BORDER CROSSINGS ALONG THE PAN-EUROPEAN CORRIDOR X: INFRASTRUCTURAL AND PROCEDURAL IMPROVEMENTS AND DERIVED BENEFITS

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ABSTRACT

Transport is a vital economic sector directly related to trade and tourism, as well as regional convergence and cohesion. The presence of international borders along main international transport routes is impeding the smooth movement of passenger and goods, increasing travel times and costs. In this paper the infrastructural and procedural obstacles recorded at all the border stations along the Pan-European Transport Corridor X between Central Europe and Greece, via the former Yugoslavian countries, are presented. These obstacles were recorded through questionnaire-based surveys elaborated by the authors in the periods 2002-03 and 2007-08, in the process of identifying common problems and propose possible common solutions and measures for the facilitation of trans-border traffic.

These measures are examined under the prism of a prospective cost-effectiveness analysis. The direct and self-evident benefit of the potential improvements would be the increase of the provided level of service with the reduced travel times, while ultimately the increase of the competitiveness of Corridor X would affect the trips distribution on the international and South-East Europe regional network by shifting traffic from antagonistic routes and/or between modes. Most probably, and as in the cases from the past in Central-Western

Europe and recently at the borders of Greece with its neighbouring countries, new land uses at the trans-bordering zones could form additional trip generators (induced traffic), affecting local and regional economies and creating new travel habits and behaviours of local populations.

Keywords: Pan-European Transport Corridors, Cross Borders Improvements, Prospective Cost-Effectiveness Analysis

INTRODUCTION

The Pan-European Transport Corridors were established during the Pan-European Transport Conferences of Crete in 1994 and Helsinki in 1997, aiming at the promotion of sustainable and efficient transport systems within the European territory and securing the consecutiveness and complementarity with the trans-European networks. Among other sub-objectives of the Helsinki Declaration (ECMT, 1997), one concerns the promotion of the rehabilitation or the reconstruction of problematic links, giving at the same time priority to measures, which are able to better exploit the existing infrastructures.

The multimodal Pan-European Transport Corridor X (Main Axis and four branches) provides connection to the South Eastern Europe (**SEE**) with Central Europe. More specifically, it connects Salzburg, Ljubljana, Zagreb, Belgrade, Nis, Skopje, Veles and Thessaloniki; Graz with Maribor and Zagreb (Branch A, $\mathbf{X_A}$); Budapest with Novi Sad and Belgrade (Branch B, $\mathbf{X_B}$); Nis with Sofia [to Istanbul via Corridor IV (Branch C, $\mathbf{X_C}$)]; and Veles with Bitola and Florina [and via Egnatia with Igoumenitsa port (Branch D, $\mathbf{X_D}$)]. The alignment of the Road Corridor X is presented in Figure 1. The alignment of the Rail Corridor is similar; the slight difference is that Branch A connects Graz with Maribor and Zidani Most in Slovenia, and not directly with Zagreb in Croatia.

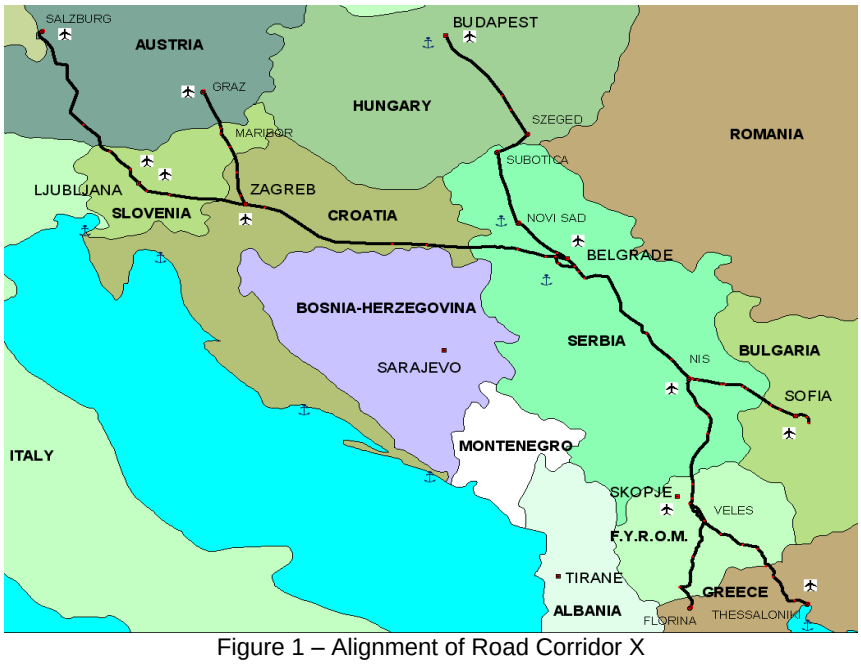

Figure 1 – Alignment of Road Corridor X

Before the 1990's the Corridor was fully operational and more or less developed in terms of road and rail infrastructure. However, the condition of infrastructures and facilities was seriously affected during and after the events in former Yugoslavia. Additionally, a major consequence of the partition of former Yugoslavia was the addition of new international borders along the Corridor that reduced farther its functionality and its competitiveness against other major international routes. On the route from Austria to Greece for example traffic initially had to pass through only two pairs of border stations (Austria/ Yugoslavia and Yugoslavia/ Greece) but afterwards through four more pairs of stations at the various intermediate new borders.

The international cooperation for the development of Corridor X is ruled by a Memorandum of Understanding (**MoU**), signed in March 2001 by the responsible Ministers for Transport of the participating countries. The MoU aims at the cooperation for the development of main and ancillary infrastructure on multimodal Corridor X, which should include maintenance, reconstruction, rehabilitation and upgrading activities, as well as new construction projects. It also aims at the improvement of its operation and use and the facilitation of long-distance transport through intensive cooperation on border crossings, with a view to fostering the most efficient and environmentally friendly transport modes, securing intermodality and optimal interoperability of its sections.

International cooperation for the development of the Corridor: Structures and roles

The framework for the implementation of the MoU for Corridor X includes the definition of priorities, budgets and time-plans for specific measures necessary for the development of the Corridor. The coordination is performed by a Steering Committee (**S.C.**), chaired by the Greek Ministry of Infrastructures, Transport and Networks (which in fact initiated this cooperation) since January 2000 until June 2010, after three renewals of its chairmanship. The S.C. is permanently supported by a Technical Secretariat (**T.S.**), a task which has been assigned to the Department of Transportation and Hydraulic Engineering of the Faculty of Rural and Surveying Engineering of Aristotle University of Thessaloniki.

In 2003, after the presentation of results of the surveys elaborated up to then by the T.S. and relative suggestion to the S.C., a decision was taken for the formulation of a special Working Group (**W.G.**) for the improvement of border crossings along Corridor X. This W.G. processed a Protocol text for intensifying the cooperation for the improvement of border crossings along the Corridor.

The Protocol for the improvement of border crossings along Corridor X was signed by the Ministers of Transport of the participating countries in June 2006.

The Action Plan for the implementation of the aforementioned Protocol foresees the following activities of the W.G.:

1. Verification of current situation (operating status and deficiencies of border stations).
2. Legislation and procedures, International Conventions and Agreements applied.

3. Means of exchange of information at neighbouring border stations.
4. Set of common standards for operation between neighbouring border stations.
5. Risk analysis methodology.
6. Introduction of common time measurement tool.
7. Staff training activities.
8. Relevant activities/ initiatives in SEE.
9. Set of priorities for actions.

