result Report on FYR Macedonia, published by the World Bank on May 2006, had a satisfactory outcome and has a substantial development impact.

2.5.4 UIC - Union Internationale des Chemins de Fer

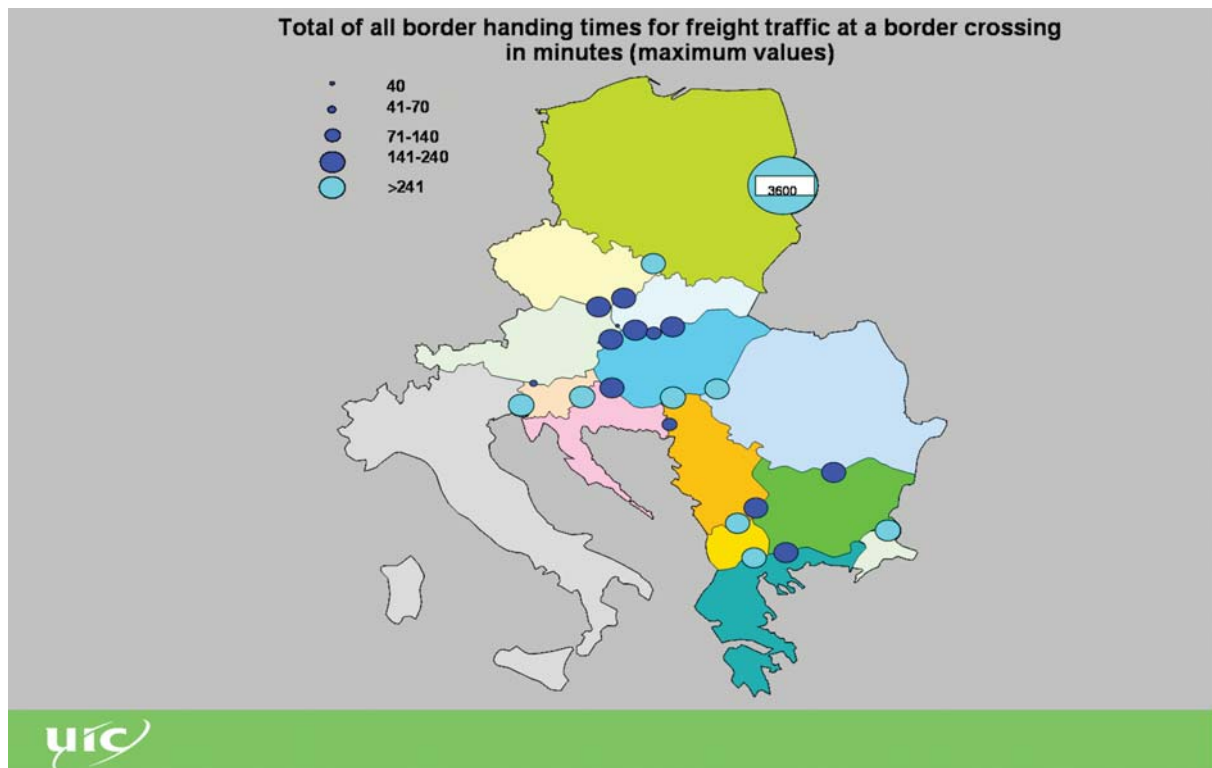
The International Union of Railways has implemented a project, among others, relevant for the future development of the Rail Working Group activities: the ABC project. This initiative, managed by the East-West Task Force of the UIC, deals with the facilitation of border crossing along railway corridors. Each border crossing point (located and selected on Pan-European Corridors) is investigated in three steps:

- fact-finding, involving some field study;
- analysis and optimization of processes and framing of proposals;
- discussion on measures and compilation of report.

Bulgaria and FYR Macedonia participate to this project and can transfer their experience gained on North-South rail cross border issues to future East-West new cross borders.



Figure 27 - Cross Border areas considered by UIC-ABC Project



Source: UIC, ABC Project

2.5.5 European Commission

The overall strategy and the transport policy goals of the EC DG for Energy and Transport constitute the main framework for the analysis and the proposals of this Study.

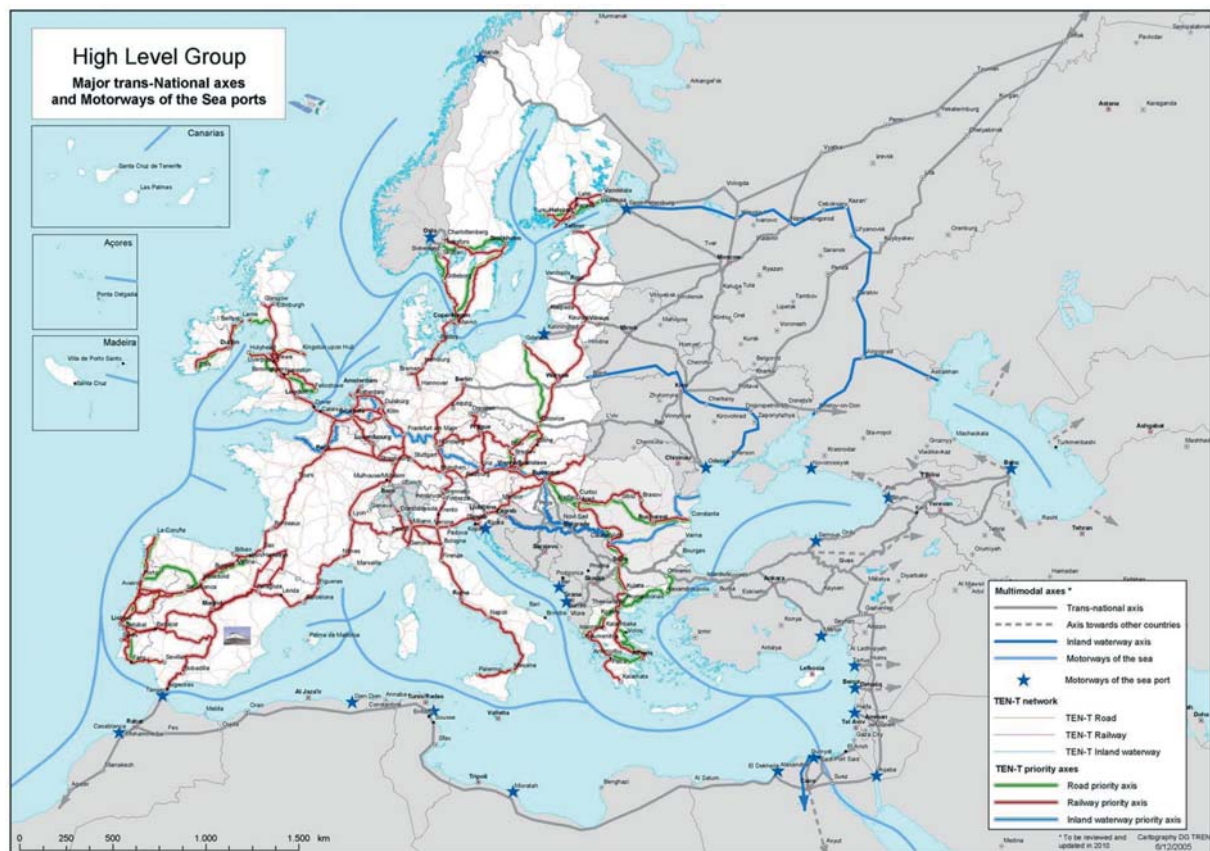
With EU enlargement to the 27 members, the Countries of central Europe will increasingly adopt a dual role, as both constituent parts of the wider European Union, and as interconnection with the new independent states in eastern Europe and the littoral countries of the Mediterranean and the Black sea.

Following a ministerial seminar on Wider Europe for Transport in Santiago de Compostela on 7-8 June 2004, a High Level Group has been established. Ms. Loyola de Palacio was appointed Chair of the Group, which comprised, besides the 25 EU States plus Bulgaria and Romania, 26 neighbouring Countries, the European Investment Bank, the European Bank for Reconstruction and Development and the World Bank. The main purpose of the HLG was to look into the issue of extending the major trans-European transport axes to the neighbouring countries and regions.

The objectives of the Group were to present Proposals to the Commission on:

- a limited number of priority axes connecting the Union with its neighbours with a focus on international exchanges and freight movements;
- a short list of priority projects on these axes, including the Motorways of the Sea;
- how to improve the efficiency of the current transport networks through horizontal measures, e.g. interoperability, border-crossings, safety and security.

The Final Report was presented in November 2005. The following figure shows the proposed system of trans national axes to connect the Trans European Networks to the new neighbouring countries and to the Near East, Far East and North Africa.

Figure 28 - HLG Major trans-national axes

Source: European Commission, Report from the High Level Group.

The Group identified the following five major transnational axes (see Fig. 28).

- Motorways of the Sea: linking the Baltic, Barents, Atlantic, Mediterranean, Black and the Caspian Sea areas as well as the littoral countries within the sea areas and with an extension through the Suez Canal towards the Red Sea.
- Northern axis: to connect the northern EU with Norway to the North and with Belarus and Russia and beyond to the East.
- Central axis: to link the centre of the EU to Ukraine and the Black Sea and through an inland waterway connection to the Caspian Sea. Connections towards Central Asia and the Caucasus are also foreseen.
- South Eastern axis: to link the EU through the Balkans and Turkey to the Caucasus and the Caspian Sea as well as to Egypt and the Red Sea. Access links to the Balkan countries are also foreseen.
- South Western axis: to connect the south-western EU with Switzerland and Morocco and beyond, including the trans-Maghrebin link connecting Morocco, Algeria and Tunisia.

The main alignment of Corridor VIII, Bari/Brindisi-Durres/Vlora-Tirana-Skopje-Sofia-Burgas/Varna, is included as an integral component of the South Eastern Axis, while the following segments of Corridor VIII, as defined in its MoU, were not included in the HLG South Eastern Axis: the section Lin-Kapshtice/Kristallopigi (cross border Albania-Greece), the branch Durres-Vlora and the section Skopje-Pleven-Gorna Oriahovica (connection between Corridor VIII and IX).

HIGH LEVEL GROUP
South Eastern Axis

Multimodal axes *

- Trans-national axis
- Axes towards other countries
- Inland waterway axis
- Motorways of the sea

TEN-T network

- TEN-T Road
- TEN-T Railway
- TEN-T Inland waterway

TEN-T priority axes

- Road priority axis
- Railway priority axis
- Inland waterway priority axis

Priority project numbers

- Road project
- Railway project
- Multimodal / Logistic centre project
- Inland waterway project

Map Labels: Ljubljana, Zagreb, Rijeka, Trieste, Padova, Venezia, Milano, Bologna, Firenze, Roma, Napoli, Brindisi, Bari, Tirana, Vlorë, Durrës, Gëlle Thane, Shkëmbi, Kufë, Pogradec, Pristina, Nis, Belgrade, Novi Sad, Brocko, Sarajevo, Mostar, Plzeň, Bratislava, Podgorica, Skopje, Kicevo, Struga, Demir Kapia, Smolnica, Gostivar, Kallambaka, Volos, Kalamata, Promachonas, Varna, Burgas, Sofia, Thessaloniki, Athens, Piraeus, Corfu, Patras, Mytilene, Rhodes, Kos, Samos, Chios, Lesbos, Dodecanese, Crete, Rhodes, Kos, Samos, Chios, Lesbos, Dodecanese, Crete.

Scale: 0 50 100 150 km

Footnote: * To be reviewed and updated in 2010. Cartography: G. TREN 09/12/2009

The HLG Report opens new options for the implementation of a Rail Corridor VIII. In fact, in the HLG report several projects of interest of this Study are identified as short term priority projects (HLG report list 1):

- The report also includes, among other projects, project n. 40, the construction of the multi-modal terminal located in Struga.

2.6 National Plans

The situation of the Albanian Railways has been recently analyzed in a study commissioned by the Government to the consultant firm Scott Wilson Railways Ltd on “Modernization of Albanian Railways” (2004).

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On the rail network, the primary emphasis suggested by the World Bank should be placed on rolling stock rehabilitation and track renewals, *vis-à-vis* major upgrades, on the defined core network, together with further labor restructuring in all areas: freight, passengers and infrastructure as well as other cost saving areas.

Any investments in new capacity should focus on developing niche markets, and only take forward projects on the defined core network and in rolling stock that serve core long-term business needs. The latter would include further investment in overcoming operating bottlenecks in international traffic services, as in the Durres-Skopje-Sofia section, including the reduction of border delays.

The situation seems to be so critical that the consultant recommended a drastic reduction of personnel and the closure of the less productive lines.

The conclusions of this study served for the preparation of the Albanian National Transport Plan, developed by Louis Berger S.A. and financed by Phare, to provide the Albanian Government with transport planning guidelines.

Scott Wilson conclusions on Corridor VIII link to the Macedonian Railways were the following:

“The construction of this rail link is essentially a political matter, involving the Governments of Albania, FYR Macedonia, Bulgaria and the EU Transport Commission.

It would be difficult at this stage to construct a commercial case for such route investment by Albania alone, especially as very little of the work would be carried out within its territory.

Undoubtedly, if the link were in place there would be a growth of rail container traffic.

It is not valid to see rail as a prerequisite to the growth of Durres Port and the new container trade in particular, but it would be reasonable to assume that of the 170,000 teu forecast to be using the Corridor VIII cross border route (extracted from the Moffat and Nichol Intl. Multimodal Container Study quoted in the Louis Berger SA Interim Report) at least 40% or 68,000 teu per annum would represent real rail potential”.

At 13 tons/TEU, 68,000 teu are equivalent to about 900,000 tons of rail container traffic alone between the Black Sea and the Adriatic.



Picture 14 - View of the Port of Durres

Figure 30 - Port of Durres Land Use Plan, Phase III, Scenario 3



Source: Port of Durres Land Use Plan, Louis Berger, March 2000

Figure 30 shows one of the alternative future land use proposals for the port of Durres, as defined in the Louis Berger's Port of Durres Land Use Plan dated March 2000. The World Bank report n. 32287 (see reference list) summarizes the contents of the study: "...it assessed mostly operational issues by evaluating the existing operations, defining how the land could be used and propose several scenarios of port



development in the short-medium and long term (till 2015). The study recommended three-phase operations development and land use plan. In the 1st stage (4 years) it addresses the existing congestion and operations problems. In the second stage it focused on proposing options for the expansion of several port related activities and removal of some others, while in the third stage recommendations were made to create additional land.”

The tender for a new Port master plan is currently under preparation by the Durres Port Authority.

It would be useful to recall that generally a railroad investment reaches the financial break-even point if it is capable of transporting one million tons/year. Moreover, rail transport is generally cheaper than road transport when used for distances exceeding 500 km.

The National Transport Plan prepared by L. Berger is, however, less optimistic on potential freight traffic through a new Trans-Balkan rail link along Corridor VIII, mainly because it is unable to evaluate how many containers would be transported by truck and how much Roll-on-Roll-off truck traffic will use alternate routes both North-South and towards Thessalonica and Black Sea seaports.

In any case the recommended transport plan for the Albanian Railways includes carrying out maintenance on infrastructures between Elbasan and Lin on the Eastern line to ensure its usability, while waiting for new decisions.

The World Bank study suggests to close the line from Elbasan to Lin and Pogradec. This would mean to abandon the idea of connecting the Adriatic and Black Sea ports by rail.

However, it should be taken into account that the Report prepared by the High Level Group chaired by Ms Loyola de Palacio includes among the short term priority projects the “Railway line Lin-Qafe Thane-fYR Macedonia border” (List 1, project n° 11).

The Albanian Government is currently considering these recommendations in order to integrate them on its future Transport Plan.

In the recent Transport Donors Conference, held in Tirana on 24 March 2006, national rail priority projects were clearly expressed.

The modernization of the West-East existing line (Tirana-Durres/Vlore-Rrogozhine-Lin-Pogradec) was presented as one of the two strategic rail connections of Albania since it allows a rail accessibility of Durres and Vlore ports to/from all South East Balkans as well a rail connection between the two most important Albanian ports of Durres and Vlore.

Figure 31 - Albanian Priority Projects on Existing and Missing Rail Corridor VIII Sections



Source: Republic of Albania, Ministry of Public Works, Transport and Telecommunication, Transport Donors Conference, Tirana 2006



Of course this strategic connection requires the construction of the missing link between the station of Lin and the fYR Macedonia border.

The modernization of North-South existing line (Tirana-Bajze) constitutes the other strategic Albanian connection that allows a rail continuity with Montenegro.

fYR MACEDONIA

The geographical setting of fYR Macedonia determines the strategic importance of having access to the sea through its neighbours' territory.

The Country considers the connections with Aegean and Adriatic seas ports as national economic priorities, in particular the access to the ports of Piraeus and to the ports of Taranto and Gioia Tauro. At the moment, however, only the connections with Piraeus are adequately developed while those with Durres and the Southern Italian Ports are in need of greater impulse.

Figure 32 - Access of fYR Macedonia to sea



Source: fYR Macedonia, Ministry of Transport

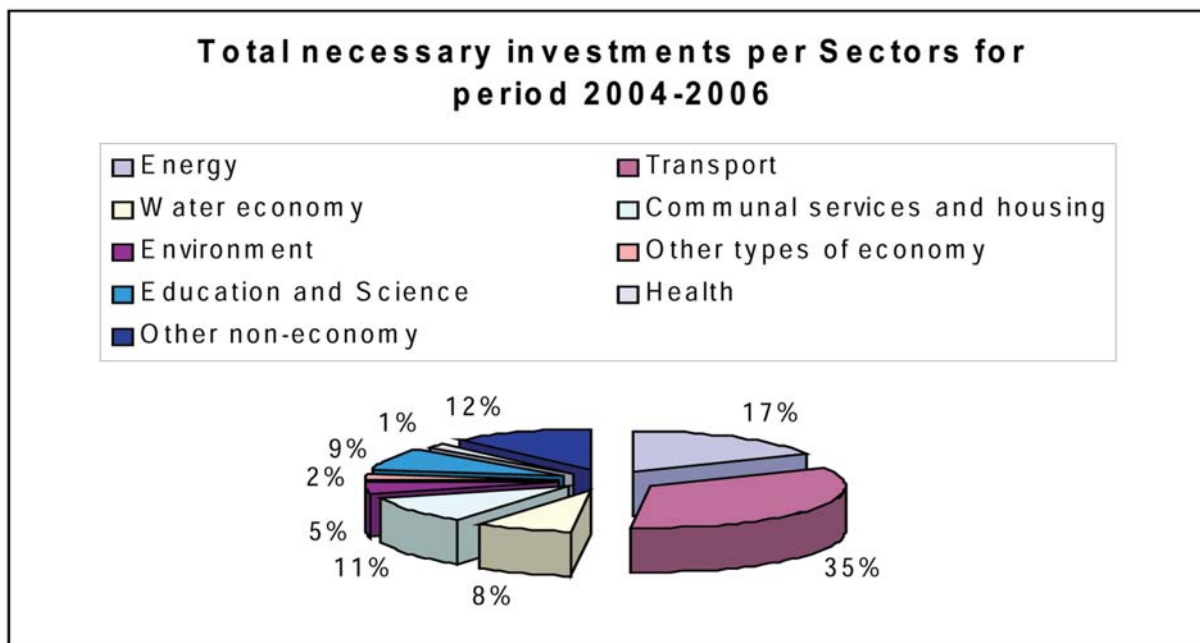
A program of investment in transport infrastructures is presently included in the National Economic Plan 2004-2006.

The Ministry of Transport and Communication is preparing the 2007-2009 strategic plan, which is to be completed by the end of 2007. The work is currently ongoing and will include the necessary documentation for railways and motorways concessions along Corridor VIII and X.

It must be recalled that about 97% of missing or under construction rail sections along Corridor VIII are in the territory of fYR Macedonia and that the HLG Report includes these sections in the list of priority projects (list 1).

Consequently, more than one third of investments in the National Economic Plan for the years 2004-06 (about 35%) are allocated to the transport sector.

Figure 33 - fYR Macedonia Investment Plan 2004-2006



Source: fYR Macedonia, Ministry of Transport

As far as Rail Corridor VIII is concerned the plan includes, in order of priority, the following projects:

1. completion of the construction of the rail lines towards the Republic of Albania and the Republic of Bulgaria;
2. preparation of a study, including investment and technical documentation, for the construction of a multi-modal terminal in Struga;
3. defining the next steps for opening a Free Economic Zone in Durres (Republic of Albania) for the economic needs of fYR Macedonia;
4. electrification and modernization of the rail from Skopje to Gostivar; it is also necessary to start preparing the project for electrification of the rail from Gostivar to Kicevo.

Besides these rail projects the Country gives high priority to completing the construction of the motorway along the entire Corridor VIII for a total length of 206 km.

The Report prepared by the High Level Group chaired by Ms. Loyola de Palacio includes many high-priority projects of fYR Macedonia among the short-term priority projects (List 1).

More specifically the following projects concerning fYR Macedonia are included:

In the List 1 (short to medium term projects):

- rehabilitation of the railway line Tabanovci–Gevgelija, phase I, (Project n° 8a);
- railway line Kumanovo – Beljakovci - Bulgaria border (Project n° 9);
- railway line Kicevo - Struga - Albania border (Project n° 10).

In the List 2 (projects of long term interest):

- Rehabilitation of the railway line Tabanovci – Gevgelija, phase II, (Project n° 8b).

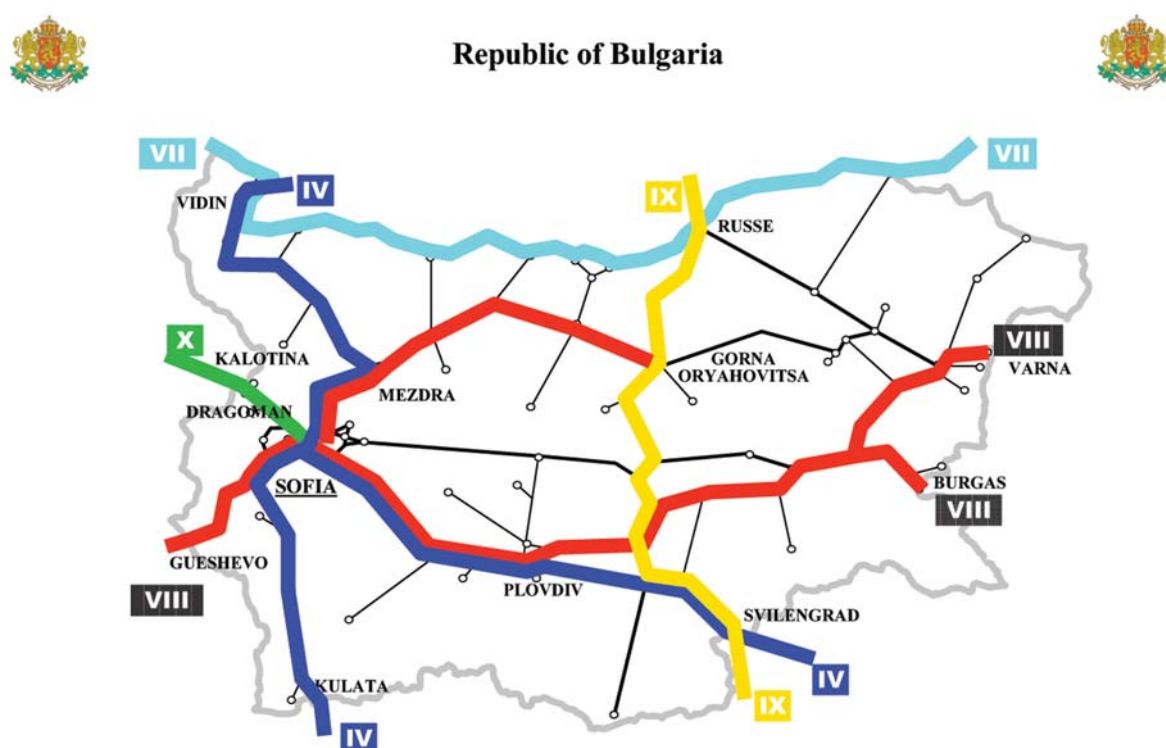
In the List 3 (Other major projects on multimodal axes, projects of regional or national interest):

- The Construction of the multi-modal terminal located in Struga (project N° 40).

Bulgaria

Bulgaria is located on a strategic position in the South Balkans: five Pan-European Corridors cross the Country.

Figure 34 - Pan-European Corridors crossing Bulgaria



Source: Bulgarian Rail Agency

The Country joined the European Union on 1 January 2007 and therefore has developed overall plans concerning the transport sector.

Bulgaria elaborated a strategy for the development of the National Transport System till 2015 involving all relevant governmental institutions and interested agencies.

National Transport Planning is developed at three levels:

- Strategic Plan, longer term (10 years time horizon), giving broad directions to the national transport policy, consistent with the Ministry's mission statement and priority objectives, for the Transport Sector as a whole, in an integrated context;
- Mid-term Review, medium term (5 years), providing programs, in line with the Strategic Plan directions, for transport sub-sectors (so-called "small strategies");
- Action Plans, short term (1 year), pertaining to specific projects, rolling annual updates linked to yearly budget preparation.

