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European Transportation Policy for better Integration. Shifting the Balance between the Modes of Transport

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Abstract: The increasing need for transportation and mobility of citizen gives raises the importance of transportation policy. The development of the European transportation policy has a great significance for the European Union. The common transportation policy of the European Union is reviewed and updated every nine years. The first common transportation policy of the European Commission was published in December 1992. Besides the railway sector, most of the objectives listed in this policy were realized in ten years. In 2001, the European Commission proffered a new transportation policy with sixty new measures. Thus, this paper shows the importance of transportation projects -especially in the field of railways- for European Union member states. In accounting, cross-border sections of projects are more or less neglected, as member states tend to prioritize the development of sections of the projects, which are economically viable for themselves, thereby delaying the overall connectivity of the trans-European network. The railway modal is the hardest modal to interoperate between the member countries. Therefore it is not a surprise that the objectives listed in the first European transportation policy were not realized in the railway sector. There were enormous differences between railway systems before the European Union. Some of them still have an influence on current railway infrastructure and operations today. To sum up, this research shall deal with the crucial aspects of common transportation policies as well as problems of its implications.

Keywords: European transport policy; European railway projects; interoperability; Fehmarnbelt; Pyrenees

Introduction

When the European Union was formed in 1992, a transport policy was incorporated to guide the European Union to a better unification between its member states.

"*Studies show that transport is set to double by 2030… If nothing happens, pollution and congestion will increase prices of our products and impact negatively on the competitiveness of our industry and the quality of life of our citizens. Congestion is estimated to represent around 1.1% of EU's GDP or more or less the EU budget (EUR 100 billion). There are also adverse consequences for safety (over 44,000 deaths on Europe's roads each year), the security of energy supply (the transport sector is very dependent on oil) and the quality of the environment (transport is responsible for %30 of greenhouse gas emissions)… Therefore, European transport policy must promote the modal shift towards modes of transport which are less congested, safer and less polluting.*"

Jacques Barrot, EU Transport Commissioner

The Need of a European Transportation Policy

Transportation is an important aspect in every citizen's everyday life, and considered a right to have access to. Without a proper working transportation system in a country, a country becomes paralyzed and the economy of the country will suffer from it, as the lack of transportation will lead to a decrease in its productivity levels, and thereby affecting GDP.

Not only is it important to avoid a paralyzed state when it comes to transportation, a transportation policy also functions as a guideline with goals to achieve to cope with an ever increasing need of transportation and mobility of its citizens, while being sustainable towards the environment and from an economical and social aspect.

The development of the European transportation policy has been very important for the European Union, as the European Commission began to make a new internal market between its member states in the European Union in 1992, when the Maastricht Treaty was signed and became into effect.

The new internal market was based on the Four Freedoms, which are follows; the free movement of goods, the free movement of capital, the free movement of services and the free movement of persons. To realize this, all member states gave up a part of their legislative power to the European Parliament, and the European Commission developed an extensive, common transportation policy to ensure these four freedoms, removing any barriers and making transportation between each member state as effective and efficient as possible.

Although the member states were required to give up some of their legislative power as regarding to making a transportation policy, member states still have influence o their own national policy, and the European transportation policy acts as an umbrella policy, thereby affecting the national transportation policy of each member state. The reason for not adapting and implementing one common transportation policy for all the member states is simply that there are still political barriers to its implementation and therefore it is not possible to harmonize all the different transportation policies of all member states.

To facilitate the Four Freedoms, an important aspect of the European transportation policy is the development and creation of a sound trans-European transportation network. Its goal is to promote the smooth operation of the internal market and strengthening economic and social cohesion as a big, unified power bloc, which is comparable to the United States.

Development of the trans-European network would ensure and satisfy the ever increasing need of mobility of persons and goods, be more economically viable, offering users a high-quality infrastructure and allow a better interoperate ability between all modes of transportation between the member states, by harmonizing and adapting common standards in the existing infrastructure.

The common transportation policy of the European Union is reviewed and updated every nine years, in which they review the goals set in their last transportation policy, and add any new issues to the policy which have to be regulated or goals to be met for the next nine years.

The European Commission's first transportation policy, published in December 1992, put the accent on opening up the transport market. Ten years later, most of the objectives listed in this policy were realized, except in the railway sector. Freedom of transportation between the member states became a reality, air safety standards in the European Union became the best in the world and personal mobility had increased from 17 km a day in 1970 to 35 km in 1998

Contents of the European Transport Policy of 2001 for Integration

In 2001, the European Commission proposed a new transportation policy with sixty new measures, which were especially focused to develop a transport system capable of shifting the balance between modes of transport and thereby lowering congestion, revitalizing the railways, promoting transport by sea and inland waterway, controlling the growth in air transport and lowering the harmful effects of transportation to the environment and public health and improving road safety.

