IMPROVING THE COMPETITIVENESS OF THE ROMANIAN AND BULGARIAN RAILWAYS BY INCREASING CROSS-BORDER QUALITY OF SERVICE

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1. BACKGROUND

The liberalisation of the rail sector in the EU has led to the need for the old state railways to adjust to open market conditions. The entry of new successful private railway companies shows that rail transport can be profitable in certain market segments and corridors. However, in the early days of the liberalisation, cooperation between railway companies on border crossings proved to be difficult. This hampered the successful development of international rail passenger and freight services.

The border crossing problems in Western Europe has triggered different responses from the old state railways, logistic providers and port operators. Nowadays, a lot of joint ventures between these stakeholders exist. A number of port operators and container shipping companies are not satisfied with traditional rail service; to increase their control on time delivery some now run their own trains.

The accession of Bulgaria and Romania to the EU implies that these countries do need to adjust to the modern logistic principles, especially since trade generation on the international corridors between Western Europe and Turkey is expected to grow significantly in the coming years. Therefore, improvements of the competitiveness of rail transport in the Balkan region, is important for many stakeholders including the EU, World Bank, railway companies and logistic providers.

The World Bank has issued a study called “Trade and Transport Facilitation in Southeast Europe (TTFSE) 2 – Railway Corridor and Border Crossing Study Romania and Bulgaria” with the aim to contribute to improve the competitiveness of rail transport in the Balkan region by (i) reducing the border crossing stopping times for freight and passenger transport trains on the main railway corridors, and (ii) improving the quality of services through identifying pragmatic short-term high-impact measures and capacity building actions that will facilitate liberalisation of railway services.

The study, which has been conducted in the period September 2004-February 2005, is summarised in this paper.

2. DESK STUDY

The first phase of the study consisted of a desk study in which data was collected regarding actual traffic and future potential. The focus is on rail corridors and border crossing points (BCP’s) connecting Bulgaria and Romania, as well as the key rail corridors and BCP’s connecting neighbouring countries.
The following figure of the pan-European corridor IV shows the location of the BCP’s considered.

Figure 1: BCP’s included

2.1 Desk study findings

The data collected revealed that in general the number of trains per day is low. This means that the organization of the border process for all parties involved is a compromise between cost control and time control, because for a small number of trains one cannot expect the same capacity as on a busy road border crossing. On most border crossings the number of transit trains is lower than the number of import / export trains.

The recorded border processing times for passenger trains are in general between 30 and 90 minutes, delays are usual and on average around 30 minutes. The border processing times for freight trains are between 3 and 7 hours according to the timetable. The monitoring data show that in reality the average realization times are often 100% more and a significant part of trains departs the border station with delays.
2.2 Categorisation and selection of BCP’s

The (political) situation at the border crossings will change with time as a result of EU accession. This means that old problems might disappear and new problems emerge. For passenger transport it is assumed that the Schengen transition will be a gradual process as is the case in Hungary. The border Hungary – Austria is currently for freight and customs an internal EU border but for police and passengers it is still a Schengen border for a few years.

The following table provides an overview of Bulgarian and Romanian BCP’s included in audits through field visits.

Table 1: Bulgarian and Romanian BCP’s included in audits

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<tr>
<th>Bulgaria</th>
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<tr>
<td>Svilengrad and Kapikule (Turkey)</td>
<td>Cristeti Jijia</td>
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<td>Svilengrad (Greece)</td>
<td>Dornesti</td>
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3. AUDIT OF RAIL BORDER CROSSINGS

In general satisfactory meetings were held with professional local managers from the railways, customs and border police. During the visits day-to-day problems to achieve proper process timings, cross border cooperation problems, frictions between authorities and processes that work well have been observed.

3.1 General remarks Romania

It is expected that in the future the EU borders between Romania and Hungary will still be railway borders since not much sign of mutual interest at this moment was recorded. However, local staff ensured that at top level and regional level there is full agreement on the strategy. Local observations showed that this is not perceived. The cooperation in the Curtici joint-border station between the railways is not so good at this moment; in the other border crossings the cooperation is rather good. Cooperation between customs and police did not encounter problems. The Romanian custom officers were well aware of the changes in near future.
Based on the audit, it is noted that the development of the future external borders between Romania and Ukraine depends largely on Ukrainian progress to harmonize with EU standards for customs. This includes the introduction of the Uniform Rules concerning the Contract for International Carriage of Goods by Rail (CIM) for freight. The border processing times at the Ukraine side are not known, at the Romanian side these times are rather long (5 or 6 hours).