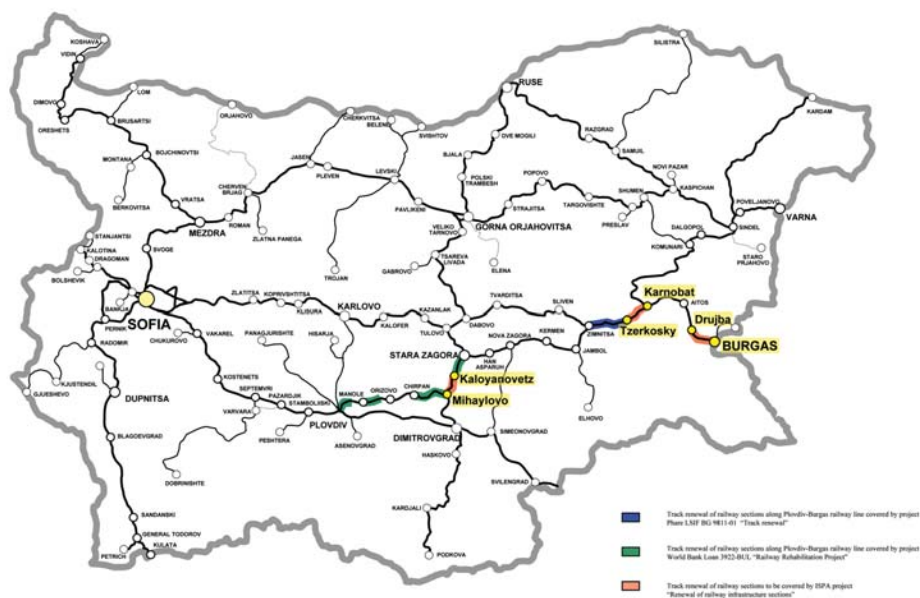


Considering the situation of Rail Corridor VIII East of Sofia, on the main alignment of Rail Corridor VIII, the Plan includes:

- the modernization of the Sofia – Plovdiv section,
- the renewal of sections along Plovdiv – Burgas, financed by the World Bank Loan 3922-BUL, and
- the modernization of Plovdiv – Stara Zagora – Jambol – Burgas.

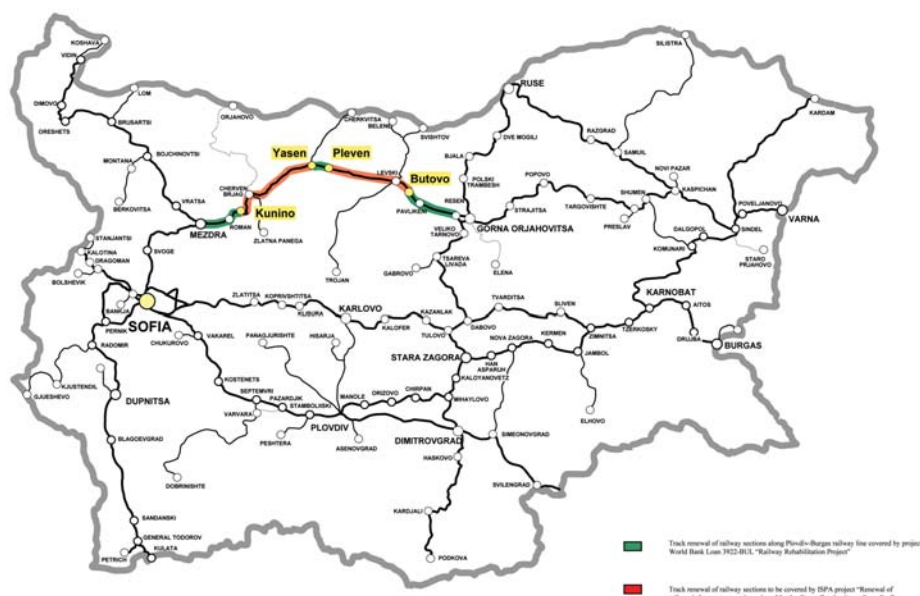
Along the main alignment of Rail Corridor VIII the electrification and double tracking of Karnobat – Sindel railway line is also ongoing. This segment connects the port of Burgas to the port of Varna.

Figure 35 - Bulgaria: investments on main alignment of Rail Corridor VIII



Source: Bulgarian Rail Agency

Figure 36 - Investment on the northern branch of Rail Corridor VIII



Source: Bulgarian Rail Agency



Figure 37 - Bulgaria: Trans European Transport Network Outline plan - Railways



Source: European Commission



As far as Rail Corridor VIII West of Sofia is concerned, the Bulgarian Transport Plan includes the modernization and electrification of the Radomir-Gueshevo railway line.

In the northern branch of the rail corridor VIII, the National Transport Plan includes:

- the renewal of sections along Mezdra – Gorna Oryahovitza, funded by ISPA, and
- the modernization of the Sofia – Gorna Oryahovitza – Varna railway line.

The official plan (2020 horizon) agreed with the EU for Railways privileges upgrading high speed lines for almost all the section of Corridor VIII in Bulgaria: from Sofia to Mihaylovo and from Stara Zagora to Bourgas (see figure 37).

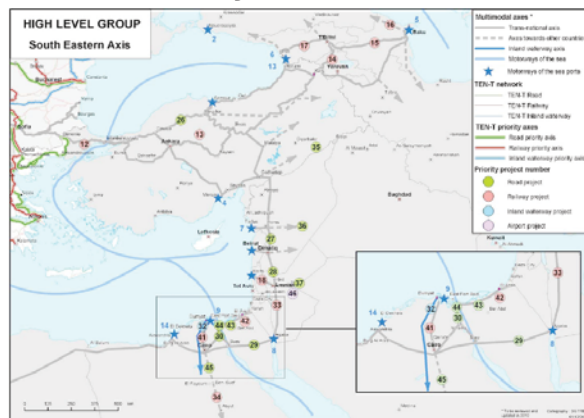
Concerning the lines from Gueshevo to Sofia and from Mihaylovo to Stara Zagora, the plan instead calls for conventional lines.

Turkey

Turkey is not directly crossed by Corridor VIII, even though is significantly affected by it through the Corridor IV branch reaching Istanbul. The Country geographical position offers great multi-modal transport opportunities on the Europe – Asia Axis.

In the new strategic context designed by the HLG Report, the South East European Transnational Axis overlaps with the TRACECA Corridor through Turkey.

Figure 38 - HLG: South Eastern Axis across Turkey



Source: European Commission, High Level Group Report

Figure 39 - TRACECA Corridor



Source: TRACECA

The TRACECA (Transport Corridor Europe-Caucasus-Asia) is the renaissance of the Great Silk Road, one of the ancient routes in the world. The Corridor starts in Eastern Europe (Bulgaria, Romania, Ukraine) and crosses Turkey. From Azerbaijan by means of the Caspian ferries (Baku-Turkmenbashi, Baku-Aktau) TRACECA route reaches the railway networks of Central Asian states of Turkmenistan and Kazakhstan. The transport networks of these states are connected to destinations in Uzbekistan, Kyrgyzstan, Tajikistan and reach the borders of China and Afghanistan.

In this strategic perspective Turkey took an active part as one of the main partners in the High Level Group on the “Extension of the major trans-European transport axes to the neighboring countries and regions”.

As a result, the Turkish rail and road backbones towards Caucasus and toward Middle East have become an important component of the new European South Eastern Axis. In fact, the South Eastern Axis mainly consists of the Corridors IV, VIII, and X and connects Europe to Asia through Turkey.

In this respect, the rail section “Istanbul-Bulgarian border” is important not only for Corridor IV but also for Corridor VIII.

Currently there is a motorway connection as well as a conventional railway line from Istanbul to the Bulgarian border.

A railway project aimed at improving the existing line from Istanbul (Halkali) to the Bulgarian border is now under development. The total length of the project is 230 km.

The project has been included in the inventory of “Projects of short to medium term” of the High Level Group (List 1, project no 12). These are projects to start before 2010.

The rail project, which calls for a double track and electrified line, with a maximum inclination of 15‰ and a project speed of 250 km/h, will improve the backbone of the rail connection between Europe and Asia. With the realization of this project, the route which starts from Kapikule in the west will connect with the existing Istanbul-Ankara-Sivas-Erzincan-Erzurum-Kars line towards the east then will extend to Tblisi by the planned Kars-Tbilisi line and finally will reach Baku.

In the prospect of improving traffic connections from Europe to Asia through and around Istanbul the Marmaray project is of the utmost importance.

When completed, this project will join both sides of the Istanbul Strait by means of an uninterrupted, modern, high capacity railway connection between Europe and Asia.

Figure 40 - Marmaray Project



Source: www.marmaray.com

This project started on 9 May 2004 and is presently one of the most important projects of its kind in the world. The project, of a total length of approximately 77 km, consists of two parts: the 13.6 km long Istanbul Strait Tube Crossing (of which 1.38 km is immersed tube tunnel and 9.8 km bored tunnel), and the upgrading of the existing commuter rail from Halkali to Gebze.

The red alignment on the map shows the parts of the railway which are above ground and the white alignment shows the new railway system that will be constructed under the Istanbul Strait.

The total cost of the project is approximately 2.5 billion USD.

Turkey is at the same time a strategic crossroad for energy for both natural gas and crude oil pipelines from the Caspian region towards Europe.

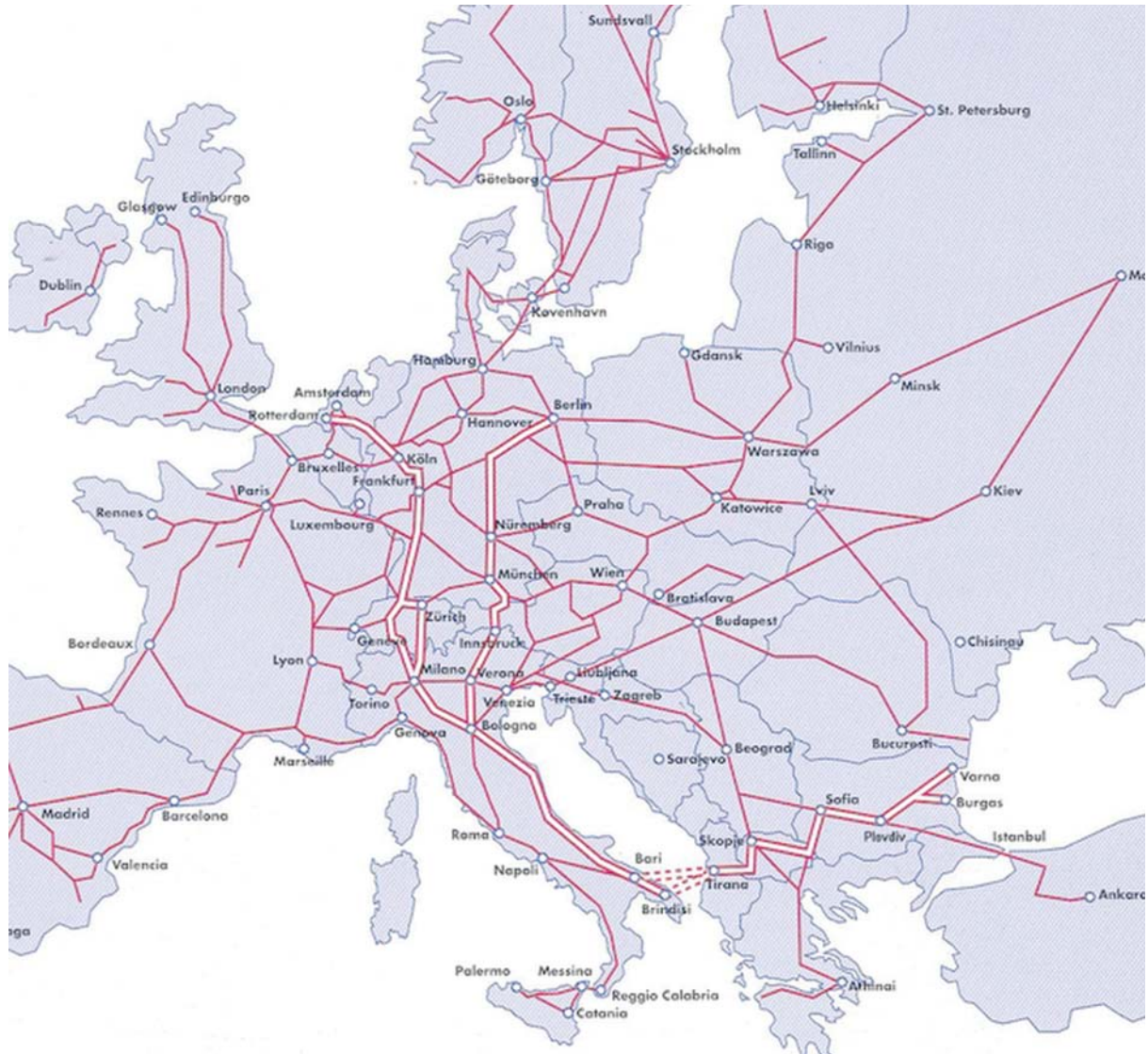


Italy

Connections of Corridor VIII with the Italian transport network are identified in the Operation National Transport Plan for the years 2000-2006 and 2007-2013.

On the west, Corridor VIII connects to the Trans European Networks through the Italian transport infrastructure by linking with, the Adriatic Corridor, a 800 km rail line running along the Adriatic Sea that is integral part of the freight corridor of European interest (TERFN). This is a completely electrified railway and for almost its entire length is double track.

Figure 41 - «Pon Trasporti» - Future Developments



Source: RFI, Presentation «PON Trasporti», Bari September 2005

Effective connections of Corridor VIII to the Italian internal railway, motorway and logistic systems, are fundamental to allow the development of new opportunities for freight transport between South Europe and the Balcan region.

Bari and Brindisi are the connection nodes to these inland networks, through the respective ports. At this regard, in order to further increase the intermodal potential of the Port of Bari that represents a fundamental gateway to the south-east Europe region, some projects are planned to be implemented in the next years.

Improvement of the freight traffic infrastructures includes:

1. New terminal for passengers and Ro-Ro, improvement of the passengers, Ro-Ro and cruise infrastructures;
2. Extension of cargo and storage area;
3. New road linking the industrial area to State Road 16.

By 2007, a dedicate freight line will be activated between Taranto and the freight train station of Bari P.N. which is located close to the city port.

Improvements will be also brought to the Bari rail junction through the planned under-ground line which will connect Bari to Palese.

In the port of Brindisi infrastructural investments will be completed by 2007, in order to increase its intermodal capacity from the present 400,000 ton/year to 1,200,000 ton/year.

Moreover, the commercial port of Brindisi will be better connected with the national rail network by means of a new 10 km railway spur.

The following figure reports the planned and ongoing infrastructural projects in Southern Italy. The darker blue line identifies rail sections interested by projects. In particular, dark triangles identify specific rail projects along those sections. Light square symbols refer to port projects, while dark squares mark land port projects.

Figure 42 - PON Trasporti: Southern Italy Infrastructure planned projects



Source: Italian Ministry of Infrastructure

In 2007, the Train Control Station, which will allow the control over trains travelling from Bari to Bologna as well as remote diagnosis and security of the infrastructure, will also be completed and activated in Bari;

Connections from the Adriatic Corridor with the Tyrrhenian Corridor, which is the Trans-European Corridor I, connecting Berlin to Palermo, is guaranteed by transversal links between the two corridors. Freight from/to Gioia Tauro can be at present routed toward Taranto and from there to the ports of Bari and Brindisi; to this end, the construction of a new alternative rail freight line between Gioia Tauro and Taranto has been planned.

Other local interventions include:

- The electrification of the rail line Taranto-Brindisi and the doubling of the rail line Taranto-Bari;
- The doubling of the rail line Napoli-Bari between Apice and Orsara.



Picture 15 - SCC Headquarters

2.7 Conclusions on the current situation

Main conclusions can be summarized as follows:

1. Rail missing links along Corridor VIII are very well identified and are all located West of Sofia.
2. Several specific studies concerning Rail existing sections and missing links have already been developed by consultant firms and National Rail Agencies of the interested Countries (See References List pag. 127).
3. Missing links are embedded in longer rail sections that, in some cases, need rehabilitation.
4. The field inspection confirmed the preliminary result reached through the desk work that it is appropriate to extend the notion of missing link also to those sections of the existing alignment showing a critical condition for regular freight traffic.
5. The need to guarantee traffic flows along the rail corridor alignment from Bari/Brindisi and Durres/Vlore through Skopje and Sofia to Burgas and Varna brought to the choice of concentrating the object of the study on the Durres-Skopje-Sofia segment of Rail Corridor VIII.

Consequently, the alignment under study includes the sections described in table 1.

The table has been obtained taking into consideration individual studies with the purpose of roughly estimating the investment costs required to connect Sofia to the Adriatic Sea along the rail alignment of Corridor VIII from Durres to Sofia.

These sections amount to a total length of 586 Km, distributed among the following type of needed interventions:

- km 92 missing (to be constructed ex novo);
- km 68 in construction, to be completed;
- km 136 requiring indispensable rehabilitation;
- km 190 to be upgraded to a higher international standard;
- Km 100 with no immediate need for intervention.

Table 1 - Investment Costs along Rail Corridor VIII from existing Studies

RAIL SECTION	LENGTH (km)	STATUS	INVESTMENT COSTS mil €	SOURCE	TIME FOR IMPLEMENTATION (years)
Durres-Lin	136	Rehabilitation	50	Sudop Praha	6/7
Lin-f.Y.R. Macedonia border	3	Missing	6	Albanian Transport Institute	6/7
Albanian border-Struga	12	Missing	70	Louis Berger	6/7
Struga-Kicevo	54	Missing	130	Louis Berger	7/8
Kicevo Gorce Petrov	102	Upgrading	12	Louis Berger	5/6
Gorce Petrov-Skopje-Kumanovo	52	-	-	-	-
Kumanovo-Beljakovci	29	In construction	25	Macedonian Rail Agency	2/3
Beljakovci-km 66	37	In construction	66	Macedonian Rail Agency	4
Km 66-Bulgarian border	23	Missing	105	Macedonian Rail Agency	11/12
f.Y.R. Macedonia border-Gueshevo	2	In construction	10	Bulgarian Rail Agency	2
Gueshevo-Radomir	88	Upgrading	220	Bulgarian Rail Agency	7/8
Radomir-Sofia	48	-	-	-	-
DURRES-SKOPJE-SOFIA	586	-	694	-	12/15

Source: Secretariat elaboration



However, we have to take into account that table 1 presents a preliminary evaluation, since the total investment costs only derive from summing up the estimates of the studies previously illustrated and defined by Country national experts.

More specifically:

- For the Durres-Lin section, the assumed costs of rehabilitation are those of the Sudop Praha feasibility project, which are very close to those of the TIRS study.
- For the Kicevo-Skopje section, that was not inspected, the assumed cost is the estimate of Louis Berger study “Investment Options in the Transport Sector, component 5: Rail Link to Albania”.
- Total investment costs, derived by the studies considered, amount to some 700 € mil, and the overall implementation could require 12/15 years.
- These investment costs were however made by different consultants in different periods, during diverse national contexts and were made for different purposes; the final plain algebraic sum therefore could be misleading.

In conclusion, the RWG agreed that it is now urgent to capitalize on these existing studies and develop a full feasibility evaluation on financial, economic and political aspects, by carrying out a **Coordinated Multinational Rail Project on Corridor VIII: Durres-Skopje-Sofia (DSS Rail Project)**.

This Project can only be the result of a comprehensive approach to the issue of Corridor VIII railway alignment, arising from the technical and political cooperation of the Member Countries.

In a jointly defined general framework, each Partner Country expresses its priorities in accordance with the national transport plans and development strategies. On the other hand, the evaluation of each project acquires a general consistency and a meaningful “economic value” in the framework of the Durres-Skopje-Sofia Rail Project.

Preliminary evaluations on potential freight traffic on Rail Corridor VIII show that the scenario of a freight traffic flow has mainly the characteristics of international transit traffic. Interested Countries, particularly Albania and FYR Macedonia, need to establish a clear policy for transit traffic, which should be based on an analysis of the advantages and disadvantages of such traffic.

Domestic transport demand is too low, and rail infrastructures are too expensive to justify such investments for domestic reasons alone. Transit traffic is likely to increase business and employment opportunities in Albania and FYR Macedonia but also in Bulgaria and Southern Italy.

Possible disadvantages are environmental hazards, possible future increased congestion, and wear and tear of the transport infrastructure which does not get adequately compensated.

The competitiveness of Rail Corridor VIII transport system as a transit route will depend therefore on the cost, speed and quality of service as compared with the other competing land and sea transport routes.

On the basis of the result of this assessment the opportunity of a full feasibility study appears well worthwhile. In the next chapter, the general preliminary framework for such a study is provided.

Chapter 3 - Pre-feasibility evaluation of the Durres-Skopje-Sofia Rail Project

3.1 Preliminary evaluation on Rail Corridor VIII Development Potential

3.1.1 Trade Development Potential along Corridor VIII

The Countries along the alignment of Corridor VIII already have some relevant flows of trade, and significant commercial flows exist between Italy and the Balkans.

The Balkan Countries along the Corridor are Albania, fYR Macedonia and Bulgaria; North of the corridor there are Serbia, Montenegro and Romania; South of it there are Greece and Turkey.

Table 2 - Freight Flows in Southern Balkans Countries and between South Balkans and Italy (2004, million €)

	DESTINATION									
		ITALY	ALBANIA	fYR MAC.	BULGARIA	TURKEY	GREECE	ROMANIA	SERBIA / MONT	TOTAL
ORIGIN	ITALY		583	137	1 057	5 687	6 486	4 288	920	19 158
	ALBANIA	339		5.1	1.5	8.1	52.9	0	1.5	408.1
	fYR MAC.	186	17.2		38.2	39.6	168.1	0	254.8	703.9
	BULGARIA	1 081	33.1	153.2		728.3	422	289.3	213.2	2 920.1
	TURKEY	3 971	118.4	69.5	638.6		898.3	897.1	209.2	6 802.1
	GREECE	1 503	308.4	205.9	610	490.4		351.7	190.1	3 659.5
	ROMANIA	4 043	0	82.9	309.3	1 209	460.7		166.7	6 271.6
	SERBIA/MONT	570	0	178.6	0	0	0	166.7		915.3
	TOTAL	11 693	1 070	860.1	2 662.7	8 166	8 488	5 992.8	1 978	81 749

Source: Secretariat elaboration on ISTAT and ICE databases

According to this elaboration on freight flows among South Eastern Countries and between these and Italy, the value of commercial traffic reached 82,000 million € in 2004, 38% referring to flows to/from Italy and South Balkans.

Of this 38%, that is some 31,000 million €, a more detailed origin/destination matrix in tons and transport mode was elaborated.

In 2004, the freight market between Italy and the Southern Balkans amounted to 26 million tons, while the rail share appears small. One of the reasons is that official statistics register, in case of intermodal

transport, the last mode used in the transport chain, which usually is road or sea, thus underestimating the rail sector.

Table 3 - Trade Exchange between Italy and Balkan Area Countries by transport mode (2004, 1,000 tons)

	Maritime transport		Rail transport		Road Transport		Air Freight Transport		Other		Total		
COUNTRY	Import	Export	Import	Export	Import	Export	Import	Export	Import	Export	Import	Export	Total
BULGARIA	1.469	124	16	31	155	174	"	1	-	"	1.640	330	1.970
ALBANIA	170	864	0	2	6	7	-	"	-	-	176	873	1.049
Rep. of MAC.	103	16	1	1	36	28	-	"	-	-	140	45	185
SUB TOTAL	1.742	1.004	17	34	197	209	"	1	-	"	1.956	1.248	3.204
ROMANIA	1.222	148	288	84	774	853	"	1	-	-	2.284	1.086	3.370
GREECE	697	1.974	25	11	597	1.554	"	2	340	464	1.659	4.005	5.664
TURKEY	8.383	2.975	"	3	136	180	2	3	"	-	8.521	3.161	11.682
SERBIA/ MONT	909	169	78	19	308	253	-	"	-	"	1.295	441	1.736
TOTAL	12.953	6.270	408	151	2.013	3.049	3	7	340	464	15.716	9.939	25.655

Source: Trenitalia elaboration on ISTAT databases

The main reason is of course that there is no economic rail choice from South Italy and the Balkans, so the sea + road mode is predominant.

It is therefore safe to affirm that trade exchanges with Bulgaria, Albania and fYR Macedonia, taken together, constitute a potential market for the newly developed rail infrastructure, while the Romanian, Greek, Turkish and Serbian markets will not profit as much from it. A more detailed study focused on trade development in the area linked to the activation of Rail Corridor VIII should be carried out in the future.

Table 4 -Trade Exchange between Bulgaria and Balkan Area Countries (2004, tons)

Country	Import	Export	Total
Albania	351	47.797	48.148
fYR Mac.	12.779	252.564	265.343
Romania	106.813	480.764	587.577
Serbia	13.210	420.164	433.374
Greece	208.329	247.768	456.096
Turkey	218.460	1.210.833	1.429.293
Bosnia	447	14.355	14.801
Total	560.388	2.674.245	3.234.633

Source: Trenitalia elaboration on NSI - National Statistic Institute (Bulgaria) database

A similar matrix was also produced for Bulgaria and its exchanges with other Balkans and Far East European Countries.

In 2004, more than 3 million tons were transported to/from Bulgaria and these Countries, as Table 4 reports.

It seems therefore reasonable to forecast a higher potential development of trade exchange deriving from facilitating cross border connections both in terms of infrastructures and in terms of “soft” measures, having to do with customs, security and so on.

A study, financed by the Italian Ministry of Economy and Finance (Ministry of Economy, ISDEE-CERPEM, “Lo sviluppo delle infrastrutture di trasporto nei Balcani”, June 2005), estimates a relevant potential in the development of flows between Southern Italy and the Balkans: the potential market could amount to more than one billion euros. The main obstacle to this market development potential being identified in the lack of “accessibility”, both physical (transport infrastructures) and non physical (customs procedures, transport infrastructures management, security, etc).

