1. Towards the Baltic-Adriatic corridor work plan

In 2014 we have reached all together a major milestone in the European transport policy. After the adoption of the forward-looking TEN-T Regulation (1315/2013) in December 2013, the core network corridors have paved their way. The Baltic-Adriatic Corridor links major nodes (urban nodes, ports, airports and other transport terminals) through key rail, road, maritime and air transport connections from North to South, i.e. from Poland through the Czech Republic, Slovakia, Austria to Italy and Slovenia. Such a reinforced network in Central Europe significantly strengthens the infrastructural basis for efficient, safe and high-quality multimodal transport chains for freight and passengers. By implementing the Baltic-Adriatic axis, new traffic flows between the Baltic and Adriatic ports and their hinterland will be developed and the ports as entry and exit doors of the corridor be boosted.

In March 2014 I was given the mandate as European Coordinator for the Baltic-Adriatic Corridor. Regulation (EU) 1315/2013 defines that *each European Coordinator shall, by 22 December 2014, submit to the Member States concerned a work plan analysing the development of the corridor. After it has been approved by the Member States concerned, the work plan shall be submitted for information to the European Parliament, the Council and the Commission. The work plan shall include, in particular, a description of the characteristics, cross-border sections and objectives of the core network corridor*.

I am very grateful that I was given this important task to assist the Member States in shaping an integrated and modern transport network. I am aware of the high responsibility that was entrusted to me and ensure you that I will do my utmost to reach the objectives that you, Member States, have set together with the European Parliament upon a proposal of the European Commission and that have been consulted with a very wide variety of stakeholders.

We need a transport network that can face the challenges of today's economy and environment. Investing in the many projects on the Baltic-Adriatic Corridor that contribute to this objective will be vital for Europe's smart, inclusive and sustainable growth and has an enormous potential for creating jobs – during construction and after completion – in many sectors of the economy.

My vision of the Baltic-Adriatic Corridor is that this corridor turns into a corridor of sustainable and socio-economic growth and that it becomes much more than the mere transport infrastructure. I wish that this corridor becomes a key development zone and that it plays an important role as one of the main drivers of economic development in Central Europe. My vision of this corridor is also based on its sustainable dimension, giving clear preference to greener transport modes and fostering a shift from road to rail. Moreover, this corridor needs to be seen far beyond the pure transport links across borders. It needs to be well embedded into national and regional development strategies as to maximize the positive influence of its transport infrastructure on other social and economic sectors. We thus need to come from a regional and national planning perspective to a real corridor perspective.

Our challenge will be to turn this ambition into reality and to turn the Baltic-Adriatic Corridor into a living environment. In order to reach this ambitious goal, a strong cooperation of all relevant stakeholders at all levels of intervention will be needed. I am very pleased that we have with the Baltic-Adriatic axis a corridor with a long history of interregional cooperation on which we can base our activities. This constitutes an important competitive advantage.

I trust that the present work plan is a first step to enable the corridor to become reality, not only by connecting North and South, but by generating growth along the corridor and its adjacent areas. This work plan is a concrete plan for the implementation of the core network based on a thorough analysis of the corridor.

This corridor work plan is accompanied by three analytical documents: first, the detailed analysis of the Baltic-Adriatic Corridor presented as corridor study. Secondly, an indicative list of projects and investments which are planned for the completion of our core network corridor by 2030, together with their individual timing and financing. And thirdly, an illustration of the compliance of our corridor network with certain technical standards as defined by the TEN-T Regulation, based on the TENtec database.

These three annexes to the work plan have been elaborated by LeighFisher Limited (IT) and their subcontractors Jacobs Polska (PL), Paradigma (AT), NDCon (CZ, SK) and ASTRA Project d.o.o./University of Maribor (SI) (Baltic-Adriatic corridor study consortium). The consultants have worked very hard in setting a common ground for our discussions. I would like to present them my very special thanks for their high-quality work and for the excellent collaboration throughout this year.

More importantly, this work plan is not only based on a sound scientific basis but on a strong and wide consultation and participation process with a high number of relevant stakeholders. With the full approval of the Member States concerned and in line with the progress for all nine core network corridors, I organised four corridor forum meetings in 2014 with a gradually increasing number of stakeholders: a first forum meeting in March 2014 only with the Member States concerned; a second forum meeting in June 2014 with the Member States concerned and the railway infrastructure managers and the ten ports along the corridor; a third forum meeting in October 2014 with the road infrastructure managers, airports and regions in addition to the previously involved stakeholders and finally a fourth forum meeting in November 2014 involving all. Besides, I called for two working groups – one dedicated to ports and another one dedicated to regions – which met adjacent to the 3rd Forum and to the 4th Forum respectively. Last but not least, the exchange with the Baltic-Adriatic Rail Freight Corridor was very important to me as to ensure coherence with their activities along our corridor. This is why the representatives of its management and executive board were involved as of the 2nd Forum meeting on.

Apart from the various meetings organised in Brussels, the direct face-to-face dialogue was crucial to come to a common understanding of the corridor and to ensure a sound basis for cooperation. This is why I visited all Ministers of Transport along the corridor over the past months in their capital cities. In addition, I looked for opportunities to directly speak with the rail and road infrastructure managers.

I am committed that the voices of the above groups are heard, their expertise is taken on board in the corridor process and that acceptance and ownership with the corridor are created. I thank all involved parties for the strong support given to me and the very constructive and harmonious atmosphere during our meetings which comforts me in my conviction that this Baltic-Adriatic Corridor is on a good way and indeed much more than 'hard' infrastructure.

All together, we have reached important milestones in 2014: We have mutually agreed on the corridor alignment. We have now a detailed insight into the compliance of the Baltic-Adriatic infrastructure with the technical requirements laid down in the TEN-T Regulation. We can base this corridor work plan on a transport market study which is the first of its kind as it involves all modes of transport along the corridor. Finally, we have succeeded in getting a detailed overview of the investments needed on the corridor in order to achieve the EU targets by 2030.

In a nutshell, the Baltic-Adriatic corridor activities of 2014 have enabled us to come to a powerful "Acquis Corridor". This is a great momentum and chance to realise what has been worked upon in the past years. I invite you to closely cooperate with me and to assume a vital role in implementing this work plan. The process is not over with the submission of this work plan; it is instead the starting point of an interesting path that I would like to go together with you. Together we can create the conditions for growth and prosperity, driving competitiveness for everyone in Europe to the benefit of citizens and businesses by setting up a real European transport network with high standards on the Baltic-Adriatic core network corridor by 2030. I count on your continuous engagement!

2. Characteristics of the Baltic-Adriatic Corridor

From the Polish to the Adriatic ports – corridor alignment

The Baltic-Adriatic core network corridor alignment and infrastructure are defined by Regulations (EU) 1315/2013 and 1316/2013. Involving six Member States (Poland, Czech Republic, Slovakia, Austria, Italy and Slovenia), the corridor connects the Baltic ports of Gdynia/Gdańsk and Szczecin/Świnoujście with the Adriatic ports of Trieste, Venezia, Ravenna and Koper. The corridor will thus provide better access to these seaports for the economic centres along the corridor.

The 1,800 km long Baltic-Adriatic Corridor allows for more possible itineraries between the Baltic and Adriatic basins: from North to South, either starting in the ports of Szczecin and Świnoujście, via Poznan and Wroclaw, or in the ports of Gdynia and Gdańsk directly to Katowice or through Warszawa and Łódź, the corridor interconnects the Polish core urban and logistics nodes to the ones located in the Czech Republic, Slovakia and Austria, reaching Wien through Bratislava or Ostrava. The corridor road and rail links continue from Austria towards the Adriatic ports of Koper, Trieste, Venezia and Ravenna via Ljubljana in Slovenia or via Udine, also passing through Venezia and Bologna in Italy.

Figure 1: Alignment of the Baltic-Adriatic core network corridor

Source: Baltic-Adriatic corridor study consortium

The corridor encompasses a total of 13 urban nodes and airports, 10 ports and nearly 30 rail-road terminals. The backbone of the Baltic-Adriatic axis is based on railway and road routes. Indeed, it is one of the few corridors that do not include inland waterways, even though the corridor interconnects with the inland waterway TEN-T core network at various sections. Its railway network corresponds mostly to the Baltic-Adriatic Rail Freight Corridor.

This corridor has intersections with five other corridors. In Poland, the corridor is crossed by the North-Sea Baltic Corridor in West-East direction and in the Czech Republic, Austria and Slovakia by the Orient-East Med and Rhine-Danube Corridors. Further South - in Italy and Slovenia - the corridor runs for large parts in parallel to the Mediterranean Corridor. Finally, there is one intersection with the Scandinavian-Mediterranean Corridor between Bologna and Faenza along the Bologna-Ravenna rail itinerary, also including the Bologna urban and logistics nodes.

Compliance with the technical infrastructure parameters of the TEN-T guidelines

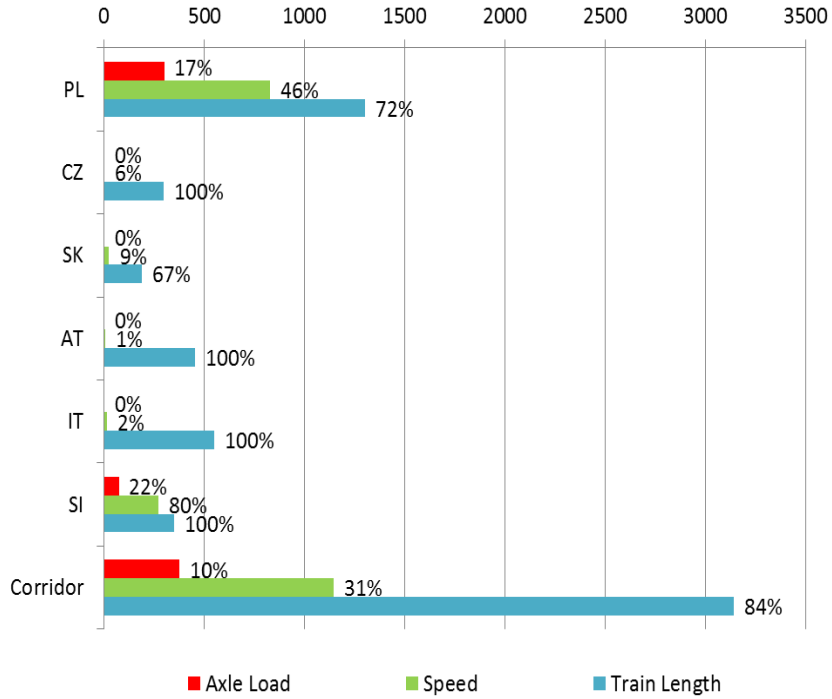
The new TEN-T Regulation sets a clear basis for action. Ambitious transport infrastructure requirements have been defined for the core network and which have to be achieved by 2030. In this respect, the consultants of the corridor study have performed a deviation analysis by comparing the parameters characterising the infrastructure with the target values of the Regulation. This compliance check has also been illustrated in eight different maps based on the data encoding (data as of January 2014) in the TENtec database and which are annexed to this work plan. The technical analysis shows the following results which give clear guidance for action on the Baltic-Adriatic Corridor. As European Coordinator, I will do my utmost to assist Member States in fulfilling those obligations.

Rail

The Baltic-Adriatic Corridor includes 4,200 km of 1435 mm standard gauge railway infrastructure. With only the exception of the two sections in Austria (Koralmbahn line section Wettmannstätten - Grafenstein within the wider section Graz – Klagenfurt and Semmering Base Tunnel Gloggnitz - Mürzzuschlag), the corridor railway infrastructure is already continuous and in operation. However, a number of challenges are to be faced in terms of compliance with the different infrastructure requirements as laid down in the Regulation (EU) 1315/2013.

Figure 2 summarises the outline in percentage (over the national sections of the corridor) and absolute km values of the non-compliant infrastructure with reference to main compliance parameters related to the Baltic-Adriatic Rail Freight Corridor (axle load, line speed and train length).

Figure 2: Extension of the non-compliant rail freight infrastructure in km and % of the total length



Source: Baltic-Adriatic corridor study consortium, elaboration based on TENtec data

As regards *electrification*, with reference to passenger, freight and mixed use lines, the railway infrastructure along the corridor is almost entirely electrified with the exception of diesel passenger sections at the cross-border railway line between Bratislava and Wien. However, three different power systems are in use: AC 15 kV 16.7 Hz (Austria), AC 25 kV 50 Hz (Czech Republic and Slovakia) and DC 3 kV (Poland, Czech Republic, Slovakia, Italy, Slovenia) which constitutes an important obstacle for interoperability on the corridor only partially mitigated by the use of multisystem locomotives.