In the following chapters, the methodology and activities of the T.S. related to the border crossings improvement and moreover their results are presented, in order to draw some conclusions on the before-after situation and the prospect of the impacts from the improvements of border crossings.

METHODOLOGY AND ACTIVITIES OF THE TECHNICAL SECRETARIAT RELATED TO BORDER CROSSINGS

The T.S., since its constitution in year 2000, has included in its Work Programme a special item under the title “Border and custom procedures”, with the task of the optimization of the procedures of border and custom controls and the provision of improved access conditions to Corridor X.

In this framework, the activities of the T.S. included: a) exploitation of the relative work already done by other initiatives in the region, considering the simplification of procedures (e.g. introduction of the SAD – Community Single Administrative Document) and the improvement of the infrastructure and the equipment at the cross border (and custom) stations; b) on-site observation and the registration of the border-crossing procedures and the required transit times for the various types of vehicles and the completion of a properly composed questionnaire or interviews taken from the authorities of the border-crossing stations; c) analysis of the characteristics of border stations along the Corridor X with similar needs of improvement concerning the level and the quality of service provided; d) exploitation of examples and solutions given along other Pan-European Corridors; and e) formulation of conclusions and guidelines for the optimization of the border station structures and procedures (short and mid-term measures). The implementation of all these activities are being carried out by the following actions, presented chronologically since 2000:

Two questionnaires concerning the infrastructure and operation of the road and rail Corridor X allowed the data collection for the establishment of the first and detailed Data Base dedicated to Corridor X in 2001. Each questionnaire consisted of four parts: Part A: Information about the existing Rail/Road infrastructure; Part B: Information about existing studies to be implemented and about ongoing studies for the modernization of the Rail/Road Corridor X; Part C: General information on Rail/Road design and construction; and Part D: Cross border facilitation. This questionnaire survey was followed by on-site visits of expertise to the participating countries road and rail infrastructures in the period April – November 2000.

Later on, in the period October 2002 – February 2003, a second questionnaire-based survey was performed especially focused on cross borders. The information collected by the questionnaires was accompanied by a round of expertise to the road and rail cross border stations along Corridor X, in order to observe (under real conditions) the border crossing procedures and to verify the respective waiting times.

Given the Protocol provisions for the development of border crossings and the respective action plan of the W.G., the task of verifying the current situation was undertaken and completed within the 2007-08 survey. The scope of this third survey was a) to record the state of play of cross border infrastructures and procedures along Corridor X, including update and comparison of the information collected in the 2002-03 survey, and b) the investigation of the prevailing legal framework and the international environment for cross border operations.

The design of the questionnaires was adjusted to the needs of the data to be collected, and included its division into two major parts:

1. "Country information questionnaire": Information on the general policy applied and the Conventions/ Agreements in force, as well as registration of the practices followed and the opinions of the leading agencies responsible for border crossing controls in each country.

2. "Road/ Rail cross border stations questionnaires": Information concerning each border station's infrastructure (capacity, agencies, facilities, technical equipment); Information concerning the staff of the agencies present at each border station (sufficiency, working hours, language and computer knowledge); Information on the procedures taking place at each border station and the respective documents used and data on the required times; Data on delays (waiting times) before the execution of the border controls (non-useful time); Data on traffic volumes crossing each border and their characteristics; and Registration of problems at each station and proposals for their arsis.

The border stations along Corridor X (field of all the aforementioned surveys) are listed in Table I below:

Table I – Border stations along Road and Rail Corridor X

Main Rail Corridor X	**Main Road Corridor X**
Austria (Rosenbach) – Slovenia (Jesenice)	Austria (Karawanken) – Slovenia (Karavanke)
Slovenia (Dobova) – Croatia (Savski Marof)	Slovenia (Obrezje) – Croatia (Bregana)
Croatia (Tovarnik) – Serbia (Sid)	Croatia (Bajakovo) – Serbia (Batrovci)
Serbia (Presevo – Ristovac) – F.Y.R.O.M. (Tabanovce)	Serbia (Presevo) – F.Y.R.O.M. (Tabanovce)
F.Y.R.O.M. (Gevgelija) – Greece (Idomeni)	F.Y.R.O.M. (Bogorodica) – Greece (Evzoni)
Branch A	**Branch A**
Austria (Spielfeld) – Slovenia (Maribor – Maribor Tezno)	Austria (Spielfeld) – Slovenia (Sentilj)
	Slovenia (Gruskovje) – Croatia (Macelj)

Table I *(cont)* – Border stations along Road and Rail Corridor X

Branch B Hungary (Kelebia) – Serbia (Subotica)	**Branch B** Hungary (Roszke) – Serbia (Horgos)
Branch C Bulgaria (Dragoman) – Serbia (Dimitrovgrad)	**Branch C** Bulgaria (Kalotina) – Serbia (Gradina)
Branch D F.Y.R.O.M. (Kremenica) – Greece (Mesonission)	**Branch D*** F.Y.R.O.M. (Medzitlija) – Greece (Niki)

* Not operational

FINDINGS OF THE SURVEYS: INFRASTRUCTURAL AND PROCEDURAL IMPROVEMENTS

Road border crossings

State of play in years 2002-03

The border stations along the Road Corridor X at the new frontiers created after the partition of former Yugoslavia had been built extemporaneously to catch up the new status of the region and were gradually upgraded during the years passing by. These stations faced many problems, mainly related to infrastructure and equipment.

According to the REBIS study (COWI, 2003) the road border crossings with most important problems on Corridor level were Macelj in Croatia, Tabanovce and Medzitlija in F.Y.R.O.M. and Presevo and Gradina in Serbia, and the proposed actions needed referred to infrastructure improvements.

On the other hand, in the framework of the T.S. survey, bottlenecks were reported at the stations Macelj in Croatia (X_A) and Obrezje in Slovenia, whilst such phenomena were registered during the summer periods at Bregana and Bajakovo stations in Croatia and at Batrovci and Presevo stations in Serbia.

The categorisation of the stations per other problem (inefficiency) met during the survey of the T.S. was as follows:

Table II – Road Border stations categorisation per inefficiency met in 2002-03

Buildings	**Traffic lanes**	**Special lanes for TIR trucks**	**Parking places**	**Electricity/ Water supply systems**	**Lighting of installations**	**Appropriate Electronic and Technical equipment**	**Staff**
Gruskovje	Batrovci	Macelj	Macelj	Tabanovce	Batrovci	Macelj	Presevo
Bregana	Tabanovce	Batrovci	Bajakovo	Medzitlja	Gradina	Gradina	Gradina
Bajakovo		Bogorodica	Batrovci		Presevo	Tabanovce	
Batrovci			Gradina				
Presevo			Medzitlja				
Tabanovce							

The above categorization of the road border stations emerges from the analytic information provided in Table III presented below, which also presents the planned (at that time) measures for the improvement of the stations and of the overall performance and service provided.