According to a more or less favorable scenario, the increments of tons in 2013, with 2003 as base year, can vary from 62% to 86%.

The tons, about 15 millions, measured in this study for the year 2003, differ from the tons calculated in the estimates earlier mentioned, for the year 2004, mainly because the first one does not include Turkey nor Greece, while it does include Bosnia and Croatia and it refers to a different base year.

Table 5 - Trade Forecast between Italy and the Balkans

Trade flows between Italy and Balkans		Conservative scenario		Optimistic scenario	
Year	2003	2009	2013	2009	2013
Million of tons	14.8	19.3	24.0	20.9	27.5
Cumulative variation		30.7%	61.9%	41.0%	85.7%

Source: Minister of Economy and Finance, DPS, Transport Infrastructure Development in the Balkans and their Impact on the Economy of south Italy, 2005

The study also points out that such a development is hindered by a lack of appropriate transport infrastructures.

At the moment land connections, both rail and truck, can use only Corridor V and make it difficult to reach the Southern Balkans from Southern Italy.

Italian Trade access to the Balkan Area is carried out through two main routes:

a) The land route

This route links Italy to Croatia, Bosnia-Herzegovina, Serbia, FYR Macedonia and Bulgaria. Its first segment, as far as Ljubljana, is constituted by Corridor V, while the second one is the “trans Balkan way” crossing Zagreb (Corridor X). This route is a road as well as a rail one, but, as seen before, rail freight transport plays only a marginal role on the total trade volumes.

b) The sea route

As the container transport ratio is historically low, nearly all of the Italian maritime trade uses standard Ro-Ro shipping, regularly linking the two Adriatic shores. A very limited amount of trade is carried by bulk cargo ships. Taking into account the difficulties linked to load switch operations in many Balkan ports, freight transport occurs mainly through shipped trucks. Therefore, current access to the Balkan ports is carried out through road infrastructures.

**Figure 43 - Rail access to the Balkans from Italy****Figure 44 - Sea access to the Balkans from Italy**

Source: DPS, ISDEE-CERPEM Transport Infrastructure Development in the Balkans and their Impact on the Economy of South Italy, June 2005.

The only alternative available at the moment to connect Southern of Italy and South of Balkans is the intermodal access by sea + road.

Five East Adriatic ports were analyzed by the study as gates to the Southern Balkans: Split (Croatia), Ploce (Croatia and Bosnia), Bar (Serbia-Montenegro), Durres (Albania), and Igoumenitsa (Greece).

Of these, however, only the port of Bar currently offers a rail intermodal opportunity to reach the middle of the Balkans.

For this reason, the study recommends the urgent upgrading of this railway connection between Bar and Beograd which is furthermore a transport node between Corridor X and Corridor VII.

As for other East Adriatic ports, Durres included, only a sea-road intermodal alternative is available in the short term.

For this reasons, the report recommends to develop Road Corridor VIII in the short term, while at the same time starting the development and implementation of Rail Corridor VIII in the mid-term.

The reason for this recommendation is that Rail Corridor VIII, even though it represents a more efficient transport mode and is consistent with the general strategic indications of EU (transport mode balance from road to rail and sea) is still at a stage of development and will require some years to completion.

In fact, according to the study, an economic convenience to use Road Corridor VIII to connect Southern Italy with the Southern Balkans already exists.

Sea-land intermodality along Corridor VIII shows good competitiveness perspectives.

The study estimates that it is 25% more convenient to use Durres rather than Igoumenitsa to reach Skopje from Bari in terms of money, and this route will save 10 hours of traveling time as well.

Table 6 -Comparative analysis of costs and transit times between Bari and Skopje

Transport mode			Cost €/truck	Traveling time hours
Sea + land	Bari-Igoumenitsa-Skopje	635	1.600	64
Sea + land	Bari-Durres-Skopje	330	1.200	54

Source: DPS, ISDEE - CERPEM, Transport Infrastructure Development in the Balkans and their Impact on the Economy of South Italy, June 2005.



In conclusion:

1. The DPS ISDEE - CERPEM analyses on trade between Italy and the Balkans and relevant perspectives in the 2009-2013 period showed a **great trade potential** in that area.
2. In particular: **Southern Italy has a great trade potential with the Balkans.** The “potential” export, taking into account the GDP levels and the air-line distances, may reach around 2 billion Euros, compared with the “actual” 850 million Euros, with possible increments in Croatia, Bosnia-Herzegovina, Serbia, Montenegro, Romania and Bulgaria.
3. However, current and future Italian traffic (especially in Southern Italy) will see **substantial difficulties to access these markets** unless significant measures are undertaken.

3.1.2 Preliminary Traffic Potential Evaluations on the Durres-Skopje-Sofia Rail Section

Forecasting traffic flows data will depend on whether improvements are linked either to a “demand” approach or to a “supply” approach.

A demand approach implies that existing transport facilities are crowded and can not absorb future increasing requests. It is therefore easily forecasted that new or improved facilities could accommodate such a demand.

A supply approach, on the other hand, assumes that existing transport facilities are not fully utilized because they are in poor conditions and/or are lacking other indispensable and integrated infrastructures to be fully exploited. In this case the mere provision of improved facilities will create a new demand either by opening up previously inaccessible areas and/or shifting existing demand towards more convenient routes.

In the case of Rail Corridor VIII a supply approach will be prevalent.

Freight Market

The most often used forecasts for containerized traffic are those developed by Moffat and Nichol International in their *Feasibility Study for the Port of Durres Multi-Modal Container Facility* (June 2000). The data contained in this study are the basis for many later studies concerning this subject.

Table 7 shows the traffic forecasts relevant for Corridor VIII, according to the analysis by Louis Berger, *Investment Options in the Transport Sector, component 5: rail link to Albania, October 2002*.

This study estimated that half the Macedonian imports and exports by container that presently use Thessalonica port would more naturally move to Durres.

Durres is at a similar distance from Skopje as compared to Thessalonica and its port charges are estimated at some 20 per cent less. It is also better located than Thessalonica to many shipping destinations, including Western Europe and the USA, and it is closer to the major international container hub-ports of Gioia Tauro and Malta.

The container traffic forecast was based on the assumptions that the railway link would be open by 2010, and that there would be an efficient service of unit (block) trains for container traffic. The figures are based on an assumed share of a total market, which will become increasingly containerized over time.

The Louis Berger also estimates some transit traffic through Bulgaria to/from Durres that could amount to 20,000 TEU (about 260,000 tons) in 2010 and 150,000 (about 2 million tons) in 2025.

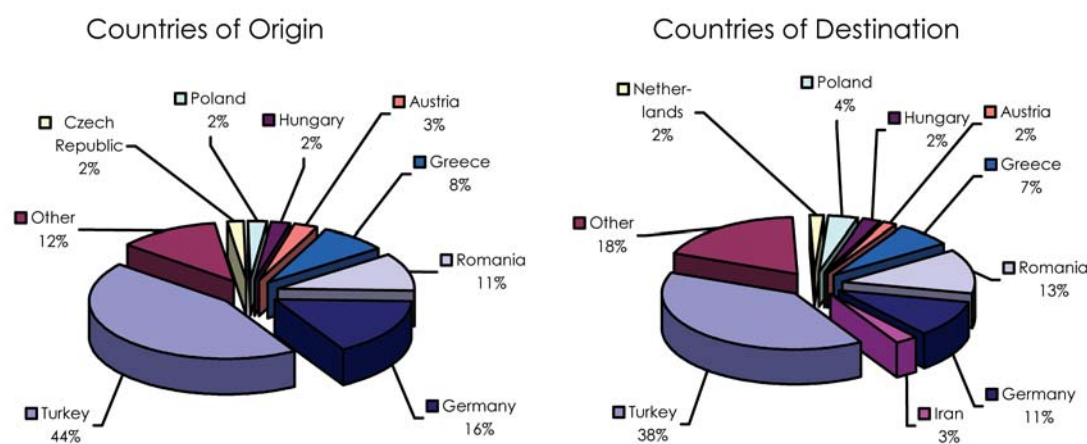
Table 7 - Estimation of potential Corridor VIII Freight Railway Traffic (1,000 tons)

Market Segment	2005	2010	2015	2020	2025
Potential transit traffic on Corridor VIII	-	18.301	22.771	27.760	33.717
Railway market share on transit traffic	-	1,4%	2,3%	4,2%	6,0%
Potential rail transit traffic on Corridor VIII	-	260	533	1.158	2.031
fYR Macedonia imports and exports using rail Corridor VIII	-	800	1.100	1.500	2.500
Total Potential Rail Freight Traffic on Corridor VIII	-	1.060	1.633	2.658	4.531

Source: elaboration of Corridor VIII Secretariat from Louis Berger Study Investment Options in the Transport Sector, October 2002.

The current freight transit transport flows through Bulgaria, in the period after 2000, amounted up to 5/6 million tons.

Of this traffic flows, the ports handled around 5% of the transit, the railways, between 5 and 10%, while the road transport traditionally held the highest share, between 85-90%.

Figure 45 - International Freight Transit Transport in Bulgaria - 2003

Source: Bulgarian Custom Agency

In conclusion the Louis Berger study indicates that the rail line of Corridor VIII could carry 1,620,000 tons in 2015 and 4.5 million tons in 2025 in a rapid growth scenario and some 3.4 tons in a slow economic transformation state.

The Scott Wilson study, *Modernization of Albanian Railways*, October 2004, also evaluates that undoubtedly, were the rail link in place, there would be an increase of rail container traffic.

According to their estimates "it would be reasonable to assume that of the 170,000 teu forecast to be using the Corridor VIII cross border route (extracted from the Moffat and Nichol Intl: Multimodal Container Study quoted in the Louis Berger SA Interim Report) at least 40% or 68,000 teu per annum (about 900,000 tons) would represent real rail potential".

Another study reporting rail traffic forecasts of Corridor VIII is ARCADIS Geraghty & Miller Inc. Regional Railroad Interconnectivity Project, January 2003. This work was financed by the U.S. Trade and Development Agency for the Ministries of Transport of Bulgaria and of fYR Macedonia.

As a follow up the Ministers of Transport of Bulgaria and fYR Macedonia signed in September 2003 a Joint Declaration endorsing the results the ARCADIS report (See Annex n. 3).

In the first scenario, the rail corridor would primarily serve fYR Macedonia, Bulgaria, and potentially Serbia and it will point North and Westward.

In the second scenario in addition to the traffic defined in the previous scenario, Albanian products could move Eastward through Europe to Turkey and beyond.

Table 8 - Scenario A: Freight Traffic, Serbian Transit Only (tons)

	2005	2010	2015	2020	2025
International	3,229,000	3,698,000	4,120,000	4,562,000	5,037,000
Transit	0	0	0	0	0
Local traffic	389,000	497,000	628,000	791,000	967,000
Total	3,618,000	4,195,000	4,748,000	5,353,000	6,004,000

Source: ARCADIS Geraghty & Miller Inc, Regional Railroad Interconnectivity Project, January 2003

Table 9 - Scenario B: Freight Traffic, Serbian and Albanian Transit (tons)

	2005	2010	2015	2020	2025
International	3,229,000	3,698,000	4,120,000	4,562,000	5,037,000
Transit	0	300,000	385,000	480,000	588,000
Local traffic	389,000	497,000	628,000	791,000	967,000
Total	3,618,000	4,495,000	5,133,000	5,833,000	6,592,000

Source: ARCADIS Geraghty & Miller Inc, Regional Railroad Interconnectivity Project, January 2003

The conclusions of the study are:

“Volumes of heavy freight - minerals, steel, and similar products - running over this section of the Corridor could reach 3.6 million tons by 2005 and grow to 5.8 million tons by 2020.

Much of this is assumed to be regional transit traffic moving over the line between fYR Macedonia and Bulgaria. It is crucial for our analysis that lignite, a type of coal used in power plants, will be sourced competitively in the future within Kosovo, Serbia, and Germany to become a higher quality and more environmentally acceptable regional alternative to local Bulgarian and Macedonian lignite.

In addition, both Bulgarian and Macedonian heavy industries should see traffic increases as plants increase their outputs. We have also determined that the number of industries using the rail infrastructure of Corridor VIII is likely to be few and concentrated in heavy industry and energy.

Other industries are likely to use trucks almost exclusively. This possible concentration of future rail freight in a few sectors should make refinements of demand forecasts relatively easy in the future”.

The Italian Ministry of Economy and Finance (Department for Development policies) also produced some estimates of potential trade flows relevant for rail Corridor VIII.

Forecast in terms of tons between Italy and the Balkans - 15 million in 2003, 5 of which from Central and Southern Italy - are estimated to increase to 24 or 27 million tons, for 2013, and to 19 or 21, for 2009, according to a more or less favorable economic scenario.

Concerning the traffic modality ratio in 2003, 6% has been hauled by rail, 62% by sea and 32% by road.

This is however a national average, looking closer to transport modality of Central and Southern areas the situation appears quite different.

Table 10 - Estimation of potential Trade volumes between Central and Southern Italy with the Balkans (million tons)

Italian Macro Area	Actual Traffic				Potential Traffic 2009
	Volumes 2003	Sea %	Road %	Rail %	
Centre	1.5	67.0	30.5	2.5	2.2
South	1.8	89.7	9.3	1.0	2.6
Islands	1.1	99.1	0.9	0.0	1.6
Total	4.4	84.3	14.4	1.3	6.4

Source: elaboration of Corridor VIII Secretariat from DPS, ISDEE - CERPEM Transport Infrastructure Development in the Balkans and their Impact on the Economy of South Italy, June 2005

Of these trade volumes, 87% are tons traveling among these Italian areas and two Adriatic Countries, Croatia and Albania (61.5%), and two Black Sea Countries, Romania and Bulgaria (25%).

The picture, on one hand, shows the actual difficulty of connecting Central and Southern Italy with the Southern Balkans, on the other, envisages the trade potential of opening new transport infrastructures in the Southern Balkans and connecting them to Italian ports.

This is basically the bottom line of the study.

The study also gives a forecast of potential commercial traffic using the section Durres-Skopje-Varna.

Table 11 - Potential trade volumes along Corridor VIII (million €)

Country	Actual Export 2003	Potential Export 2009	Potential Export 2013	Potential Volumes 2013/2003
Albania	338.5	466.9	544.3	205.8
fYR Macedonia	41.0	225.9	267.6	226.6
Bulgaria	270.0	706.4	827.7	557.7
Total	649.5	1,399.2	1,639.6	990.1

Source: DPS ISDEE - CERPEM, Transport Infrastructure Development in the Balkans and their Impact on the economy of Southern Italy, June 2005 (Part. 3, p. 71)

However, data are expressed in million € only and not in tons. In any case potential volumes traveling along Corridor VIII seem substantial, more than doubling for the year 2009 and tripling for the year 2013.

Transport modality, according to the study, should probably change in the future shifting more in favor of road and rail.

The Port Authority of Bari also developed a quantitative forecast of potential traffic flows divided by mode of transport.

The estimates refer to freight flows along the Adriatic Corridor running along the East side of the Italian peninsula, from Brindisi to Trieste, and that has the Port of Bari as one of its nodes.

The Port Authority of Bari used these forecast to develop its Operational Plan for the years 2004-2006.

Data indicate of course only road freight traffic specific to Corridor VIII and only overall tons transported by rail.

In any case the volumes are significant.

The Port of Bari is capturing increasing shares of RO-RO and containerized freight traffic. In 2003 it has moved 4 million tons and volumes are increasing pushed also by a new feeder line with the hub of Gioia Tauro operated by Maersk Sealand.

Table 12 - Total Freight Forecast for the Adriatic Corridor by transport mode

FREIGHT ROAD TRANSPORT	2000	2007	2015
	Tons		
Across Greece	13.755.708	20.951.027	25.236.819
Across Corridor VIII	940.261	1.431.000	2.399.692
Across Corridor V	3.345.825	5.515.988	7.244.734
Total Road Transport	18.041.795	27.898.015	32.881.242
FREIGHT RAILWAY TRANSPORT	2000	2007	2015
	Tons		
To/from Italy	942.101	1.648.554	2.398.147
To/from Western Europe	352.320	614.715	896.419
Total Railway Transport	1.294.421	2.263.269	3.294.566
Total Freight Transport (Road/Railway)	19.336.216	30.161.284	36.175.808

Source: World Bank 2001, reported in The Port Authority of Bari, Operational Plan 2004-2006.

Passenger Market

This market will probably play a minor part for justifying an international rail link but it can contribute to the project also because some trains will be mixed marshalled.

According to the L. Berger study, *Investment Options in the Transport Sector, component 5: rail link to Albania*, rail will be reasonably competitive for day travelers between Albania and Skopje, and for overnight travelers between Albania and Bucharest, the Black Sea and Istanbul when the speed will be 160 km/h.

More passenger traffic can be envisaged for regional and local services.

The ARCADIS Geraghty & Miller Inc. Regional Railroad Interconnectivity Project makes forecast for passenger traffic passing through Gueshevo border crossing.

Table 13 - Total Rail Passenger Forecast between fYR Macedonia and Bulgaria

Passenger traffic	2005	2010	2015	2020
International	300,000	330,000	355,000	372,000
Local	1,153,100	1,237,170	1,346,740	1,463,700
Generated	115,000	125,000	135,000	145,000
Total	1,568,100	1,692,170	1,836,740	1,980,700

Source: ARCADIS Geraghty & Miller Inc. Regional Railroad Interconnectivity Project January 2003.

The study develops different assumptions on international and local passengers traffic that lead to estimate the number reported in the table.

International passengers could amount to some 300,000, while local traffic could well rise above 1 million travelers soon after the opening of the rail link between Sofia and Skopje through Gueshevo.

Sudop Praha a.s., in the second part of its study, develops a marketing analysis of the rail transport traffic following the proposed improvement of the railways.

Modeling through the VISEM unit, a component of the planning transportation software VISION - made by PTV Karlsruhe company -, for the section Lin - fYR Macedonia border it is estimated a cross border passenger traffic with fYR Macedonia of about 300/400,000 for the years 2010-2013.

In conclusion, Corridor VIII could serve as an intermodal link between the Black Sea and the Adriatic, possibly moving containerized and other cargo as an alternative to seaborne transit from Black Sea origins to Mediterranean destinations.

The advantages of this alternative would derive from:

- 1) a shorter delivery time in the freight land traffic from Black Sea Ports to Adriatic Ports (1-2 days) as compared to the sea shipping time (4-6 days);
- 2) the restrictions imposed on shipping through the Bosphorus, due to hazards resulting from congested sea lanes.

According to the studies and evaluations mentioned in this chapter, the prospected Corridor VIII Rail line could carry more than one million tons of freight per year.

If this is the case, considering that a railroad generally breaks even financially if it transports one million tons per year, and that rail transport is on average cheaper than road transport for distances exceeding 500 km - which is the case of the typical haul from Durres to Burgas - we can conclude that the traffic potential of Rail Corridor VIII deserves to be seriously considered.

These financial and economic hypotheses together with the analysis of the present status of the rail line West of Sofia led to the identification of the DSS Rail Project.

Of course this potential must be verified through a full feasibility study that is one of the Recommendations proposed to Governments by this Report.

3.2 Preliminary identification of the Durres - Skopje - Sofia Rail Project

3.2.1 The DSS Rail Project by Investment Phases

Table 14 - Durres - Skopje - Sofia Rail Project: phases/costs GANTT Chart

		Years														
ACTIVITIES		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Feasibility study																
PHASE 1																
PHASE 2																
PHASE 3																
D S S Rail Project COSTS *																
		Years														
Investment Costs	Total	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
PHASE 1	248	2	12		126	108										
PHASE 2	286			12	110	40	105		9		10					
PHASE 3	632							220		200				200	12	
Total	1.166	2	12	12	236	148	105	220	9	200	10			200	12	

* Financial resources are distributed at the beginning of each investment phase

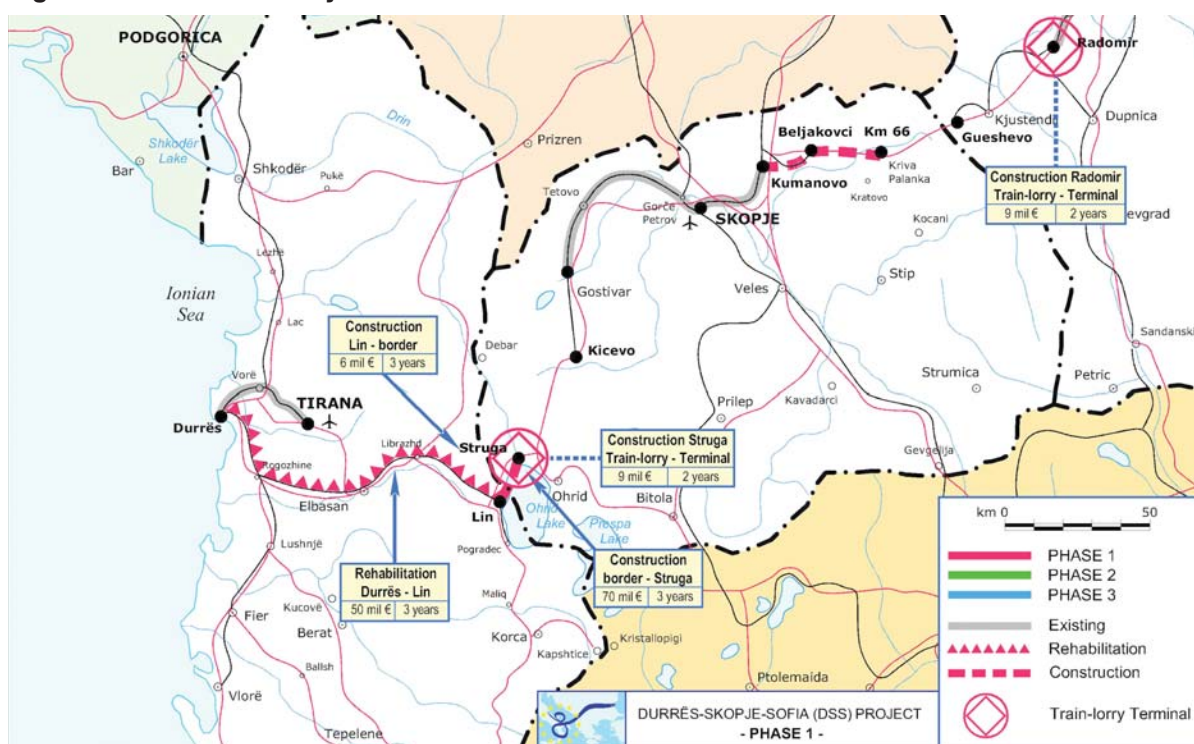


According to the preliminary evaluations developed in this study, the identified projects amount to about 1.200 € million and the proposed investment approach is to activate them progressively in three phases. The previous table shows the GANTT Chart of the three Phases and a preliminary estimation of the investment costs by Phases and by year.

FIRST PHASE: Starting the missing links construction and opening rail communications between the Central Balkans and Southern Adriatic. The project components to be activated are:

- 1) construction of the missing link Lin-Struga (cross border area Albania-fYR Macedonia);
- 2) rehabilitation of the sections Durres-Lin to minimum operating standards (Albania);
- 3) construction of two intermodal terminals in Struga (fYR Macedonia) and Radomir or Gueshevo (Bulgaria);
- 4) completing the construction of the sections Kumanovo-Beljakovci-Kriva Palanka (fYR Macedonia).

Figure 46 - DSS Rail Project: Phase 1



Source: Corridor VIII Secretariat Elaboration

During this phase, Rail freight traveling in the West-East direction would exchange transport modes in Struga (fYR Macedonia) and in Radomir or Gueshevo (Bulgaria), traveling on road for the intermediate distance of about 370 km.

The cost of this step would amount to about 248 million € and it will require about 6/7 years for completion.

In the meantime the section Kumanovo-Beljakovci-Kriva Palanka could be completed.

With this first phase fYR Macedonia would be linked by rail with Albania and the Adriatic sea and reducing at the same time the distance to the Bulgarian Border. Some international freight from/to central-East Balkans could then start traveling by rail from/to Durres port.

Of course local passenger traffic between the two Countries will also be activated.