With respect to the *axle load*, the corridor is mostly compliant with the Regulation (22.5 t). There are however some corridor sections (10% of the total corridor railway infrastructure) that do not comply with this standard yet, especially in Poland (including several sections on the lines Katowice – Czechowice Dziedzice – Zwardoń, Wrocław – Jelcz – Opole, Kędzierzyn Koźle – Chałupki and Kędzierzyn Koźle – Gliwice – Chorzów, Warszawa Wschodnia – Warszawa Zachodnia – Grodzisk Mazowiecki), Slovenia (several sections between Zidani Most – Šentilj) and the Czech Republic (railway line between Brno – Přerov).

Line speed is also not homogeneous along the Baltic-Adriatic Corridor with relevant bottlenecks particularly affecting the Polish network which calls for infrastructure modernisation. In greater detail, over 800 km of the Polish railway lines (about 20% of the total corridor railway infrastructure) need to be upgraded to meet the requirement set in the Regulation with respect to the line speed for freight trains (100 km/h).

When it comes to the maximum permitted *length of trains*, this is on most sections of the corridor shorter than the 740 m required by the Regulation. The prevailing maximum train length along the corridor is around 600 m, but more severe restrictions exist on specific sections, especially on the Slovenian network.

Despite the installation of ETCS on certain lines or GSM-R already available on most of the corridor sections, the *ERTMS* technology is – apart from one section in Austria – not deployed on the corridor yet; its gradual deployment is however starting from end 2014 on.

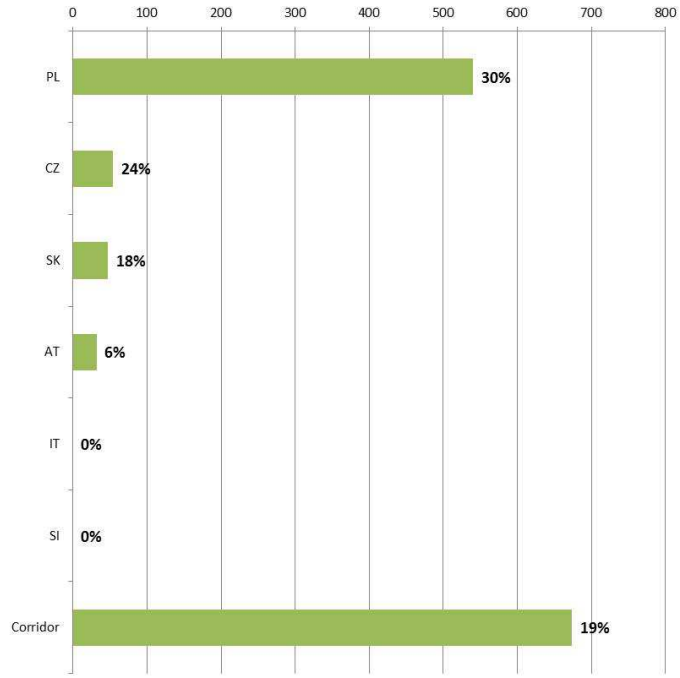
- In Poland, the ERMTS technology is expected to be deployed by 2030. Railway line E65, section Grodzisk Mazowiecki – Zawiercie, is already equipped with ETCS Level 1 and operational as of December 2014; GSM-R is not installed on the line.
- In the Czech Republic, the ETCS Level 2 is envisaged to be deployed by 2017 with the exception of the Přerov – Brno railway line on which instalment is expected to be completed by 2024.
- In Slovakia, ETCS Level 1 is already available on the section Bratislava – Zlatovce; ETCS Level 1 technology is expected to be installed on the section Zlatovce – Žilina by 2015 up to Púchov and by 2018 up to Žilina. ETCS Level 2 technology will be implemented on the Žilina – Čadca railway line by 2016. Deployment of ETCS at the Bratislava junction is planned for 2019. There are no defined plans for the deployment of ERTMS in the cross-border section Čadca – Skalité at present.
- In Austria, the deployment of ERTMS is on-going. The sub-section connecting Bernhardsthal to Wien's main station will feature ETCS Level 2 by the end of 2014. According to the investment plans of ÖBB Infra, other sections of the Baltic-Adriatic Corridor, Pottendorf/Wien – Wampersdorf (106) and Graz – Klagenfurt (401 Koralm railway line), will be ETCS Level 2 compliant in 2023 and the section comprising the Semmering tunnel will be ready by 2024.
- The rail infrastructure on the Baltic-Adriatic Corridor in Italy is equipped with national control and command systems, which in most cases was upgraded to a national digital system (SCMT) that uses the same infrastructure digital equipment of ETCS (Eurobalise). Planned investments on the Italian rail network include the upgrade of existing lines equipped with national signalling system to ETCS Level 1 or Level 2, as appropriate.
- With the exception of railway line Pragersko-Maribor-Šentilj, ETCS Level 1 is currently under implementation on the Slovenian sections of the Baltic-Adriatic Corridor, with expected completion date by end of 2015. The time-schedule for the implementation of the ERMTS technology on the Pragersko-Maribor-Šentilj section is to be confirmed.

Regarding stations and junctions, in line with the overall considerations about the status of the railway lines in Poland, stations and junctions are being gradually modernised and upgraded; however modernisation works are still necessary to improve the performance of the entire network at nodes. In the Czech Republic, capacity and speed limitations exist at the junctions of Ostrava, Brno and Břeclav, the latter expected to be fully modernised by 2015. In Slovakia the Žilina and Bratislava junctions have speed limitations respectively of 60 km/h and 40 km/h, requiring modernisation works. In Austria, works are on-going for the construction of the new railway station in Wien (Wien Hauptbahnhof); the station is already partially in operation since October 2014 and is expected to be fully completed by 2015. In Italy, the junction of Udine is affected by constraints existing on the access point to the Northern part of the city and partly on the belt-line which still is single track. In Slovenia, the capacity of the current railway station in Ljubljana is rather limited; therefore possibilities for rerouting of cargo traffic out of the station are under consideration.

Road

The 3,600 km road infrastructure on the Baltic-Adriatic Corridor does not fully comply with the requirements of the Regulation (EU) 1315/2013 either, i.e. in what concerns the type of infrastructure and parking areas. The situation is particularly relevant for the Polish road network, whereas the corridor infrastructure in Italy and Slovenia is fully compliant. Currently, 19% of the road corridor infrastructure is constituted by ordinary roads which do not comply with the requirements.

Figure 3: Extension of the non-compliant road infrastructure in km and % of the total length



Source: Baltic-Adriatic corridor study consortium, elaboration based on TENtec data

Ports

Ports represent the main gateways for passengers and especially freight transport to core network corridors. There are ten core ports in operation along the Baltic-Adriatic Corridor: five classified as maritime and inland waterway ports (Szczecin and Świnoujście, Trieste, Venezia and Ravenna), three classified as maritime ports (Gdynia, Gdańsk and Koper) and two inland waterway ports also classified as maritime ports (Wien and Bratislava). These ports are all interconnected to the road and rail links of the corridor, representing a basic infrastructure for intermodal transport. Container terminals provide access to commercial global maritime flows of cargo; Ro-Ro/Ro-Pax terminals allow for continuity in the flows between the surface road and rail transport links of the Baltic-Adriatic axis and the Motorways of the Sea in operation within the Baltic and Mediterranean basins. Investments planned at the ports are expected to support the economic activities and growth of the Baltic-Adriatic Corridor regions both serving the existing traffic and capturing additional demand, which makes the need for effective and efficient "last mile" accessibility a key focus of attention in the development of the core network corridor.

Airports

There are 13 core airports along the corridor which are all interconnected to the road network (Szczecin, Gdańsk, Poznan, Wroclaw, Łódź, Warszawa, Katowice, Ostrava, Bratislava, Wien, Ljubljana, Venezia, Bologna). The two core airports (Warszawa and Wien) which have to be connected to the rail network according to the Regulation already fully comply with this requirement. In addition, a rail connection exists for the Szczecin airport and is currently under construction for the Gdańsk and Ostrava airports. Investments are also planned at Katowice, Venezia, Bologna and Ljubljana for the development of railway interconnections with the TEN-T core network.

Rail-Road Terminals

Nearly 30 rail-road terminals are operating along the Baltic-Adriatic Corridor and more are under construction at present, all of them already or planned to be interconnected to the corridor rail and road infrastructure.

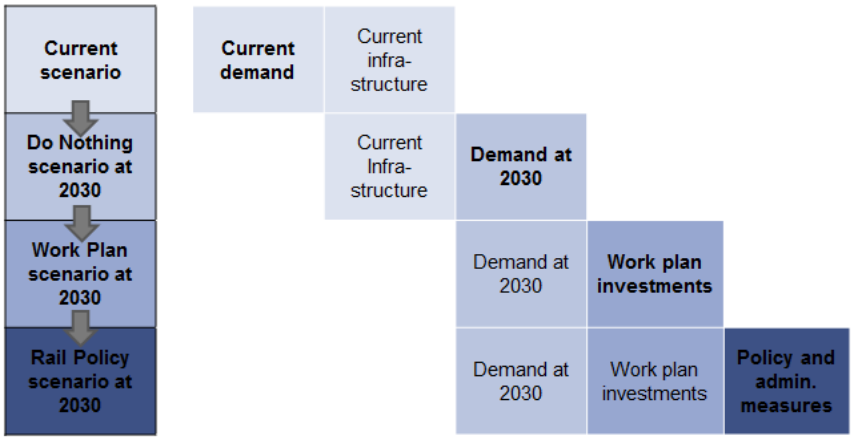
3. Results of the transport market study

For the first time, a multi-modal transport market study that covers all corridor relevant modes of transport has been elaborated. This market study has been prepared at the threefold propose of:

- providing a comprehensive view on the current multimodal transport flows on the rail and road corridor infrastructure and at the main interconnecting nodes (maritime and inland ports, airports);
- measuring the current performance of rail and road transport along the corridor and developing a prognosis of its evolution during the time horizon of the corridor work plan (2014-2030), also including the effects of the investments included in the project list annexed to this work plan;
- supporting the definition of the critical issues on the Baltic-Adriatic Corridor, complementing the analysis of the compliance and quality of the infrastructure with a view to identifying the possible issues related to the transport infrastructure capacity on the road and rail networks.

Four main scenarios were developed for the prognosis of the rail and road performance, gradually introducing different assumptions on a step-by-step basis, thus allowing for the separate assessment of their effects.

- *2014 (current scenario)* – describing the interaction of the current travel and transport demand and the current corridor infrastructure;
- *2030T (do-nothing scenario at 2030)* – describing the interaction of the travel and transport demand at 2030 with the current corridor infrastructure (as for the 2014 scenario);
- *2030WP (work plan scenario at 2030)* – describing the interaction of the travel and transport demand at 2030 (as for the 2030T scenario) and with the corridor infrastructure improved based on the major rail and road investments included in the project list annexed to this work plan;
- *2030RP (rail policy scenario at 2030)* – describing the interaction of the travel and transport demand at 2030 with the corridor infrastructure improved based on the major rail and road investments included in the project list annexed to this work plan (as in scenario 2030WP), combined with policy and administrative measures aimed at reducing by 20% the generalised transport cost of the rail mode compared to the road transport (such as the internalisation of the total transport costs, the promotion of more attractive rail services, the effect of the on-going liberalisation process in railways and the fourth railway package, the removal of administrative and operational barriers). This last assumption does not constitute an assessment of the likely impact of these measures, but it is only aimed at providing an indication about the magnitude of the possible modal shift and its implication on the available rail capacity on the corridor.