Table III – Main problems and planned measures at Road Corridor X border stations in 2002-03

Station	Main problems	Planned measures
Karawanken	None	None
Spielfeld	Long queues on peak days	None
Karavanke	None	None, 50% of capacity in use
Obrezje	Yes	New station construction
Sentilj	None	None
Gruskovje	None	New station construction
Bregana	Bottlenecks during summer, Lack of buildings	Doubling of lanes and 250 parking places (CARDS financing)
Bajakovo	Bottlenecks during summer, Lack of buildings	6 new lanes and 300 parking places (CARDS financing)
Macelj	Bottlenecks, Difficult terrain	TTFSE project
Roszke	None	New station
Batrovci	Bottlenecks during summer, Lack of buildings	TTFSE project (CARDS financing)
Presevo	Bottlenecks during summer, Lack of infrastructure – equipment	TTFSE project
Horgos	Possible bottlenecks	TTFSE project
Gradina	Lack of infrastructure – equipment	TTFSE project
Kalotina	None	On-line electronic system, New phyto-sanitary installations, X-Rays equipment supply, New customs installations
Tabanovce	Water supply, Low capacity, Poor infrastructure and equipment	Reconstruction by 2004
Bogorodica	Water & power supply, Signaling	Rehabilitation of facilities (PHARE)
Medzitlija	Water & power supply, Signaling	Rehabilitation of facilities (PHARE)
Evzoni	None	Reconstruction by 2004
Niki	None	Rehabilitation

The total average annual daily traffic of vehicles and Heavy Goods Vehicles (**HGVs**) and the required mean times for crossing each border station by passenger car (**PC**) or HGV are summarised in the following table:

Table IV – Traffic and required times at Road Corridor X border stations in 2002-03

Station	Average Daily Traffic Flow (2002)		Average Waiting Times (minutes)	
	Total	HGVs	PC	HGVs
Karawanken	4.434	890	20	20
Spielfeld	11.646	1.258	15	15
Karavanke	4.258	570	5	30
Obrezje	6.610	1.092	3	10
Sentilj	13.792	1.246	3	10
Gruskovje	6.002	762	5	15
Bregana	6.610	584	n.a.	60-120
Bajakovo	522	156	n.a.	10-15
Macelj	6.002	600	5	75
Roszke	2.794	366	30	60
Batrovci	522	156	10	60
Presevo	359	225	15	60-80
Horgos	2.794	366	15	60
Gradina	964	345	15	80
Kalotina	964	345	2	2
Tabanovce	809	243	3-5	15-60
Bogorodica	872	349	3-5	15-60
Medzitlija	435	261	3-5	15-60
Evzoni	1.067	427	10	30
Niki	122	67	20-30	40

n.a.: not available information

Improvements after the 2002-03 survey

In Slovenia, two new border stations were constructed at Obrezje (2003) and Gruskovje (2005) on the Main Axis and Branch A, respectively, at the Slovenian/ Croatian borders. On the opposite side of the borders, the Bregana (Main Axis) and Macelj (X_A) stations were reconstructed and expanded in 2006 and 2007, respectively, with construction of parking areas and installations of efficient capacity. Also in Croatia at the Croatian/ Serbian borders on the Main Axis, the Bajakovo (Lipovac) station was reconstructed in 2006.

In Hungary, in 2004 the new Roszke (X_B - borders with Serbia) station was constructed, which was planned to be reconstructed soon after, in order to meet the norms of the Schenghen Treaty.

In Serbia, in the Batrovci reconstructed station was put in operation in November 2006 at the borders with Croatia on the Main Axis, with new installations and double capacity compared to the previous situation. Earlier, in August 2006, the new Horgos station at the borders with Hungary (X_B) was put in operation. Later, in 2007 the Gradina station (X_C) was adapted and improvements were made on the outside installations, while most recently (2009) the

reconstruction and increase of terminals capacity of the Presevo station on the Main Axis at the borders with F.Y.R.O.M. were completed.

In Bulgaria, at the borders with Serbia (X_C), improvements took place in 2005 at Kalotina station, with general overhaul of the customs installations and establishment of X-Rays equipment, while in 2006 new installations were constructed for the phyto-sanitary inspections.

In F.Y.R.O.M. the Tabanovce station at the borders with Serbia on the Main Axis was reconstructed in 2005, with construction of new installations, more lanes at entrance and exit and parking areas, while a terminal was under construction. In the past, in 2000 the Bogorodica (Main Axis) and Medzitlija (X_D) were reconstructed, at the borders with Greece. The latter was improved also in 2007.

Finally, in Greece the Evzoni (Main Axis) and Niki (X_D) stations Greek/ F.Y.R.O.M. borders were renovated and improved in 2004.

State of play in years 2007-08

The following table summarizes the main problems reported in the 2007-2008 survey, the planned measures and the needs for further improvement proposed by the national delegations and the agencies present at the each border station along the Road Corridor X.

Table V – Main problems, planned and proposed measures at Road Corridor X border stations in 2007-08

Station	Main problems	Planned measures	Need for further improvement
Karavanke	None	None	No
Obrezje	Insufficient buildings for police.	None	Yes
Sentilj	None	None	No
Gruskovje	Insufficient traffic lanes and parking places for trucks, Bad road connection to the station, Insufficient number of customs staff.	Yes (no details provided)	Yes
Bregana	Insufficient traffic lanes, Short working hours of phyto-sanitary inspection services.	No	Education of staff on computers.
Bajakovo	Customs building, Lighting of veterinary building, Telephone connection, Insufficient number of policemen and veterinarians, Increased number of smuggling.	Computers supply and installation of internet connection.	Cable connection with neighboring station, Training personnel in computers usage for data exchange, More storage areas, Cameras, trained tracing dogs, One more lane for passenger cars at entrance.
Macelj	None	No	No
Roszke	Old office equipment.	Building of storage facilities.	X-Rays scanners for passenger traffic and truck traffic.

Table V (cont) – Main problems, planned and proposed measures at Road Corridor X border stations in 2007-08

Station	Main problems	Planned measures	Need for further improvement
Batrovci	Customs building, Inspection building lighting, Phone connection, Insufficient number of border police and inspection servants, Smuggling.	Yes (reconstruction 2nd phase documentation preparation).	Cable connection with neighboring station, More space for storage of animals, Cameras and trained dogs, One more lane for passenger cars at entrance and exit.
Presevo	Customs building, Inspection building lighting, Phone connection, Insufficient number of border police and inspection servants, Smuggling.	Yes (reconstruction 2nd phase documentation preparation).	
Horgos	Customs building, Inspection building lighting, Phone connection, Insufficient number of border police and inspection servants, Smuggling.	Yes (reconstruction on one part of the station documentation preparation).	
Gradina	Customs building, Smuggling.	Yes (ongoing production of project for bus control terminal at entrance).	
Kalotina	Water supply, Electricity supply, Sewerage, Communications.	Reconstruction of border station (TTFSE II).	Road infrastructure optimization.
Tabanovce	Phyto-sanitary and veterinary infrastructure, Insufficient staff, Bad communication with competent authorities, Customs organization scheme and relationships of the basic structural units at the border crossing point.	No	Improvement of phyto-sanitary and veterinary infrastructure, more staff, training of staff, communication with competent authority.
Bogorodica	Insufficient customs staff and equipment, Lack of understanding of the clients of the procedures for import, export, transit of animals and animal products, Often problems with documentation and licenses for reload.	Only for phyto-sanitary and veterinary.	Modernization of border crossing point for customs, Public campaign for the procedures/ documents for import, export, transit of animals and their products, Improvement of phyto-sanitary and veterinary infrastructure.
Medzitlija	Absence of ramp and canal for vehicle inspection, Absence of storage area, Electricity, water supply, office equipment, cleaning service, training.	Improvement of power and water supply, office equipment, cleaning service, training.	Integrated border management and introduction of single windows and one-stop systems.
Evzoni	Insufficient number of staff, Few lanes at exit, Lack of NAR control equipped with X-ray machine.	No	Construction of NAR control with full equipment, Construction of more lanes at exit, Employment of staff.
Niki	Insufficient number of staff, Weighbridge needed, Tracing means and dogs needed, New customs building, Unreliable electric power, Lighting of surrounding areas, Bad water quality.	Construction of new customs buildings (Works on-going).	Storage areas, Internet installation Employment of staff, Cameras Tracing means and dogs.