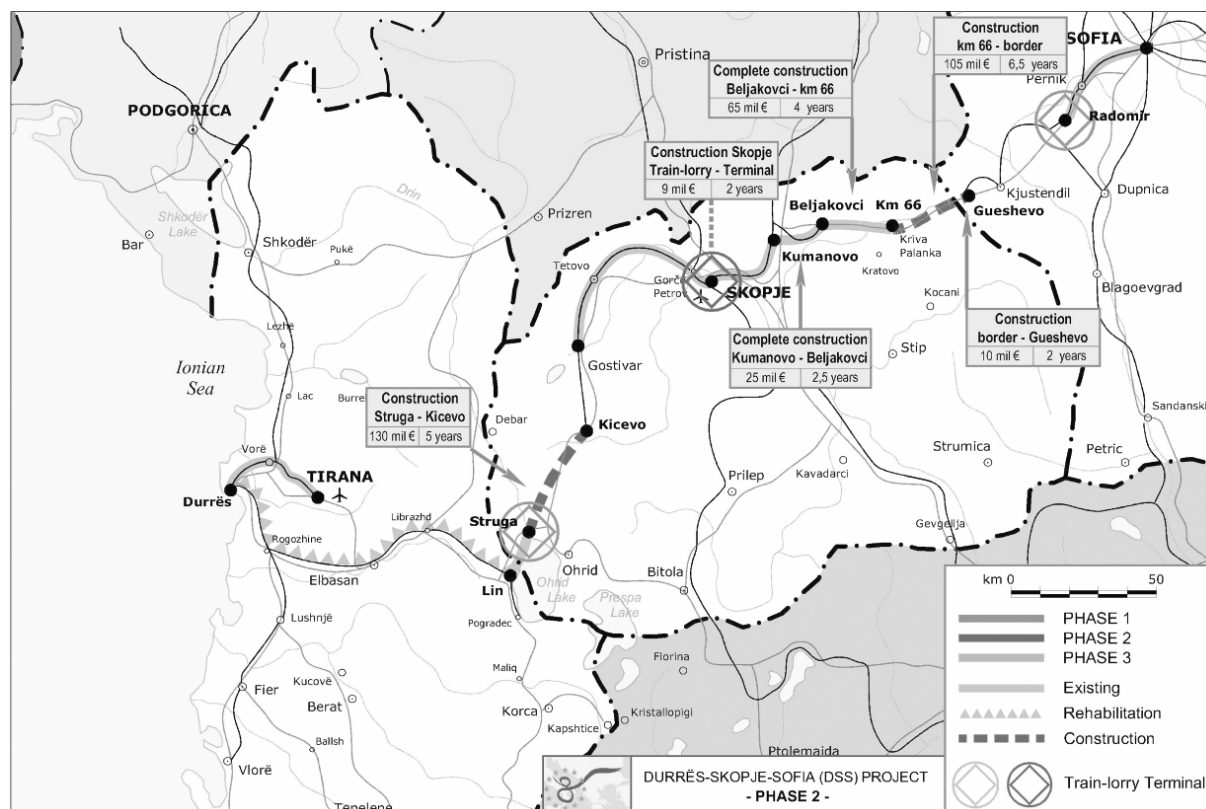
According to the Louis Berger's study, in the hypothesis that half of import-export of fYR Macedonia will start using this line and with some transit freight from/to East Balkans, investment costs should be completely recovered.

SECOND PHASE: completing the construction of the missing links thus insuring rail continuity along the entire Corridor VIII.

The project components to be activated are:

- 1) construction of the Struga-Kicevo missing link;
- 2) construction of the missing link Kriva Palanka-Gueshevo (cross border area FYR Macedonia-Bulgaria);
- 3) construction of a multimodal terminal in Skopje.

Figure 47 - DSS Rail Project: Phase 2



Source: Corridor VIII Secretariat Elaboration

The cost of this phase would amount to about 286 million € and will require 10 years for completion, because there are mountainous terrains to be crossed by long tunnels and bridges. In this phase the rail continuity of Corridor VIII is established. It must be remarked that estimated total time to complete this phase (10 years) will start at the 3rd year of the DSS Rail project (see Table 14) and not at the end of the 1st phase.

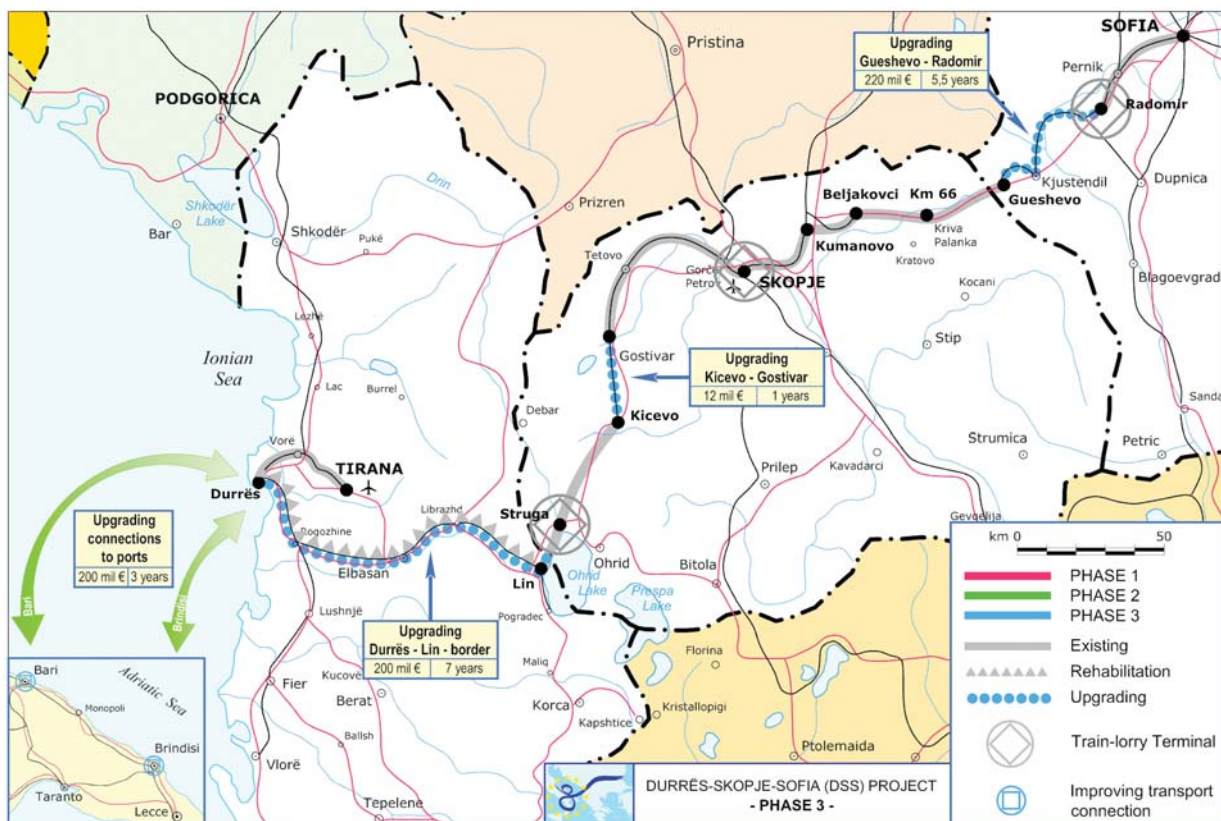
In this phase the creation of an additional intermodal terminal in Skopje (at the crossing between Corridor VIII and Corridor X) is suggested, to offer more intermodal choices. Therefore in about 10 years from now, by 2017, a Rail Corridor VIII can be fully operational even though it will not be in the best possible technical standards.



THIRD PHASE: improving the Rail Corridor standards. The project component to be activated are:

- 1) upgrading the section Durrës-Lin (Albania);
- 2) upgrading the section Gueshevo-Radomir (Bulgaria);
- 3) upgrading the section Kicevo-Gostivar (fYR Macedonia)
- 4) improving the rail connections in the ports of Bari/Brindisi.

Figure 48 - DSS Rail Project: Phase 3



Source: Corridor VIII Secretariat Elaboration

This phase is the most expensive, requiring about 632 million €. It will take about 9 years *per se*; however it will take 15 years from the start of the DSS Rail Project in order to achieve the full implementation of Rail Corridor VIII (see Table 14).

3.2.2. The DSS Rail Project by Country

Investment costs, amounting to about 1,200 million €, will be distributed in the following shares: 23% in Albania, 38% in fYR Macedonia, 21% in Bulgaria and 18% in Italy.

These percentages do not include the money for feasibility, planning and tendering procedures, estimated at about a total 46 million €. The higher percentage is of course in fYR Macedonia because the main missing links are located in this area, the lower percentage in Italy, at the final phase of the project, for improving the rail connections and intermodal infrastructure within the ports of Bari and Brindisi.

Table 15 - Durres-Skopje-Sofia: DSS RAIL PROJECT by Phase and Country

		Italy	Albania	fYR Macedonia	Bulgaria	Investments	
						Costs (€ mil)	Timing
		Construction planning and tendering procedures (1st, 2nd and 3rd phases)				46	-
	PHASE 1		Rehabilitation section Dures-Lin (km 137), without electrification and speed increase € 50 mil	Construction new section Albanian border-Struga (km 13,5) € 70 mil	Construction intermodal terminal in Radomir or Gueshevo € 9 mil	234	7.5*
			Construction new section Lin- Macedonian border (km 3) € 6 mil	Construction intermodal terminal in Struga € 9 mil			
				Completion section Kumanovo-Beljakovci- Kriva- Palanka (km 66) € 90 mil			
	PHASE 2				Construction new section Macedonian border-Gueshevo (km 3) € 10 mil	254	10*
				Construction new section Kriva Palanka- Bulgarian border (km 23) € 105 mil			
				Construction new section Struga-Kicevo (km 53,5) € 130 mil			
				Construction intermodal terminal in Skopje € 9 mil			
	PHASE 3	Upgrading rail connections in the ports Bari/Brindisi € 200 mil	Upgrading and electrification Dures- Lin-Macedonian border (km 140) € 200 mil	Upgrading section Kicevo-Gostivar (km 40) € 12 mil	Upgrading section Gueshevo-Radomir (km 88) € 220 mil	632	9*
		200 (18%)	256 (23%)	425 (38%)	239 (21%)		
		1.166 € mil					

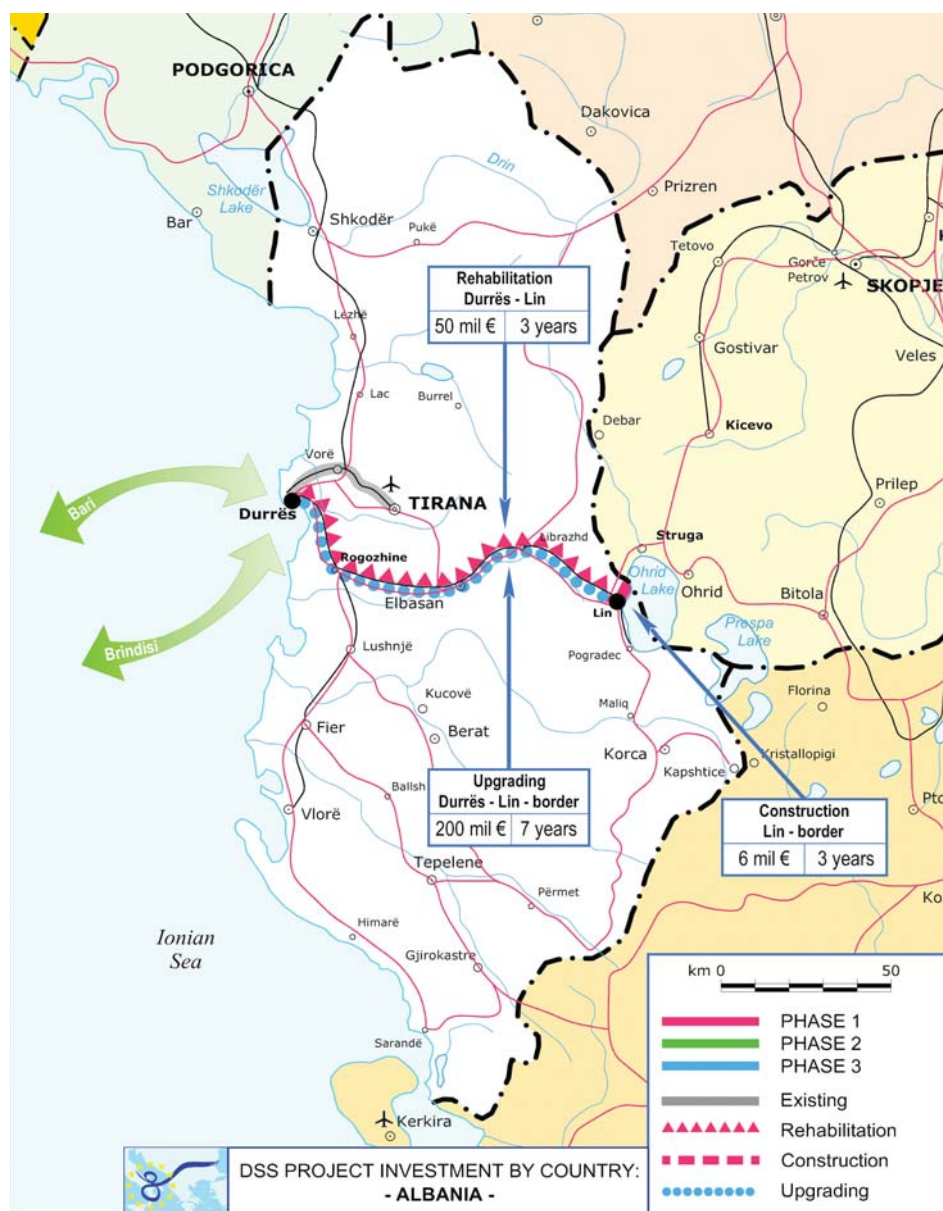
*Note: the starting years for implementation of second and third phases, are earlier than the end of the previous phases. (Also See Table 14)



Albania

In the first phase, the investment components in Albania are concentrated on the rail segment from Durrës to Lin station, to assure minimum standard of railway operating safety, and on the construction of the cross-border missing link Lin-Struga, between Albania and FYR Macedonia. In the third phase the investments are aimed to upgrade the Durrës-Lin line to international standards.

Figure 49 - DSS Rail Project in Albania



Source: Corridor VIII Secretariat Elaboration

The reason to proceed gradually on the same rail section is justified by the necessity to activate some rail traffic as soon as possible, without having to wait the full completion of the entire segment from Durrës to Sofia, which could require 15 years.

A first meaningful rail connection Durrës-Lin-Struga can in fact be achieved in five years, anticipating the full completion of the entire segment by ten years. This will also allow to better measure and influence the progress in freight traffic growth, in order to invest on the following stages.

Project fiches of the described investments follow:

Country: Albania		
Section: Durres – Lin		
Project Name: Rehabilitation of the section Durres-Lin		
DSS Rail Project Phase 1	AL-Ph1-1	

Project Name:	Rehabilitation of the section Durres-Lin					
Nature of Project:	New	Rehabilitation	Upgrade	Other		
Location:	Secretariat Map AL-Ph1-1					
Status of Project:	Project Identification / Pre-feasibility study	Feasibility study	Budgeting and Financing Plan	Detailed Design	Tendering	Under Construction
Project Objectives:	Secure the existing line from the Port of Durres to the rail station of Lin in order to allow traffic from the port towards the new Intermodal Terminal in Struga (f.Y.R. Macedonia).					
Estimated Investment Cost:	50 million €					
Expected Benefits:	Allowing a new international Freight line creating freight traffic for the east-west alignment; establishing rail continuity between Albania and f.Y.R. Macedonia; enhancing viability of rail operations in Albania; stimulating economic activities in the South Balkans; securing improved inter-regional links and Macedonian access to the Adriatic Sea opening the potential for establishing a rail link with f.Y.R. Macedonia once construction of the new segment (Lin- Macedonian border) is completed.					
Existing Reports:	TIRS AL-R-03 (2002). Sudop Praha a. s., Feasibility Study Tirana-Durres-Elbasan-Lin-Macedonian Frontier Railway (2003). Scott Wilson, Modernisation of Albanian Railways Report (2004). World Bank, Railway Reform in the Western Balkans (2005).					
Implementation Programme (years):	Preparation: 1		Expropriation: 0		Construction: 2	Total: 3
Implementation Authority:	General Directorate of Railways, Ministry of Transport					
Additional Info:	This project is included in the Albanian National Transport Plan.					



Country: Albania		
Section: Lin – fYR Macedonia border		
Project Name: Construction of the section Lin - Macedonian Border		
DSS Rail Project Phase 1	AL-Ph1-2	

Project Name:	Construction of the section Lin - f.Y.R. Macedonia Border					
Nature of Project:	<u>New</u>	Rehabilitation	Upgrade	Other		
Location:	Secretariat Map AL-ph1-2					
Status of Project:	Project Identification / Pre-feasibility study	Feasibility study	Budgeting and Financing Plan	<u>Detailed Design</u>	Tendering	Under Construction
Project Objectives:	Completing the rail network (3 km) in Albania in order to activate the first segment of Rail Pan European Corridor VIII from the Port of Durres to the Intermodal terminal in Struga.					
Estimated Investment Cost:	6 million €					
Expected Benefits:	Creating a new international Freight line allowing for freight traffic on the east-west alignment; establishing rail continuity between Albania and f.Y.R. Macedonia; stimulating economic activities in the South Balkans; securing improved inter-regional links and Macedonian access to the Adriatic Sea; opening the potential for establishing a rail link with f.Y.R. Macedonia once rehabilitation of the existing line (Durres- Lin) is completed.					
Existing Reports:	TIRS AL-R-02 (2002). Sudop Praha a. s., Feasibility Study Tirana-Durres-Elbasan-Lin-Macedonian Frontier Railway (2003). Scott Wilson, Modernisation of Albanian Railways Report (2004). World Bank, Railway Reform in the Western Balkans (2005).					
Implementation Programme (years):	Preparation: 0		Expropriation: 1		Construction: 2	Total: 3
Implementation Authority:	General Directorate of Railways, Ministry of Transport					
Additional Info:	This project is included in the Albanian National Transport Plan; Bilateral Agreement Albania- f.Y.R. Macedonia, Ohrid, 18/11/2004; Technical protocol – Ohrid, 14/07/2005					

Country: Albania		
Section: Durres – Lin		
Project Name: Upgrading of the section Durres - Lin		
DSS Rail Project Phase 3	AL-Ph3-1	

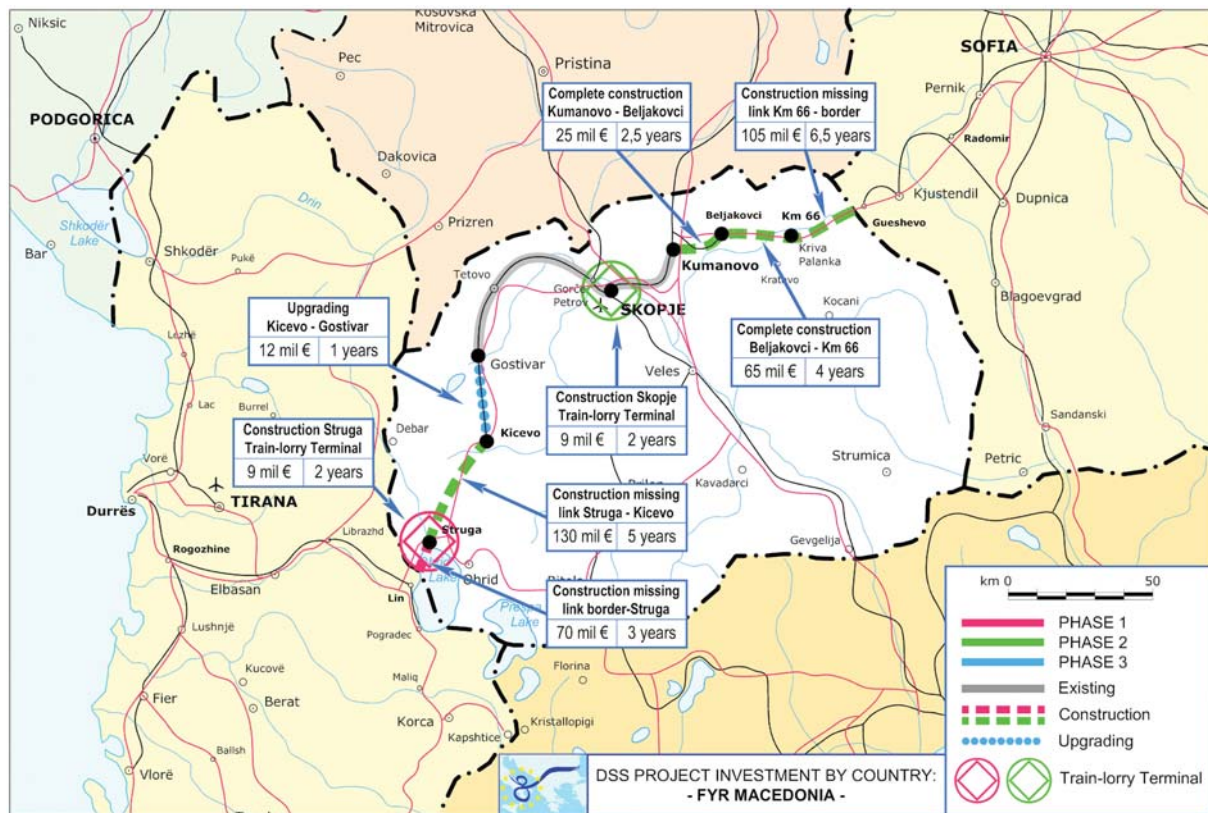
Project Name:	Upgrading of the section Durres - Lin					
Nature of Project:	New	Rehabilitation	Upgrade	Other		
Location:	Secretariat Map AL-Ph3-1					
Status of Project:	Project Identification / Pre-feasibility study	Feasibility study	Budgeting and Financing Plan	Detailed Design	Tendering	Under Construction
Project Objectives:	Upgrading the rail network from Durres to the Macedonian border (137 km), improving max. speed, electrification and signalling.					
Estimated Investment Cost:	200 million €					
Expected Benefits:	Improving rail efficiency of Rail Corridor VIII in Albania; increasing international Freight traffic on the east-west alignment (from Burgas-Varna to Bari-Brindisi through Durres); stimulating economic activities in the South Balkans; securing improved inter-regional links and South Balkans access to the Adriatic Sea; developing the potential for establishing a direct rail link between Durres and Sofia together with the upgrading of the Gueshevo-Radomir segment.					
Existing Reports:	TIRS AL-R-03 (2002). Sudop Praha a. s., Feasibility Study Tirana-Durres-Elbasan-Lin-Macedonian Frontier Railway (2003). Scott Wilson, Modernisation of Albanian Railways Report (2004). World Bank, Railway Reform in the Western Balkans (2005).					
Implementation Programme (years):	Preparation: 2		Expropriation: 0		Construction: 5	Total: 7
Implementation Authority:	General Directorate of Railways, Ministry of Transport					
Additional Info:	This project is included in the Albanian National Transport Plan.					



fYR Macedonia

The main investment effort is concentrated in fYR Macedonia, as this country includes 97% of new rail sections to be constructed.

Figure 50 - DSS Rail Project in fYR Macedonia



In the first phase, the investments include the construction of the cross-border missing link Lin(Albania)-Struga, the construction of the intermodal terminal in Struga and the completion of the ongoing section Kumanovo-Kriva Palanka.

With this connection, a first rail connection between the Adriatic Sea (Port of Durrës) and fYR Macedonia is established with minimum investment, opening a new transit flow potential. The growth of this traffic will justify more investments in later years to complete the rail corridor.

Once an increased freight traffic demand has been established, the completion of the most challenging part of the rail corridor will proceed: the construction of the rail missing link Struga-Kicevo and the construction of the Kriva Palanka-Bulgarian Border segment.

In fact, even though these works are included in the second phase, the preparatory phases (feasibility, detailed design, tendering) will start during the first Phase.

The political orientation for the realization of the rail connection between fYR Macedonia and Bulgaria was established in September 2003 between the Ministers of Transport and the Ministers of Finance of Bulgaria and fYR Macedonia in the circumstance of the joint positive reception of ARCADIS study.

For that event a Joint Declaration "on accelerated realization of the project for the interconnection of the railway networks of the two Countries as a key element of Pan-European transport Corridor VIII" was signed.

In the declaration there is an agreement for the priorities in realizing the interconnection:

- Phase I) construction of missing links Gueshevo - border (Bulgarian part) and Beljakovci - Kriva Palanka - border (fYR Macedonia part);
- Phase II) reconstruction/rehabilitation Gueshevo – Kustendil -Radomir (Bulgarian part) and Kumanovo - Beljakovci (fYR Macedonia part);
- Phase III) electrification.

Project fiches of the described investments follow.



Country: fYR Macedonia		
Section: Albanian Border - Struga		
Project Name: Construction of the section Albanian Border - Struga		
DSS Rail Project Phase 1	MA-Ph1-1	

Project Name:	Construction of the section Albanian Border - Struga					
Nature of Project:	<u>New</u>	Rehabilitation	Upgrade	Other		
Location:	Secretariat Map MA-Ph1-1					
Status of Project:	Project Identification / Pre-feasibility study	<u>Feasibility study</u>	Budgeting and Financing Plan	Detailed Design	Tende-ring	Under Construc-tion
Project Objectives:	Completing the rail network (12 km) in FYR Macedonia in order to activate the first segment of Rail Pan European Corridor VIII from the Port of Durres to the Intermodal terminal in Struga.					
Estimated Investment Cost:	70 million €					
Expected Benefits:	Creating a new international Freight line allowing for freight traffic on the east-west alignment; establishing rail continuity between Albania and f.Y.R. Macedonia; stimulating economic activities in the South Balkans; securing improved inter-regional links and Macedonian access to the Adriatic Sea; opening the potential for establishing a rail link with f.Y.R. Macedonia once rehabilitation of the existing line (Durres- Lin) is completed.					
Existing Reports:	TIRS MA-R-06 (2002). Louis Berger SA, Investment Options in the Transport Sector, component 5 Rail Link to Albania, (2002); Louis Berger SA, Investment Options in the Transport Sector, component 6c Strategy for Developing Multi-Modal Terminals Final Technical Report (2002)					
Implementation Programme (years):	Preparation: 1		Expropriation: 1		Construction: 3	Total: 5
Implementation Authority:	General Directorate of Railways, Ministry of Transport					
Additional Info:	This project is included in the Macedonian National Transport Plan; Bilateral Agreement Albania – f.Y.R. Macedonia, Ohrid, 18/11/2004; Technical protocol – Ohrid, 14/07/2005					



Country: fYR Macedonia		
Section: Albanian border - Struga		
Project Name: Construction of a multimodal terminal in Struga		
DSS Rail Project Phase 1	MA-Ph1-2	

Project Name:	Construction of a multimodal terminal in Struga					
Nature of Project:	New	Rehabilitation	Upgrade	Other		
Location:	Secretariat Map MA-Ph1-2					
Status of Project:	Project Identification / Pre-feasibility study	<u>Feasibility study</u>	Budgeting and Financing Plan	Detailed Design	Tendering	Under Construction
Project Objectives:	Construction of an intermodal facility to allow freight transfer between rail and road transport systems.					
Estimated Investment Cost:	9 million €					
Expected Benefits:	Freight transfer between rail and road transport systems will allow trade flows between segments not yet connected by Rail Corridor VIII. When the rail link will be activated, the intermodal terminal may be used as a transfer point between the two transport systems, thus supporting the economic and industrial development of the surrounding area.					
Existing Reports:	Louis Berger SA, Investment Options in the Transport Sector					
Implementation Programme (years):	Preparation: 1		Expropriation: 0		Construction: 1	Total: 2
Implementation Authority:	General Directorate of Railways, Ministry of Transport					
Additional Info:	This project is included in the f.Y.R. Macedonia National Transport Plan. This project has been included in the HLG report, list 3, n.40.					