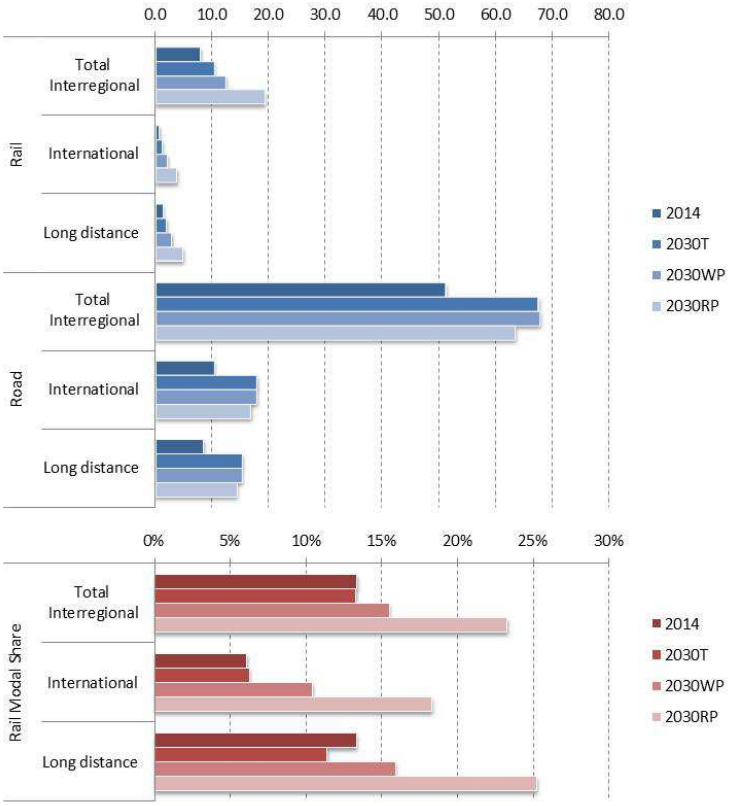
In the interpretation of the results of the transport market study for the corridor, the scope of the study, together with the very large area covered by the analysis and the limitations in the demand and traffic data available, should be kept in mind. Inevitably, significant margins of uncertainty affect the results in terms of absolute values and shares.

Notwithstanding these limitations, by comparing the outcomes in the different scenarios, the analysis provides some clear indications concerning the main trends in the transport performance by mode and the potential effects of the rail and road transport investments included in the project list annexed to this work plan, also combined with policy measures aiming at supporting the use of railway and environmentally friendly transport systems. The results presented in Figures 4 and 5 are focused on the interregional[1], international and long distance transport demand along the corridor, which are the key target of the EU and TEN-T transport policy, and show that:

- The current rail modal share is around 13% for passengers (measured in pax*km) and 19% for freight (in tons*km); the rail modal share is significantly higher for long distance freight transport (39%). It is worth noting in this respect that the corridor already satisfies the 2030 freight modal share target of the 2011 White Paper (30% rail share for trips longer than 300 km).
- The transport demand is expected to grow significantly by 2030, both on rail and road, although at a reduced pace when compared to the historical observed trends. In the do-nothing scenario, the growth in the total interregional demand along the corridor is around 32% for passenger and 33% for freight.
- Without significant investments, the rail share is expected to remain stable for passengers (13%) and is envisaged to decline slightly for freight (18%), due to a combination of increasing car ownership (especially in the Eastern European countries), also combined with the forecast demographic development.
- The investments in rail and road infrastructure, as included in the project list annexed to this work plan, have a positive, although limited, effect in counterbalancing this trend, with a rail demand exceeding the current market shares (15% for passengers and 21% for freight), with major increases in the international and long distance segments.
- The results of the fourth developed scenario (2030RP) show that additional policy and administrative measures could contribute to a great extent in the promotion of rail transport, with market shares for this mode rising to 23% of interregional demand for passenger and 24% for freight (43% for long distance transport). While these changes may appear limited in terms of modal shift, the combination of this shift and the natural growth of the rail market will lead, under this scenario, to doubling of the current rail volumes – which may induce potential capacity issues on the Baltic-Adriatic Corridor.

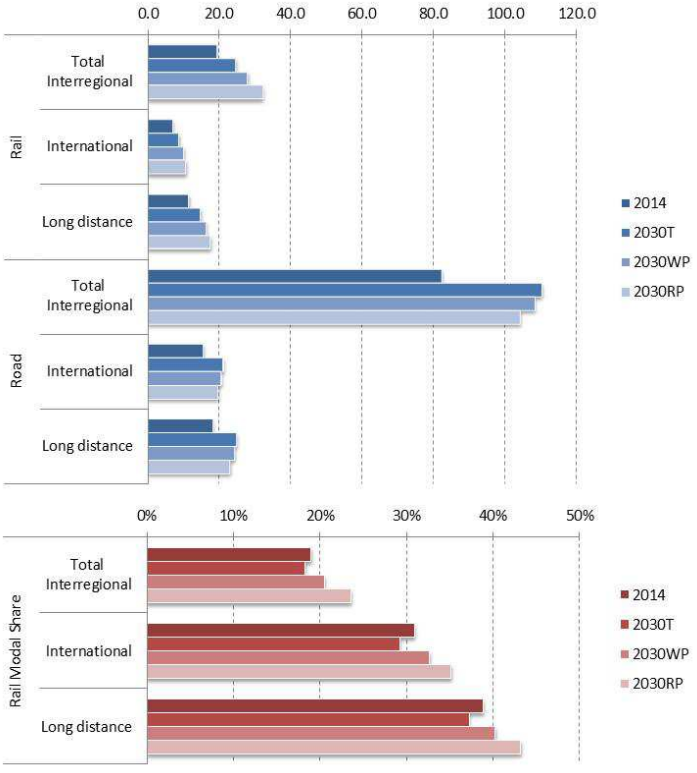
[1] The interregional demands include only trips occurring between two distinct NUTS2 regions both located along the Baltic-Adriatic corridor alignment. The long distance demand includes interregional trips longer than 300 km.

Figure 4: Performance and modal share of the Baltic-Adriatic transport modes (millions of pax*km/year)



Source: Baltic-Adriatic corridor study consortium

Figure 5: Performance and modal share of the Baltic-Adriatic transport modes (millions of tons*km/year)



Source: Baltic-Adriatic corridor study consortium

Capacity issues on the rail and road networks

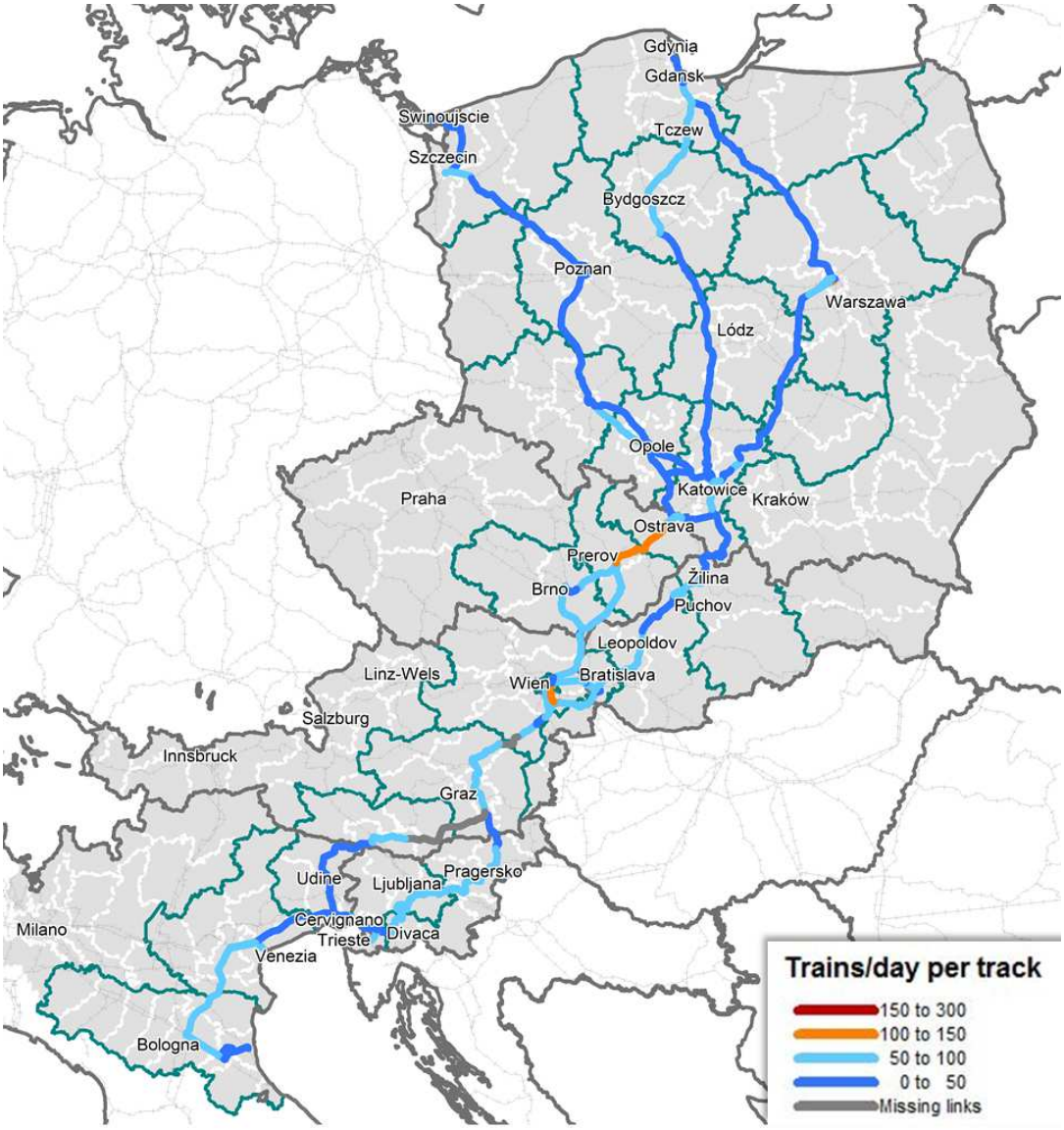
The identification of the possible capacity issues on the rail and road corridor infrastructure is based on the analysis of the current and predicted traffic volumes in comparison with the available number of rail tracks and road lanes. It should be noted that this analysis does not constitute a complete assessment of the capacity of the infrastructure, which would require much more detailed analysis (especially for rail, where capacity limitations may refer to any of the rail subsystems, and not necessarily the number of tracks). The main purpose of the analysis is to provide a comprehensive view on the use of the available capacity of the rail and road infrastructure and to contribute identifying in advance possible capacity issues in the mid and long term.

Flows and capacity on the rail network

Figure 6 shows that current flows on the rail network are generally below the critical level - set in the corridor analysis at 150 trains per day per track for a double track line. Taking into account that rail infrastructure can also operate above this traffic level – especially if specific technological and signalling solutions are implemented – rail capacity is not a generalised short term issue for the corridor.

On the other hand it should be underlined that by restricting the analysis to the work day rather than to the calendar day some sections of the corridor already present high levels of traffic, such as the Graz-Bruck/Mur section, with 240 trains per work day and the single line section connecting Werndorf to Spielfeld-Strass/Šentilj with 112 trains per work day between Werndorf and Leibnitz. The section Brno-Přerov is also worth mentioning in terms of capacity, although not directly resulting from the analysis as significantly critical due to the replacement of railway services with bus operations for capacity related issues. Investments are already planned to increase capacity on these lines.

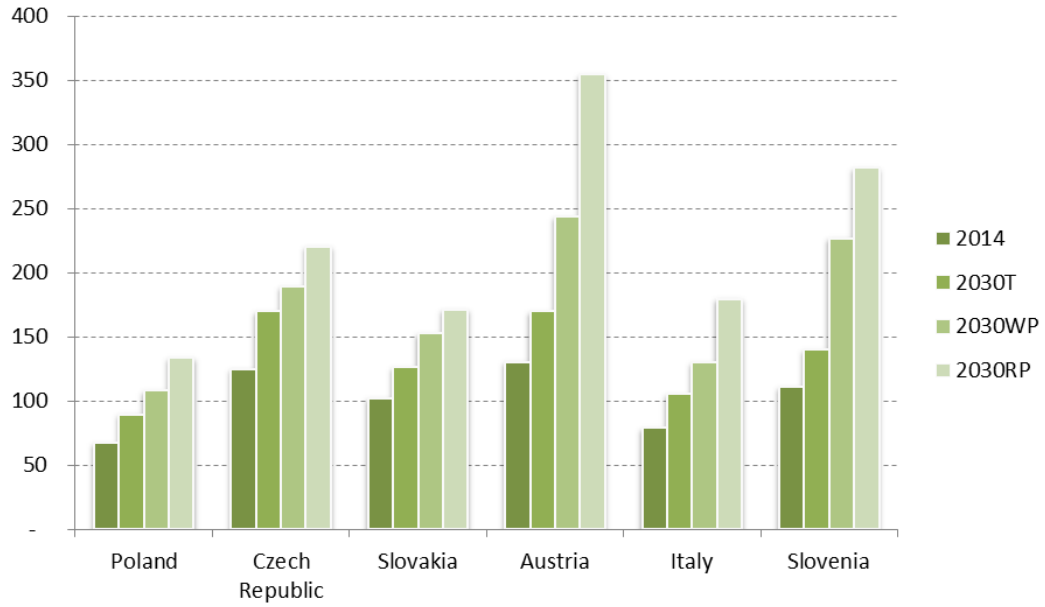
Figure 6: Intensity of rail transport (2014, trains/day/track)



Source: Baltic-Adriatic corridor study consortium, elaboration based on TENtec data and sections

In the medium and long term, the improvement of the railway infrastructure will induce a significant growth in the corridor rail transport volumes, which will be even higher in the case of effective implementation of significant modal shift measures. In this respect, it should be noted that in certain urban and metropolitan areas, new services are going to be implemented, i.e. Bologna node, expected to increase services between Bologna and Castelbolognese, and Gdynia/Gdańsk where the Pendolino high speed trains are already in operation and the Pomerania Metropolitan rail services are planned to be introduced in the future. These foreseen increases in rail services may lead to capacity issues particularly in view of the increase in freight traffic operations from the ports of Ravenna and Gdynia as well as Gdańsk respectively. This specified it should be also noted that, under the applied approach, the growth in the corridor train traffic is also correlated to re-routing of services from alternative lines to take advantage of the improved infrastructure. This is of course an operational decision that might not be implemented by train operators and/or infrastructure managers, and subject to the availability of train paths. For this reason, the present assessment is likely to identify an upper limit in the increase in train flows on the corridor.