The total average annual daily traffic of vehicles and Heavy Goods Vehicles (**HGVs**) and the required mean times for crossing each border station by passenger car (**PC**) or HGV, including the waiting times before the start of controls, are summarised in Table VI.

Table VI – Traffic and required times at Road Corridor X border stations in 2007-08

Station	**Average Daily Traffic Flow (2006)**		**Average Total Times at Borders (Waiting Times + Procedures Times) (minutes) (2007)**	
	Total	**HGVs**	**PC**	**HGVs**
Karavanke	6.378	1.030	12	25
Obrezje	8.829	1.004	7	38
Sentilj	15.732	1.305	12	26
Gruskovje	8.095	971	7	20
Bregana	7.604	1.036	9	41
Macelj	8.048	825	4	44
Bajakovo	4.520	713	10	65
Roszke	2.158	598	7	50
Batrovci	4.998	1.169	n.a.	n.a.
Presevo	1.438	422	n.a.	n.a.
Horgos	3.799	584	n.a.	n.a.
Gradina	728	339	n.a.	n.a.
Kalotina	n.a.	n.a.	6	14
Tabanovce	1.585	434	35	87
Bogorodica	3.148	985	15	87
Medzitlija	801	n.a.	7	60
Evzoni	1.896	482	15	43
Niki	169	71	11	43

n.a.: not available information

Railway border crossings

State of play in years 2002-03

The main problems registered in the 2002-03 survey were related to infrastructure, interoperability and necessary procedures and operations. The change of locomotive was an often practice that took at least 40 minutes for the change and the necessary break tests. Even in the cases that existed interoperable infrastructure there was (and still is) need for change of locomotive, due to the absence of bilateral agreement or legal framework for the driver and locomotive insurance (e.g. between Greece and F.Y.R.O.M.).

Additionally, there were reported for many stations lack of infrastructure (buildings, number of lines at entrance and exit, electricity supply etc.), lack of staff and of technical equipment (mainly PCs). In some cases where the number of staff was fair the lack of lighting installations that resulted obligatory working hours during daylight for the necessary inspections.

According to the REBIS study (COWI, 2003) the rail border crossings with most important problems on Corridor level were Tabanovce and Gevgelija in F.Y.R.O.M. and Presevo and Sid in Serbia, and the proposed actions needed referred to elaboration of studies for the necessary improvements, while for the latter the elaboration of a pre-feasibility study for joint railway operations.

The categorisation of the stations per problem (inefficiency) registered by the 2002-03 survey was as follows:

Table VII – Rail Border stations categorisation per inefficiency met

Buildings	**Lines**	**Electricity/ Water supply**	**Interoperability**	**Staff**
Savski Marof	Savski Marof	Gevgelija	Austria – Slovenia	Tovarnik
	Presevo		Slovenia – Croatia	
	Tabanovce		Bulgaria – Serbia	

The above categorisation is a result of the more detailed presentation of the main problems of Table VIII, which contains also information of the planned measures for the confrontation of these problems or the general improvement of the performance of the stations.

Table VIII – Main problems and planned measures at Rail Corridor X border stations in 2002-03

Station	**Main Problems**	**Planned Measures**
Rozenbach	Change of locomotive	Same voltage locomotives
Spielfeld-Strass	Change of locomotive	Same voltage locomotives
Jesenice	Change of locomotive	None
Dobova	Change of locomotive	New station by 2005 E-connection with Savski Marof
Maribor	None	None
Maribor Tezno	None	None
Savski Marof (passengers) and Zagreb RK Marshaling station (freight)	Lack of lines and buildings Change of locomotive	Planned joint border station, E-connection with Dobova
Tovarnik	Lack of personnel – Phyto-sanitary inspections until 14:00	Negotiation for joint station in Vinkovci or Sid (Serbia)
Kelebia	Delays	None
Sid	Delays	None
Presevo	Delays	None
Subotica	None	None
Dimitrovgrad	Old equipment – small station	None
Kalotina	Change of locomotive	Electrification of the access railway line
Tabanovce	Small station only for passengers – Trubarevo station for freight	Improvement of the station
Gevgelija	Change of locomotive	Rehabilitation of facilities
Medzitlija	Not in use	
Idomeni	Change of locomotive	Improvement and maintenance of the station
Mesonission	Not in use	

The daily traffic and the average waiting times for passenger and goods trains are presented in the following table.

Table IX – Traffic and required times at Rail Corridor X border stations in 2002-03

Station	Number of trains per day (2002)		Average Waiting Times (minutes)	
	Total	Goods	Passenger	Goods
Rozenbach	20	n.a.	15	60
Spielfeld-Strass	20	5	10-12	60
Jesenice	66	44	15	50
Dobova	37	19	15-20	120
Maribor	24	0	20	-
Maribor Tezno	32	32	-	45
Savski Marof (passengers) and Zagreb RK Marshaling station (freight)	45	14	3	125
Tovarnik	23	9	22	76
Kelebia	49	23	30	90
Sid	63	6	15	110
Presevo	36	10	20	90
Subotica	78	13	15	60
Dimitrovgrad	35	8	20	90
Kalotina	19	9	40-60	240
Tabanovce	n.a.	n.a.	30	80
Gevgelija	10-12	n.a.	30	80
Medzitlija	Not in use			
Idomeni	12	n.a.	30	60
Mesonission	Not in use			

n.a.: not available information

Improvements after the 2002-03 survey

In Slovenia a new station was constructed at Dobova at the Slovenian/ Croatian borders on the Main Axis in 2005, which could operate as a joint station in the future (covering Dobova station and Savski Marof station in Croatia). Furthermore, the possibility of twin voltage system was under examination in order not to change locomotives at the Austrian frontiers.

Improvements were made in Hungary at Kelebia station at the Hungarian/Serbian borders (X_B) in 2004 and in F.Y.R.O.M. at Tabanovce station on the Main Axis at the F.Y.R.O.M./ Serbian borders in 2006.

In Greece some improvements and maintenance works took place at Idomeni on the Main Axis at the Greek/ F.Y.R.O.M. borders in 2004. On X_D, where the international connection between Greece and F.Y.R.O.M. is not in operation, the Mesonission (Neos Kafkassos) station was renovated in 2005.

Nevertheless, the most important achievement for the improvement of border crossings along Corridor X and specifically for its rail component, was conducted at the Serbian/ Bulgarian borders (X_C), where a new joint border station is in operation at Dimitrovgrad since December 2006. After intensive bilateral negotiations, the two countries signed a special agreement, which foresees for the passenger trains the performance of border controls and procedures en route between the Dimitrovgrad and Dragoman stations (in a distance of 21km) and during the stay if the train at the stations. For freight trains the border procedures are jointly performed at Dimitrovgrad station in the Serbian territory.