Country: fYR Macedonia		
Section: Kumanovo – Beljakovci		
Project Name: Completing the construction of the section Kumanovo – Beljakovci		
DSS Rail Project Phase 1	MA-Ph1-3	

Project Name:	Completing the construction of the section Kumanovo – Beljakovci					
Nature of Project:	New	Rehabilitation	Upgrade	Other		
Location:	Secretariat Map MA-Ph2-3					
Status of Project:	Project Identification / Pre-feasibility study	Feasibility study	Budgeting and Financing Plan	Detailed Design	Tendering	Under Construction
Project Objectives:	Completing the rail network (29 km) already in construction in f.Y.R. Macedonia in order to connect Skopje to Sofia.					
Estimated Investment Cost:	25 million €					
Expected Benefits:	Establishing rail continuity of Corridor VIII; creating a new international Freight line allowing for freight traffic on the east-west alignment (from Burgas-Varna to Bari-Brindisi through Durres); stimulating economic activities in the South Balkans; securing improved inter-regional links and South Balkans access to the Adriatic Sea; opening the potential for establishing a direct rail link between Durres and Sofia once the construction of the missing link Beljakovci - Gueshevo is completed.					
Existing Reports:	Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ), Feasibility Study Railway Link Macedonia-Bulgaria (1995) TIRS MA-R-01 (2002). USTDA, Regional Railroad Interconnectivity Project- Feasibility Study, ARCADIS Geraghty & Miller Inc, (2003)					
Implementation Programme (years):	Preparation: 0		Expropriation: 0		Construction: 3	Total: 3
Implementation Authority:	General Directorate of Railways, Ministry of Transport					
Additional Info:	This project is included in the Macedonian National Transport Plan; This segment has been included in the HLG Report, list 1, project n.9					

Country: fYR Macedonia		
Section: Beljakovci – Kriva Palanka (km 66)		
Project Name: Completing the construction of the section Beljakovci–Kriva Palanka (km 66)		
DSS Rail Project Phase 1	MA-Ph1-4	

Project Name:	Completing the construction of the section Beljakovci –Kriva Palanka (km 66)					
Nature of Project:	New	Rehabilitation	Upgrade	Other		
Location:	Secretariat Map MA-Ph2-4					
Status of Project:	Project Identification / Pre-feasibility study	Feasibility study	Budgeting and Financing Plan	Detailed Design	Tendering	Under Construction
Project Objectives:	Completing the rail network (37 km) already in construction in f.Y.R. Macedonia in order to connect Skopje to Sofia.					
Estimated Investment Cost:	65 million €					
Expected Benefits:	Establishing rail continuity of Corridor VIII; creating a new international Freight line allowing for freight traffic on the east-west alignment (from Burgas-Varna to Bari-Brindisi through Durres); stimulating economic activities in the South Balkans; securing improved inter-regional links and South Balkans access to the Adriatic Sea; opening the potential for establishing a direct rail link between Durres and Sofia once the construction of the missing link Kriva Palanka - Gueshevo is completed.					
Existing Reports:	Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ), Feasibility Study Railway Link Macedonia-Bulgaria (1995) TIRS MA-R-01 (2002). USTDA, Regional Railroad Interconnectivity Project- Feasibility Study, ARCADIS Geraghty & Miller Inc, (2003)					
Implementation Programme (years):	Preparation: 0		Expropriation: 0		Construction: 4	Total: 4
Implementation Authority:	General Directorate of Railways, Ministry of Transport					
Additional Info:	This project is included in the Macedonian National Transport Plan; f.Y.R. Macedonia and Bulgaria have signed Protocol of Understanding (Sofia, 09/2001) and a Joint Declaration (09/2003) This segment has been included in the HLG Report, list 1, project n.9					



Country: fYR Macedonia		
Section: Struga - Kicevo		
Project Name: Construction of the section Struga - Kicevo		
DSS Rail Project Phase 2	MA-Ph2-1	

Project Name:	Construction of the section Struga - Kicevo					
Nature of Project:	New	Rehabilitation	Upgrade	Other		
Location:	Secretariat Map MA-Ph2-1					
Status of Project:	Project Identification / Pre-feasibility study	Feasibility study	Budgeting and Financing Plan	Detailed Design	Tendering	Under Construction
Project Objectives:	Completing the rail network (53 km) in f.Y.R. Macedonia in order to implement the first segment of Rail Pan European Corridor VIII from the Port of Durres to the Intermodal terminal in Struga.					
Estimated Investment Cost:	130 million €					
Expected Benefits:	Creating a new international Freight line allowing for freight traffic on the east-west alignment; establishing rail continuity between Albania and f.Y.R. Macedonia; stimulating economic activities in the South Balkans; securing improved inter-regional links and Macedonian access to the Adriatic Sea; opening the potential for establishing a rail link with f.Y.R. Macedonia once rehabilitation of the existing line (Durres- Lin) is completed.					
Existing Reports:	TIRS MA-R-06 (2002). Louis Berger SA, Investment Options in the Transport Sector, component 5 Rail Link to Albania, (2002);					
Implementation Programme (years):	Preparation: 1		Expropriation: 1		Construction: 3	Total: 5
Implementation Authority:	General Directorate of Railways, Ministry of Transport					
Additional Info:	This project is included in the Macedonian National Transport Plan; Bilateral Agreement Albania – f.Y.R. Macedonia, Ohrid, 18/11/2004; Technical protocol – Ohrid, 14/07/2005 This segment has been included in the HLG Report. list 1. project n.10					

Country: fYR Macedonia		
Section: Gostivar – Skopje - Kumanovo		
Project Name: Construction of a multimodal terminal in Skopje		
DSS Rail Project Phase 2	MA-Ph2-2	

Project Name:	Construction of a multimodal Terminal in Skopje					
Nature of Project:	New	Rehabilitation	Upgrade	Other		
Location:	Secretariat Map MA- Ph2-2					
Status of Project:	<u>Project Identification / Pre-feasibility study</u>	Feasibility study	Budgeting and Financing Plan	Detailed Design	Tendering	Under Construction
Project Objectives:	Construction of an intermodal facility to allow freight transfer between rail and road transport systems.					
Estimated Investment Cost:	9 million €					
Expected Benefits:	Freight transfer between rail and road transport systems will allow trade flows between segments not yet connected by Rail Corridor VIII. When the rail link will be activated, the intermodal terminal may be used as a transfer point between the two transport systems, thus supporting the economic and industrial development of the surrounding area.					
Existing Reports:	Louis Berger SA, Investment Options in the Transport Sector					
Implementation Programme (years):	Preparation: 1		Expropriation: 0,5	Construction: 1		Total: 2,5
Implementation Authority:	General Directorate of Railways, Ministry of Transport					
Additional Info:	This project is included in the f.Y.R. Macedonia National Transport Plan.					



Country: fYR Macedonia		
Section: Kriva Palanka - Bulgarian border		
Project Name: Construction of the section Kriva Palanka (km 66) to the Bulgarian border		
DSS Rail Project Phase 2	MA-Ph2-3	

Project Name:	Construction of the section Kriva Palanka (km 66) to the Bulgarian border					
Nature of Project:	New	Rehabilitation	Upgrade		Other	
Location:	Secretariat Map MA-Ph2-5					
Status of Project:	Project Identification / Pre-feasibility study	Feasibility study	Budgeting and Financing Plan	Detailed Design	Tendering	Under Construction
Project Objectives:	Completing the rail network to connect Skopje to Sofia by constructing a new section (23 km)					
Estimated Investment Cost:	105 million €					
Expected Benefits:	Establishing rail continuity of Corridor VIII; creating a new international Freight line allowing for freight traffic on the east-west alignment (from Burgas-Varna to Bari-Brindisi through Durres); stimulating economic activities in the South Balkans; securing improved inter-regional links and South Balkans access to the Adriatic Sea; opening the potential for establishing a direct rail link between Durres and Sofia once the construction of the missing link Macedonian border - Gueshevo is completed.					
Existing Reports:	Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ), Feasibility Study Railway Link Macedonia-Bulgaria (1995) TIRS MA-R-01 (2002). USTDA, Regional Railroad Interconnectivity Project- Feasibility Study, ARCADIS Geraghty & Miller Inc, (2003)					
Implementation Programme (years):	Preparation: 2		Expropriation: 1		Construction: 6	Total: 9
Implementation Authority:	General Directorate of Railways, Ministry of Transport					
Additional Info:	This project is included in the Macedonian National Transport Plan; f.Y.R. Macedonia and Bulgaria have signed Protocol of Understanding (Sofia, 09/2001) and a Joint Declaration (09/2003) This segment has been included in the HLG Report, list 1, project n.9					

Country: fYR Macedonia		
Section: Kicevo - Gostivar		
Project Name: Upgrading of the section Kicevo - Gostivar		
DSS Rail Project Phase 3	MA-Ph3-1	

Project Name:	Upgrading of the section Kicevo - Gostivar					
Nature of Project:	New	Rehabilitation	Upgrade		Other	
Location:	Secretariat Map MA-Ph3-1					
Status of Project:	<u>Project Identification / Pre-feasibility study</u>	Feasibility study	Budgeting and Financing Plan	Detailed Design	Tendering	Under Construction
Project Objectives:	Upgrading the rail network from Skopje to Durres (40 km), improving max. speed, electrification and signalling.					
Estimated Investment Cost:	12 million €					
Expected Benefits:	Improving rail efficiency of Rail Corridor VIII in f.Y.R. Macedonia; increasing international Freight traffic on the east-west alignment (from Burgas-Varna to Bari-Brindisi through Durres); stimulating economic activities in the South Balkans; securing improved inter-regional links and South Balkans access to the Adriatic Sea; developing the potential for establishing a direct rail link between Durres and Sofia together with the upgrading of the Gueshevo-Radomir and the Durres-Lin segments.					
Existing Reports:	Louis Berger SA, Investment Options in the Transport Sector, component 5 Rail Link to Albania, (2002);					
Implementation Programme (years):	Preparation: 0		Expropriation: 0		Construction: 1	Total: 1
Implementation Authority:	General Directorate of Railways, Ministry of Transport					
Additional Info:						

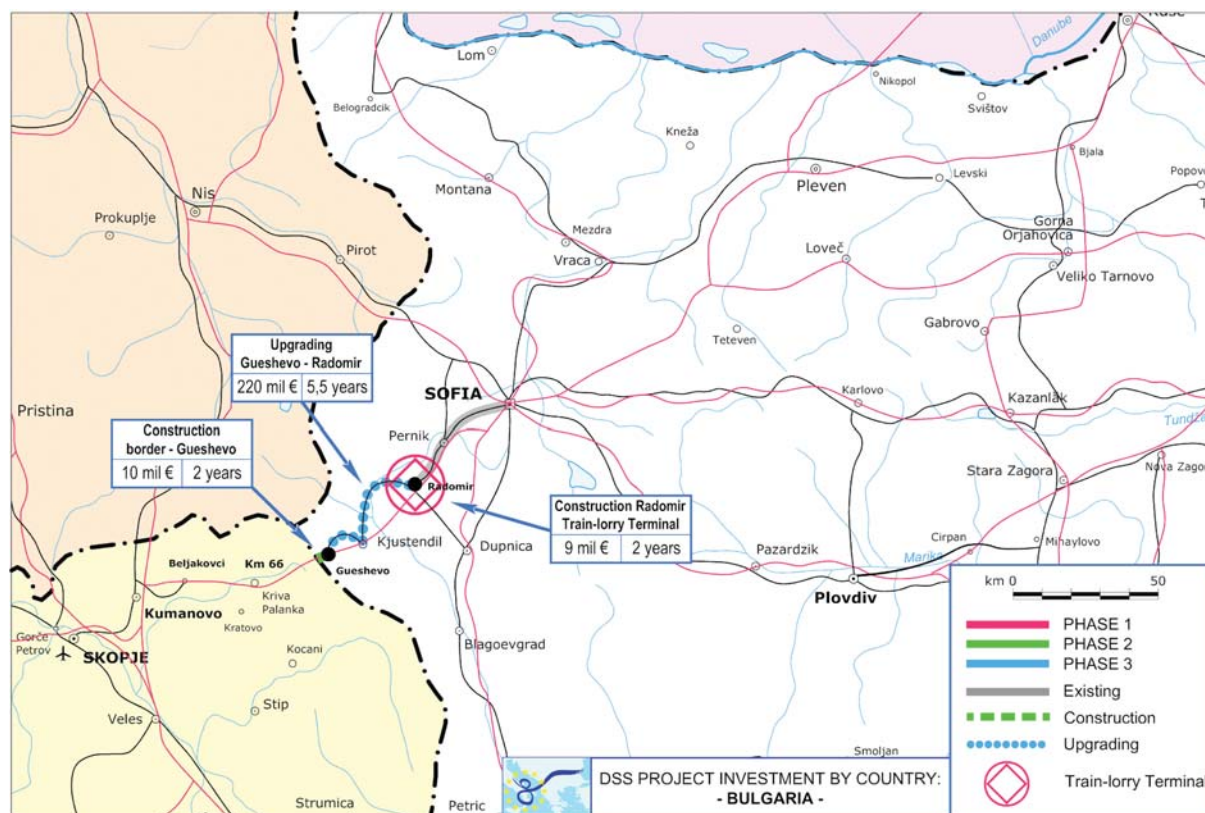


Bulgaria

Investment components in Bulgaria include:

- during the first phase the construction of an intermodal terminal in Radomir, which will collect the freight traffic along road Corridor VIII route;
- in the second phase the completion of the short missing link from Gueshevo to fYR Macedonia border, in coordination with the completion of the more challenging Macedonian side of the fYR Macedonia-Bulgaria rail missing link;
- in the third phase the upgrading of the section Gueshevo-Kjustendil-Radomir .

Figure 51 - DSS Rail Project in Bulgaria



Source: Corridor VIII Secretariat Elaboration

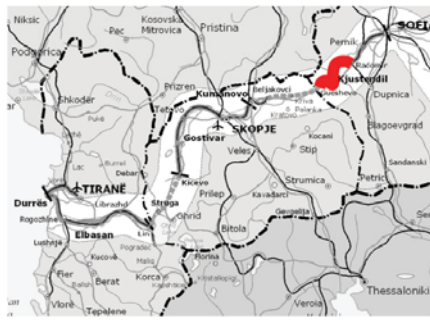
Project fiches of the described investments follow.

Country: Bulgaria		
Section: Macedonian border - Gueshevo		
Project Name: Construction of a multimodal terminal in Gueshevo or Radomir		
DSS Rail Project Phase 1	BU-Ph1-1	

Project Name:	Construction of a multimodal terminal in Gueshevo or Radomir					
Nature of Project:	New	Rehabilitation	Upgrade		Other	
Location:	Secretariat Map BU-Ph1-1					
Status of Project:	Project Identification / Pre-feasibility study	Feasibility study	Budgeting and Financing Plan	Detailed Design	Tendering	Under Construction
Project Objectives:	Construction of an intermodal facility to allow freight transfer between rail and road transport systems.					
Estimated Investment Cost:	9 million €					
Expected Benefits:	Freight transfer between rail and road transport systems will allow trade flows between segments not yet connected by Rail Corridor VIII. When the rail link will be activated, the intermodal terminal may be used as a transfer point between the two transport systems, thus supporting the economic and industrial development of the surrounding area.					
Existing Reports:						
Implementation Programme (years):	Preparation: 1		Expropriation: 0,5		Construction: 1	Total: 2,5
Implementation Authority:	General Directorate of Railways, Ministry of Transport					
Additional Info:	Terminal location (Gueshevo or Radomir) will be decided by Bulgarian authorities consistently with national transport planning priorities.					

Country: Bulgaria		
Section: Macedonian border - Gueshevo		
Project Name: Completing the Construction of the section Macedonian border - Gueshevo		
DSS Rail Project Phase 2	BU-Ph2-1	

Project Name:	Completing the Construction of the section Macedonian border - Gueshevo					
Nature of Project:	New	Rehabilitation	Upgrade		Other	
Location:	Secretariat Map BU-Ph2-1					
Status of Project:	Project Identification / Pre-feasibility study	Feasibility study	Budgeting and Financing Plan	Detailed Design	Tendering	<u>Under Construction</u>
Project Objectives:	Completing the rail network to connect Skopje to Sofia by constructing a new section (2,5 km)					
Estimated Investment Cost:	10 million €					
Expected Benefits:	Establishing rail continuity of Corridor VIII; creating a new international Freight line allowing for freight traffic on the east-west alignment (from Burgas-Varna to Bari-Brindisi through Durres); stimulating economic activities in the South Balkans; securing improved inter-regional links and South Balkans access to the Adriatic Sea; opening the potential for establishing a direct rail link between Durres and Sofia once the construction of the missing link Macedonian border - Gueshevo is completed.					
Existing Reports:	Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ), Feasibility Study Railway Link Macedonia-Bulgaria (1995) TIRS MA-R-01 (2002). USTDA, Regional Railroad Interconnectivity Project- Feasibility Study, ARCADIS Geraghty & Miller Inc, (2003)					
Implementation Programme (years):	Preparation: 0		Expropriation: 0		Construction: 2	Total: 2
Implementation Authority:	General Directorate of Railways, Ministry of Transport					
Additional Info:	f.Y.R. Macedonia and Bulgaria have signed a Protocol of Understanding (Sofia, 09/2001) and a Joint Declaration (09/2003)					

Country: Bulgaria		
Section: Gueshevo - Radomir		
Project Name: Upgrading of the section Gueshevo – Radomir		
DSS Rail Project Phase 3	BU-Ph3-1	

Project Name:	Upgrading of the section Gueshevo – Radomir					
Nature of Project:	New	Rehabilitation	Upgrade		Other	
Location:	Secretariat Map BU-Ph3-1					
Status of Project:	Project Identification Pre-feasibility study	Feasibility study	Budgeting and Financing Plan	Detailed Design	Tendering	Under Construction
Project Objectives:	Upgrading the rail network from Sofia to the Macedonian border(88 km), improving max. speed, electrification and signalling					
Estimated Investment Cost:	220 million €					
Expected Benefits:	Improving rail efficiency of Rail Corridor VIII in Bulgaria; increasing international Freight traffic on the east-west alignment (from Burgas-Varna to Bari-Brindisi through Durres); stimulating economic activities in the South Balkans; securing improved inter-regional links and South Balkans access to the Adriatic Sea; developing the potential for establishing a direct rail link between Durres and Sofia together with the upgrading of the Durres-Lin segment.					
Existing Reports:	Transproekt, Feasibility study for reconstruction, electrification of the Gyueshevo-Radomir railway line, 1992. Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ), Feasibility Study Railway Link Macedonia-Bulgaria (1995) Transproekt, Detailed design connection between Bulgaria and FYROM, 1997. TIRS BU-R-06 (2002).					
Implementation Programme (years):	Preparation: 1		Expropriation: 0		Construction: 5	Total: 6
Implementation Authority:	General Directorate of Railways, Ministry of Transport					
Additional Info:	f.Y.R. Macedonia and Bulgaria have signed Protocol of Understanding (Sofia, 09/2001) and a Joint Declaration (09/2003)					

Italy

Italy represents the western end of Corridor VIII. The projects planned in phase 3 are aimed at developing the operational capacity of the concerned Adriatic ports, increasing intermodality and implementing the rail connections with the Italian system of rails and roads.

Particularly, the investments to be brought to the ports of Bari and Brindisi, will increase the tonnage of the freight stocked and transferred by different ways of transport. Improvements to the ports system will allow new commercial opportunities in freight, ro-ro, and passenger sectors.

Moreover, electrification of the rail link between Bari and Brindisi, and upgrades of railroad connections with the Trans-European Corridor I (Berlin-Palermo) will guarantee a valuable acceleration of flows of goods and passengers towards Central Europe and the Balkan Region.



Country: Italy		
Section: Rail connections with italian system		
Project Name: Upgrading rail connections in the ports of Bari and Brindisi		
DSS Rail Project Phase 3	IT-Ph3-1	

Project Name:	Rail Connctions in the ports of Bari and Brindisi					
Nature of Project:	New	Rehabilitation	Upgrade		Other	
Location:	Secretariat Map IT-Ph3-1					
Status of Project:	<u>Project Identification</u> <u>Pre-feasibility study</u>	Feasibility study	Budgeting and Financing Plan	Detailed Design	Tendering	Under Construction
Project Objectives:	Projects related to Corridor VIII to be developed in Italy, are mainly concentrated in the territory of the Puglia Region and are described in the section 2.6 dedicated to Italy National Plan					
Estimated Investment Cost:	200 million €					
Expected Benefits:	Improving rail efficiency of Rail Corridor VIII in Italy; increasing international Freight traffic on the east-west alignment (from Burgas-Varna to Bari-Brindisi through Dures); stimulating economic activities in Southern Italy;					
Existing Reports:						
Implementation Programme (years):	Preparation:		Expropriation:		Construction:	Total: 3
Implementation Authority:	Port Authorities and National Railroad Agency					
Additional Info:	Preliminary projects are being defined					

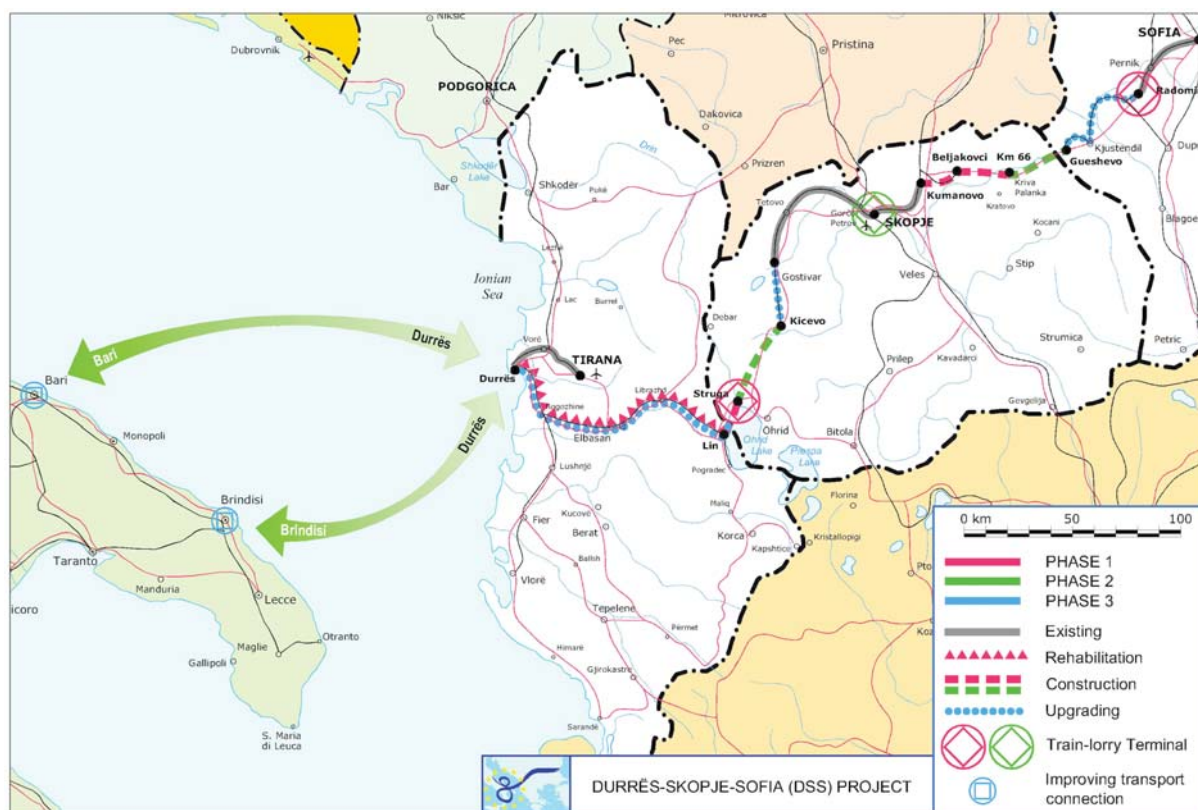


3.3 General Framework of a Durres – Skopje – Sofia Rail Project on Corridor VIII

3.3.1 General Overview of Investments by Phase

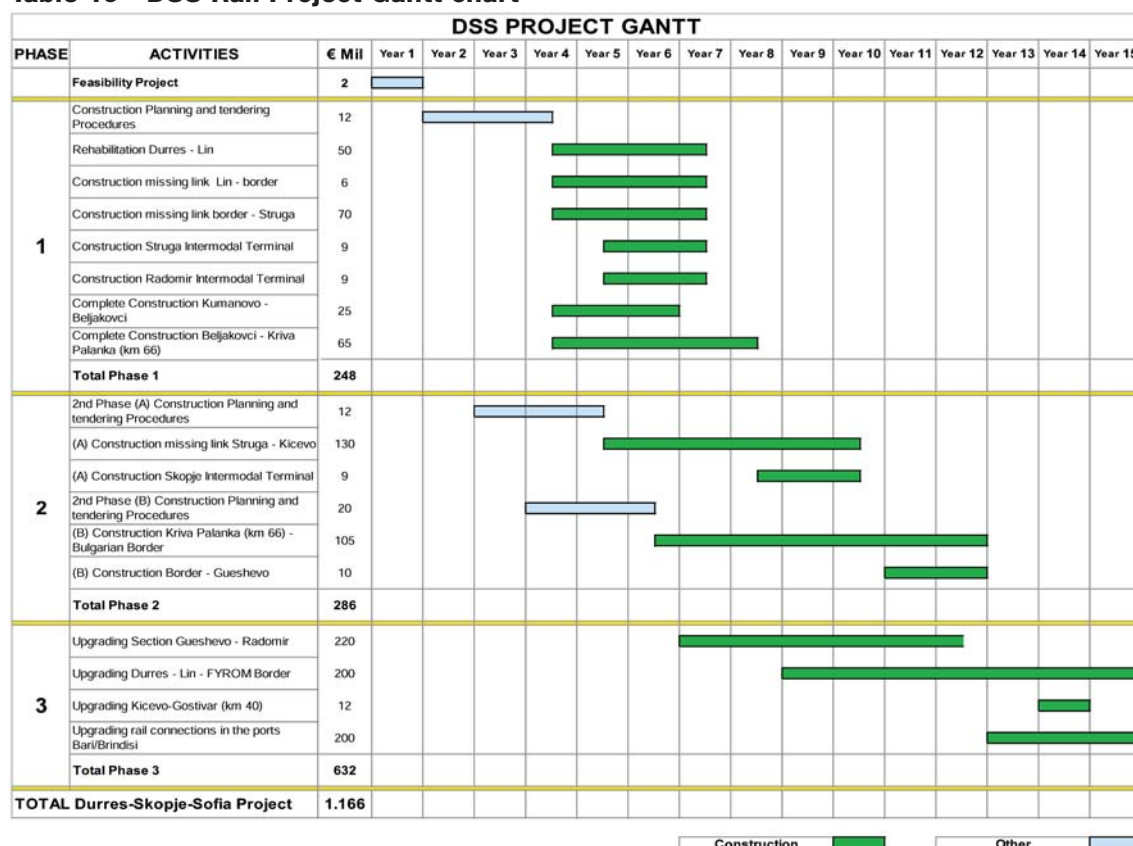
The following map shows all the DSS Rail Project investment components, identified by phases.