Figure 7: Average train flows along the corridor (trains/day)



Source: Baltic-Adriatic corridor study consortium

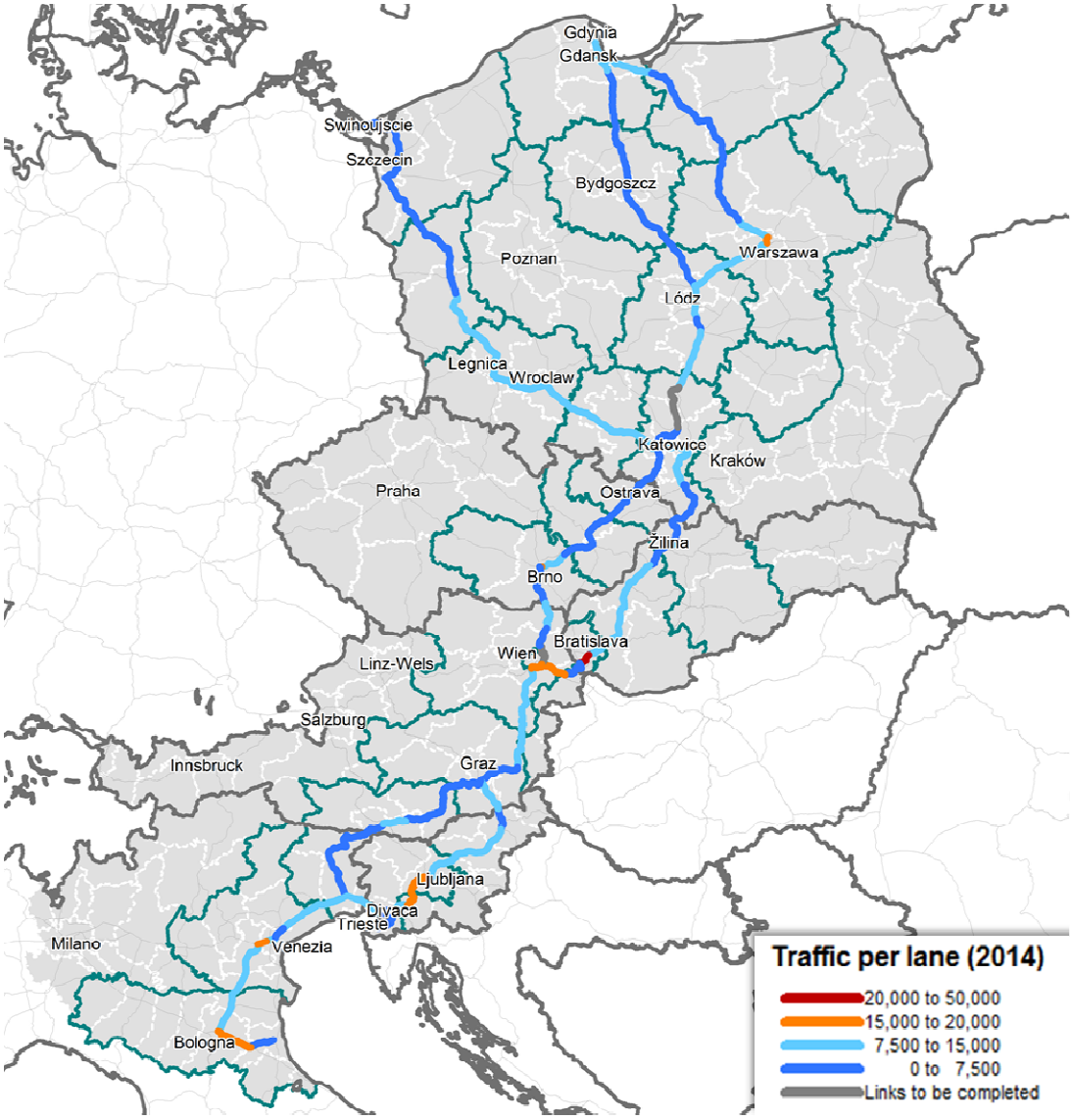
Based on the analysis, the current available capacity will be sufficient to accommodate train traffic growth along the corridor in the do-nothing scenario (2030T). This is also generally true for the work plan scenario, where the train volumes will further increase compared to the current situation (+60% in average along the corridor, but with growth mainly concentrated on the new or upgraded sections). However, local capacity issues would need to be appropriately managed – both in the detailed definition of the investments or in the management of the available capacity. These issues will be mainly located in urban nodes (Warszawa and Katowice in Poland, Wien in Austria, and Ljubljana in Slovenia) and in specific sections (Ostrava-Přerov in the Czech Republic). In addition, high traffic flows might occur in the Austrian section between Werndorf and Wiener Neustadt, also as a result of traffic induced by the completion of the Alpine crossings (Semmering and Koralm). In any case, investments are already planned or under consideration on these sections to allow accommodating for the expected traffic increase.

It is therefore only in the case of a more significant shift of transport demand towards the rail mode (such as the one depicted in the 2030RP scenario) that capacity issue might arise on the corridor, limiting the effective growth of the rail mode and the smooth flows of long distance transport. However, it should be noted that, in case this scenario will materialise, capacity to accommodate this additional demand might be provided not only with additional investments on the corridor, but also with the improvement of the comprehensive network, which can provide alternative routes to the main Baltic-Adriatic core network corridor.

Flows and capacity on the road network

Figure 8 shows that current road flows are generally below the critical level - set in this analysis at 20,000 vehicles per day per lane.

Figure 8: Intensity of road transport (2014, veh/day/lane)

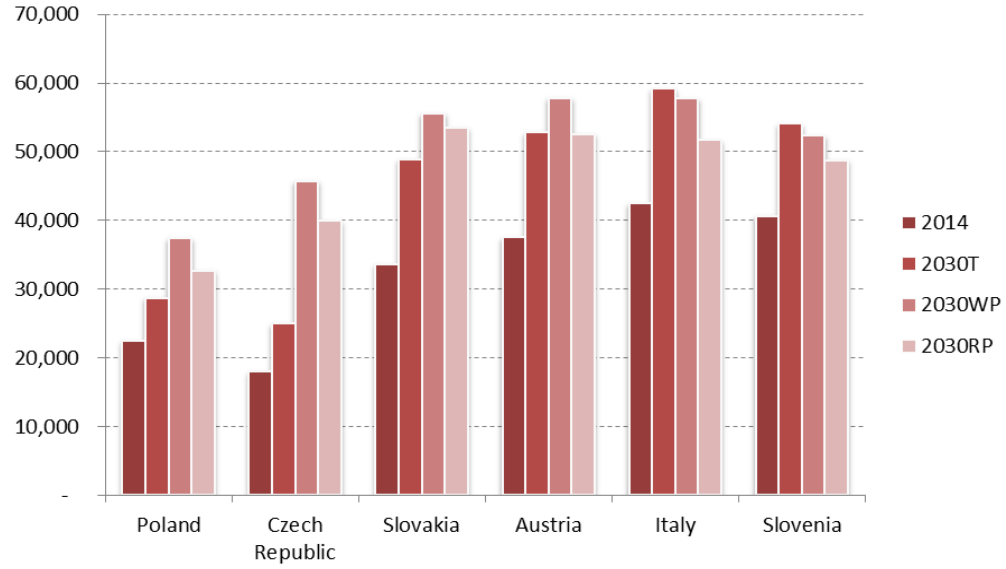


Source: Baltic-Adriatic corridor study consortium, elaboration based on TENtec data and sections

Taking into account that road infrastructure can also operate above this traffic level (although with reduced efficiency in terms of congestion), capacity is not a general issue for the corridor. The only section currently above the identified critical level is within the urban area in Bratislava, where projects for a new external by-pass are being developed – although not included in the Baltic-Adriatic corridor alignment.

Figure 9 shows that, as a result of the improvement of the infrastructure, the flows on the road infrastructure are expected to grow significantly in the time plan horizon, although this effect might be mitigated by improvements of the rail infrastructure and implementation of modal shift measures.

Figure 9: Intensity of road transport (vehicles/day)



Source: Baltic-Adriatic corridor study consortium

The available infrastructure capacity (also taking into account the full implementation of all investments already included in the project list annexed to this work plan) will be generally adequate to accommodate growth in road transport volumes for all scenarios under assessment. Limited and specific exceptions to this situation may occur within or in the approaches to major urban nodes, in particular in Warszawa, Brno and Bologna. It should be noted that issues in Warszawa and Bologna seems more limited and might be solved by the implementation of modal shift measures, while the capacity issues in Brno might call also for capacity improvements in the mid or long term.

In a nutshell, the results of the transport market study show that with reference to existing and future likely flows of traffic on the Baltic-Adriatic Corridor *no specific critical issues in terms of capacity* are worth noting at present, which does however not aprioristically exclude that capacity problems may occur in the future, particularly in proximity of urban agglomerations and other major demand generation points and on the lines and roads interconnecting these nodes. In these terms, the corridor study may underestimate the extent and severity of specific situations where long distance flows add up and mix to the regional, metropolitan or even local traffic, which I recommend as European Coordinator are to be analysed in a more detailed way in future studies.

4. Critical issues on the Baltic-Adriatic Corridor

Critical issues hampering the development of the Baltic-Adriatic Corridor as part of the TEN-T core network have been identified on the basis of the analysis of the compliance of the infrastructure to the requirements of the Regulation (EU) 1315/2013, complemented by means of the review of existing studies, professional knowledge of the Baltic-Adriatic corridor infrastructure and the results of the market study. Most importantly for me as European Coordinator is that a wide variety of stakeholders was confronted with and consulted on those research results in the four Corridor Forum and two working group meetings.

In line with the targets and objectives of the TEN-T regulation aimed at supporting the development of intermodal and interoperable long distance traffic across Member States, my attention as European Coordinator focuses in a first place on the critical issues at cross-border sections along the Baltic-Adriatic Corridor.

Cross-border sections

Further to the analysis of the compliance to the requirements in terms of electrification, axle load, speed and train length, major cross-border bottlenecks have been identified for following six rail cross-border sections (out of nine rail cross-border sections along the corridor):

Railway sections

- Opole (PL) – Ostrava (CZ), [Chałupki (PL) – Bohumín (CZ)];
- Katowice (PL) - Ostrava (CZ), [Zebrzydowice (PL) – Petrovice u Karviné (CZ)];
- Bratislava (SK) – Wien (Stadlau) (AT), [Devínska Nová Ves (SK) – Marchegg (AT)];
- Katowice (PL) – Žilina (SK), [Zwardoń (PL) – Skalité (SK)];
- Graz (AT) – Maribor (SI), [Spielfeld-Straß (AT) - Šentilj (SI)];
- Trieste (IT) - Divača (SI), [Villa Opicina (IT) – Sežana (SI)].

In addition, the following two road cross-border sections (out of a total of seven along the corridor) have been identified as critical in terms of compliance as these two sections are neither motorways nor expressways.

Road sections

- Katowice (PL) – Žilina (Brodno) (SK), [Zwardoń (PL) – Skalité (SK)];
- Brno (CZ) – Wien (Schwechat) (AT), [Mikulov (CZ) – Mistelbach (AT)].