A substantial reduction of border crossing times is reported by the Serbian and Bulgarian delegations in the W.G. for border crossings of Corridor X:

> On the direction Dimitrovgrad – Dragoman (towards Sofia) times for the control of passenger trains were reduced by 35 to 49 minutes, 32-45% of the times required in the past (110 minutes). The times for freight trains were reduced by 2 hours and 15 minutes, 38% of the required in the past times.
>
> On the opposite direction (towards Nis), the duration of border procedures for passenger trains was reduced by 36 to 55 minutes (33-50%), and for freight trains by 2 hours and 33 minutes (41%).

State of play in years 2007-08

The following table details the main problems reported in the 2007-2008 survey, the planned measures and the needs for further improvement proposed by the national delegations and the agencies present at the each border station along the Rail Corridor X.

Table X – Main problems, planned and proposed measures at Rail Corridor X border stations in 2007-08

Station	**Main Problems**	**Planned Measures**	**Need for further improvement**
Jesenice	Bad maintenance of buildings and surrounding area, Not enough parking places for passengers and customers, Ineffective information system, Ineffective safety protection for buildings and area.	No	Buildings modernization, Information system improvement and compliance with IT system of Austria, New parking places for passengers and customers, Construction of platforms and underpasses for passengers.
Dobova	Not harmonized procedures between phyto-sanitary service and forwarding agencies.	Yes (no details provided).	Harmonize and improve the whole chain of transport logistic in the process of freight transport.
Maribor	None	None	-
Maribor Tezno	Not automated station with unsuitable signaling safety system.	None	Automatization of Maribor Tezno station.

Table X *(cont)* – Main problems, planned and proposed measures at Rail Corridor X border stations in 2007-08

Station	Main Problems	Planned Measures	Need for further improvement
Savski Marof (passengers) and Zagreb RK Marshaling station (freight)	The station is not adjusted for performing border control and it is necessary to carry out comprehensive station reconstruction. Due to insufficient capacities, customs and inspection control of freight trains is performed at the Zagreb Marshalling Station (Zagreb RK), 40km away.	Study on the modernization of the corridor that should offer possible quality solutions of border stations and border traffic.	Investments to improve the operation of the station: increase track capacities, construct buildings, supply of devices and equipment for performing border control. Otherwise find solution for border crossing Savski Marof – Dobova, e.g. convert the Dobova station into joint border station.
Tovarnik	No signalling and safety devices for traffic regulation, No customs building with necessary facilities and equipment for performing quality border control, No tracks for performing border controls on freight trains, No platforms with necessary equipment for handling passengers.	Study on the modernization of the corridor that should offer possible quality solutions of border stations and border traffic.	Invest in station capacities and equipment in order to remove deficiencies, Establish information links for data exchange regarding trains with the Serbian Railways.
Kelebia	Lack of staff for unloading and loading freight wagons.	Container control system is foreseen to be built.	Procurement of X-Ray scanner.
Sid	Insufficient and bad condition of track capacity, Frequent lack of traction units (locomotives), Layover due to freight operations (weighing, etc.), Layover of trains due to certain customs regulations.	Station development within railway line modernization Beograd-Sid-Croatian border.	Permanent stay of inspection authorities in the Sid station, Track capacity overhauling, Empowering workers and work places with contemporary assets for work and training of it.
Presevo (passengers) and Ristovac (freight)	Inspection services are at the road border station, Unsatisfactory passenger service level.	Stations development within Beograd - Nis – F.Y.R.O.M. border railway line modernisation.	Increase the level of service offered, proportionally to passengers needs.
Subotica	Insufficient track capacities and their length.	Station development within Beograd - Novi Sad - Subotica - Hungarian border railway line modernisation.	-
Dimitrovgrad	Frequent lack of traction units (locomotives).	Track reconstruction, signal-security and telecommunication reconstruction finished, There are ongoing works on reconstruction of station building and accompanying objects.	Procurement of locomotives.

Table X *(cont)* – Main problems, planned and proposed measures at Rail Corridor X border stations in 2007-08

Station	Main Problems	Planned Measures	Need for further improvement
Kalotina	Lack of equipped premises, Need for improvement of communication among the relevant authorities, Varying criteria among the wagon inspectors, Finish of reconstruction. Invalid documentation from the country of the consignor - Missing invoices and other documents attached to the bills of lading and serve for the declaration of the goods at the Bulgarian Customs office, From the Bulgarian side there are no officials performing phyto and veterinary inspections at night, From the Serbian side there are no officials performing radioactive inspection at night.	Project for reconstruction under preparation.	Strict implementation of the Rules of Procedure at the common station, Improvement of technical equipment of personnel (computers, office equipment), Execution of three month stay analysis at the common station and taking measures for its reduction, Improvement of the organisation for timely servicing and recall of the cargo trains.
Tabanovce	Lack of engines, Lack of railway tracks, Long lasting administrative procedures of customs and railways, Lack of expertise of staff, Absence of centralised computer system within FYROM railways, Lack of lighting, Lack of walkways between railway tracks.	No	Asphalt pavement of the access road to the railway border crossing point, Construction of objects and facilities for all services on the border crossing point, Improvement of all infrastructure, Staffing of veterinary control, Creation of conditions for introducing integrated control with border services from Serbia.
Gevgelija	Lack of engines, Lack of railway tracks, Missing computer link among all customs outposts, Old computer and IT equipment, Insufficient number of staff, causing lack of quality of procedures.	Yes, but due to railways privatization process are delayed.	Establishment of IT communication links among all customs outposts, Improve IT and hardware equipment and existing software, Staffing of station to achieve full operational capacity.
Medzitlija	Not in use		
Idomeni	Cement of corridors between railway lines for easier access, Lighting of lines, Maintenance of buildings, Insufficient number of customs staff and Greek Railways staff, Not sufficient external inspection of wagons due to electric traction, Incorrect loading document in many cases.	Yes. INTERREG III for maintenance and upgrade of buildings. Also customs included in "Mini Zefksis" project for the upgrade of electronic services.	Staff training on PC usage Supply of cameras, tracing means CIM (COTIF) (1/7/2006) could be submitted and checked electronically.
Mesonission	Not in use		

The daily traffic and the average required times for border procedures per type of train at each border station (at entrance), including the waiting times before the start of controls, are presented in Table XI.

Table XI – Traffic and required times at Rail Corridor X border stations in 2007-08

Station	Number of trains per day (2006)		Average Total Times at Borders (Waiting Times + Procedures Times) (minutes) (2007)	
	Total	Goods	Passenger	Goods
Jesenice	37	22	43	40
Dobova	49	19	22	115
Maribor	12	0	15	-
Maribor Tezno	26	26	-	70
Savski Marof (passengers) and Zagreb RK Marshaling station (freight)	113	17	1	105
Tovarnik	36	13	1	100
Kelebia	48	27	115	115
Sid	30	12	29	140
Presevo (passengers) and Ristovac (freight)	6	12	29	135
Subotica	34	23	29	300
Dimitrovgrad	20	14	29	178
Kalotina	14	9	40	70
Tabanovce	23	14	18	237
Gevgelija	6	4	60	190
Medzitlija	Not in use			
Idomeni	19	14	20	30
Mesonission	Not in use			

EX POST AGGREGATED EVALUATION

The **Road Corridor X** (Main Axis and branches) has a total length of 2300km of existing infrastructures. In the year 2000 53,8% of this length was constructed with full motorway characteristics. Nowadays the Corridor consists of multilane motorways at a percentage of 73,9% of its total length, while on the Main Axis the respective percentage reaches the 87,4% and it is foreseen that by 2015 it would be 100% consisted of motorways, after the large scale investments realisation in the south and east Serbia and the south of F.Y.R.O.M.