Figure 52 - DSS Rail Project Planned Interventions



Source: Corridor VIII Secretariat Elaboration

The following GANTT chart presents a detailed prospect of the implementation phases for each investment activity.

Table 16 - DSS Rail Project Gantt chart

Investment components identified are the following:

- Rehabilitation Durres - Lin section, electrification and speed increase (137 km - 50 mil €);
- Construction new section Lin - FYR Macedonia border (2,7 km - 6 mil €);
- Construction new section Albanian border - Struga (12 km - 70 mil €);
- Construction intermodal terminal in Struga (9 mil €);
- Construction intermodal terminal in Radomir (9 mil €);
- Construction new section Struga - Kicevo (53 km - 130 mil €);
- Construction intermodal terminal in Skopje (9 mil €);
- Completion section Kumanovo - Beljakovci (29 km - 25 mil €);
- Completion section Beljakovci - Kriva Palanka (37 km - 65 mil €);
- Construction new section Kriva Palanka - Bulgarian border (23 km - 105 mil €);
- Construction new section FYR Macedonia border - Gueshevo (2,5 km - 10 mil €);
- Upgrading section Gueshevo - Radomir (88 km - 220 mil €);
- Upgrading and electrification section Durres-Lin (137 km - 200 mil €);
- Upgrading section Kicevo - Gostivar (40 km - 12 mil €);
- Upgrading rail connections in the ports Bari/Brindisi (200 mil €).

These amounts are derived mainly by the evaluations contained in the existing studies. These costs were in any case validated by national representatives that in some cases changed the amounts indicated in previous versions of the reports.

These investment costs present, however, two limits that must be kept in mind.

The first limit lies in the origin of estimates, which were produced by different consultants and often by



National Rail Agencies. Therefore, detailed assumptions and project choices may not be completely homogeneous.

The second limit lies in the time when the estimates were defined. Furthermore investment costs were not financially adjusted and do not take into account different time frames.

3.3.2 Infrastructure Maintenance Costs and Traffic Control System

A common policy agreed among all the participating Countries in Corridor VIII MoU is that of separating the management of transport infrastructure from the management of trains operations.

These costs have been derived on the basis of maintaining in operation a single electrified track 100 km long and using maintenance and traffic control system costs, provided to the Rail Working Group by the Bulgarian team as a reference.

A) There are three main items of infrastructure maintenance costs:

- current maintenance;
- extraordinary maintenance;
- other maintenance operating costs.

The main objects of ordinary maintenance should include: track equipment, point switches, point switch motors, shunting signals, color-light signals, wheel counting devices, contact lines. The scheduling is annual. The main objects of extraordinary maintenance should include: track equipment, pilot lines, air tight closure telephones, contact lines and further technological equipments. The timing is every ten and twenty years.

The evaluations, performed on the different components of investment, define the total costs, to be supported every ten-twenty years, for extraordinary maintenance from the initial year in operation of these objects to the end of their efficient working condition. These amounts can then be transformed in annual rates of extraordinary maintenance costs.

The items composing maintenance costs are made of personnel expenditures, of different technical qualifications, and technical suppliers' contracts for services and materials. There are also further operating costs of infrastructure maintenance such as expenditures for telephone, electricity, cleaning, security, administration etc.

The estimates of infrastructure maintenance costs for the main components are reported in table 17.

Table 17 - Infrastructure Maintenance Costs for 100 km single track railway in the Southern Balkans

<i>Costs of infrastructure maintenance</i>	Annual costs €
1. Technical People required	386 000
2. External Contracts and materials	133 000
3. Further Operating Costs telephone, electricity and cleaning for stations and installations	76 000
A) TOTAL ORDINARY MAINTENANCE* (1+ 2+ 3)	595 000
B) TOTAL EXTRAORDINARY MAINTENANCE ** (Every 10-20 years)	275 000
INFRASTRUCTURE MAINTENANCE COSTS (A+B)	870 000

NOTE*: principal objects of ordinary maintenance: Track equipment, Point switches, Point switch motors, Shunting signals, Color-light signals, Wheel counting devices, Contact lines.

NOTE **: principal objects of extraordinary maintenance: Track equipment, Pilot lines, Air tight closure telephones, Contact lines, Further technological equipments.

B) The category of train control system costs are strongly conditioned by the typology of the existing technologies of signaling and safety along the considerate railway track mainly for the quantity of personnel required.

For a typical configuration, for a 100 km long single-track railway open to traffic for a period of 16 hours per day, these evaluations can be made:

- for a Centralized Traffic Control system : 4 expert stationmasters are required with the qualification of Operative Traffic Controller;
- for a Local Traffic Control system: 26 persons are required, in particular 13 stationmasters and 13 signalmen for 5 stations.

Table 18 - Traffic Control System Fixed Costs

Traffic Control System Costs	Annual cost €/year
Centralized Control system	27 000
Local Control System	298 000

3.3.3 Train Operating Costs

These are the costs met by operators using the rail infrastructures with their vehicles and serving freight and passenger markets. The amounts of these costs are estimated referring to the operation of a single-track railway and one daily period of opening to the train traffic for 16 hours. There are two main items of train operating costs:

- train operating costs;
- cost of using the rail infrastructure.

The first categories of costs are connected to the concrete operation of railway traffic such as:

- train staff;
- amortization of rolling stock;
- maintenance of rolling stock;
- hammer testing and cleaning of rolling stock;
- energy.

These items usually vary according to different train categories, for example:

- Intercity Trains;
- Regional and Metropolitan Trains;
- Freight Trains.

The second category is a governmental policy issue, since rail infrastructures are public goods and usually their profitability is not their primary *raison d'être*.

The passengers and freight traffic level of remuneration in the European experience is highly variable and fluctuates greatly among Countries. It ranges between 0,5 and 5 € by train/km.

The following table reports train operating costs, provided by the Bulgarian team. They are meaningful for understanding the Southern Balkans situation.

Table 19 - Traffic Control System Variable Costs

Variable Costs *	€/Km
Passenger Train	3,60
Freight Train	11,45

*Note: costs of train operations: train staff, rolling stock amortization, rolling stock maintenance, rolling stock hammer testing and cleaning, energy.

3.3.4 Revenues For Service Operators and Financial Pre-feasibility

Revenues to be considered should be mainly those derived by the potential freight traffic flow from/to Durres to/from fYR Macedonia, as well as onwards to/from Bulgaria and further to/from Romania, Turkey and beyond the ports of Burgas and Varna.

International passenger services would probably add some revenues, as is the case of local and regional commuter traffic, while playing a minor role.

The results of the many studies already developed on freight and passenger rail traffic (see Paragraph 3.1.2) allow a preliminary financial feasibility evaluation, following the opening of the section Durres-Skopje-Sofia.

The basic hypothesis could be the following:

Table 20 - Freight traffic hypothesis

FREIGHT TRAFFIC HYPOTHESES		
Average distance	Km	500
Yearly running days	Days/Year	250
Average tons transported	Ton/train	380
Number of trains	Trains/day	18
FREIGHT TRAFFIC FLOWS		
Ton transported	Ton/year	1.710.000
Annual traffic	Train* km/Year	2.250.000
Annual traffic	Ton*km/year	855.000.000

Table 21 - Passenger traffic hypothesis

PASSENGER TRAFFIC HYPOTHESES		
Average travel	Km	500
Yearly running days	Days/Year	350
Capacity passengers transported	Pax/train	500
Load factor	%	40
Average passengers transported	Pax/train	200
Number of trains	Trains/day	10
PASSENGER TRAFFIC FLOWS		
Passengers transported	Pax/year	700.000
Annual traffic	Train* km/Year	1.750.000
Annual traffic	Pax*km/year	350.000.000

As far as freight traffic is concerned, it can be assumed to be 1.7 million tons/year, with an average revenue of 3.5 €cent per ton*km.

For passenger traffic, a basic hypothesis could forecast transporting 700,000 passengers/year with 1.9 €cent per pax*km.

Using operating costs, provided to the Working Group by BDZ -Bulgaria Rail Agency-, an economic “steady state” financial situation, after the entire rail is opened and operations are working normally, could be the following:

Table 22 - Financial hypothesis

ITEMS	FINANCIAL HYPOTHESES	FREIGHT (€ mil)	PASSENGER (€ mil)	TOTAL (€ mil)
Revenues	855 m ton*km/year * 3.5 €cent ton*km	29.93		36.58
	350 m pax*km/year * 1.9 €cent pax*km		6.65	
Operating Costs	2.25 m train*km/year * 11.45 €/train*km	25.76		32.06
	1.75 m train*km/year * 3.6 €/train*km		6.30	
Margin		4.16	0.35	4.52
Cost of using rail infrastructure	Infrastructure maintenance and traffic control system			4.48
Income				0.04

A rail management of the Durres-Skopje-Sofia section could break even with the hypothesis of transporting 1.5-2 million tons of freight for an average distance of 500 km. Passenger traffic does not add much, but the line will be also used for this purpose and trains will sometimes be mixed.

A standard haul of 500 km is an overall average compatible with several combinations of origins and destinations such as, for instance, 700 tons traveling for 350 km (Durres-fYR Macedonia) and 1 million traveling for 600 km (Durres-Burgas), and so on.

In this basic hypothesis there is room for recovering the infrastructure maintenance and traffic control system costs. These costs for using the infrastructure are the revenues of the rail infrastructure companies, usually state owned.

The rail service operators, instead, could be imagined to also be private companies, and in any case they should operate economically without subsidies.

The previous consideration provides a positive perspective on the traffic potential of Corridor VIII. However, as recommended in the conclusions of this study, a detailed updated marketing research should be performed.

3.3.5 Cost-Benefit Preliminary Evaluations

Transport infrastructure projects aim at improving the quality of the transport system by removing bottlenecks, reducing travel times and by improving safety and security as well as by providing access

from peripheral regions to services and to the market. The technical specification and optimal timing of the project should be carefully assessed and compared with the investment cost, the expected users and other benefits of alternative scenarios.

Besides their value-for-money, transport infrastructure projects also have broader socio-economic impacts that must be analyzed by adapting the appropriate methodology coherent to the local context and traffic situation.

An economic evaluation differs from a financial evaluation because it reviews the project from the point of the national economy as a whole rather than from the point of view of the project promoter.

The European Commission “Guide to cost-benefit analysis of investment projects” (2003), analyzing a sample of 400 projects – 56 of which railway related – confirmed the importance of the socio-economic impact of rail infrastructure projects, and also gave more wide-ranging values to be used as benchmark for rail infrastructure project assessment. In fact, while for investments on manufacturing financial rates of return are very close to economic rates, in the transport sector economic rates are on average two times higher than financial rates.

Table 23 - EC: cost-benefit analysis of investment projects

Economic Sector	Average Financial Rate of Return	Average Economic Rate of Return
Energy	7.0	12.9
Water and Environment	-0.1	15.8
Transport	6.5	17.1
Industry	19.0	18.4
Other Services	4.2	16.3
Total	11.5	16.8

SOURCE: European Commission “Guide to cost-benefit analysis of investment projects”, 2003

These are, of course, average values but the Commission’s Guide (in its previous 1997 edition) provides data on the distribution of these values.

Table 24 – EC: cost-benefit analysis of rail sector investments

Rail Transport Sector	Financial Rate of Return	Economic Rate of Return
Minimum value	1.63	2.80
Maximum value	21.50	55.10
Average	6.44	13.83
Standard Deviation	4.26	8.76

SOURCE: European Commission “Guide to cost-benefit analysis of Major Projects, 1997

The European Investment Bank prepared a comprehensive methodological framework specific for the appraisal of rail investments in the European Union, as well as in Countries of the European Neighborhood area: the RAILPAG (Railway Project Appraisal Guidelines).

The High Level Group chaired by Ms. Loyola de Palacio explicitly recalls this manual as a methodological reference point.

In particular the RAILPAG approach gives more emphasis to the distribution effects of project on stakeholders:

- Users (of rail lines, of alternative modes);
- Rail Transport Service Operators;
- Contractors & Suppliers (of infrastructure, superstructure, rolling stock, electrification, etc.);
- Infrastructure Managers;
- Non Users (external effects);
- Government (local, regional, national, EU).

To this purpose a Stakeholders Matrix has been developed to clarify how costs and benefits of a project are distributed.

For each stakeholder specific financial effects, such as Fares, Travel time, fees, operating costs, land value, taxes, noise, air pollution etc. can be allocated.

Through this matrix, a detailed analysis of economic costs and benefits for Rail Corridor VIII should be developed.

The German Cooperation Agency (GTZ), in its study on the railway link FYR Macedonia-Bulgaria, evaluated an economic rate of return besides the financial IRR.

To this purpose the study used shadow prices modifying the financial prices to account for import duties, unskilled labor and in general those components which benefit the Macedonian economy as a whole.

With these modifications the result was a much higher rate of return, between 9 and 18%, indicating that the project had a major socio-economic impact.

The study listed further economic benefits of the project such as:

- work openings during construction for over 1.000 people, many of them unskilled;
- some 200-250 additional jobs in the stations and yards along the line;
- stimulation of regional economic development;
- reduced air and noise pollution along the line;
- acquisition of specialized know-how in the construction of bridges and tunnels;
- a cheap transport alternative for people and industries.

The Sudop Praha feasibility study on the “Tirana-Durres-Elbasan-Lin-Macedonian Frontier Railway” also estimated some external effects of rail investment. In the context of such an economic analysis the study considered the following external effects:

- time saving;
- external income (improved safety, reduced effects of road transport on the environment, less road congestions);
- cost saving in the area of repair and maintenance of road infrastructure.

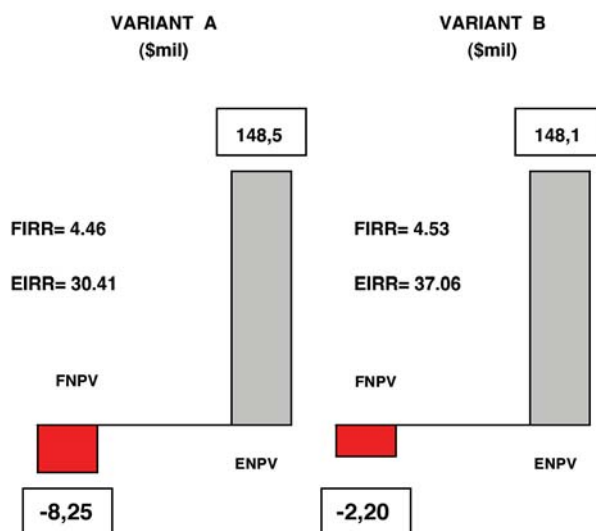
The evaluations were made using a German template, the PTV VISEM/VISUM software, calibrated by experts at Karlsruhe University.

Financial net present values (FNPV) were marginally negative while the economic net present values (ENPV) were instead considerably positive acknowledging the fact that broader socio-economic impacts can be very important aspects to consider in the project under concern.

All the mentioned studies evaluating the economic impact of some sections along the Durres-Skopje-Sofia rail alignment confirm the average estimated values by the results of the European Commission “Guide to cost-benefit analysis of investment projects” (2003).

In conclusion, given the importance of these infrastructural projects on national economies, an updated and complete cost-benefit analysis on the entire section Durres-Skopje-Sofia should be performed.

Figure 53 - Financial and Economic Returns on the Section Durres – Lin – fYR Macedonia Border



Source: Sudop Praha a. s. Feasibility Study Tirane-Durres-Elbasan-Lin- fYR Macedonia Frontier Railway, Part 2-Marketing and Economic Study, December 2002

Chapter 4 - General Conclusions and Recommendations

The main results of the present study are:

- 1) an updated Assessment of present status and ongoing processes, including data, maps, photographic documentation, Country reports and studies, international initiatives;
- 2) a framework for a Coordinated Multinational Railway Project Durres-Skopje-Sofia (DSS Rail Project), including estimation of investment costs (per rail section, Country, temporal phases), predictable operating costs and revenues under different management options, possible financial sources available to the project, expected economic impact on Countries involved.

Based on the results of this study the Working Group believes that it is urgent, at this point, to capitalise on these existing studies and to develop a full feasibility evaluation of financial, economic and political aspects, by carrying out a **Coordinated Multinational Rail Project on Corridor VIII: Durres-Skopje-Sofia (DSS Rail Project)**.

This Project can only be the result of a comprehensive approach to the issue of Corridor VIII railway alignment, arising from the technical and political cooperation of the Member Countries.

In a jointly defined general framework, each Partner Country will express its priorities in accordance with the national transport plans and development strategies. On the other hand, the evaluation of each segment will acquire a general consistency and a meaningful “economic value” in the framework of the DSS Rail Project.

On this approach all National Representatives gave a general positive appreciation.

The CEI representative also welcomed the approach and, above all, the common intent of the Member Countries to cooperate towards a shared goal.

Finally, a general agreement on goals and results of the study was expressed by the Ministers of Transport of participating Member Countries (see forewords, p. 3)

The main strategic reference for the present proposal is the general framework defined in the HLG Report “Extension of the major trans-European transport axes to the neighboring Countries and regions” presented in December 2005.

In fact it must be underlined that within the general framework Corridor VIII is fully included in the South Eastern Axis and most of the projects identified in our study fall into List 1 of the HLG report, i.e. projects to be implemented in the short to medium term (ready to start before 2010, completion by 2020). The time has come to call for a DSS Rail Project of “European interest”. The Group understands that the lists of projects composing the DSS Rail Project are just a starting point. Further studies and analyses are needed before these projects may be considered for implementation.

These should concern particularly:

- financing and fiscal space issues,
- the project’s financial and economic viability,
- technical specification as well as
- environmental impact

It is also important to stress that these projects should respect relevant EU legislation, where appropriate or when EU funding is envisaged, and international conventions and that environmental assessment, public procurement procedures etc. shall be carried out in accordance with donors' funding rules and best international standards and practices.

Interested Countries and mainly Albania and FYR Macedonia need to establish a clear policy for transit traffic, which should be based on an analysis of the advantages and disadvantages of such traffic.

Given these premises, the Corridor VIII Rail Working Group

RECOMMENDS

that:

- 1) Member Countries approve the proposed Coordinated Rail Project Durres-Skopje-Sofia (DSS Rail Project) and support the initiative at a political level.

In particular:

- a) Governments will officially support the DSS Rail project;
 - b) The Project will be jointly presented to EC and IFIs, so as to finance Feasibility, Design and Implementation.
- 2) Member Countries appoint a permanent Coordination Technical Committee, composed by technical representatives of the interested Countries, in order to assure the promotion, coordination and implementation of DSS Rail Project.
 - 3) Member Countries jointly take initiative to promote a full feasibility study on the DSS Rail Project, to be developed according to international standards as a first step towards its implementation.
 - 4) The implementation of this Project be approached by phases, as indicated in this Study. In their national planning activities and allocation of financial resources related to the specific content of the Project, Member Countries will take into account the priorities jointly identified in the DSS Rail Project.
 - 5) A short term program (Crash Program) be jointly defined among the member Countries in order to start the implementation between the approval and the operational beginning of the DSS Rail Project.
 - 6) Governments, the European Commission and IFIs will assign priority to single projects that will be submitted for financing in the frame of the DSS Rail Project, when defining cooperation and financing programs with the concerned Countries.
 - 7) Specific technical-political Protocol be signed by concerned Countries and parties, confirming the common commitment to implement the DSS Rail Project.



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Annexes



Annex 1 - Corridor VIII Memorandum of Understanding



MEMORANDUM OF UNDERSTANDING
ON PAN-EUROPEAN CORRIDOR
NR. VIII

Bari, Fiera del Levante

9 September 2002

*Memorandum of Understanding
on the Development of the Pan-European Transport Corridor VIII*

PREAMBLE

Desiring to promote efficient transport of goods and passengers through making progress in the implementation of the Declaration of the Second Pan-European Transport Conference in Crete in 1994 and the Third Pan-European Transport Conference in Helsinki in 1997 and in the spirit of the documents on priority transport Corridors endorsed by the Conferences as a basis for further international co-operation,

Considering the good relations between Countries through which the Corridor VIII passes, Turkey and the European Union as well as their intention to further economic and trade relations with the other Countries of the area,

Considering the importance of co-operation in the development of an efficient transport system with regard to the integration of the roads, the railways and the ports of the Participants concerned into the Pan-European Transport Infrastructure Network and its adequate interconnection with the Trans-European Network of the European Community,

Taking also into consideration the developments emerging from Transport Infrastructure Needs Assessment (TINA) in the candidate Countries for accession,

Welcoming the work and the activities carried out so far in the development of the infrastructure connection in the Countries concerned,

Welcoming the actions already undertaken on the Corridor VIII by the Participants concerned as well as by International Institutions, in particular G-24, Black Sea Economic Co-operation (BSEC), Central European Initiative (CEI) and encouraging more international initiatives to provide



the financial means to promote the realization of the necessary infrastructures,

Welcoming the work carried out under the aegis of the Central European Initiative, as stated in the final document of the Graz Summit (November 1996),

Welcoming the interest far progress in this area shown by USA through the launching of the Southeast Europe Co-operative Initiative (SECI) and the South Balkan Development Initiative (SBDI),

Paying due attention to the activities to be developed in the framework of the Adriatic/Ionian Seas and the Black Sea Pan-European Transport Areas,

The signatories of the present Memorandum of Understanding,

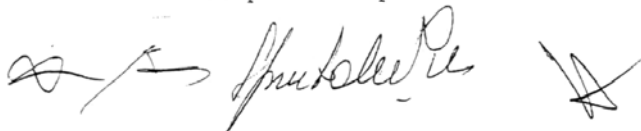
Conscious of the fact that infrastructure development is a long term exercise,

Agree on the following Memorandum of Understanding as an important step towards common objective.

Article 1 *Aim*

The aim of this Memorandum of Understanding is to co-operate in studying and promoting main and ancillary infrastructures on the intermodal Pan-European Transport Corridor linking the Parties of this Memorandum of Understanding. This development of the Corridor includes maintenance, rehabilitation, upgrading and new construction of main and ancillary infrastructures as well as theirs operation and use.

The co-operation will furthermore aim at studying the harmonization of the technical parameters and the phasing of the implementation of given projects located on the Corridor, the support for the mutual information regarding the realization of investment, the definition of a suitable regulatory framework for investments and the prerequisites for the most efficient use of funds and know-how from public and private sources.