These six rail and two road cross-border sections require particular attention with regard to their modernisation and upgrading to comply with all EU requirements.

Figure 10: Critical issues at cross-border sections

Source: Baltic-Adriatic corridor study consortium

Missing links

There are two missing links along the Baltic-Adriatic Corridor. These regard the two alpine crossings in Austria, the Semmering Tunnel and the Koralm railway line and tunnel. Both are at the construction stage and are expected to be completed by 2024 and 2023 respectively.

National bottlenecks

Besides the major issues and needs for upgrading at the borders and the completion of the two missing links, several national bottlenecks need to be addressed on the Baltic-Adriatic Corridor. Even though these bottlenecks are on the national transport network, their removal will bring important network benefits for the whole corridor. In particular, the railway network in Poland and Slovenia require modernisation to comply with the EU

requirements. In the Czech Republic, Slovakia, Austria and Italy an upgrading of lines and improvements at junctions and nodes is in the needed focus. As regards national roads, bottlenecks exist for Poland, Czech Republic and Slovakia where a completion of the modernisation of the motorway network is needed.

National bottlenecks - rail

Poland has already started an extensive investment programme for the modernisation of its railway infrastructure during the period 2007-2013. Several works have already been completed and others are currently under implementation. However, further improvements are required on several sections of the Polish Baltic-Adriatic Corridor for the removal of line speed bottlenecks, increase in train length and axle load standards which particularly affect the transport of freights along the corridor.

In the Czech Republic, capacity and speed bottlenecks exist which affect operations of trains at the junctions Ostrava and Brno. Similar problems exist at the Břeclav node where upgrading works are nearly completed. The section Přerov – Brno represents a capacity bottleneck; the line is also not compliant with respect to line speed, train length and axle load standards. Different solutions are currently under review by the relevant stakeholders for the modernisation of this railway line.

In Slovakia, bottlenecks are concentrated at major railway junctions in particular Žilina and Bratislava, where maximum speed is respectively of 60 km/h and 40 km/h. Works for the modernisation of the line Žilina – Bratislava railway line are already on-going or planned to increase the speed from 120 to 160 km/h.

In Austria, apart from the two missing railway links, the Wien railway node is considered as bottleneck which is however being solved by the new main railway station in Wien which opened to traffic in October 2014 and is already partially in operation. It is expected to be completed by the end of 2015. The line Wien Inzersdorf – Wampersdorf is planned to be doubled by 2023. Some sections of the network are operating close to capacity limits such as the Graz-Bruck/Mur railway line.

In Italy, major critical issues exist on the Venezia – Trieste railway line (improvement of headway system signalling and need for removal of level crossings); the Venezia/Mestre and Udine nodes also require upgrading works. Works to increase train length and gauge standards in favour of freight traffic are required on more sections along the corridor.

In Slovenia, major deficiencies exist compared to the requirements of the TEN-T standards. The upgrading of the existing line Divača – Koper is under implementation/modernisation to be concluded by the end of 2015, while the second track Koper – Divača is planned to be concluded by the end of 2022.

National bottlenecks – road

In Poland, part of the road infrastructure belonging to the corridor (S69, S3, S7, A1 and S1) is being upgraded or is planned to be upgraded to comply to Regulation (EU) 1315/2013. The S69 in particular is directly interconnected to the Katowice – Žilina cross-border section.

In the Czech Republic the D1 motorway section Lipník nad Bečvou – Říkovice is still to be completed; currently planned for 2021.

In Slovakia, upgrading works for sections and junctions of the D1 motorway between Trnava – Bratislava are planned to be completed by 2019; works for the implementation of the D4 bypass motorway to solve capacity issues in Bratislava are under preparation, the infrastructure assumed to be completed by 2020. The D3 motorway bypassing the Žilina urban area is currently under implementation to solve traffic congestion on the existing roads I/11 and I/18; this section which is directly interconnected with the future Katowice – Žilina cross-border section is expected to be completed by 2017.

In Austria, Italy and Slovenia the motorway network is compliant to the Regulation.

Transport Nodes

Another priority area of intervention are the last mile connections to transport nodes, including ports, airports and rail road terminals. Particularly ports are of strategic relevance for the development of the Baltic-Adriatic Corridor as these are the main gateways to the EU third commercial partners and may contribute to further economic growth and competitiveness of the regions along the corridor. Furthermore, the development of the Motorways of the Sea is seen as an opportunity to develop intermodality at the EU level, whereas the development of inland waterway transport can contribute to the EU policy objectives supporting the promotion of sustainable transport.

As the compliance check concluded, all the ***sea and inland ports*** included in the Baltic-Adriatic Corridor are already connected to the rail and road infrastructure. However, last mile railway and/or road port interconnections issues are present and limit development in all Baltic-Adriatic corridor seaports.

The extent and severity of the critical issues at the ports and more specifically the scope of the proposed solutions is in many cases to be further defined; however most of the problems relate to the need to increase the standards of the existing railway connections in terms of electrification, speed, axle load, train length. Due to their location within urban areas, capacity/congestion and road safety related problems may also exist in the urban network surrounding the ports partly attributable to the heavy traffic generated by the ports.

- Port of Gdynia – Works for the improvement of the standards of railway lines interconnecting the terminals to the main lines 202 and 201 belonging to the Baltic-Adriatic Corridor are required; works on comprehensive railway line 201 are also planned, which is the railway line predominantly used by the traffic generated by the port. Regarding road connections, the S6 express road is already in good condition up to the junction with Morska Street in Gdynia, however critical issues exist in the road network providing access to the port: the Kwiatkowski Viaduct although recently completed (2008) represents a critical issue in terms of axle load standards and the Kwiatkowski Route registers high traffic levels, which may turn into a capacity issue particularly in view of the further development of the traffic at the port. The key issue affecting the road access to the port is already under consideration by the relevant stakeholders, the infrastructure is planned to be modernised in the short term. In addition to these, an upgrade of the surrounding urban road network could help in solving the potential capacity issues.
- Port of Gdańsk – Railway line 226 requires modernisation works (i.e. upgrading of second track, and increase in axle load and operating speed standards). The improvement/upgrading of the Nowa Kościuszki street, resulting in the completion of the Gdańsk ring road also represents a critical issue in terms of road accessibility to the port. The completion of the tunnel under the Martwa Wisła River, currently expected by 2015 will also improve road access

to the port, allowing direct interconnection to the A1 as an alternative to the existing interconnection with the S7.

- Świnoujście and Szczecin ports – Train length and freight speed limitation are currently affecting railway line 401, section Szczecin Dąbie – Świnoujście Port, and railway line 351, section Szczecin Główny -Szczecin Dąbie. Road access to the Port of Szczecin is primarily provided through national road no. 10, Parnica viaduct and local roads; the reconstruction of local road communication system in the area of Międzyodrze is currently presenting a critical issue in terms of last mile connection to the port. Road access to the Port of Świnoujście is provided by national road no. 3 and lower class roads (Poviat roads). Short segments of both national road no. 3 and Poviat roads require upgrading works. Świnoujście and Szczecin ports are also interconnected through a 68 km long fairway, which is deemed not adequate to support the interconnection between the two ports via water; studies and investments are already planned in this respect aimed at deepening the fairway works and improving ferry and intermodal connection between the two ports.
- Wien and Bratislava inland waterways ports – The two inland waterway ports of Freudenau in Wien and Bratislava are both located on the Danube river. These ports are planned to be expanded aimed at further increasing their capacity and competitiveness to support the further development and growth of intermodal services and transport. Also based on the relevant road and particularly rail services operated by Wiencont, investment plans at the Port of Wien emphasize the expansion of tri-modal facilities, particularly storage of containers and the modernization of the handling equipment, in an endeavour to provide adequate service level required to encourage modal shift from road to rail and inland waterways. The extension of the port's container handling capacities will emphasize land recovery and the construction of a new quay wall in order to optimize the operational efficiency. Regarding the interconnections of the two ports with the Baltic-Adriatic Corridor road and rail networks, the Freudenau port is interconnected with the A4 through national road 14 and motorway A 23. It is also connected with the railway network by a direct link (national code 124) parallel to national road 14. The Bratislava inland waterway port has its own siding network connected with the main railway network through the Bratislava - ÚNS freight station on the Baltic-Adriatic Corridor freight branch (section Bratislava - Petržalka). The port has good connections with the motorway D1 on the Baltic-Adriatic Corridor, being only 0.5 km distant from the Bratislava – Prievoz junction on the D1. No specific problems have been identified which affect last mile connections at present for the two ports; however critical issues exist which affect the navigability of the Danube river between the two cities and particularly in Slovakia, for which works are already on-going or planned to be implemented by 2018-2020. In addition to the need to improve navigability in the section Freudenau – Slovak border, in the National Park Donau-Auen, works are planned between km 1880,260 and km 1862,000 in Slovakia, including dredging of the river bed and removal of obstacles. The reconstruction of the "old bridge" in Bratislava and the possibility to operate simultaneously the two Gabčíkovo locks are also relevant to develop inland waterway transport services along the Danube.
- Port of Trieste – A direct junction and a flyover (within the port) interconnect the Port of Trieste and its terminals to the main city road network and to the national highway and motorway networks, including the Baltic-Adriatic Corridor links. Improvement works on the SS 202, also providing access to the port, are currently on-going for the stabilisation of the retaining walls (from km 9+850 to km 12+200) and for the structural repair of the viaduct "Molo VII". Concerning accessibility to the port by railway, one double track line is interconnecting the port to the Trieste-Venezia railway line, leaving from Campo Marzio, tunnelling and crossing the city. Furthermore there is a single track line going from Campo Marzio directly to Villa Opicina, which is however temporary closed and with a steep gradient that prevents operation of heavy trains. Based on the current schedule, increases in the future traffic on the line in operation may lead to congestion. The port's development plans consider this "last mile" issue a critical one to ensure continuity in the operation of freight services. In addition to this, investments are deemed necessary to develop the railway terminal at Campo Marzio (Port Station) in order to improve operations at existing port terminals. Shunting and coupling of trains is indeed currently possible only at port terminals; due to the limited length of tracks at these terminals more shunting operations and train manoeuvring is required to assemble trains even limited to 550 m length, which impacts on the effectiveness and efficiency of terminal operations. Investments to increase train length operations up to 650 m at Trieste C. Marzio station are planned for implementation as part of a wider initiative aimed at modernising the whole Trieste Campo Marzio station, increasing its capacity and performance in support of the development of intermodal services. As part of the analysis of the last mile connection to the Port of Trieste, the interconnecting railway section Bivio Aurisina-Trieste is also worth mentioning as a

bottleneck providing direct access between the Baltic-Adriatic Corridor and the Port of Trieste through Trieste Central Station. This section has a speed limitation of 90 km/h, and train length limited to 600 meters.

- Port of Venezia – Investments are already foreseen to improve road and rail accessibility to the port; traffic management related works are planned on the local roads interconnecting the port to the national motorway network to increase fluidity and safety as well as to reduce congestion. Regarding interconnection by railway, in the medium term, solutions have already been identified to upgrade the internal railway infrastructure (doubling the existing track) and avoid interferences between manoeuvring and national traffic. In the long term, as a consequence of the entry into operation of the planned offshore terminal, the existing railway connection is expected to become a possible capacity bottleneck, also causing traffic congestion problems at the Mestre railway node, which will require development of a direct connection to the Venezia-Trieste railway line bypassing the Mestre node.
- Port of Ravenna – Upgrading, electrification and extension of the existing infrastructure providing access to the port and its terminals is already planned; works aimed at eliminating level crossings on the line interconnecting the port to the Baltic-Adriatic corridor network are also foreseen, as well as the upgrading to P/C 80 standard of the line between Castelbolognese and Ravenna; Last mile connections to the port by road are also planned to be improved, studies and works to be implemented on the following infrastructure, SS16, SS67 (including new construction of the Candiano bypass), and SS 309dir in particular.
- Port of Koper – The modernisation of the existing track between Koper and Divača is at its implementation phase. Works are underway and expected to be completed by the end of 2015. Construction of the second track on the line Koper and Divača is planned for the period 2016-2022 also to support the planned expansion of the port terminal infrastructure. Road and rail internal works are planned to be implemented by 2020 to improve accessibility. Direct interconnection between the A1 motorway and the port should be developed also including construction of a truck terminal.