The **Rail Corridor X** (Main Axis and branches) has a total length of 2528km of existing infrastructures. In the year 2000 64,2% was single track lines and 35,8% double. 88,7% was operating using electric power traction system and 11,3% using diesel. The national development plans for Rail Corridor X foresaw for year 2010 that the percentage of double track lines would reach 42,2% and the percentage of electrified lines 92,9%. Despite these ambitious development plans, and on the contrary to the Corridor X road component, the Rail Corridor remains more or less at the same state of play as in year 2000. This is of course a consequence of the general bad situation of the railways in the region, the drop in demand

due to the economic recession and the uneven competition against road transport. Many projects have been realized that concerned priority rehabilitation, electrification, upgrading and modernization of existing infrastructures and doubling of specific short length crucial parts of lines, mainly in Austria and Serbia.

Nevertheless, and despite whichever progress achieved or planned in the short-term on roads or railways infrastructures, including those at border stations, there still remain several unsolved problems at the borders that hold transit times at higher levels than anticipated for the maximization of the cost effectiveness and the return of the high investments made. The problems persist even there are various bilateral agreements between the various countries of the Corridor: Between Slovenia and Croatia an agreement stands for the easier performance of border control in road and rail traffic, which includes the possibility that state border administrations of one country perform border control at the territory of the other country. Between Bulgaria and Serbia, there is an agreement for the introduction of Joint border control procedures, and another for the exchange of information to facilitate border crossing procedures and combat smuggling. F.Y.R.O.M. has an agreement with Serbia for the exchange of information to facilitate border crossing procedures and combat smuggling, and agreements of its national railway organization with those of Serbia and Greece.

The Corridor X countries have also signed and ratified several international agreements/ conventions. There are completed and on-going programs for facilitation of border crossings (e.g. TTFSE, Stability Pact Non-tariff barriers on trade in SEE) with substantial positive results regarding the modernization and the enhancement mainly of the customs authorities, but still the procedures and followed (sometimes bad) practices impede fast clearings and smooth transits. Integrated Border Management (IBM) Strategies have been developed in all the countries, and as a consequence of these strategies they are making steps to implement the concepts of the principles of the “Single Administrative Document” and “Single Window”.

The participating countries provided very useful information and performed their own evaluation of the existing situation and the required measures for improvement:

Regarding the staff of the Road border stations, the customs administrations (present at 16 stations) have insufficient number at half of the stations. English language knowledge has more than 50% of the staff at 6 stations and computer knowledge has more than 50% of the staff at 10 stations. The police (present at all the stations of the survey) have insufficient number of staff at 6 stations. English language knowledge has more than 50% of the staff at 9 stations and computer knowledge has almost all the staff of all the stations. The phyto-sanitary staff (present at 14 stations), from 9 answers provided, is insufficient in number at 4 stations, and finally the veterinary staff (present at 16 stations) is insufficient in number at 6 stations, from 10 answers provided.

Regarding the staff of the Rail border stations, the customs administrations (present at 13 stations) have insufficient number at 6 stations. English language knowledge has less than 50% of the staff of 7 stations (actually 100% of the answers) and computer knowledge has more than 50% at 6 stations (also 100% of the answers derived). The police (present at all

the stations of the survey) have insufficient number of staff at 3 stations (actually 100% of the answers). English language knowledge has more than 50% of the staff at 6 stations (out of 8 answers obtained) and computer knowledge has the staff of 7 stations (also out of 8 answers obtained). The phyto-sanitary staff (present at 11 stations) is insufficient in number at only 1 station (no answer was provided for 8 stations), and finally the veterinary staff (present at 8 stations) is insufficient in number at 4 stations.

Regarding the used capacity of the Road border stations, it is used at percentage higher than 75% at 9 stations. Selective controls are performed at 15 stations, all except from the Serbian/ Hungarian and Austrian/ Slovenian borders (not applicable at EU internal borders), while simultaneous controls of the various agencies are performed at 14 stations. Controls off-lane are performed at all stations (usually the detailed inspections) and finally “green” lanes system is applied at 9 stations. The used capacity of the Rail border stations is higher than 70% at 9 stations (out of 12 answers obtained). Simultaneous controls are performed at 7 stations and controls at separate areas at 5 stations. Performance of controls on board is done at 13 stations (mainly the police control) and engine/ locomotive change, due to the legal basis/ railways regulations and differed traction voltage, takes place at 11 stations.

The communication between neighbouring Road border stations is performed through meetings and telephone at all stations and via internet at 5 stations. It is daily at 7 stations, often than weekly at 1 station, weekly at 4 stations and rarely than weekly at 2 stations. Between neighbouring Rail border stations the communication is basically performed through meetings and via telephone, whilst Internet communication is used at 7 stations. The communication is daily between all railway organizations’ staff.

The graphs in Figure 2 below present the evaluation of the installations and equipment of all the border stations along the Road and Rail Corridor X.

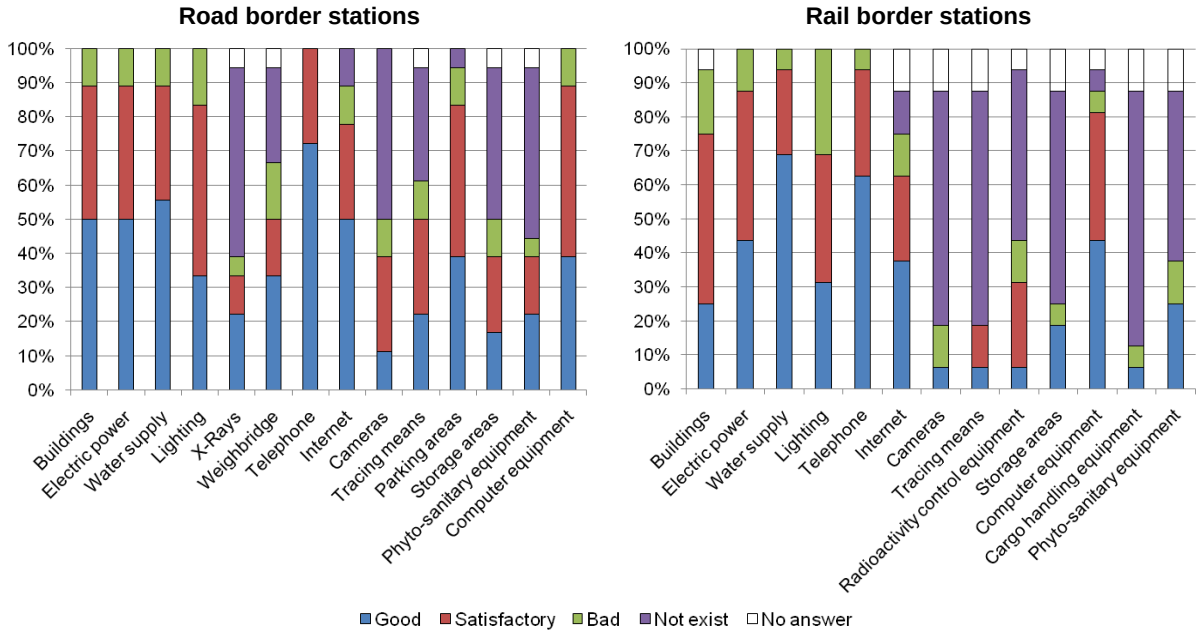

Figure 2 – Graphical representation of evaluation of installations and equipment of Road and Rail border stations

At Road border crossings the main problems related to equipment and installations are the absence of X-Rays machines, weighbridges, tracing means and equipment for phyto-sanitary inspections, and insufficiency of offices and storage areas and lighting of surrounding areas and areas for detailed inspections.