Article 2

Definition of the Pan-European Corridor VIII

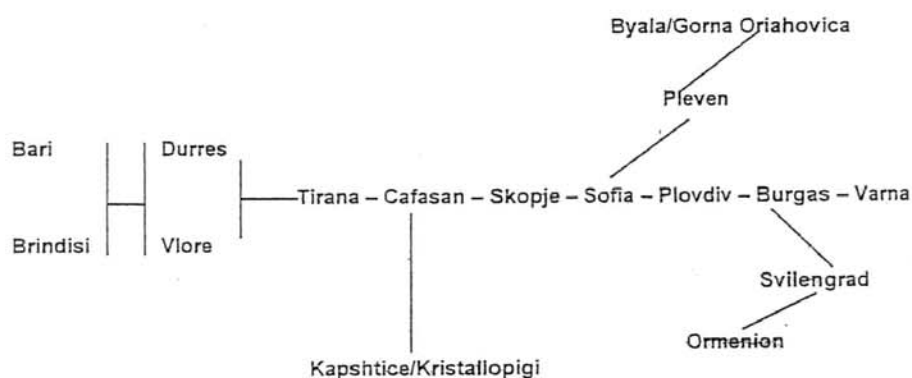
Throughout this Memorandum, the term "Corridor No. VIII" or "the Corridor" refers to an intermodal West-East link between the Pan-European Transport Areas Adriatic/Ionian Seas and Black Sea which is defined as follows:

the main line connects Bari/Brindisi-Durres/Vlore-Tirana-Cafasan-Skopje-Sofia-Plovdiv-Burgas/Varna.

The Corridor also includes:

- the road connection Ormenion-Svilengrad-Burgas, connecting to Corridors IV, IX and Trans-European Network;
- Byala/Gorna Oriahovica-Pleven-Sofia, connecting to Corridors IV and IX;
- Cafasan-Kapshtice/Kristallopigi connecting to the Trans-European Network,

which correspond to the following outline:



The Corridor also has a relationship with Corridor IV (Sofia-Plovdiv-Istanbul), Corridor IX (Ruse-Byala-Dimitrograd-Alexandropoulis) and Corridor X (Nis-Sofia/Skopje-Thessaloniki).

This Intermodal Pan-European Corridor refers to the ports, roads, rails and airports, when appropriate, and combined and intermodal transport infrastructures, including ancillary installations such as access roads, border crossing stations, service stations, freight and passenger terminals, warehouse and installations necessary for traffic management, on the route defined above, as well as to the interactions of the above mentioned features with transport activities of all modes on reasonably related routes.

Further co-operation for improving port activities and their maritime links will be addressed in the context of the Pan-European Transport Areas (PETRA) concerned.

The criteria for identifying priorities for financing and construction of the Corridor will be defined by the Steering Committee foreseen by the article 8 of the present Memorandum of Understanding.



Article 3 *General rules*

The Participants agree to co-operate in the implementation of this Memorandum of Understanding in the following manner.

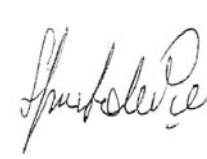
The study activity will be co-ordinated between the Participants, as far as concerned criteria, methodology and other aspects covered by this Memorandum of Understanding.



All the necessary works will be carried out according to best practice, taking into due account the requirements of the International Financial Institutions and the private sector to be involved during the different stages of planning, implementation, operation and use of the infrastructures.



The Participants agree to co-operate in the question of financing activities, as appropriate, in accordance with their own procedures. Tenders for contracts will be launched according to rules agreed between donors and recipients. The Participants will undertake all the necessary steps to ensure that any activity could be carried out efficiently, in order to provide all assistance and available information.



Article 4 *Exchange of information*



The Participants will make available to each other information relevant to the development, use and operation of the Corridor, and they will exchange information regarding a harmonized conception of the development and establishment of border crossing. This includes detailed available data on the state of the infrastructures on the Corridor, the traffic flows, waiting times at the borders, specific maintenance, rehabilitation, upgrading, new constructions, investment, environmental and organizational measures planned or undertaken, and the financial resources allocated or to be allocated to the development of the Corridor from public and private sources. It will also cover the legal framework for the participation of the



private sector in the development, use and operation of the Corridor as well as relevant economic and social data of a general nature.

Within the limits of law and as agreed by the Steering Committee as defined in Article 8, the results of the work and all relevant information will be accessible, on request, to institutions demonstrating substantial interest in contributing to the development of the Corridor.

Article 5 *Technical rules*

The Participants will agree on studying a common set of technical rules necessary to secure optimal interoperability of all section of the Corridor with a view to adopting common technical rules, including different transport modes. Such technical rules will cover electrification, gauge and communications for the rail part of the Corridor; axle load capacity and signalling for the road and rail part of the Corridor; the communication between the ports of the Corridor on the one hand and the road and the railway on the other hand; safety and environmental aspects and traffic management.

Rules set by the UN-ECE Agreements or the European Community for the different transport modes will be adhered to in order to secure interoperability.

Article 6 *Border crossing facilitation*

Because of excessive waiting times at border crossing may impede any improvement resulting from the development of the Corridor, contiguous Participants agree to encourage actions by the competent authorities, giving special attention to the installation of joint border crossing posts and joint controls, as well as to customs services co-operation and to visa problems, in order to minimize waiting times and to ease up transit conditions. The Participants will promote joint studies on the necessary infrastructural and organizational measures, including the evaluation of needs of personnel at border crossings.

Depending on a typology of controls, the establishment of a maximum time to fulfil these controls should be studied as well as the possibility of creating fast lanes for transit traffic operating under the T.I.R. carnet or other suitable agreements. Special attention should be devoted to improve the conditions to ease up transit operations.

The establishment of appropriate training schemes should be jointly identified in order to assure the best possible efficiency at the border crossings. Standards set by international agreements or the European Community will be adhered to in order to secure interoperability.

Article 7
Framework for private participation

The Participants intend to provide for a maximum of private sector involvement in the development, operation and use of the Corridor. To this aim, a dialogue with the private sector and International Financial Institutions will take place during the planning and realization of the Corridor. In all phases of co-operation under this Memorandum of Understanding, the private sector will generally be informed of action planned or undertaken, and its comments will be taken into account as far as possible, in the appropriate phases of the development of the Corridor or of the given projects.

The Participants may set up common entities to carry out the necessary actions in order to reach the aims of this Memorandum of Understanding. Taking into account their national legislation, they will consider the possibility of engaging the private sector for the implementation of this Memorandum of Understanding.

Article 8
Steering Committee

A Steering Committee, to be composed of representatives of the Participants, will co-ordinate the joint work under this Memorandum of Understanding. Each Participant will appoint one representative and one deputy-representative to the Steering Committee, that will meet as necessary, but at least once a year. The decision on its rules of procedure will be unanimously taken. The Committee will decide by simple majority: this majority should include all the concerned Countries for activities on their territories.

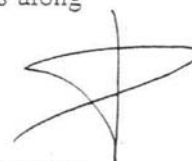
Representatives from the private sector and International Institutions and Organizations will be invited to the meetings as appropriate.

The Steering Committee will regularly report on its work to the European Commission, Directorate-General for Energy and Transport.

Article 9
Start off Phase

The implementation of this Memorandum of Understanding will start with a "Start off Phase" formed by the four first points of the activities listed as follows:

- complete inventory of existing studies;
- state of the infrastructures on the Corridor and on-going works along them;
- complete inventory of existing information system;
- infrastructure and other needs first assessment.



Besides, in the "Start off Phase" it will be prepared a Working Programme regarding the other activities.

The "Start off Phase" will be co-ordinated and financed by the Italian Ministry of Transport and it will last four months.



Article 10
Implementation

The information exchanged and the activities carried out by the Participants will provide the framework for defining, inter alia, priorities, conditions for the assessment of the economic and financial viability of the projects, budgets and time-plans for specific measures necessary for the co-ordinated development of the Corridor as well as conditions on the use and operation of the Corridor. The Participants will agree on such issues as appropriate.

Article 11
Duration



This Memorandum of Understanding is concluded for five years. A Participant can terminate its participation to this Memorandum with a one year notice. Its duration will be automatically extended every five years if none of the Participants objects at the latest one year before the expiration of each period.

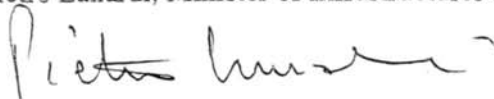


Article 12
Final provisions

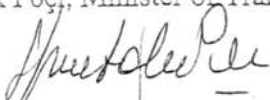
This co-operation is based on a voluntary commitment and will continue until the objectives of the initiative have been achieved. This Memorandum of Understanding does not contain obligations governed by international law.

This Memorandum of Understanding, drawn up in seven originals in English, shall be deposited with the archives of the signatory Participants.

Mr. Pietro Lunardi, Minister of Infrastructures and Transport



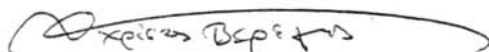
Mr. Spartak Poçi, Minister of Transport and Telecommunication



Mr. Plamen Petrov, Minister of Transport and Communications



Mr. Ljupco Balkoski, Minister of Transport



Mr. Christos Verelis, Minister of Transport and Communications

Mr. Selcuck Coskun, Under-Secretary of State of Transport



Ms. Loyola de Palacio, Vice-President of the European Commission



Bari, 9 September 2002

Annex 2 - Agreement between Albania and fYR Macedonia

- **Ohrid Declaration between Albania and fYR Macedonia, 18 November 2004**



MINISTRY OF TRANSPORT AND COMMUNICATION OF
R.MACEDONIA



MINISTRY OF TRANSPORT AND TELECOMMUNICATION
R.ALBANIA

D E C L A R A T I O N

Between

**the Ministry of Transport and Telecommunication
of the Republic of Albania**

**the Ministry of Transport and Communications
of the Republic of Macedonia and**

**for joint co-operation
in the field of Road, Railway, Telecommunication, Air and Lake transport
in the Corridor VIII**

18th November, 2004, Ohrid



18th November, 2004, Ohrid

The Ministry of Transport and Telecommunication of the Republic of Albania and the Ministry of Transport and Communications of the Republic of Macedonia;

DETERMINED to strengthen the development of the co-operation in the field of road and railway infrastructure development, as well as air and lake traffic, all this with an objective to strengthen the co-operation between the both countries to enforce the good neighborhood relations.:

EMPHASIZING the importance and advantages of the dialogue about the questions of mutual interest;

AGREED on the following:

1. The Parties, within the frames of their responsibilities, and in accordance with the laws of their States, will strengthen the co-operation between both Ministries and their relevant institutions, with an objective to develop the transport and telecommunication policy in the respective countries;
2. The Parties agreed and acknowledged that the railway connection is of high priority, and both sides will make efforts preparing and signing the Agreement between the Council of the Ministers of the Republic of Albania and Government of the Republic of Macedonia the regarding the railway connection of the two countries;

It was agreed to sing the above mentioned Agreement within 2004.

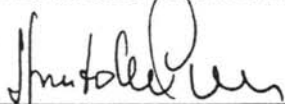
3. The Parties agreed to boost the activities regarding the preparation of the technical documentation and the construction of a motorway;
4. Both Parties concluded that it is necessary to quicken the activities to implement the Agreement for International Lake Transport line Ohrid – Podgradec.

The Albanian Party reconfirmed the readiness of Ports of Durres and Vlora to handle with priority the goods from and to Macedonia with preferential tariffs on the basis of the agreements that will be bound with these Ports.

5. Both Parties jointly or independently will make efforts in order to provide funds as soon as possible from the financial institutions to complete the construction of all modes along Corridor VIII,
6. Both parties agreed to establish the fiber optic connection between two countries by the beginning of 2005.

This Declaration is created on the 18th of November, 2004 in Ohrid, Macedonia and becomes valid on the day when signed. The text is written in English language and both copies have the same validity.

FOR THE MINISTRY OF
TRANSPORT AND
TELECOMMUNICATION
REPUBLIC OF ALBANIA



Mr. Spartak Poci,
MINISTER

FOR THE MINISTRY OF
TRANSPORT AND
COMMUNICATIONS
REPUBLIC OF MACEDONIA



Mr. Agron Buxhaku,
MINISTER



Annex 3 - Agreements between fYR Macedonia and Bulgaria

- **Protocol of understanding between fYR Macedonia and Bulgaria, September 2001**
- **Joint declaration between fYR Macedonia and Bulgaria, September 2003**



PROTOCOL OF UNDERSTANDING

ON THE ENHANCED DEVELOPMENT OF THE PROJECT FOR THE INTERCONNECTION OF THE RAILWAY NETWORKS OF THE REPUBLIC OF BULGARIA AND THE REPUBLIC OF MACEDONIA AS A PART OF THE PAN-EUROPEAN TRANSPORT CORRIDOR VIII

Desiring to facilitate the international transport of goods and passengers through making progress in the implementation of the Declarations of the Second Pan-European Transport Conference in Crete in 1994 and the Third Pan-European Transport Conference in Helsinki in 1997,

Stating their commitment to accelerate the implementation of the Agreement between the Government of the Republic of Bulgaria and the Government of the Republic of Macedonia for the Interconnection of the Railway Networks of the Two Countries,

Taking into consideration the recommendations and the development achieved through the European Commission TINA (Transport Infrastructure Needs Assessment) programme,

Recognising the significance of transport infrastructure for the promotion of the overall economic development and stabilisation of Southeastern Europe,

Recalling the activities already undertaken by the Joint Steering Committee and the Joint Working Group established for the interconnection of the railway networks of the Republic of Bulgaria and the Republic of Macedonia,

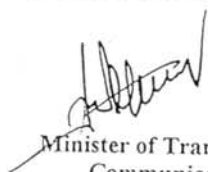
Expressing their willingness to expedite the signing of the Memorandum of Understanding on the Development of the Pan-European Transport Corridor VIII,

Taking into consideration the political will of the two countries to support the Stability Pact for Southeastern Europe,

Agree on the following actions as a further step for the achieving of the common objective.

1. The two countries agree on the including of the project for the interconnection of the railway networks of the Republic of Bulgaria and the Republic of Macedonia in the Quick Start List of the Stability Pact for Southeastern Europe.
2. The two countries agree on the holding of the second meeting of the Steering Committee two weeks after the Donors' Conference the Stability Pact for Southeastern Europe in Bucharest (24-25 October 2001).
3. The two countries agree upon a Timetable on implementation of the construction works and auxiliary activities related to the implementation of the project mentioned above in three-months term.
4. The *Project sheets* for the project of common interest for the interconnection of the railway networks of the Republic of Bulgaria and the Republic of Macedonia are a requisite Annex to this Protocol.
5. The two countries shall notify the Stability Pact for Southeastern Europe, the European Commission and the Ministry of Transport and Navigation of the Republic of Italy as a Coordinator of the Pan-European Transport Corridor VIII on the activities succeeding this Protocol.

This Protocol was done on 12th September 2001 in Sofia in the English language in two copies, both copies being equally authentic.



Minister of Transport and
Communications

Republic of Bulgaria



Minister of Transport and
Communications

Republic of Macedonia



JOINT DECLARATION

ON THE ACCELERATED REALIZATION OF
THE PROJECT FOR THE INTERCONNECTION OF THE RAILWAY NETWORKS
OF THE REPUBLIC OF BULGARIA AND THE REPUBLIC OF MACEDONIA
AS A KEY ELEMENT OF PAN-EUROPEAN TRANSPORT CORRIDOR VIII

H.E. Nikolay Vassilev, Deputy Prime Minister and Minister of Transport and Communications of the Republic of Bulgaria, H. E. Milen Velchev, Minister of Finance of the Republic of Bulgaria, H.E. Milaim Ajdini, Minister of Transport and Communications of the Republic of Macedonia, and H.E. Petar Goshev, Minister of Finance of the Republic of Macedonia,

AWARE of the importance of transport infrastructure for enhancing trade and economic cooperation and sustainable economic growth;

DESIRING to facilitate the international transport of goods and passengers through making progress in the implementation of the Declarations of the Second Pan-European Transport Conference in Crete (1994) and the Third Pan-European Transport Conference in Helsinki (1997);

CONFIDENT that significant investments will be needed for the development of modern, environmentally sound and highly efficient transport system in the region, to meet growing demand for high quality transport services;

REITERATING their firm commitment to accelerate the implementation of the Agreement between the Government of the Republic of Bulgaria and the Government of the Republic of Macedonia for the Interconnection of the Railway Networks of the Two Countries, in the context of the Memorandum of Understanding on the Development of Pan-European Transport Corridor VIII;

CONVINCED that the interconnection of their railway networks would create more favourable conditions for fostering the Bulgarian-Macedonian economic relations and in particular for the development of trade and investment, instruments which are indispensable for economic restructuring and technological modernization of their respective economies;

RECALLING the activities already undertaken by the Joint Steering Committee and the Joint Working Group established for the interconnection of the railway networks of the Republic of Bulgaria and the Republic of Macedonia,

ACKNOWLEDGING the actions already undertaken within the framework of different bilateral and multilateral programmes;

EXPRESSING their concern that the lack of financial resources necessary for the implementation of the interconnection of their railway networks project may prevent them from its realisation;

ENDORISING the Regional Railroad Interconnectivity Study Final Report, prepared by the US consulting company Arcadis, Geraghty and Miller (herein after referred as to "The Report"), financed by US TDA;

STATING their firm commitment to undertake the implementation of the project for the interconnection of their railway networks according to the timetable, proposed in the Report;



COMMITTED to include the project for the interconnection of the railway networks of the Republic of Bulgaria and the Republic of Macedonia in their respective priority project lists;

AGREEING that the realisation of the project for the interconnection of their railway networks shall be conducted in three main phases, as presented in the Annex to this Joint Declaration;

ADDRESS the International Financial Institutions to support their efforts to implement this important project, as a means of promoting modern, environmentally sound and highly efficient transportation in the region, through providing the necessary funds for the interconnection of the railway networks of the Republic of Bulgaria and the Republic of Macedonia.

September 2003

FOR THE REPUBLIC OF BULGARIA

H.E. NIKOLAY VASSILEV
DEPUTY PRIME MINISTER AND
MINISTER OF TRANSPORT AND
COMMUNICATIONS

H.E. MILEN VELCHEV
MINISTER OF FINANCE

FOR THE REPUBLIC OF MACEDONIA

H.E. MILAIM AJDINI
MINISTER OF TRANSPORT AND
COMMUNICATIONS

H.E. PETAR GOSHEV
MINISTER OF FINANCE



Annex 4 - Plovdiv Declaration of the Ministers of Transport



**JOINT DECLARATION
OF THE HIGH LEVEL MEETING
OF THE MINISTERS OF TRANSPORT OF THE COUNTRIES
ALONG PAN-EUROPEAN TRANSPORT CORRIDOR VIII**

PLOVDIV, 8 MARCH, 2006

The High Level Meeting of the Ministers of Transport of the Pan-European Transport Corridor VIII countries was held in Plovdiv, on 8 March, 2006.

APPRECIATING the decisions of the High Level Group of Mrs. Loyola de Palacio for inclusion of Pan-European Transport Corridor VIII into the EU priorities;

TAKING INTO CONSIDERATION the close attention of the EU and other international bodies to the region, demonstrated in the framework of several regional initiatives, which have contributed to further encouraging the participant countries, international financial institutions and the private sector in implementing specific projects as parts of Corridor VIII;

EXPRESSING their conviction that the implementation of regional infrastructure projects, such as Corridor VIII, contributes to bringing closer together and to the European and global mainstream, countries, cultures and economies of the region, thereby constituting an essential element in building a stable and prosperous region, fully integrated into Euro-Atlantic structures;

RECONFIRMING the willingness of their governments expressed in the Memorandum of Understanding on the Development of Corridor VIII, signed in Bari (Italy), in September 2002, with regard to an effective transport system, integrated railways, highways and harbours of the countries included in the Pan-European Transport Infrastructure Network and its connections with the EU Trans-European Network;

ASSESSING the importance of establishing a high-level EU Coordinator for Corridor VIII, supported by the Ministers of Transport of the countries along Corridor VIII, as a significant undertaking to further promote intergovernmental co-operation for the implementation of this relevant Project;

THE MINISTERS stress the need to exchange relevant information and to coordinate their efforts with respect to: lobbying at appropriate levels to commit donors and international financial institutions, and to explore other financial resources for this

project; evaluating and monitoring projects, as well as taking all the necessary steps for the implementation of the Corridor VIII Project.

THE MINISTERS welcome the progress made in the various sections of Corridor VIII, and encourage the parties concerned to continue all activities related to the full realization of the Project.

THE MINISTERS consider of great importance the involvement of Parliaments, distinguished representatives of civil society, local and other officials, for a successful promotion campaign to attract the participation of potential investors in this Project, which is of paramount significance for the region.

The MINISTERS consider Corridor VIII as a mechanism that fosters cooperation and strengthens integration among their countries, as well as for the whole of South Eastern Europe.

The MINISTERS express their appreciation of the timely initiative of the Bulgarian Government, for organizing and hosting this important meeting in Plovdiv, and they agree on the need to continue periodically with political and technical consultations.



Annex 5 - Minutes of the Working Group Meetings: Summary

List of Corridor VIII Rail Working Group Meetings

1st Meeting, Bari, 4th -5th July, 2005

2nd Meeting, Bari, 22nd -23rd September, 2005

3rd Meeting (Field Inspection), 3rd -7th October, 2005

4th Meeting, Trieste, 14th – 15th November, 2005

5th Meeting, Rome, 27th -28th March, 2006

In the **1st Meeting**, held in Bari on 4-5 July 2005, the methodological basis for work was identified and an operational plan was agreed upon.

The Countries representatives presented the situations and the projects concerning the Cross border areas and the existing railway along the alignment of Corridor VIII.

As a first result of the discussion on cross border situation and Member countries priorities, the Working Group agreed on **establishing continuity of the main rail alignment of Corridor VIII as the highest priority for the work of the Group.**

Two cross-border areas between **Albania and FYR Macedonia**, and between **FYR Macedonia and Bulgaria** were identified as the main object of study.

A first table collecting the information on advancement of projects in the cross border missing links areas was jointly defined by the group for all corridor Countries. Even though the information was derived from existing sources, this process created, as a starting point, a reliable and consistent table of information concerning all Member States, thus allowing to easily update and integrate it as the study advanced. (See Annex n.6: Projects Status Report Table)

A second table aiming at assessing the technical status of the existing railway lines was proposed by the Italian experts of RFI/Italferr and agreed upon by the Group. This Technical Status Report Table includes 32 technical parameters, which have been applied to existing railway sections in each country, and insures the availability of standardized data for further elaborations (See Annex n.7: Technical Status Report Table).

In order to proceed along the planned activities the Working Group agreed to produce Project Fiches for each study available on Missing Links, containing all existing up-to-date information gathered from feasibility studies, technical documents, etc, on the sections to be built.

Between the 1st and the 2nd meeting, Working Group Members provided the Secretariat with three sets of documents mentioned above, completed with up-to-date information.

In the **2nd Meeting**, held in Bari on 22-23 September 2005, the two sets of documents were thoroughly examined, with the aim of performing a coordinated and consistent evaluation of the whole alignment.

The joint work developed by the group brought to a first preliminary definition of categories of projects to be identified and evaluated along the alignment of the Corridor:

1) missing links, corresponding to non existing segments of the alignment;

- 2) critical sections, corresponding to existing sections presenting a critical situation which makes it impossible to guarantee a continuity of the alignment for regular freight and passengers traffic;
- 3) sections to be upgraded and modernized in order to obtain a common international standard.

This definition yielded to two very important **preliminary results**:

- 1) ***the broadening of the notion of “missing link” with the aim of identifying all the sections (existing or non-existing) that presently are critical in the perspective of guaranteeing the continuity of traffic along the Corridor alignment from Bari and Durres to Burgas and Varna.***
- 2) ***The need to concentrate the Study on the most critical part of Corridor VIII: Durres-Skopje-Sofia.***

On this approach all national representatives gave a general positive appreciation. The CEI representative also appreciated the approach and, above all, the common intent of Member Countries to cooperate towards a shared goal.

The Working Group agreed upon defining a common set of criteria for the identification of the priority projects.

The final phase of this meeting was dedicated to the definition of a draft list of priority projects, and their degree of priority, which was the basis to be verified and discussed in the Field Inspection.

The **3rd Meeting**, actually corresponding to the Field Inspection, took place between 3-7 October 2005. The inspection was focused on the 537 km from Durres through Skopje to Sofia, following the decisions taken in the second meeting.

The Group inspected the whole railway alignment starting from Tirana-Durres in Albania, through Skopje in fYR Macedonia to Sofia in Bulgaria. The visited sites included:

- 1) in Albania: Tirana, Durres, Rrogozhine, Elbasan, Librazhd, Lin, border area;
- 2) in fYR Macedonia: border area, Struga, Kicevo, Gostivar, Skopje, Kumanovo, Beliakovc, Kriva Palanka, border;
- 3) in Bulgaria: border area, Gjuzeshevo, Kjustendil, Radomir, Sofia.

Part of the Group had an opportunity to extend the inspection traveling by train along the Corridor VIII route East of Sofia, through Pleven to Varna (9 October 2005).

The field inspection was a way to verify the hypothesis identified in the previous meetings and complete the information on the rail alignment physical status and projects by:

- 1) direct inspection of the sites;
- 2) meetings with National Railways Agencies.

The field work has proven to be very useful. A first important result was to create strong cooperation and confidence among members of the Work Group and insure greater visibility of the multilateral WG to national Transport Authorities.