Regarding ***airports***, the two airports of Wien and Warszawa (Chopin) are already interconnected to the Baltic-Adriatic corridor railway network, which satisfies the requirements of the Regulation. The second Warszawa airport (Modlin) is developing relatively quickly and should therefore be analysed in future. Although not primarily aimed at solving existing critical issues related to technical or capacity barriers, investments are planned at the most relevant corridor airports particularly to promote accessibility by public transport which are expected to meet user needs and support modal shift. This is the case of Wien (the major airport along the Baltic-Adriatic Corridor with already more than 20 million passengers per year). The Austrian authorities are currently considering the opportunity of increasing interconnectivity between the Wien airport and the Czech Republic, Slovakia and Hungary to improve the capacity and performance of the existing railway services, also in view of future traffic growth at this multimodal cross-border hub, and in consideration of the recent trends in travel patterns, showing an increase in the demand for integrated high-speed railway and aviation services.

A rail interconnection already exists for Szczecin airport and is at its final stage of construction for the Gdańsk airport as well as for Ostrava airport (start of operation in 2015). Rail interconnections are also planned to be constructed at Katowice and Ljubljana airports as well as at Venezia and Bologna airports, these latter representing with Warszawa and Wien the largest airports along the corridor, with more than 6 and 8 million passengers at 2013 respectively. Also for Bologna and Venezia, the interconnection to the corridor railway network represents the possibility to directly connect high speed rail to aviation services, increasing the attractiveness of rail transport and responding to the most recent request from the market of developing a network of high speed nodes.

Nearly 30 ***rail-road terminals*** have been identified along the Baltic-Adriatic Corridor with reference to the list of nodes provided by the Regulation (EU) 1315/2013. New rail-road terminals are currently under construction and additional ones have been considered in the corridor study for their functional relevance for the corridor. The rail-road terminals on the Baltic-Adriatic Corridor are all interconnected to their respective national road and rail networks. For the terminals located within seaports and inland waterway ports similar considerations apply as the ones described for the ports in which they are situated in terms of conditions and issues associated to their accessibility by rail and road. For the other rail-road terminals no critical issues have been identified that are affecting the quality of last mile connections. However, the Regions have highlighted in their corridor working group the need to foster the multimodality of the corridor by developing the RRT along the corridor and by taking their potential of capacity increase into consideration.

Interoperability

The predominant application of interoperability is associated to traffic management. It is under development and implementation for all transport modes. The analysis of the status of transposition and implementation of the relevant legislation is progressing with regard to all systems; although for many of them, and particularly ERTMS, delays in the completion of the deployment plans are significant. Differences between the Baltic-Adriatic Corridor concerned Member States in terms of status of implementation of the legislation and technological solutions also exist.

- **ERTMS**: Whilst the importance of the implementation of the European Rail Traffic Management System (ERTMS) in support of the development of a Single European Railway has been identified as a priority in many of the existing studies (such as SoNoRa, AB Landbridge and particularly SETA), no studies have been undertaken to systematically assess the status and plans of the deployment of ERTMS along the Baltic-Adriatic Corridor. ERMTS technology starts being available on the Baltic-Adriatic corridor railway infrastructure by the end of 2014 (one section in Austria), with wider deployment more likely and significantly by end of 2015. Based on current plans ERTMS is expected to be fully deployed on the Baltic-Adriatic Corridor not earlier than 2030; on three sections: Skalité – Čadca (SK), Blumental – Wampersdorf (AT) and Pragersko-Maribor-Šentilj (SI) the time-schedule for ERTMS implementation is still not defined.
- **VTMIS**: Numerous initiatives of Vessel Traffic Management Information System (VTMIS) are being implemented at the wider European Union area, national or basin cluster level in order to support the promotion of Single Window initiatives to access ports, track flows of vessels and transported intermodal vehicles, rolling stock and goods entering and exiting port areas. It is however worth noting that no initiative has been so far implemented at the wider corridor level, nor at the level of the core network.
- **RIS**: River Information System (RIS) technology is also under implementation at Baltic-Adriatic corridor inland ports and interconnected inland waterways links belonging to other core network corridors or sections of the core network. The experiences vary from trial initiatives in Italy and recently completion of pilot projects in Poland to a more advanced development in Austria and on-going refinements of system implementation in the Czech Republic and Slovakia.
- **ITS** for roads (including EETC): The review of the five years action plans developed by the Baltic-Adriatic Corridor Member States in compliance with Directive 2010/40/EU shows that activities are on-going with respect to many of the foreseen measures for Intelligent Transport Systems (ITS) with differences between the Member States about the priorities and actions under implementation or envisaged to be implemented. The TEN-T core network corridor approach may also in this respect facilitate a more coordinated development of these initiatives, although many of them apply to units of infrastructure – regional, or national networks if not specific motorways under concession – that differ from the one of the core network corridor. Specifically regarding the European Electronic Toll Collection system as per Directive 2004/52/EC and subsequent Decision 2009/750/EC it is not yet implemented in the Baltic-Adriatic Corridor Member States.

- **SESAR**: From the review of the research and project experience activities of this initiative, no other corridor airports other than Wien has been significantly involved in the development of this relevant system with a possible need for promotion of the involvement of other corridor airports in the deployment phase of SESAR (Single European Sky ATM Research).

Promotion of intermodality and sustainable transport

Initiatives supporting the development of infrastructure at ports and rail-road terminals have been implemented in the past as an incentive to the development of intermodal transport. Additional projects are still on-going and planned for the future aimed at developing Motorways of the Sea and container terminals as well as rail-road terminals expansion. The focus of attention under the new TEN-T policy will also be that of maximising the use and benefits from the completion of these infrastructure projects by promoting the physical and operational interconnection of different transport modes and particularly the one between rail and maritime transport.

In order to further promote the increase of modal shift from road to rail transport and the use of Motorway of the Sea services, ICT, and more generally innovation and research initiatives and pilot projects are also deemed relevant. Usually involving more stakeholders from the wider intermodal logistics chain these projects are crucial for the solution of operational barriers affecting the competitiveness of intermodal transport. Pilot projects have already been implemented in this respect for the development of real-time operational databases and portals. However a major criticism about those initiatives is the difficulty in consolidating the pilot projects, due to lack of resources to support the required efforts in the further refinement and continuity in the updating of the databases. Similarly to what has already been identified with reference to ITS solutions, the efficiency and efficacy of such initiatives aimed at developing a smooth flow of information among the relevant stakeholders, could be improved by the corridor approach introduced by the new TEN-T policy aimed at establishing a coordinated network of nodes along the core network.

Regarding the promotion of sustainable transport solutions and related technology, the Regulation (EU) 1315/2013 also foresees the availability of clean fuels at core network corridor ports and airports by 2030; no initiatives on such developments on the Baltic-Adriatic Corridor are under implementation at present. However, the Polish ports in the Baltic, and particularly Świnoujście where a new LNG terminal is under construction at present, as well as Venezia and Ravenna in the Adriatic, are considering developing LNG clean fuel related facilities in the future. Clean fuel distribution is present along the corridor road network; however it is not possible at present to assess the extent of its availability.

Operational and administrative barriers

Different types of operational and administrative barriers affect the development of the Baltic-Adriatic Corridor. As regards railway transport, it should be noted that interoperability for this mode is not just restricted to traffic management; it also affects other railways subsystems: energy and infrastructure (loading gauge, train length). Relevant studies have already analysed railway interoperability related critical issues such as SoNorA and AB Landbridge, and more recently the SETA project. Interoperability can be primarily achieved by implementing the respective EU Regulations (decisions 2006/920/EG, 2006/679/EG and 2008/386/EG of the European Commission) by introducing compatible ERMTS based railway control systems in all countries. To this respect at least the implementation of Level 1 of the European Train Control System (ETCS) is required to introduce interoperable services. Level 2 that includes GSM-R could further enhance this technology by simplifying communication between locomotives and the control system.

Regarding differences in traction (electrification and power systems) problems may be solved by means of use of multi-traction locomotives; however these locomotives are

considerably more expensive; they cost 10-15% more than traditional ones and technical maintenance and repairs are also much more costly. Therefore operators would only invest into these locomotives if the time savings over locomotive change at the border can justify it.

Regarding the other main interoperability infrastructure parameters, i.e. line speed, axle loading category, number of tracks and capacity of railway sections and stations, relevant studies highlight how these issues can primarily be improved by investment into the railway infrastructure through refurbishment and upgrading of respective sections and stations. This is the responsibility of the national governments and their railway infrastructure managers. It is however highly desired that these investments are carried out in a coordinated manner in order to avoid situations when a line section is upgraded up to the national border and then on the other side of the border upgrading is delayed resulting in a significant difference in transport speed and quality.

Beyond infrastructure or rolling stock related barriers, operational and administrative barriers between and within transport modes exist possibly hindering the seamless and continuous flow of passenger and goods, such as lack of harmonisation of procedures for railway vehicles authorisations in different Member States or the lack of coordination between agency-specific and country specific regulatory and operational requirements for international trade and transport. Studies have already been implemented in the past to describe and identify solutions to these issues.

In addition to the above mentioned Intelligent Transport Systems, ICT projects, including e-Maritime initiatives have been implemented to this respect aimed at simplifying administrative procedures relating to custom, safety and security procedures. Whilst projects have already been initiated at the single basin area, no initiatives have however been implemented so far involving all port authorities along the corridor and/or the ports authorities and the rail road terminals and railway undertakings.

Regarding rail transport, the Baltic-Adriatic Rail Freight Corridor 5 and infrastructure managers as active stakeholders in the activities of Rail Net Europe are involved in the development and use of the systems Path Coordination System (PCS), Train Information System (TIS), and charging Information System (CIS); all these aimed at simplifying and further supporting the development of international, cross-border train operations.

In addition to the above issues affecting the operation of rail and maritime services, administrative barriers have been identified with reference to the implementation of infrastructure projects which require coordination and consensus on both the definition of the problems and identification of the solutions. This is usually frequent for cross-border initiatives but may also occur for those investments deemed beneficial under the functional stand-point to a stakeholder which is however not the owner of the infrastructure. This is particularly the case of last mile connections to ports; but may also happen in situations in which local/regional traffic adds to long distance traffic. Examples currently under analysis to this respect seem to be related to road improvements to the port of Gdynia (OPAT providing access to National Road no.6 and the Droga Czerwona road connecting OPAT to Janka Wiśniewskiego Street); railway and road works improving accessibility to the port of Ravenna (elimination of one railway crossing in the urban area as well as improvements of the roads SS16 and SS67 and their main interchanges); improvement of the urban road network in Bologna, including some roads affecting accessibility to the Bologna airport; the construction of a railway intersection on the railway between Granarolo and Faenza. Problems may also exist relating to reaching consensus on the development of projects in environmental sensitive areas, as it is the case of the Brno-AT border road cross-border section in the Czech Republic.

The nature of the problems in the above and other similar cases may vary from the presence of different positions about the definition of a critical issue and identification of an agreed project solution, to lack or delays of formal administrative requirements such as the inclusion of the projects in the investment plans of the relevant concerned infrastructure managers. The corridor approach may be helpful also in finding

coordinated solutions among the stakeholders to solve similar situations, particularly if associated to key priority intervention areas of the TEN-T policy.

5. Objectives of the Baltic-Adriatic Corridor

The analysis of the characteristics of the Baltic-Adriatic Corridor, in terms of consistency with the technical requirements of the Regulation, bottlenecks and missing links in the road and rail infrastructure, deployment of traffic management systems, intermodal nodes and their interconnections as well as the operational and administrative barriers point to the main development needs of the corridor, and allow for translating the general objectives and the priorities of the TEN-T policy into specific corridor objectives for each policy category.

Table 1 summarises the general and specific objectives for the Baltic-Adriatic core network corridor.