To reach the objectives which were formulated in 2001 by the European Commission, the following projects were started or to be prioritized by the European Commission:

1. High-capacity rail crossing in the Pyrenees;
2. East European high-speed train/combined transport train;
3. The Fehmarn Belt rail connection;
4. Interoperability of the Iberian high-speed rail network;
5. River Danube improvements;
6. Galileo project for satellite radio-navigation.

The six projects listed above come from a list which includes 30 projects which were considered a project of European common interest and are being carried out to not only balance the modes of transport, but also to eliminate transportation bottlenecks between its member states to be commenced before 2010 and to be completed before 2020.

Funding of these projects come for the most part from the member states itself, and the European Union invests a certain percentage of the total costs, depending on the importance of the project towards the European Union as a whole.

Rail Projects

The railway modal is the hardest modal to interoperate between the member countries as the modal itself had various barriers to interoperation, and it is therefore not a surprise that the objectives listed in

The first European transportation policy, to open up the transportation market, was not realized in the railway sector.

The differences of the railway systems before the European Union was implemented were enormous, which still have an influence on current railway infrastructure and operations today. The use of different national track information systems, operating procedures, signaling, track with and rail electrification voltages between member states limit the operation of locomotives and trains in the European railway network. Another aspect of railway transportation in Europe is that the railway infrastructure of cargo trains is shared with a significant amount of passenger trains, while when compared to the United States; mostly freight trains operate its rail network, usually not having to cope with any passenger train on its infrastructure. As this hinders the transportation of goods over the rail network, some rail projects were constructed for freight trains exclusively, such as the Betuwe line from Rotterdam to Germany.

Railways are however a very safe modal to use as can be seen in Appendix: 6, table 1, as in the European Union around 100 deaths are registered each year on railroads, compared to 43,000 deaths on the European roads, while the share of ton-miles transported over rail has been declining for decades. The mode has also a lower environmental impact as road or air transport, which is why

development of high speed trains is advanced and utilized, when compared to other countries outside the European Union.

The European Union believes this modal is the key which will help to create a more balanced use of modals if railroads would be more developed, which is why 80% of all the trans-European transportation projects which were approved by the European Commission and are currently in development or completed are rail projects, despite the high number of barriers to interoperation.

The railway projects described below are specifically the projects which have been prioritized by the European Union and are currently n development, which is why not all the projects, the railway projects which are completed or planned for construction, are not listed or described in this section.

High-Capacity Rail Crossing in the Pyrenees

The Pyrenees are range of mountains between Spain and France, which form a natural border or boundary between those two countries. Currently, road transport is the main mode of transport between Spain and Portugal with the rest of the European Union, while only two road crossings are passing through the Pyrenees, which are located at the Mediterranean and Atlantic coast borders and can visually be seen on a project map in Appendix: 1. Since 1985, there has been an increase of the number of heavy motor cargo vehicles crossing the French-Spanish border, and by 2006, close to 22,000 heavy motor cargo vehicles crossed the border each day using primarily either one of these roads, as seen in Appendix: 6 Table 2. Railroads were never a feasible option for freight transportation between France and Spain, as both the width of the European and Iberian tracks and the rail electrification system differ.

The main problem of the increasing amount of road traffic in the Pyrenees s that it will create more congestion and pollution at a bottleneck which also happens to be a high quality environmental area which should be protected and preserved, while it is economically necessary to have transportation between Spain and France. The development of this crossing would shift the modal balance to the use of trains, while also lowering the environmental impact of road transport by offering piggyback transportation.

Current Status

The project started by converting particular Iberian tracks to standardized, European tracks in Portugal and Spain. It is suspected to be completed in 2013, after which the surveys and studies have been completed for the construction of the trans-Pyrenees railway connection between France and Spain, which is estimated to be completed in 2020. The total length of the track is 1573 km, of which 1242 km is completed, which is 79% of the total track. Total costs of this project are estimated on EUR 8.9 billion, still excluding the estimated costs of the studies and construction of the rail crossing in the Pyrenees.

East European High-Speed Train/Combined Transport Train

Because of historical political reasons, the rail infrastructure between East- and West- European member states was never developed very significantly and therefore lacking an efficient railway mode from Western member states to the Eastern member states. The development of an efficient

transportation mode for both passengers and freight is viable between East- and West-Europe, as trade is growing immensely because of Western companies outsourcing their production in Eastern Europe, and thereby preemptively avoiding bottlenecks in the future.