3.2 General remarks Bulgaria

The current Ruse – Giurgiu border faces a lot of work, mainly between the railways, whereas only registration for transit trains is needed. Based on the audit, it is noted that most of the problems that have to be solved here for transit trains should not exist at all if at the departure terminal the preparation of wagons and papers is of better quality. Currently additional checks are performed in Curtici or Svilengrad between Ruse and the departure terminal. The reason is probably because of different working standards. The Romanian railway (CFR) staff in Ruse was very professional and gave the impression that they are well supported by their regional management. The Bulgarian railway (BDZ) staff is more alone it seems, in our view they certainly deserve more support from the region and headquarters.

The process in Svilengrad looks more organized and – very important – has better support from regional offices regarding information and planning. The BDZ staff in Svilengrad analysed the quality problems in the current situation and how to solve them.

For the Turkish side only a limited impression of the situation was perceived; the atmosphere was good, in general a professional attitude exists. One of the problems at the Turkish side seems to be to get enough trained staff. There is no proper medium level school for the workers that are needed in Kapikule.

Regarding the future EU internal borders between Bulgaria and Romania/Greece it is stated that the cooperation between railways is the only remaining problem. The problems in Ruse will not disappear if nothing is improved on the BDZ information systems and planning.

The future external border between Bulgaria and Turkey (Svilengrad – Kapikule) will be one of the most important EU railway border crossings. The discussion about the location and integration of stations is therefore of great importance. It seemed that all parties are well preparing for this future situation.

3.3 Customs, policy and quality control

The conclusions regarding customs, police and quality control are based a detailed assessment made during the audits. Customs, police and quality control in general
does not lead to any additional delay when passing these controls at railway border stations. These controls can take place within the stopping time caused by technical and commercial railway delays.

This does not mean that control could not be better organised by law and means. Further improvements (generally the law and proceedings based on national law, already complying with the situation within the EU) at future internal borders can make capacity available to intensify (and improve) control at future external borders.

The following legal improvements, for the short term, should be considered:

- Participation in the common transit system (not only Romania and Bulgaria as future member states, but also Ukraine and Turkey);
- Participation in CIM by Ukraine;
- Introduction of the possibility of pre-arrival declaration (on basis of specific information of the cargo owner/importer, such as invoice and copy of the export declaration filed in the country of departure);
- Further improvement of the possibility to file electronic declarations (such as in Halmeu already the case);
- Further minimisation of physical control in railway transport from 10% to 5% by introduction of preferred importers (major companies, bulk products and/or deferring physical control to the customs office in charge of the place of residence of the importer);
- Set definitions for sealing wagons (by the railway company and/or customs).

The fact that aforementioned measures are laid down in the law will make them applicable at any customs office.

Next to the fact that control at the future internal border stations does not lead to any additional delay at this stage, aforementioned additional measures may further reduce the time and manpower necessary for adequate control at these border stations. Workforce can be replaced to the future external borders. Both in Halmeu (Ukraine) as well as in Svilengrad, customs and police seem understaffed and/or have planning problems due to irregularities in train traffic.

3.4 Conclusions

The border crossing process time in general is too long; the current organisation of border crossing results in very unreliable timetables. This is not due to customs or police activities or requirements, but largely by the way the railways work together at the border. Under the existing regulations a railway has to accept a train that has been contracted by another railway. This means, however, that at the border between two railways the liability for the train, the cargo, the rolling stock and taxes of any kind are transferred from one railway to another. This is the main reason for the lengthy and unpredictable process in the border stations.
The border crossing timings differ between the various BCP’s because of local conditions or constraints. Releasing constraints like capacity bottlenecks will not help much when cooperation between railways will not change.

The improvement of border crossing timings relies mainly on the use of locomotives and crews that can work across the border so that stopping times can be minimal and logistical problems with finding next locomotive are avoided. Almost all problems that have been observed in the fieldwork would probably evaporate if these principles could be applied in Curtici, Giurgiu/Ruse, Svilengrad and Kapikule.