Table 1 General TEN-T objective and specific objectives of the Baltic-Adriatic Corridor

COHESION	**A high quality infrastructure corridor with interconnected long distance and regional/urban flows**
General Objectives	• Accessibility of all regions of the Union • Reduction of infrastructure quality gaps between Member States • Interconnection of long-distance, regional and local traffic flows • Balanced transport infrastructure coverage of all European regions
Specific Objectives	• Improving the infrastructure quality and standards - especially of Eastern Member States - with the target to comply to the technical requirements o Rail: line speed (freight), train length, axle load o Road: motorways or expressways • Improving interconnection in all urban nodes along the corridor between TEN-T and local transport infrastructure, for both passenger and freight traffic

EFFICIENCY	**A continuous, interoperable and intermodal corridor**
General Objectives	• Continuity of long distance flows • Interconnection and interoperability of transport networks • Intermodality • Economic efficiency contributing to further economic growth and competitiveness • Innovation
Specific Objectives	• Removal of rail and road bottlenecks: • Improvement, modernisation and upgrading of: o Cross-border connections (Poland - Czech Republic / Slovakia, Czech Republic - Austria, Slovakia – Austria, Slovenia - Austria / Italy) o National rail lines (Poland, Czech Republic, Slovakia, Slovenia) and specific railway links and nodes (Austria, Italy) o Road network to motorway/expressway standard (Poland, Czech Republic, Slovakia) • Interoperability of national transport networks: o ERTMS, ITS, VTM and e-Maritime services, SESAR • Optimal integration and interconnection of all transport modes, especially improving the "last mile" connections to ports, airports and rail-road terminals • Promotion of economically efficient, high-quality and competitive transport, contributing to the development of intra and extra EU trade, also trough the promotion of the role of the Adriatic and Baltic ports as gateways to the main third commercial partners
SUSTAINABILITY	**A corridor targeted at reducing externalities, preserving sensitive areas and reducing emissions**
General Objectives	• Long term sustainability • Clean transport • Low-carbon transport
Specific Objectives	• Contributing to the objectives of low-carbon and clean transport, fuel security, reduction of external costs of transport (especially for highly populated areas) and protection for environmentally sensitive areas (such as the Alpine space) • The Baltic-Adriatic Corridor will also be serving the objective, set out in the White Paper, of reducing greenhouse gas emissions from transport by 60 % below 1990 levels by 2050
USERS' BENEFITS	**A safe corridor, accessible to all users', meeting the needs of the demand**
General Objectives	• Meeting users' needs • Safety and security • Risk resilience • Establishment of requirements • Accessibility PRM
Specific Objectives	• Meeting the mobility and transport needs of its users within the Union and in relations with third countries, improving the performance of the transport system for its users, reducing congestion and expanding the infrastructure capacity when necessary • Ensuring safe, secure and high-quality standards, for both passenger and freight transport; supporting mobility even in the event of natural or man-made disasters, and ensuring accessibility to emergency and rescue services • Improving accessibility for elderly people, persons with reduced mobility and disabled passengers

Source: Baltic-Adriatic corridor study consortium

6. Recommendations and outlook by the European Coordinator

The year 2014 was the starting point of a challenging, but very appealing exercise. This work plan which I present to you today constitutes the basis for the development and implementation of the corridor investments which are needed to remove important bottlenecks along the Baltic-Adriatic Corridor.

High investments required on the corridor

The corridor study identifies more than 350 investments that would be needed for the development of the Baltic-Adriatic Corridor until 2030 which represents an estimated total volume of around 59.7 billion EUR (assumed at 2014 prices). 52% of this total volume of investments is allocated to railways, 30% to road, 12% to ports (including their interconnections) and about 6% to airports, rail-road terminals and urban nodes. 13% of the total budget is allocated to cross-border sections related initiatives. The cost of the two alpine crossings is equivalent to 14% of the total investment value. Considering that this overall estimate only includes the costs of on-going projects and not even yet the ones that may follow further to on-going (feasibility) studies (e.g. RRT, urban nodes), it shows us that there is much to do to realise the Baltic-Adriatic core network corridor.

Prioritisation needed

These financial estimates clearly illustrate that it is of utmost importance to prioritise the investments along the corridor. As European Coordinator, I wish to assist you, Member States, in this challenging task.

Further to the analysis undertaken by the corridor consultants and my wide consultation of stakeholders in the Corridor Forum and during my various missions to the Member States, I conclude that five main issues need to be primarily addressed on the Baltic-Adriatic Corridor:

- the cross-border links both for rail and road;
- the timely implementation of the major tunnel projects in Austria which will allow for a big step forward with regard to the Alpine crossing of major traffic flows;
- the hinterland connection of the ports building the start and end point of the corridor;
- the development of the urban nodes;
- and last but not least the deployment of ERTMS along the corridor.

We need to start now working with full speed on these highest priorities in order to get them implemented by 2030 as to develop today's transport patchwork into a smooth-running network.

Priorities for the Baltic-Adriatic Corridor

Investing in cross-border sections with high European added value

The corridor analysis has shown that important bottlenecks exist on six railway and two road cross-border sections. These are crucial projects in order to guarantee smooth (long-distance) transport flows across the corridor countries. As European Coordinator, I will therefore pay particular attention to their development and implementation and like to assist Member States in finding cross-border agreements for the smooth and coordinated implementation of those projects on both sides of the border. It also needs to be ensured that the infrastructure is developed in accordance with the requirements and targets of the TEN-T Regulation. For this reason, I propose to Member States to initiate specific cross-border dialogues and organise dedicated working groups for cross-border regions involving all relevant stakeholders wherever diverging interests, implementation plans and timings between Member States prevail. Indeed, I understand my role as European Coordinator as a mediator between different (national) interests and as a facilitator for those bilateral exchanges. In the interest of the Baltic-Adriatic axis and of creating real network benefits, it will be important to clarify and reconcile potential cross-border conflicts, always aiming at higher quality standards in the interest of both sides of the borders, and at the same time respecting the national motivations.

The following box provides a brief overview of the planning and implementation status for each of these cross-border sections which are in my point of view to be addressed with highest priority:

Rail cross-border priorities

- **Opole (PL) – Ostrava (CZ)** [Chałupki (PL) – Bohumín (CZ)]: This rail section requires relatively minor investments (45.8 € million) on the Polish side for the modernisation of the line between Kędzierzyn Koźle - Chałupki (state border) which is expected to be completed by 2019. No investments are currently planned on the Czech side where two single track sections are in operation between Bohumín Vrbice and Bohumín stations, and the state border towards Chałupki, already allowing train operation up to 100 km/h for both passenger and freight services. The remaining sections in the Czech Republic were already modernised to increase the speed up to 160 km/h, including the improvement of the Bohumín station. This cross-border section is expected to benefit from the modernisation of the Opole Zachodnie – Kędzierzyn Koźle section to increase maximum operational speed on the Polish side (75 € million) by 2018, and of the Ostrava junction on the Czech side (220 € million), by 2021.
- **Katowice (PL) - Ostrava (CZ)** [Zebrzydowice (PL) – Petrovice u Karviné (CZ)]: This rail section requires major investments on the lines E30 and E65 on the Polish side (1,025 € million), expected to be completed by 2021. On the Czech side, limited improvements are required at the stations Petrovice u Karviné and Dětmarovice to increase speed operations; the section from the state border to Petrovice u Karviné and Ostrava was already modernised since 2002, increasing the speed up to 120 - 160 km/h. Also this cross-border section is expected to benefit from the completion of the modernisation of the Ostrava junction (220 € million), by 2021.
- **Katowice (PL) – Žilina (SK)** [Zwardoń (PL) – Skalité (SK)]: Works for the improvement of the existing single track line on the Polish side are under study and their scope under definition, with works already planned on the line which are expected to be completed by 2019 (88 € million); on the Slovak side, the single track Skalité – Čadca subsection (with a maximum speed of 100 km/h and a maximum train length of 650 m) was already modernised and no additional works are planned; ERTMS is not planned to be deployed on this section. The modernisation of the double track Krásno nad Kysucou – Čadca section, also common to the cross-border itinerary between Ostrava-Žilina, is expected to be completed by 2022, including the deployment of ERTMS (300 € million).

- **Bratislava (SK) – Wien (Stadlau) (AT)** [Devínska Nová Ves (SK) – Marchegg (AT)]: Two cross-border railway lines are in operation between Bratislava and Wien, one predominantly used for freight transport passing through Petržalka (SK) - Kittsee (AT), another one going via Devínska Nová Ves (SK) and Marchegg (AT). The latter is the only non-electrified section along the Baltic-Adriatic Corridor, also requiring upgrading works. The electrification of the existing single track railway line on the Slovak side is planned to be completed by 2019 (5 € million). Upgrading of the line Wien Stadlau - Border AT/SK (next to Marchegg) including two tracks, electrification and railroad station works are planned to be implemented by 2030 (550 € million).
- **Graz (AT) – Maribor (SI)** [Spielfeld-Straß (AT) - Sentilj (SI)]: This cross-border railway section is planned to be rehabilitated by 2020-2030 on the Slovenian side (245 € million); the time-schedule for ERTMS deployment on the Pragersko-Maribor-Šentilj railway line is not yet defined. The completion of the Austrian side of the section is planned by 2030 (570 € million).
- **Trieste (IT) - Divača (SI)** [Villa Opicina (IT) – Sežana (SI)]: The studies for this cross-border railway section are on-going; the feasibility for the completion of the works by 2030 are still to be confirmed (envisaged cost 1,320 € million).

Road cross-border priorities

- **Katowice (PL) – Žilina (Brodno) (SK)** [Zwardoń (PL) – Skalité (SK)]: The upgrading of the road infrastructure to express road standards is expected to be completed by 2023 (2,030 € million including both the Polish and Slovak sides).
- **Brno (CZ) – Wien (Schwechat) (AT)** [Mikulov (CZ) – Mistelbach (AT)]: On the Austrian side the motorway A5 will be completed to the border up to 2030, subject to a solution found of the environmental related administrative issues on the Czech side (471 € million). On the Czech side, Pohořelice - Perná - border CZ/AT, sections are planned to be completed by 2030 (378 € million).

Considering the information provided at present on each of these cross-border sections, I will focus my attention as European Coordinator on harmonising the implementation plans on both sides of the border and on coming to concrete cross-border agreements. Indeed, the above overview shows certain uncertainties and incongruities with respect to the implementation of (national) projects to the respective border. For instance, the electrification of the rail cross-border section Bratislava – Wien is on the Slovak side planned to be completed by 2019 whereas the electrification of the Austrian section is only planned to be implemented by 2030 as part of the doubling of the line. Similarly, the timely implementation of the cross-border road section between Brno-Wien is endangered by uncertainties on the Czech side due to delays in the planning and permitting procedures. Solutions have to be found as to speed up the construction of the motorway on the Czech side to the Austrian border. In order to realise our European vision of this corridor, it is also not acceptable that the realisation of some cross-border sections is not even fully planned yet, e.g. the ERTMS deployment on the Katowice – Žilina rail cross-border section, or Trieste – Divača where the feasibility for the completion of the works is still to be confirmed. Similarly, the rail cross-border section Graz – Maribor remains in terms of timing very vague ("to be rehabilitated by 2020-2030"). These are exemplary issues which I would like to address in dedicated bilateral or trilateral cross-border working groups in order to come to joint and stable cross-border agreements by 2016. I will thereby base my work also on already existing initiatives and Memoranda of Understanding (e.g. the existing bilateral working groups of Austria with the Czech Republic, Slovakia and Slovenia).

Missing links at the Alpine crossings are to be completed on time

The Baltic-Adriatic Corridor is almost continuous, apart from two missing links at the Alpine crossings in Austria. The Austrian stakeholders are working very hard to realise the projects needed to remove these important bottlenecks. Indeed, the Semmering tunnel is expected to be completed by 2024 and the Koralm railway line and tunnel by 2023, with a total investment need for both projects of about 8.5 billion EUR. Both projects will significantly reduce travel times and we should grasp all the important network benefits that these projects will bring for the whole corridor. As European Coordinator, I will therefore closely monitor the implementation of these crucial Austrian projects.

Developing the last mile connection of ports

The last mile connection to the seaports is another critical issue of the Baltic-Adriatic Corridor which needs to be adequately addressed. The investment plan as outlined in the annex to this work plan indicates that the most critical connections to seaports are planned to be solved by 2020 (789 million EUR of investment needs); additional investments at port "last miles" are planned between 2020 and 2030 (535 million EUR), also based on the development of traffic. Finally, regarding intermodality, relevant investments at ports and rail-road terminals (nearly 5 billion EUR for ports and 453 million EUR for rail-road terminals) are foreseen. The working group of ports authorities has shown that all ports along the corridor share the same concerns. To facilitate the exchange of good practice and to help ports learning from each other in order to face those common challenges is therefore of high importance. Apart from a continuation of the working group for ports – bringing probably also the rail and road infrastructure managers into the dialogue as regards the last mile connection – I wish to become a close partner for ports and to assist them in developing their "last miles".

Due attention to be paid to urban nodes

Not only ports, but also the urban nodes are somehow the "first and last miles" of the corridor since they serve as connecting points, linking transport modes and corridors. They deserve additional attention as their development helps making the benefits of developing a multi-modal trans-European transport network visible to the citizen. As traffic is heavily generated within urban nodes, it is indeed vital that there is excellent connectivity between the urban nodes and the axes of the corridor.