Concerning the Rail border crossings the main problems refer to insufficient buildings and storage areas, lighting of lines and installations, tracing means, radioactivity control equipment, cargo handling equipment and phyto-sanitary equipment.

Additionally to the aforementioned inefficiencies there are reported increased incidents of smuggling, difficulties of comprehension (by the clients) of the procedures for import, export, transit of animals and animal products and incorrect or incomplete documentation of cargos, things that complicate even more the operation of stations where the number and working hours of staff and appropriate places for off-lane controls are already heavy.

Especially for Rail border operations the lack of engines causes long waiting times for trains which have completed the controls but cannot depart, while also there is sometimes limited access to lines for controls and absence of platforms and handling equipment.

Of course with all these problems the controls are performed; this is obvious, it is unavoidable. There are more or less some improvements but there is still way ahead. There are some encouraging signs though. The interagency cooperation at borders (between the various responsible agencies present) is considered sufficient in most of the countries; however, admissibly there is potential for further improvement. Also, all the stations are connected in real-time with headquarters/ central/ regional offices, mostly the customs, and that rapid exchange of information is a good step for speeding up the procedures. On some connections en route controls are performed on passenger trains, at those moving on Greek Main Axis to the borders of F.Y.R.O.M., in Bulgaria and in Slovenia.

There still exist soft (and low cost) measures for improvement of border crossings along Corridor X as proposed by the participating countries, like establishing additional bilateral agreements (e.g. between Serbia and Hungary) and intensifying and fully implementing the provisions of the existing ones for cooperation at the borders, joint performance of controls or even establishment of joint border stations.

Quoting the measures proposed by the participating countries, there are more or less complex and time consuming interventions, such us the processing for signing new bilateral agreements (incl. agreements for joint controls), the introduction of Single Window and One Stop Shop concepts with computer - IT equipment and operation of electronic customs procedures with minimal human influence, the adaptation of stations or even additional constructions for the increase of the capacities of the stations. There are measures on the other hand other that could be implemented directly and would have positive impacts, e.g. extension of the working day for 24hours operation for all border authorities, operation of special lanes for TIR vehicles in transit, introduction of selective weighing of goods vehicles, appropriate horizontal and vertical signalization at the border crossings, lifting of police and

customs control posts up to the level of truck drivers, employment of trained and experienced staff, provision of means for data exchange, technical equipment procurement, supply of cameras and tracing means, construction of special infrastructure to support inspection process and make campaigns to familiarise public with the import-export procedures.

PROSPECTIVE ANALYSIS OF BENEFITS TO BE DERIVED BY THE IMPROVEMENTS OF BORDER CROSSINGS

The obvious and self-evident benefit of the improvements of border crossings and the gradual elimination of border controls after a future enlargement of the EU in the Western Balkans would be the increase of the competitiveness of Corridor X, which has been abandoned by international transport operators during the Yugoslavian war and after the accession of Romania and Bulgaria in the EU in 2007.

The Schengen treaty and new E.U. external borders with Croatia has caused the shift of bottlenecks to other cross border stations with already limited capacity. For example the procedures that took place in the past at the Sentilj and Spielfeld stations (Austria/ Slovenia) were shifted at the Gruskovje and Macelj pair of stations (Slovenia/ Croatia). And this is to happen again after the accession of Croatia to the EU. Also, the new external borders of E.U., and the particularity of the area (non EU countries between EU countries) caused double-checks on routes, for example from Turkey to Slovenia via Bulgaria and Serbia. Besides, changing locomotive takes place at all stations, even in cases of interoperable infrastructures, mainly due to the legal basis (railways regulations).

Despite the fact that Corridor X is the shortest route from Central and Western Europe to the South East (to F.Y.R.O.M., Bulgaria, Greece and Turkey), due to the bad condition of infrastructures and the increased controls and procedures at the several borders along the Corridor, it was preferred by the transport operators to use other antagonistic international routes that run at maximum possible degree in EU territory, even that it is more expensive and sometimes more time consuming. These routes are the Pan-European Corridor IV (through Romania and Bulgaria) and the intermodal transport from Italy to Greece and via Egnatia motorway to Turkey.

Traffic on Corridor X is gradually increasing, but it still falls short than the traffic levels before the 90's on many sections. Additionally, as previously mentioned, the condition of the Railways and the economic recession of the last two years have caused the significant drop of the international railway transport services. Therefore, the combination of the railway product upgrades with an uninterrupted, as possible, transport through the Corridor X countries is a big challenge that would affect also the modal split of international transport and the overall trip distribution in SEE.

A precondition of optimization of the Corridor operation and the restoration of its competitiveness is the elimination of pathologies that apparently are not registered by any kind of inventory, such as corruption at the borders and toll stations, on purpose delays at

border procedures, fines to international trucks by traffic police, etc. According to statements of international transport operators, such phenomena are still met along the Corridor that increase the transport costs and times and consequently lead to selection of alternative routes than this shortest path to the Central Europe.

Currently, the European Commission is processing in cooperation with all countries of the region an agreement on establishing a Transport Community in the region of the Western Balkans, i.e. the non-EU countries of the SEE, which of course are oriented to accessing EU the faster possible. The content of this agreement is not yet known, however it is envisaged to have more drastic provisions for border crossing facilitation.

One may claim that these measures at border crossings seem to be of temporary character, since they would have no meaning after the accession of the countries in the EU which in the best scenario would be achieved by 2015. This is however an optimistic vision we have to admit, despite our wish, taking into consideration the adventures in which the EU got into after the economic recession of Greece, the analogous trends in Spain and Portugal and the impacts of this recession in the operation and stability of the Community, which as domino effect could definitely postpone the date of its next enlargement.

Hence, a realistic assumption is that the borders will exist for several years. Anyhow, if not the elimination of borders, but the best possible facilitation of border crossings, will definitely contribute to advanced trade exchange and increased movement of persons from, to and within the region, and in extension to the improvement of bilateral and multilateral cooperation and the promotion of the multicultural character of this already very interesting from this point of view part of Europe.

Traffic at border crossings along Corridor X has been increased, but no data is available to the T.S. that refers to passports (citizenship) of the travellers or details on the origin and destination of passengers. Therefore, the authors are not in position to draw a sound conclusion concerning the characteristics nor the volume of trans-national trips performed.

However, there exist traditional exchanges between the countries of the region. The populations of the various border regions are very tied to the each time neighbouring regions, taking into account that boundaries are imaginable lines drawn up by humans that many times have separated families and relatives, especially in this region with the partition of former Yugoslavia. Most of us are aware of Hungarian populations, residents of Vojvodina region in Serbia, Serbs in Bosnia and Herzegovina or in F.Y.R.OM.; we have also many narrations of people that visit relatives from Slovenia to Croatia, Greece to F.Y.R.OM., Bulgaria and Romania. These are just few combinations of the relations, most probably the majority of all other combinations exists and of course this is valid also vice-versa (in terms of trips of persons for sure). And these connections are really strong, as also the trade relations between the countries of the region, having their roots in the – not so far – pre-existing situation of unified Yugoslavia.