4. DEVELOPMENTS INFLUENCING THE COMPETITIVENESS OF RAILWAYS

In order to reduce the border crossing times, several themes that influence the situation for the selected border crossings in near future need to be discussed. An analysis and appreciation is conducted regarding the following topics:

- Liberalization of the rail sector
- Development of the Convention concerning International Carriage by Rail (COTIF)
- Corridor transport management

The input for the appreciation is provided through interviews with stakeholders (e.g. management of BDZ and CFR, ministries of transport, corridor IV management, private rail operators) and publications (e.g. UIC, CER reports).

4.1 Liberalisation of the rail sector

In both Bulgaria and Romania the EU principles to separate rail infrastructure and transport operations have been implemented. Separation between freight and passengers is ongoing in Bulgaria and implemented in Romania. Regarding the allocation of locomotives – an important issue in border crossing improvement - the situation is not clear yet. In principle locomotives are allocated in advance to either passenger or freight trains, but in case of shortages (this is a common problem in the Balkan) or delays (also a common problem) locomotive availability at the right time and right place for freight trains is a serious problem. Passenger trains have higher priority and are processed most of the time; international freight trains seem to have the least priority. Most neighbouring countries have not (fully) implemented the separation of rail infrastructure and train operations yet.

The existing international long distance passenger trains in Bulgaria / Romania like Thessalonica / Istanbul – Moscow, do not show high ridership and will probably in a few years disappear in the current appearance.
The situation for international rail freight transport is somewhat different. The “traditional” railways have not been very successful in international transport; traditionally their focus was on domestic markets. The cooperation on border crossings between railways was and still is a problem, which hampered successful development of international rail freight. This has triggered a few different responses; some examples on the Italy – North Sea ports route are presented below.

- New operators like ERS work in joint ventures with others and are faster, more reliable and cheaper compared to the old state railways. An important reason is that they have no border problems.
- SBB (Swiss railways) decided to go international themselves; they did buy interoperable locomotives and they run now their trains from Germany to Milano with own locomotives and drivers. For Rotterdam – Milano they work together with ERS. ERS brings the train non-stop to Mainz, where SBB locomotives and crews take over to Milano. Swiss customs procedures have been adapted so that they are suitable not only for old state railways but also for new operators.
- Railion has a joint venture with BLS (another Swiss railway company) and an Italian partner on the same routes through Switzerland. Together they own interoperable locomotives.
- On the Brenner route one sees as competitors the Hamburg / Bremen port terminal operator trains and a joint venture of Railion plus an Italian rail operator.
- Port of Hamburg and Bremen terminal operators run their own rail service in Germany (Boxpress) and Italy (Contship Italia).

The lessons from these European developments in a liberalised market for Romania and Bulgaria are as follows:

- The Romanian rail freight company seems big enough to run trains cross border with own locomotives. However domestic investment has at this moment more priority and financial resources are very limited. A joint venture model seems the maximum achievable.
- The Bulgarian railways are too small to run own international trains. To grab their share of this growing market they have to take partnership in a joint venture or be part of an international holding.

4.2 COTIF development

On 1 July 2005 the new Convention concerning International Carriage by Rail (COTIF) regulations came in force. These new regulations are adapted to the new railway market situation in Europe. The new COTIF regulations include some changes that are important for border crossings:

- Transit railways do not have to accept a new train automatically; quality requirements, liabilities etc. before accepting a train can now be negotiated. This can change the procedures at the border between railways considerably.
Admission, licensing of all wagons – state owned or private – is uniform by national authorities and based on international acceptance for COTIF member states. This enables more simple and fast technical checks and repair arrangements at the border.

The new CIM documents is ready for electronic processing which again has a positive effect on border crossing times.

The new COTIF system brings the railway practice more in line with general development in the transport market where quality and reliability are more and more important contract issues. A recent CER report describes how railways try to catch their share of modern logistic markets with cooperation agreements and customer contracts based on the new COTIF system.

It is concluded that the Balkan railways are not really involved in the process of catching market share in modern logistics with cooperation agreements and customer contracts based on the liberalised railway market.