The railway goes through densely populated areas which can be seen in Appendix: 2; the railway starts in France from Paris, through Stuttgart in Germany, Wien in Austria and ending in Bratislava, Slovakia. The line can possibly also be extended to other cities (candidate) member states, such as Budapest in Hungary, Bucharest in Romania, Sofia in Bulgaria and Istanbul in Turkey.

Current Status

The project started in all of the countries in which the rail line goes through. 464 km of the total of 1298 km of track has already been laid, most of which is in France, and the complete railway is estimated to be completed in the year 2020. However, it is forecasted that most of the railway will already be completed and operational by 2015, while certain sections will be completed before 2020. Total costs of this project are estimated on EUR 15 billion.

Fehmarntbelt

The Fehmarnbelt is an 18 KM wide sea passage between the Danish island Lolland and the German island Fehmarn, which are located in the Western part of the Baltic Sea. Refer to Appendix: 3 for a map. The economic value of the bridge is derived from the fact that it would stimulate the economic development of the Baltic Sea regions of Germany and Denmark, by decreasing the time needed to cross the Fehmarnbelt.

The bridge will replace the ferry service between the two islands, and the time to cross the Fehmarnbelt will thereby be reduced by one hour, from 4¾ hours to 3¾ hours.

The bridge is not only designed for trains only, it will also be accessible by cars and trucks, as the bridge will have four road lanes to accommodate motorway traffic.

Current Status

The construction of the bridge has started in March 2009, which cost EUR 5.6 billion to build, excluding any other infrastructure which has to be built around the bridge to accommodate the use of the bridge itself, which costs are estimated around EUR 2.3 billion. Interestingly enough, most of the funding comes from Denmark, while Germany only improves its own infrastructure to accommodate to foreseen increase of traffic caused by the bridge. Completion of the project is expected in 2018

Interoperability of the Iberian High-Speed Rail Network

This rail project is not to be confused with the other rail project in the Pyrenees, which is a different project where the rail tracks are exclusively used by freight trains. While the rail network developed in this project particularly focuses on passenger transportation

The problem of having two different tracks in Europe namely the Iberian arid the European tracks, does not only affect interoperability and therefore the efficiency of the .complete railway system between the member states, but also free competition in the Iberian rail market.

Because the Spanish and Portuguese governments were planning to build high-speed rail lines, the European Union insisted that these new tracks would have to be interoperable with European trains. Therefore, me new Iberian high-speed lines will have dual rail gauges, which is a third rail, to facilitate both Iberian and European high speed trains on the same rail line. This project is also complementing an existing high speed rail network in Iberia, which has already been constructed with European track width measurements. To see the extent of the planned lines, please refer to Appendix: 4.

The added advantage for freight transportation by rail in Spain and Portugal is that the conventional rail lines become clear of passenger traffic, which means that the transportation of goods by rail will be faster and more efficient. However, the interoperability issue still existent on the conventional tracks and remains unsolved.

Current Status

The project is suspected to be completed in 2013, while some parts of the track are suspected to be operational before 2013, such as the railway connection between Valencia and Madrid. The total length of the track to be constructed, modified or upgraded is 4730 km, of which 995 kin is completed which is 21% of the total track. Total costs of this project are estimated on EUR 42.2 billion.

River Danube Improvements

The river Danube is the longest river in the European Union, which originates from the Black Forest in Germany, and flows into the Black Sea, in Romania, The importance of the Danube River lies in the fact that the river is connected with a canal to the Rhine River and thereby making an inland waterway from the North Sea to the Black sea while going through twelve different countries in Europe, seven of which are member states.

Although it is already possible to reach the Black Sea from the North Sea by thru Rotterdam, the European Union finds it necessary to improve the inland waterway of the river Danube even more, as traffic volume is expected to rise and the objective of promoting modal shifting for freight between Eastern and Western Europe more from the motorways to the waterways.

The improvements compromises of improving navigability on the Danube River, and one of which is by constructing a series of locks at a bottleneck in the 70-km long Straubing-Vilshofen section, which is marked as a priority section in Appendix: 5. This section limits the size of the inland vessels to 110x11.45m and placing locks at that section helps guaranteeing the depth of the river at 2.5m. Another improvement of importance is the instable flow of water in Hungary, which jeopardizes navigability by sudden low waters.

Current Status

The project is very environmentally complex at the Straubing-Vilshofen section and has suffered delays by environmentalists claiming that the construction of new locks in that area would cause damage to the local habitat. Studies in Hungary are still underway and there is no solution to the problem as of now.