In spite of the implementation of the planned investments for the Baltic-Adriatic Corridor, possible rail capacity issues in the future have been identified for the urban nodes of Warszawa, Katowice, Wien and Ljubljana (in addition to those urban nodes which already face capacity issues at present, as mentioned before). As for road, capacity issues may occur particularly within or close to the urban nodes of Warszawa, Brno and Bologna. Whereas the issues in Warszawa and Bologna seem more limited and might be solved by modal shift measures, the capacity issues in Brno might call also for capacity improvements in the mid or long term.

I recommend that the definition of project solutions to remove existing and future bottlenecks in urban areas should, wherever possible, consider the possible impact of soft policy measures to support the modal shift such as transport demand management and promotion of public transport, cycling and walking, in addition to infrastructure capacity expansion. In this context, it is also worth noting that the EU Regulations provide for flexibility in defining the last mile within urban nodes and thus allow Member States to address the issues occurred within their urban nodes in the best adapted manner.

Investing in ERTMS is a prerequisite for realising a shift from road to rail

Without ensuring an interoperable corridor, a shift from road to rail cannot be realised. Investing in ERTMS is therefore a prerequisite to reach the targets of the White Paper on Transport. There is a lot to do in this respect on the corridor. Indeed, ERTMS is – apart from one section in Austria – not in operation on the Baltic-Adriatic Corridor yet. Therefore, major attention has to be given to its deployment in order to ensure the interoperability of the corridor network.

I will strongly support the European Coordinator for ERTMS, Mr. Karel Vinck, in his task to ensure interoperability on the core network corridors. In his report, Mr. Vinck has presented detailed ways of how to accelerate ERTMS equipment along the core network corridors. This so called Breakthrough programme, which has been established in close cooperation with the railway sector, consists of a limited number of objectives to be reached by 2016, including a review of the current European Deployment Plan and the identification of a strategy for ERTMS equipment by 2030, as laid down in Regulation (EU) 1315/2013.

In line with this Breakthrough programme and in order to grasp the full benefits of ERTMS deployment and to achieve higher added value for our corridor, I recommend that the ERTMS implementation is deployed with priority at cross-border sections. In other words, Member States should first focus on the connection with their neighbouring countries as to enable interoperable traffic flows across borders. I strongly support Mr. Vinck in his recommendation that ERTMS shall be in operation at the cross-border sections by 2020.

Considering that the TEN-T Regulation clearly indicates that ERTMS has to be deployed on the whole core network by 2030, it is quite worrisome that the time schedule of ERTMS deployment has not been defined yet for three sections along the corridor, namely for Skalité – Čadca, Blumental-Wampersdorf and Pragersko-Maribor-Šentilj. Together with Coordinator Vinck, I will closely monitor that the deployment plans will be elaborated in due time, by 2016, as to ensure overall compliance of these sections with the technical requirements.

Setting up of a competitive planning and financing framework

Other important aspects that I propose to tackle as of now are related to measures that ensure a timely and successful implementation of our corridor, i.e. to make use of innovative financing instruments, to set up the right accompanying measures and planning instruments, and last but not least to perceive each transport project along this corridor as an important element which can lead to important network benefits for the whole corridor.

Considering innovative financial instruments next to grants

The investments needs on the corridor are huge and cannot be met by grant financing only. This is why I strongly recommend considering alternative ways of financing such as the use of innovative financial instruments. In addition, to secure funding is no longer only an issue for Cohesion countries. Sustainable, forward-looking ways to invest in infrastructure and thus to implement our ideas for the corridor are needed. Together with my fellow colleague Prof. Carlo Secchi, European Coordinator of the Atlantic Corridor, I elaborated potential lines for action as to make best use of the limited financial resources. I will further work on this important topic and present – together with former Vice-President of the Commission, Henning Christophersen and Coordinator Carlo Secchi – a final report to the Ministers of Transport during Spring 2015. In addition to the European Funds (European Structural and Investments Funds (ESIF), Connecting Europe Facility (CEF)), it will be in the interest of a timely implementation of the Baltic-Adriatic corridor network to look for additional financial means. In this context, we also need to

take advantage of the 300 billion investment plan of President Juncker and do our utmost to capture its expected growth impulses for our corridor.

No successful project implementation without the right choice of accompanying measures

Even in case the financial means for the realisation of the corridor projects are at hand, local, regional and national authorities face problems in realising, in particular major, transport projects. This especially counts for projects that are planned in environmental sensitive areas which often capture the attention of several opponents. Their concerns have to be seriously considered and not neglected as otherwise they can lead to significant delays in the completion of Strategic Environmental Assessments and other planning and development processes as well as during construction. Citizens have to be involved in those planning and development processes in an appropriate and consequent manner by putting in place sound and forward-looking information and participation tools. These have to be adequately integrated in the regional planning procedures as to ensure that planning decisions are legally sound and non-contestable.

Lengthy and complex procedures of the Strategic Environmental Assessment often add on to this problematic. Therefore, acceleration of planning and approval processes need to be considered when and wherever possible.

Embedding the corridor activities into the wider European Regional Policy

Regions play a key role in the implementation of the corridor. If we want to achieve a "living" environment along the Baltic-Adriatic axis, their involvement is of crucial importance. A very strong asset of the Baltic-Adriatic Corridor is that its corridor activities can be based on a long tradition of regional cooperation across borders. Apart from the forward-looking Baltic-Sea and Danube macro-regional strategies (and the Adriatic-Ionnian and Alpine strategies under elaboration) as well as initiatives such as the Baltic Sea Forum or the Association of Polish Baltic-Adriatic Corridor Regions, there are numerous cross-border, transnational and interregional cooperation projects (such as BatCo, SoNoRa) which have been financed by the European Territorial Cooperation programmes and which have been and are still very active along the corridor. These cooperation projects and initiatives are of high value in order to come to a joint understanding of cross-border issues and to set-up a joint vision for our corridor. Through regional cooperation, forces within the region can be bundled, innovative ideas can be developed and available resources can be used in a more efficient way. As European Coordinator, I therefore strongly support and encourage those bottom-up initiatives and invite all relevant stakeholders to create synergies with the corridor activities. In this context, it is worth noting that there are already six European Groupings of Territorial Cooperation (EGTC) that have been set up along the corridor. It may thus be interesting to further examine this instrument for the successful implementation of cross-border projects.

Apart from the various cooperation initiatives financed by Structural Funds, further synergies ought to be created between the transport projects implemented through the "mainstream" funds (i.e. European Structural Investments Funds) and the Connecting Europe Facility.

From national planning to corridor planning

There is a growing complexity and interdependency of development processes and an increasing relevance of transport investments for economic growth and social wealth. To meet those challenges, an integrated, cooperative and implementation-oriented development approach is needed which does not stop at the national borders. Therefore, national transport plans should clearly embed the corridor approach and be consistent with the objectives and priorities set out in the TEN-T guidelines. I will do my utmost do reach a common vision of our Baltic-Adriatic Corridor which is shared by all relevant stakeholders and which will guide us in the implementation of transport projects at national, regional and local level.

Subjects to be deepened and widened during the next revisions of this corridor work plan

To reach the overall objective of realising a sustainable and competitive Baltic-Adriatic Corridor, the involvement of the various stakeholders is crucial. My role as European Coordinator is to allow for an open communication and dialogue, to join forces, to listen to the different needs and national constraints and to be – where and whenever needed – an independent mediator.

The Corridor Forum is in this context an important tool which I intend to continue over the next months and years with a gradually increasing number of stakeholders to be involved. In addition, working groups for ports and regions will continue their work in 2015. I expect that other working groups, such as on specific cross-border issues, will have to be set up in 2015 too.

Dissemination and communication on activities and results are another important key word that will guide my work in future. Indeed, once this work plan is based on a shared agreement, it is important to spread the word to the "outside world".

Further development of the corridor study

In parallel, the corridor study as presented by the Baltic-Adriatic corridor study consortium should be further developed. There are several issues that were necessarily not touched upon yet, or only marginally so far, which will require due attention in future as to ensure that the Baltic-Adriatic Corridor gets to life and becomes really competitive. This regards on one hand the cross-cutting issues of innovation, Intelligent Transport Systems (ITS), sustainability and interoperability. On the other hand, the present analysis of the corridor would benefit from a further elaboration of the market analysis and of corridor specific objectives and key performance indicators.

The list of projects that is annexed to this work plan and was elaborated by the consultants of the corridor study is another field where work needs to be continuous. Indeed, this list is only a first indicative, and non-static, list of the global investment needs on our corridor. The list could be improved by further analysing the maturity of the projects, their costs and timing as well as financing sources in order to come to a more solid basis for prioritizing the individual measures along the corridor. Updates of the list may also be needed as to adjust it to developments of the respective national investment plans. Besides, overlaps between corridors need to be tackled and further coherence between the work plans of ERTMS and Motorways of the Sea to be ensured.

Moreover, the corridor study only marginally proposes measures to improve the administrative and technical capacity to conceive, plan, design, procure, implement and monitor projects of common interest. Measures to enhance resilience to climate change and to mitigate greenhouse gas emissions, noise and, as appropriate, other negative environmental impacts, should also be elaborated and proposed.

Last but not least, the cooperation with the Baltic-Adriatic Rail Freight Corridor needs to be consolidated and the results of their freight transport market study to be taken into account.

In a nutshell, there are various measures that need immediate attention by all relevant stakeholders and others that should be worked upon continuously as to ensure the completion of our corridor by 2030. The graphic below shall present the most important milestones and steps to be taken for the Baltic-Adriatic Corridor.

Priorities	by 2016	by 2018	by 2020	by 2030
Investing in cross-border sections with high European added value	Set-up of cross-border dialogues / working groups in order to align national planning and timing of cross-border sections Establishment of cross-border agreements for the six critical rail and two road cross-border sections	Monitor timely implementation of cross-border projects	Monitor timely implementation of cross-border projects	All cross-border sections fully compliant with TEN-T requirements
Missing links at the Alpine crossings to be completed	Monitor timely implementation of projects	Monitor timely implementation of projects	Monitor timely implementation of projects	2025: Missing links completed
Developing the last mile connection of ports	Continuation of working group for ports	Monitor the implementation of the last mile connection	Monitor the implementation of the last mile connection	All ports well connected to the corridor
Developing urban nodes	Continuation of working group for Regions	Monitor the implementation of the multimodal development and connection to the wider TEN-T network within urban nodes	Monitor the implementation of the multimodal development and connection to the wider TEN-T network within urban nodes	All core urban nodes along the corridor are well connected to and integrated in the corridor
Investing in ERTMS	Focus on ERTMS deployment at cross-border sections (in line with ERTMS work plan by Coordinator Vinck) ERTMS deployment plan to be elaborated for the three sections Skalité – Čadca, Blumental-Wampersdorf and Pragersko-Maribor-Šentilj	Focus on ERTMS deployment at cross-border sections (in line with ERTMS work plan by Coordinator Vinck)	Cross-border sections equipped and in operation at cross-border sections	ERTMS equipped and in operation on the whole core network corridor
Corridor activities	1st revision of corridor work plan Further development of corridor study Update of compliance check / TENtec database and maps Updates of corridor project list Continuation of Corridor Forum meetings and working groups 'Ports', 'Regions' and others upon request and approval of Member States	2nd revision of work plan Continuation of Corridor Forum meetings and working groups 'Ports', 'Regions' and others upon request and approval of Member States		

I shaped this Baltic-Adriatic corridor work plan in a way that it is adaptable to progress in the coming years. Indeed, certain developments are to be expected along the corridor. For instance, national transport strategies are going to be revised, the operational programmes of the European Structural and Investment Funds are being implemented, the Baltic-Adriatic Rail Freight Corridor will be going operational etc. The corridor work is thus going to evolve.

We have however already a clear vision of the Baltic-Adriatic Corridor; the challenges of the corridor which are ahead of us are important and its investment needs high. As European Coordinator, I will assist you in facing these challenges and in realising the needed investments. I invite you to follow me on this interesting path.

Contacts

Photo by Marko Tancar/SŽ

Prof. Kurt Bodewig, European Coordinator
kurt.bodewig@ec.europa.eu

Silke Brocks, Advisor
silke.brocks@ec.europa.eu

Corridor website:
http://ec.europa.eu/transport/themes/infrastructure/ten-t-guidelines/corridors/bal-adr_en.htm

Annexes

see: http://ec.europa.eu/transport/themes/infrastructure/ten-t-guidelines/corridors/corridor-studies_en.htm

- Corridor Study
- List of projects
- TENtec maps