### 4.3 Corridor transport management

Since a few years the old state railways experiment with all kind of cooperation formats – takeovers, joint ventures, use of open access options to work in other countries – to improve timing and most of all reliability of freight services. It is clear that the old railway product – one product for all purposes – is no longer feasible; all railways are struggling to define more modern logistic products. International transport is getting more and more important and requires new ways of cooperation. The problems to overcome in Western Europe are largely the same as in the Balkan region, e.g. timetable stability, technical checks on rolling stock, sharing liabilities and availability of locomotives.

Some problems do however not exist yet in the South-Eastern Balkan:
- Saturated infrastructure, causing many delays.
- Fierce competition for available slots.

A longitudinal analysis of the realised departure times of the Transfesa trains from Istanbul to Germany have shown a rather large difference between plan and realisation, especially on the return trip from Istanbul where various cargo is loaded which leads to problems at every border.

It is concluded that the corridor transport management concept is not yet applied in the South East Balkan region; cooperation between the railways is lacking.

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2. This relates to monitoring data collected in the period 1-15 September 2004.
5. IMPROVEMENTS NEEDED AND INVESTMENT PROPOSALS

The findings presented in section 3 and 4 results in the following groups of improvements that most likely require similar solutions or actions:

- Reconstruction and reorganisation of individual border stations; this regards non-optimal location and / or layout of BCP’s for border station logistic processes
- Train management and synchronisation between railway process and the border process for customs, police and other authorities.
- Cooperation between railways and potential of liberalisation.
- Communication and IT issues that hamper improvement actions for the border process

In the next sections these groups of improvements are further analysed and investment proposals are derived. The last section provides pre-feasibility analyses of the proposals.

5.2 Reconstruction and reorganisation of BCP’s

The border crossings between (i) Romania and Hungary, (ii) Romania and Bulgaria and (iii) Bulgaria and Greece will from 2007/2008 on no longer be a border for customs, police etc. For passenger trains police control will remain for a few more years. For passengers as well as freight these will still be borders between state railway systems.

There is no argument for this group of stations for investment in layout or facilities. Curtici and Ruse are already joint stations. The stopping times are still long; the reason for this is the “railway – to – railway” handover process. The station layout or the available facilities enable any process improvement that the railways would agree on. The other border stations face very low traffic volumes and investment will not speed up the border process.

The Bulgarian – Turkish border will be a very important road and railway border between Europe and Turkey. At this moment the border crossing station in Svilengrad is the Bulgarian border station for Greece and Turkey. It is situated at 20 km away from the Turkish border, which means that the security aspects are difficult to control. The BDZ staff works in Kapikule (official joint border station Turkey - Bulgaria) however, the Bulgarian police and customs do operate in Svilengrad around the clock. Turkish customs is not available all day for freight train processing. Another problem is that at this border there is no phyto-sanitarian agency at the Turkish side, the inspectors arrive at the border on advanced call up; a laboratory is not available close to the border (this applies to the road as well).
The Turkish customs works in compliant with the European Customs Union; there is no principal obstacle against integrated border management. The Turkish Government is committed to crime fighting and preventing illegal immigration. However, until now this is not always reflected in border procedures.

After EU accession of Bulgaria, the Greek border will no longer be a border, so it is possible to relocate the remaining border activities from Svilengrad station to the border zone at Kapitan Andreevo / Kapikule where the road border crossing zone is located.

An alternative is to retain Svilengrad as border station including a 20 km fenced border zone to prevent illegal immigrants to jump on and off the train. One of the disadvantages of this solution is that Bulgarian customs and police services are distributed between the road border zone and Svilengrad station; this seems inefficient. The joint processing at a joint border station provides the railways better chances to achieve fast processing of trains.

For the other borders, that will remain EU outer borders, only the Romanian – Ukrainian border crossing points are also potential candidates for improvement.

Based on above it is recommended to relocate the customs and police activities to a new joint station either as an extension of the Turkish Kapikule station along the road border zone or as a new Bulgarian station annex to Kapikule in order to reduce border stopping times at the Turkish-Bulgarian border.