Taking Greece as an example, where the Northern peripheries close to the borders with Bulgaria, F.Y.R.O.M., Albania and Turkey face imbalanced development compared to the rest of the land territory, unemployment and economic difficulties have created new habits of the local populations.

People from Greece are crossing the borders to F.Y.R.O.M. for tourism and recreation and even gambling and for medical reasons (e.g. visits to dentists), despite that the bilateral politic relations aren't the best due to the neighbouring country's naming dispute. Also Greece is a very popular destination for holidays and shopping for people from F.Y.R.O.M. Also many Greek firms have been activated in F.Y.R.O.M., as happened in all Balkan countries.

The graph in Figure 3 below presents the evolution of traffic at the borders (in both directions) at the borders between Greece and F.Y.R.O.M. on the Main Axis of Corridor X (border stations Bogorodica – Evzoni) in the period up to 2006. The total increase of traffic at the borders on the Main Corridor X in the period 2002 – 2006 was by 123%, whilst the increase of passenger traffic (passenger cars and buses) was by 152% (969.000 cars and buses in 2006 compared to 384.000 in 2002).

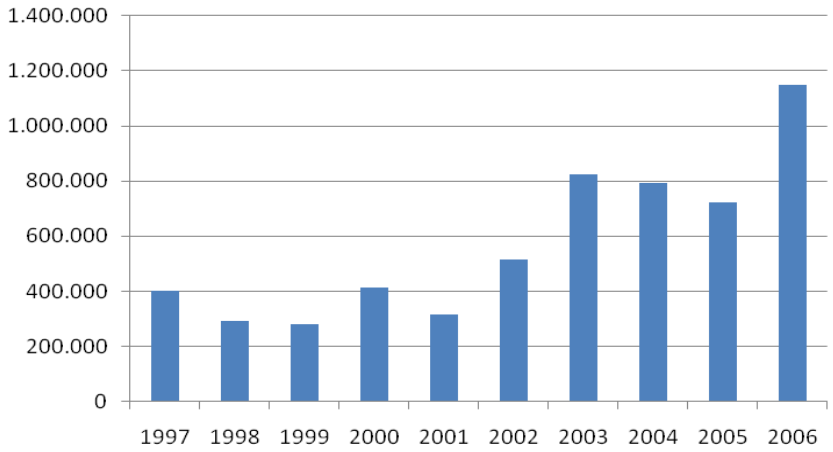

Figure 3 – Total crossings of vehicles at the Greek – F.Y.R.O.M. borders on the Main Axis of Corridor X (stations Bogorodica – Evzoni) in the period 1997-2006

After the accession of Bulgaria in the EU in 2007 the practice of exports of activities (industries) for cheaper labour was increased, as well as the trans-border "consumers" and "commuters" concepts were introduced, combined with the economic recession in Northern Greece. Additionally, movement of pensioners has been observed, which secures higher pensions for people moving from Bulgaria to Greece and declare the latter as permanent country of residence.

Exchanges between Greece and Turkey have been increased also, mostly of imports of goods and exports of tourists, while traditional exchanges between Greece and Albania are retained, at least up today, not having yet see the impacts of the latest deep economic crisis in Greece in the behaviour of the economic immigrants from Albania that are connected directly to industry, or better industry is connected to them, mainly construction and agriculture; the first sector being already stalled.

Concluding, the situation is of course not comparable to Western Europe where commuting for working purposes is very frequent, for example at the borders of France with Switzerland, Luxemburg, Germany or Belgium, at the Italian borders with Austria, at the Austrian borders with Slovakia, etc. In the region of northern Greece it is an ad hoc or seasonal practice, e.g. there is for many years now movement of workers from Albania for agricultural purposes during harvest periods. However, the economic situation of the neighbouring countries of the region is similar, and thus doesn't provide strong motivation for the appearance of commuters at the borders for working purposes, as happens in Cyprus during the last few years with the Turkish-Cypriots commuting to the Cyprus Republic south part that secures much higher income than the cost of leaving in the possessed north part of the island requires.

CONCLUSIONS

It is obvious from the before-after situation presentation that many improvements have been made on infrastructures, equipment and the legislative and regulatory framework towards the better performance of border stations along the Corridor. These improvements however are proved to be poor to perform at the anticipated level, since through the latest survey increased delays have been recorded.

In this aspect, taking into account the discrepancies and paradoxes appearing in the data presented above (e.g. volume of traffic crossing the borders is not the same for a pair of neighbouring stations) and in order to have reliable data to be based on, the T.S. and the W.G. for border crossings improvement decided the performance of time measurements at all the operational border stations along Corridor X with the use of a common tool according to the methodology applied in the "Laufzettel" exercise performed at the Baltic states. This tool follows a detailed methodology that for all pairs of stations could register the actual times per procedure and additionally it concludes with a report signed by each couple of countries for their pair stations.

In January 2010, the common time measurement tool and examples of its applications and reporting were presented to the participating countries and the decision was to proceed to time measurements by the end of June 2010, in order to make an integrated assessment of the results of the various reports (per pair of stations) and propose by the end of 2010 appropriate measures for immediate implementation horizontally for the entire Corridor or per pair of stations, and proceed also to the realisation of the other provisions of its action plan.

From the example of trans-border cooperation at the Serbian/ Bulgarian borders and its first results, the need for the promotion and encouragement of development of such bilateral cooperations along the Corridor becomes clear, which would have direct and visible benefits on the Corridor's operation. Besides, such cooperations have been applied successfully at the Austrian/ Slovenian borders for several years in the past – until the accession of Slovenia in the EU – on the rail, as well as on the road Corridor X.

The basic aim of the Protocol on the improvement of border crossings along the Corridor is to support the participating countries to cooperate in the direction of establishing joint border stations, or even better of jointly performing the border controls and procedures. For example joint stations could be organised at Sid and Presevo stations in Serbia, abolishing the neighbouring stations at Tovarnik and Tabanovce in Croatia and F.Y.R.O.M. respectively, and also at the new Dobova Border Inspection Post, covering the existing station and Savski Marof station in Croatia. Furthermore, regarding interoperability, the potential of establishing twin voltage system in Slovenia (Slovenia uses electric traction of different voltage than Austria and Croatia) could lead to the usage of the same locomotives at least in Austria and Slovenia.

In parallel, in the revised framework of the Corridors with the introduction of the Priority Axis concept, the SEE Transport Axis Cooperation (**SEETAC**) financed by the SEE Trans-national Cooperation Programme involves the existing structures of the Pan-European Corridors and the Ministries responsible for transport of the countries of the SEE region in an effort for better coordination of this Axis. An integrated approach is being implemented within this project, for the development of the SEE Priority Axis, through the establishment of unified database and elaboration of transport scenarios, rationalization of the priority projects and investments promoting pilot, low-cost but with high added value, projects for immediate financing, towards improvement of transport and spatial planning in the SEE.

The priority projects to be proposed by the SEETAC may concern more or less heavy investments on infrastructure that increase capacity on saturated or almost saturated links, while pilot projects to be defined should be projects for direct implementation that could have high cost-benefit effectiveness (low investment and high added value), and could be horizontal measures, such as for the facilitation of border crossings (infrastructure, equipment, harmonization of – transparent – methods and practices). Therefore, the synergy of the activities with the SEETAC S.C. is envisaged, in view of incorporation of a project for improved border crossings at crucial points of Corridor X or along the entire Corridor (or the complete SEE region) into the pilot SEETAC projects.

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