A very important part of the trip was the meetings with Ministers of Transport of Albania, fYR Macedonia and Bulgaria (deputy Minister) to officially present the Multinational Working Group to national Transport Authorities, enquire about national priorities and confirm political commitment on the project by each Member Country.

In the **4th Meeting**, held in Trieste at CEI Headquarters on 14-15 November 2005, the Working Group, based on the results of the field inspection, confirmed that it was possible to capitalize on existing studies and projects, on the experience and findings so far developed by the Group and on the favourable response from Member Countries and to propose a “Coordinated Multinational Railway Project on Corridor VIII”.



In particular, the Group agreed on the following points:

- 1) Many Studies and Projects concerning the missing links between Albania and fYR Macedonia and between fYR Macedonia and Bulgaria already exist.
- 2) In order to **pursue the objective of establishing an operational continuity of Rail Corridor VIII**, besides planning the completion of missing links, it's necessary to plan the rehabilitation and upgrading of some existing sections, mostly between Durres and Sofia (Durres-Lin in Albania, Kicevo-Gostivar in fYR Macedonia and Gueshevo-Radomir in Bulgaria)
- 3) In this context, it appeared necessary to envisage **A General Coordination Project: Durres – Skopje - Sofia (DSS Rail Project)** which could put the single projects, elaborated at the national and local level, in a general consistent framework, jointly agreed upon, through a multinational cooperation.

Italferr-Italian Railway Engineering Company- illustrated a preliminary quantification of investment costs of a “Durres-Skopje-Sofia project” (DSS Rail Project).

RFI -Italian Railway Network- introduced the issues of rail operating costs grouped by two categories: a) the cost of maintaining the rail infrastructure and b) the cost of utilizing the rail infrastructure.

The Working Group discussed in more detail the opportunity to move towards an integrated project for the entire Durres-Skopje-Sofia rail section. Up to now only partial evaluations had been made on the single sections along Corridor VIII and most of the existing studies maintain a national perspective. However investments on single national sections cannot be easily afforded by interested countries and, furthermore, it is quite difficult to economically justify them. The International community (EU and IFI's) is consequently reluctant to finance single national sections because financial return is highly uncertain.

A rail section, in order to be competitive with the road infrastructure, must be at least 500 km long, it must guarantee a 100/120 km/h speed and have an axial load no less than 22.5 tons per axis. This competitive standard can be achieved only considering the activation of the entire 537 km rail section Durres-Skopje-Sofia. For this reason it was proposed to include, among the final recommendations of this report, the opportunity to develop a “DSS Rail feasibility study” with complete financial and economic analyses. Financial viability should address the issues of sustainability of the operations by estimating financial revenues from traffic, passenger (national and international), freight (local and transit), subsidies and any other fees or charges to be paid for the use of this infrastructure. Financing and co-financing sources available from local authorities, donors and IFI's should also be properly investigated. Finally, for a major undertaking such as the “DSS Project”, the full economic impact study of the project to national economic profitability of interested countries must be considered.

As a result of the meeting, the Working Group approved a Draft Outline of the Final Report proposed by the Secretariat.

This **5th Meeting**, held in Rome, on 27-28 March 2006 has been dedicated to present and discuss the first Draft of the Final Report, developed by the Secretariat according to the outline approved in the previous meeting, including an up-to-date Assessment of present Status of Corridor VIII Rail Alignment between Durres Skopje and Sofia, a Proposal for the DSS Rail Project specified by temporal Implementation Phases, Recommendations that the Group will propose to the relevant Ministries and a proposal for a Crash Program.

The joint work carried out during the 5th meeting was an important step for clarifying data and information, as well as exchange preliminary outlooks on the Draft Final Report.

The first Draft of the Final Report, complete with Figures and Pictures, was distributed to all participants both on paper and on CD, in order to allow modifications and integrations by Group Members.

Thanks to this preliminary team work, the Group members subsequently corrected, integrated and amended the Draft Final Report, then submitted all modifications to the Secretariat in Bari, so that a Final Report (in a Pre-Print format) could be completed and submitted for official approval to the relevant Ministries, before proceeding with publication.

In conclusion, considering that:

- a) Rail Corridor VIII has been recognized as an integral component of the South Eastern European Axis proposed by the High Level Group on Wider Europe, and that many projects composing the DSS Project are included in List 1- projects to be implemented in the short to medium term, ready to start before 2010;
- b) Rail Corridor VIII can contribute to pursue the general objectives of stabilization and integration of Southern Balkans, thus fostering the intraregional development of the area;
- c) A renewed international political willingness to develop Corridor VIII has been recently reaffirmed (Joint Statements by Ministers of Transport of Corridor VIII, Plovdiv, 8th March 2006)

conditions exist now for a realistically successful implementation of DSS Rail Project as a Multinational Coordinated Project.

The framework proposed for the **DSS Rail Project** is as follows:

- The total investment could be estimated at about 1.200 € million and should require about 15 years to full completion;
- It should be deployed in phases: three phases are proposed (see Gantt-DSS Rail Project for more detail).
 - o **1st phase:** Italian and Bulgarian rail networks could be connected through construction of the missing link Lin-Struga (Albania-fYR Macedonia cross-border), rehabilitating the Albanian Rail section Durres-Lin to a minimum safety standard, and constructing two intermodal terminals in Struga (fYR Macedonia) and Radomir or Gueshevo (Bulgaria);
 - o **2nd phase:** At the end of this phase the continuity of Corridor VIII rail alignment will be reached by constructing the 2 missing links: Struga-Kicevo (fYR Macedonia) and Beljakovce-Kriva Palanka-Gueshevo (fYR Macedonia-Bulgaria cross-border). During the construction of the two missing links, two intermodal terminals in Skopje (fYR Macedonia) and Radomir or Gueshevo(Bulgaria).
 - o **3rd phase:** an efficient rail Corridor pursuant to European standard parameters can be activated by investing on existing sections requiring upgrading.
- This DSS Project does have a positive financial feasibility within these traffic hypotheses:
 - o 1,500,000 tons/year of freight volume (recovering maintenance costs of infrastructure with centralized traffic control);
 - o 2,000,000 tons/year of freight volume (recovering maintenance costs of infrastructure with local traffic control);
 - o 3.5 €/cent per ton-km of freight revenue;
 - o 700,000 pax/year of passengers volume;
 - o 1.93 €/cent per pax-km of passengers revenue;
 - o 11.45 € train-km of freight operating costs;
 - o 3.6 € train-km of passengers operating costs;
 - o 500 km of average distance.

- This DSS Project will have a huge impact on the socio-economic integration in the South Balkans, as well as important economic impacts on national economies; economic return on investment should be somewhat two times higher than financial return.

The report ends with a set of jointly defined **Recommendations to National Governments** to proceed with the implementation of Rail Corridor VIII, including the request to launch the “DSS Rail Project” and a “Crash Program” of initiatives that can be implemented without further delay, while the “DSS Project” advances.

The recommendations, to be included into the Final Report, were jointly defined and approved by the Group:

- 1) The Coordinated Rail Project Durres-Skopje-Sofia (**DSS Rail Project**) is approved and politically supported by the concerned Member Countries.

In particular:

- a) Governments will officially approve the DSS Project.
 - b) the Project will be jointly presented to EC and IFIs for the financing of Feasibility, Design and Implementation.
- 2) In order to assure the promotion, coordination and implementation of DSS Project, a permanent **Coordination Technical Committee**, composed by technical representatives of the interested Countries will be appointed.
 - 3) As a first step towards implementation of DSS Project, proposed by this Rail Working Group, the Countries will jointly apply for the financing of a full **feasibility study on the DSS Rail Project**, to be developed according to international standards.
 - 4) The implementation of this **Project will be approached by phases**. The phases identify a time priority of single national projects in order to reach the full implementation of Rail Corridor VIII. In their planning activities and allocation of financial resources related to the specific content of the Project, Member Countries will take into account the priorities identified and agreed upon through the DSS Rail Project.
 - 5) In the time span between the approval and the beginning of implementation of DSS Project, it is advisable to start with a short term program (**Crash Program**) that has been proposed in this study.
 - 6) The Group invites the Governments, European Commission and IFIs to support and enhance the **single projects that will be submitted for financing in the frame of the DSS Rail Project**, when defining cooperation programs with the concerned Countries.
 - 7) A specific **technical-political Protocol** will be signed by concerned Countries and parties, which confirms the common commitment to implement the DSS Project and that will include the Recommendations listed above in chapter 4.



Annex 6 - Project Status Report Table

PROJECT STATUS REPORT TABLE

Country	Exact Location (please specify)	Length	Construction / Rehabilitation	Estimated costs (Meuro)	Bilateral agreements	Design Stage	Sources of financing (state budget, IFIs, EU, etc)
ALBANIA- f.Y.R. MACEDONIA	Lin Station – <i>Macedonian border</i> (Kafasan – road cross border)	3.5 Km (2.7+ 800m station tracks)	Construction (signalling not included)	5.6	Protocol signed at technical level on September 06, 2004. Political agreement to be signed.	Preliminary design available 1 track line diesel traction; Detailed design available 2005 by the Albanian Railway Agency.	Estimated cost: 5.6 mil € (3.6 mil Leks already available for detailed design) (2.5 km link already built between the port of Dures and the station, complying with UNI 60 standards)
f.Y.R. MACEDONIA- ALBANIA	Kicevo- Struga - <i>Albanian border</i> (Kafasan - road cross border)	12 Km Albanian border/Struga 54 Km Struga/Kicevo Total length: 66 Km	To be constructed	60/70 120/130	Protocol signed at technical level on September 06, 2004. Political agreement to be signed.	Preliminary design available mid 2006 by the Macedonian Railway Agency.	From the border to Struga availability of Italian Military Assistance; Struga to be developed as a multimodal centre
ALBANIA-GREECE	Pogradec – Kapshtice – <i>Greek border</i>	61 Km (option 5)	To be constructed	132	Priority to be evaluated by Governments.	Feasibility Study by Greek company TRADEMCO and the Athens University of Economics and Business – Research Centre (1997), to be updated.	
GREECE-ALBANIA	Florina -Krisallopigi- <i>Albanian border</i>	50 Km (option 5)	To be constructed	199	Priority to be evaluated by Governments.	Feasibility Study by Greek company TRADEMCO and the Athens University of Economics and Business – Research Centre (1997), to be updated.	
f.Y.R. MACEDONIA- BULGARIA	Kumanovo- Beljakovci – <i>Bulgarian border</i>	(89 Km)	(Kumanovo- Beljakovci 30 Km /under upgrading and rehabilitation); Beljakovci – Kriva Palanca 37 Km /to be constructed;	26.8 (including signaling and one track electrification) 89.8 (single line, electrified) 110 (single line, electrified)	Bilateral agreements signed in 1999	Detailed design in progress; Implementation at expropriation stage.	
BULGARIA- f.Y.R. MACEDONIA	Gueshevo (common border station, fully operational) – <i>Macedonian border</i>	59 km are a Missing Link, including a 1.2 km tunnel 2.5 Km, including a 2.368 meter long border crossing tunnel (1.174 m in Macedonian territory; 1.194 in Bulgarian territory; 88 Km	To be constructed; 550 m of the Bulgarian side Tunnel already excavated.	10	Bilateral agreements signed in 1999	Existing and planned lines developed according to European standards; Main design available	Availability of Bulgarian and ISPA Funds.
BULGARIA	Gueshevo - Radomir		It is not a missing link, but it requires rehabilitation and the construction of new sections of a single track line.	220 single track, electrified			
BULGARIA- GREECE	Burgas – Plovdiv – Svilengrad – <i>Greek border</i>	280 Km	No missing link, existing connection through Plovdiv.		A direct road connection (170 km) included in the MOU. Priority will be evaluated by Governments.		



Annex 7 - Technical Status Report Table

TECHNICAL STATUS REPORT TABLE

	ALBANIA					FYR MACEDONIA					BULGARIA			TURKEY	
	Section 1	Section 2	Section 3	Missing Link Albania - FYR M	Missing Link Albania - FYR M	Section 4	Section 5	Section 6	Section 7 in construction	Missing Link FYR M - Bulgaria	Missing Link FYR M - Bulgaria	Section 8	Section 9	Section 10	
Technical Features of existing railway lines along Corridor VIII and main traffic parameters	A - B	B - C	C - D	D - E	E - F	F - G	G - H	H - I	I - J	J - K	K - L	L - M	M - N	N - O	O - P
	Durres - Elbasan	Elbasan - Librazhd	Librazhd - Lin	Lin - Border	Border - Struga	Struga - Kicevo	Kicevo - Gostivar	Gostivar - Skopje	Skopje - Kumanovo	Kumanovo - Bejakovci	Bejakovci - Border	Border - Guechevo	Guechevo - Kustendil	Kustendil - Radomir	Bulgarian Border - Çerkezöy - Istanbul (Halkali)
1) Length of selected section (km)	74	23	38,9	3,05	12	54	36	81	37	30	59	2,5	34,145	53,824	193
2) Total number of tracks (numbers)	1	1	1				1	1	1			1	1	1	1
3) Total length of tunnel sections (km)	2,257	2,246	5,576				9,708	0,582	0			1,194	0,9496	1,9273	2,830
4) Total length of bridge and viaduct sections (km)	2,124	0,576	1,887				0,831	0,520	0,596			0,023	0,122	0,441	4,7
5) Total length of cutting and trench sections (km)							26	10	7			73,500 m3 cutting: 101,650 m3 Trenches	24,600	28,632	nonexisting
6) Total number of tunnels on the section (number)	5	4	15				12	3	0				8	9	5
7) Traction type: Diesel or Electric	Diesel Electric	Weight 120 Ton	Made CKD PRAGE				Diesel	Diesel	Electric			Diesel / Electric	Diesel	Diesel	Electric
8) Max speed (km/hour nominal)	1350 kT TIP T-688 CKD	Speed 90 km/h	1988 - 1990				80 km/h	80 km/h	25KV; 50 Hz			100 km/h	65 km/h	90/65 km/h	120 km/h
9) MAX and MIN speed of freight trains on the section (km/hour)	120 km/h	80 km/h	60 km/h				40/80 km/h	40/100 km/h	100 km/h			100 km/h	25 km/h	80/40 km/h	120/90 km/h
10) MAX and MIN speed of passenger trains on the section (km/hour)	45 km/h	30 km/h	30 km/h				40/80 km/h	40/80 km/h	50/100 km/h			100 km/h		80/40 km/h	90/60 km/h
11) Travelling Time - passenger trains without intermediate stops (min)	2 h 09 min	50 min	1h 35 min				35 min	1 h 16 min	39 min			2 min	1 h 36 min	1 h 32 min	4 h 12 min
12) Travelling Time - passenger trains with intermediate stops (min)	2h 27 min	50 min	1h 43 min				39 min	1 h 27 min	41 min			2 min	1 h 45 min	1 h 51 min	4 h 55 min
13) Minimum travelling time - freight trains (min)	2 h 09 min	50 min	1h 35 min				1 h 02 min	1 h 25 min	42 min					1 h 23 min	7 h 39 min
14) Max inclination - track n.1 - (in ‰)	6 ‰	9 ‰	16 ‰												23,0 m ?

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Executive summary - Italian translation

Scenario complessivo e obiettivi

Dai Corridoi Paneuropei agli Assi Transnazionali

L'allargamento dell'Unione europea, con l'ingresso di 10 nuovi Paesi Membri il 1 maggio 2004 e di Romania e Bulgaria il 1 Gennaio 2007, ha ulteriormente esteso i confini dell'UE verso Est e Sud.

Alla luce di questa nuova situazione, si è resa necessaria una ridefinizione della politica europea dei trasporti verso i Paesi confinanti, in quanto la maggior parte dei Corridoi Pan Europei di Trasporto sono stati inclusi nell'UE, diventando così parte integrante della Rete Transeuropea di Trasporto (TEN, Trans European Network).

Il Gruppo di Alto Livello (HLG, High Level Group) presieduto da Loyola de Palacio, nel Rapporto Finale "Reti per la Pace e lo Sviluppo - Estensione ai Paesi e alle Regioni confinanti degli Assi principali della Rete Transeuropea" (novembre 2005), ha individuato cinque principali Assi Transnazionali. "Tali assi estendono e integrano la rete Transeuropea di trasporto attraverso l'interconnessione con le reti dei Paesi confinanti. Essi inoltre contribuiscono maggiormente alla promozione degli scambi e del commercio internazionale, consentendo una maggiore cooperazione e integrazione regionale".

In tale nuova prospettiva strategica, va sottolineato come il tracciato principale del Corridoio VIII sia stato identificato come parte integrante dell'Asse Transnazionale di Trasporto Sud-Est Europeo: numerosi progetti sul Corridoio VIII sono stati identificati dal Gruppo di Alto Livello come progetti a breve termine (avvio previsto prima del 2010). Il porto di Durazzo in Albania è stato identificato come uno dei porti delle Autostrade del Mare del basso Adriatico.

Obiettivi generali

Nell'introduzione al Libro Bianco "La politica europea dei trasporti: il momento delle decisioni" (2001), è così definita una delle principali linee di sviluppo strategico per la Rete Europea dei Trasporti: "L'Europa deve favorire un reale cambiamento nella politica comunitaria dei trasporti. È giunto il momento di stabilire nuovi obiettivi: riequilibrare gli assetti delle modalità di trasporto e sviluppare l'intermodalità".

Nel documento di revisione di medio termine del 2006, l'UE ha confermato la continuità delle linee politiche identificate nel Libro Bianco sui trasporti del 2001. Di particolare rilevanza in questo studio è l'inclusione tra le azioni prioritarie della promozione dei corridoi ferroviari di trasporto delle merci, delle iniziative volte a rimuovere le barriere tecniche che frenano l'interoperabilità del trasporto ferroviario e il monitoraggio del mercato su rotaia.

Una volta completato, il Corridoio VIII ferroviario contribuirà insieme al Corridoio VIII stradale nel quadro generale dell'Asse di Trasporto Europeo Transnazionale del Sud Est Europa - allo sviluppo di una Rete di Trasporto della Regione Balcanica che costituisce un ponte tra l'Europa e l'Oriente e nello stesso tempo un fattore di pace e sviluppo per le economie intraregionali.

Elaborazione dello Studio sul Corridoio VIII Ferroviario

Il presente studio è stato condotto da un Gruppo di lavoro composto da 2 esperti di alto livello nominati dai Ministeri dei Trasporti e dagli Enti ferroviari nazionali dei Paesi membri. Il lavoro è stato possibile



grazie al supporto tecnico di RFI-Rete ferroviaria italiana e Italferr, del gruppo Ferrovie dello Stato, con il coordinamento del Segretariato del Corridoio VIII e la supervisione del Ministero delle Infrastrutture.

Le attività del Gruppo di lavoro si sono svolte tra il luglio 2005 e il marzo 2006. Nel corso dell'elaborazione dello studio sono stati acquisiti ed esaminati tutti i programmi nazionali di trasporto disponibili, i progetti specifici relativi al percorso del Corridoio VIII e i principali studi UE di ambito regionale come TIRS, REBIS, TPPF e il Master Plan del SEETO.

Il Gruppo di lavoro ha anche raccolto la documentazione più recente sullo stato attuale delle infrastrutture ferroviarie, sui programmi e sui prospetti cartografici concernenti tutte le sezioni del Corridoio.

Tale procedura è di particolare rilevanza in quanto si tratta della prima raccolta di informazioni e documenti eseguita secondo parametri analitici e metodologie comuni.

Dopo una prima analisi congiunta delle informazioni raccolte, il Gruppo di lavoro ha condotto un sopralluogo lungo il tratto del Corridoio VIII identificato come prioritario: Durazzo-Skopje-Sofia. Durante il sopralluogo è stata condotta una valutazione delle infrastrutture esistenti. Sono stati inoltre tenuti numerosi incontri con i rappresentanti dei Governi e alti dirigenti degli Enti ferroviari nazionali di Albania, FYR Macedonia e Bulgaria. A seguito di tali incontri e valutazioni il Gruppo di lavoro ha redatto una valutazione aggiornata della situazione attuale delle infrastrutture, degli studi e dei progetti esistenti.

Come risultato di questa valutazione congiunta, si è unanimemente arrivati alla identificazione di un Progetto ferroviario coordinato Durazzo-Skopje-Sofia (DSS Rail Project).

Il quadro di riferimento proposto per tale Progetto può essere riassunto come segue:

Potenziali di sviluppo del Corridoio VIII Ferroviario

Lo sviluppo potenziale del traffico merci lungo il Corridoio VIII ferroviario, come parte della rete di trasporto della regione balcanica, è stato oggetto di diversi studi, sia a livello regionale che ai livelli nazionale e persino sub-nazionale. Queste valutazioni hanno portato a risultati molto differenziati, che variano dal pessimistico all'ottimistico (a certe condizioni).

Come descritto nel capitolo 3, in generale si può osservare che il traffico potenziale è di difficile valutazione allo stato attuale, dato che mancano ancora studi di fattibilità estesi a tutto il percorso del Corridoio VIII. È inoltre da considerare che, finora, sono state condotte valutazioni di mercato solo parziali, e la maggior parte degli studi esistenti sono limitati a una prospettiva di tipo nazionale. Tuttavia, inserendo tutti questi elementi in un quadro coordinato, emergono nuove positive valutazioni sui potenziali di sviluppo, chiaramente identificabili e suscettibili di ulteriori ricerche.

Ipotesi di progetto:

- La gestione del tratto ferroviario Durazzo-Skopje-Sofia potrà raggiungere il punto di pareggio ipotizzando un traffico merci nell'ordine di 1,5/2 milioni di tonnellate per una distanza media di 500 chilometri.
- Oltre alle valutazioni di ordine finanziario, va anche considerato che il Progetto DSS avrà un forte impatto sul processo di integrazione socio-economica dell'area balcanica meridionale, e sensibili impatti economici sulle singole economie dei Paesi attraversati.

Implementazione:

- È stato previsto un investimento totale di 1.200 milioni di Euro e un periodo di circa 15 anni per il completamento;
- Gli interventi sono stati suddivisi in fasi progressive di attuazione. Nello studio sono state proposte tre fasi:

1^A FASE: avvio dei progetti per costruire i tratti ferroviari mancanti e dar via al sistema di comunicazioni ferroviarie tra l'area del sud Adriatico e le regioni balcaniche.

- Costruzione del tratto mancante Lin-Struga (confine tra Albania e fYR Macedonia);
- Completamento della costruzione del tratto Beliakovci-Kriva Palanka (confine tra fYR Macedonia e Bulgaria);
- Ammodernamento del tratto albanese Durrazzo-Lin per raggiungere standard minimi di sicurezza;
- Costruzione di due terminal intermodali a Struga (fYR Macedonia) e a Radomir o Gjušhevo (Bulgaria).

2^A FASE: *Completamento di tratti ferroviari mancanti del Corridoio VIII.*

- Completamento dei seguenti tratti mancanti: Struga-Kicevo (fYR Macedonia) e Kriva Palanka-Gjušhevo (confine tra fYR Macedonia e Bulgaria);
- Costruzione di un terminal intermodale a Skopje.

3^A FASE: *Adeguamento del Corridoio VIII ferroviario allo standard UE.*

- Investimenti nei tratti ferroviari esistenti che richiedono ammodernamenti.

Risultati dello Studio

Di seguito i risultati principali del presente Studio:

- 1) Una stima aggiornata dello stato attuale e dei progetti in corso d'opera, con dati, rappresentazioni grafiche, documentazione fotografica, rapporti forniti dai Paesi Membri, studi, progetti e iniziative internazionali.
- 2) Un quadro di riferimento per un Progetto multinazionale coordinato del tratto ferroviario Durazzo-Skopje-Sofia (DSS), inclusa una valutazione dei costi per gli investimenti (suddivisi per tratto ferroviario, Paese e fasi di attuazione), una stima dei costi operativi e dei benefici analizzati secondo diversi parametri gestionali, delle possibili fonti di finanziamento disponibili per il progetto, e dell'impatto previsto sulle economie dei Paesi attraversati dai tratti ferroviari.
- 3) Una serie di Raccomandazioni definite congiuntamente da inviare ai Governi nazionali per procedere al completamento del Corridoio VIII ferroviario, compresa la richiesta di un supporto congiunto del Progetto DSS e l'identificazione di un "Crash Program" delle iniziative da intraprendersi.

Considerazioni finali

I risultati del presente lavoro hanno particolare rilevanza per i seguenti aspetti:

- 1) Lo studio è stato condotto da un Gruppo di lavoro multinazionale composto da rappresentanti di alto livello dei Paesi Membri, garantendo in tal modo l'uniformità dei parametri tecnici e la rispondenza ai Piani e ai Programmi di trasporto nazionali e regionali. Tale cooperazione multinazionale ha garantito soluzioni innovative per la metodologia adottata.
- 2) Per la prima volta è stata presa in esame una gran quantità di progetti sul percorso del Corridoio VIII provenienti da diversi Paesi, secondo criteri di omogeneità che hanno permesso di delineare una prospettiva generale all'interno della quale i singoli progetti, identificati da ciascun Paese, sono coerentemente inseriti in un contesto generale.
- 3) A seguito di questo primo Studio, il progetto del Corridoio VIII ferroviario acquisisce grande interesse anche dal punto di vista delle ricadute economiche e finanziarie. Tuttavia, sono emerse due condizioni essenziali per lo sviluppo di tali iniziative: la necessità di uno Studio completo di fattibilità condotto con il medesimo criterio di condivisione delle fonti e degli obiettivi, e inoltre l'esigenza di un supporto politico condiviso da parte dei Paesi attraversati dal Progetto DSS Rail Project.