5.3 Train management and synchronisation of border process

During the field visits the “old way” in which railways made contracts for international transport has been observed, meaning that all railways were obliged to handle the train on their own territory. If the train was an international wagonload train, the published railway tariffs were the base for any contract. In case of block trains every railway along the route is obliged to provide its price, hereafter the railway with direct customer contact made the contract. Special rules that assured that every railway kept its autonomy on own territory exist for timetable planning, border process planning and liability arrangements. This working practice resulted in slow, unreliable timetables, unpredictable delays and no means to inform customers about the location and estimated time of arrival of their cargo. This is one important reason why railways lost a large part of international transport.

It has already been mentioned that the old railways are struggling to improve this situation. The Balkan railways are lagging behind in this learning curve and as they all come from the same communist organisation framework era they cannot easily learn from each other.
The new private rail transport operators that have their own traction and wagons have fewer problems. They have all responsibility for contracting, liabilities, logistics, timetable and technical issues in one hand. One can observe how the old state railways struggle to get their service quality at the level that these new operators can achieve. Two solutions emerge:

1. The old state railway focuses on international transport and provides traction from door to door. This is done by SBB that runs trains for Hupac from Germany to Italy with extensions to Rotterdam and Denmark. For the extensions SBB cooperates with small railway operators. Hupac tendered the contract for these train services; the benefits are lower locomotive costs, more reliable and probably faster services and better quality control including customs procedures.

2. The old state railway agrees joint ventures with operators in other countries. Railion does this for example for traffic between Germany and Italy in joint venture with BLS (Switzerland) and Italian partners.

The position of the Balkan railways is difficult in this respect. The Balkan railways are lacking money, resources and knowledge to act as a full-grown partner for the Western European railways. They cannot bear the risks connected to joint venture type of operations like it happens in the Germany – Italy market. Neither are they in a position to extend their operations in neighbouring countries, their financial position does not allow them any move like SBB.

Therefore, a coordination centre would be an appropriate instrument to adapt to the circumstances for international cooperation in the Balkan. This coordination unit should be responsible for the timetable planning, border process planning, supranational traffic management including delay management and advanced information to all border parties.

5.4 Cooperation between railways and potential for liberalisation

The BCP audits (see section 3) revealed that important problems arise from the traditional COTIF chain contracting between the railways. This means that transit railways are obliged to accept a train; however they seek ways to limit their liabilities. The new COTIF rules enable more appropriate contracting between the railways where quality aspects and different approach for distribution of liabilities can be elements in the contract. Transit railways do not have to accept trains automatically thus cooperation will be based on the contract.

The COTIF change does not solve yet the other most important problem: availability of locomotives at the right place and the right time. Proper allocation of locomotives to international freight trains is one solution, but this is relative expensive. On all corridors in Europe it turns out to be a tough job. The use of interoperable locomotives is more efficient, probably cheaper and it increases the speed and
reliability of trains. It also ensures that there is always a locomotive; even in case of delay it would be possible to find another locomotive at the border. Whatever form of cooperation is applied, there is always the cross border use of the same locomotive as a base for success.

It is therefore advised to investigate the option to set up a joint locomotive pool for the Balkan countries; the locomotives should provide traction for all international trains, but at least for long distance international (transit) trains. The Balkan railways are not in a financial position to arrange interoperable locomotives themselves or alone.

5.5 Communication and information improvements

The cooperation between railways regarding connectivity is a troublesome area. Since the railways split up a lot of time is lost discussing who is responsible for what, who will be owner or user of the railway cable networks and who should invest in new networks. The ownership of railway communication networks has a significant commercial potential.

All Balkan railways received assistance in the past to modernize their IT systems; Romania has been reasonably successful in this process.

In Europe, the already mentioned CER report shows that organizing monitoring international train monitoring even today starts with the use of telephone, pencil and paper because systems and organisations are incompatible. The UIC is working on a complete solution, however in our view it will take many years before a general railway solution is ready. In the meantime railway companies working together along a corridor use simple ready-to-use systems to organize monitoring because this is extremely important to their business.

If one compares now how internet is used in the road sector for timetable information, booking, monitoring of the transport, it is clear that the railways have to be smart to catch up with the competition. The road competition has no dedicated company software applications like the old railways seek; they use cheap open standard internet-based applications.

These open standard internet-based IT systems could also be developed for the railways, so that the communication system railways is simple and workable in all countries involved. It is proposed that at this stage start with the creation of a basic “skeleton” network for a communication system, that will allow electronic transfer of information between:

- The railway companies on both sides of the border
- The marshalling yards in origin, destination or train assembly points
- The marshalling yards and BCP’s
• BCP’s on both sides of the border
• The rail companies/BCP’s and customs, border police and other relevant authorities

5.6 Pre-feasibility analyses investment proposals

Due to limited data availability, the pre-feasibility analyses of the proposals presented in the previous sections could only be done on a rough basis using a substantial number of assumptions.

P1: Reconstruction and reorganisation of Svilengrad-Kapikule
The preliminary cost of the integration of all current border activities in Svilengrad and Kapikule into a new joint border station as an extension of the present Kapikule station along the road border zone is estimated around 37 million euros (2005 price level). This includes the procurement of X-ray equipment.

The estimated benefits are significant: faster border processing (average improvement 2-5 hours), better catch rate for smuggling / illegal immigration, improved cooperation between Turkey and EU and eventually harmonisation of Turkish export law (indirect effect) based on equal conditions for rail and road.

P2: Regional railways coordination centre
The costs for the railway coordination centre consist of office rent, staff, equipment and training. It is estimated around 625.000 euros for the first year, each subsequent year would be 20% lower.

The benefits relate to improvement in the competitiveness of the corridor as a whole, eventually leading to the attraction of more freight. Synchronization in planning and realisation between all parties is assured not only in one station but also along the whole logistical chain, leading to transport cost reductions. In all countries procedures between railway, customs and police are similar and based on the same principals, again leading to transport cost reductions.

P3: Interoperable locomotive pool
It is advised to conduct a separate business case study, in order to come to an assessment of costs and benefits. No pre-feasibility analysis has been carried out.

P4: Communication and IT systems
The cost estimate for a simple and open internet-based IT system proposed for Bulgaria, Romania, Ukraine, Moldova and Turkish border crossing has been derived
from the TPPF report. This revealed a total preliminary investment of around 310,000 euros.

The train management improvement through the IT system is estimated to lead to around 1-2 days shorter travel times on the corridor Germany-Bosporus. The reduction in border procedure times could reduce the total travel time with another 18 to 24 hours.

6. CONCLUSIONS AND RECOMMENDATIONS

6.1 Promising investment proposals

In order to improve the competitiveness of rail transport in the South East Balkan region measures should be taken to reduce the border crossing stopping times. The most promising investment proposals to be realised on short-term with high-impacts are:

- Integration of all current border activities in Svilengrad and Kapikule into a new joint border station as an extension of the Kapikule station along the road border zone.
- Develop a regional coordination centre for Bulgaria, Romania and at least Turkey, (i) to act as a single point of entry for timetable planning, resource allocation and contracting cost calculation and (ii) to perform train monitoring, communications about train running, assistance in problem solving like missing documents, rerouting, re-planning of resources in case of delays.
- Explore the most practical and economic set up of an interoperable locomotive pool, probably to be managed by the regional coordination centre.
- Development and implementation of a simple and open internet-based IT system for the Balkan and Turkish railways.

6.2 Setting priorities: Svilengrad-Kapikule reconstruction most costly with highest impact

The pre-feasibility analyses have revealed that the integration of border activities in Svilengrad and Kapikule is the most costly investment with around 37 million euro. The estimated benefits are significant: faster border processing (average improvement 2-5 hours) better catch rate for smuggling / illegal immigration, improved cooperation between Turkey and EU and eventually harmonisation of Turkish export law (indirect effect) based on equal conditions for rail and road. Therefore it is recommended to give the highest priority to this proposal and further elaborate the conditions, costs, benefits, financing and implementation plan.

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The railways coordination centre (estimated costs 0.625 million euro for the first year), the development and implementation of a simple and open internet-based IT system (estimated costs 0.310 million euro, excluding software and operational costs) and the proposal to conduct a study on the set-up of an interoperable locomotive pool are also promising concepts that need further elaboration.

6.3 Joint actions needed

The investment proposals are all contributing to improving the competitiveness of rail transport in the Balkan region. However, these measures should be seen in a wider perspective of improving market orientation of the railways in modern logistics. Therefore in parallel additional measures aimed at improving their performance should be taken by the Balkan railways themselves.

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