Although the project estimated to be completed by 2016, it is very unlikely to be finished by then, as a new, unexpected 3 year study on the ecological impact of the area around Straubing-Vilshofen is being conducted as of 2011 and studies in Hungary are still not completed. The improvement parts in Hungary and Romania are however being constructed and on schedule to be completed before 2016.

Galiileo Project for Satellite Radio-Navigation

The Galileo project is a project which is developing a state-of-the-art global navigation satellite system, which is comparable to the American GPS system. The project itself has nothing to do with shifting balance between the modes of transport, but is prioritized regardless, because of political and safety reasons.

The technological advantages over the American GPS system is that the Galileo system will be able to provide a more accurate positioning service and offering full precision to its civil users, unlike the American counterpart which only offers full precision to its military users.

The political reason for developing a European-controlled global satellite navigation system is because the United States has the capability to encrypt their GPS services, thereby locking anyone else out who wants to use their services in times of conflict. If Europe were to have its own system it would not be dependant onto other foreign global navigation satellite systems.

The transportation related purpose of the Galileo system is to ensure the use of satellite navigation in Europe, as the use of satellite navigation is very widespread, and almost even standardized, which means that any interruption of satellite navigation can have a serious impact in for example airborne or seaborne traffic.

Other applications are amongst others to provide real-time information to road users with real-time traffic information and route guidance, managing emergency services, assisting pilots to land in all weather conditions, providing real-time information to public transport users and offering search and rescue services with distress beacons connected to the Galileo system.

The Galileo system wilt however still be interoperable with the American GPS-system and the Russian GLONASS-system to offer the best infrastructure and services to its users, despite the political reasons for the development of the Galileo system.

Current Status

In trio 2001 transportation policy it was foreseen that the Galileo system would be completed and operational by 2008, although now it is still under development due to political and technical implications, the impacts of the terrorist threats in recent years, inadequate governance and the lack of resources to develop the project as the projects' budget was exceeded (and expanded) multiple times in the development stage. As of 2009, it is suspected that the system will be operational by 2013. The

European Union invested FUR 2.2 billion in the project, while the private sector has invested around 1.3 billion.

The Effects of the Transportation Policy for Integration

From 2001, the number of casualties on European roads has been decreased significantly as can be seen in Appendix: 6 Table 1. However, the decrease is not solely the result of the transportation policy, as it is also contributed to the ever-increasing higher passenger safety of the cars their selves.

The impacts of the transportation policy for 2010 to the shift the balance of modals are as of 2007 still not very noticeable The modal sprit as seen in table 3 & 4 in Appendix: 6 still shows that the share of freight transport by road has ever been increasing from 2001, while the modals rail and inland waterways are lower than in 2001. However, there has been a steady increase of passenger transport by high speed rail, indicating the shift from passenger transport from conventional tracks to high speed tracks, which means that conventional tracks are becoming increasingly more available for freight transport. As the projects are not completed it is not a surprise that the numbers still do not reflect the anticipated results, though marginal changes can already be seen in the share of high speed rail passengers

A reoccurring phenomena I noticed while writing and researching for this paper is that all of the projects listed above, except the Galileo project, have cross-border sections, which do not seem to have a priority in the realization of the project.

As most of the funding and investments for the projects come from the member states involved, it is causing a delay to the cross-border sections as the member states put a priority to develop their own infrastructures or sections of the Projects which are economically viable for their own member state first, and thereby delaying the overall connectivity of the whole project in question.

On a final note, I would recommend the European Commission to oversee the development of the cross-border sections and making their funding only available for cross-border sections, as the funds of the European Union is accumulated wealth of all the member states

Conclusion

In 2001, the European Commission proposed a new transportation policy which put the focus on trying to shift the balance of modals used in Europe, particular on railways. As a result new projects were executed to pursue the focal point of the new transportation policy, 80% of which were rail-related. The execution of these projects were not only supposed to solve the modal imbalance, but also to eliminate future bottlenecks, to solve environmental issues, creating an integrated and efficient European transportation network, to improve safety on its transportation network, stimulating the economic development of its member states and also creating more free market competition.

Although the projects are not completed yet, the usage of partially completed high speed rail sections have already showed marginal results, the shift from passenger transport on conventional tracks is slowly shifting to high speed rail transport, which is creating more capacity for freight transport on the conventional tracks.

During my research , I noticed that cross-border sections of projects are more or less neglected as member states tend to' prioritize the development of sections of the projects which are economically

viable for themselves, thereby 'delaying the overall connectivity of the trans-European network. As a recommendation, I proposed that the European Commission should oversee the development of these cross-border sections and making their funding available for these specific parts for European Integration.

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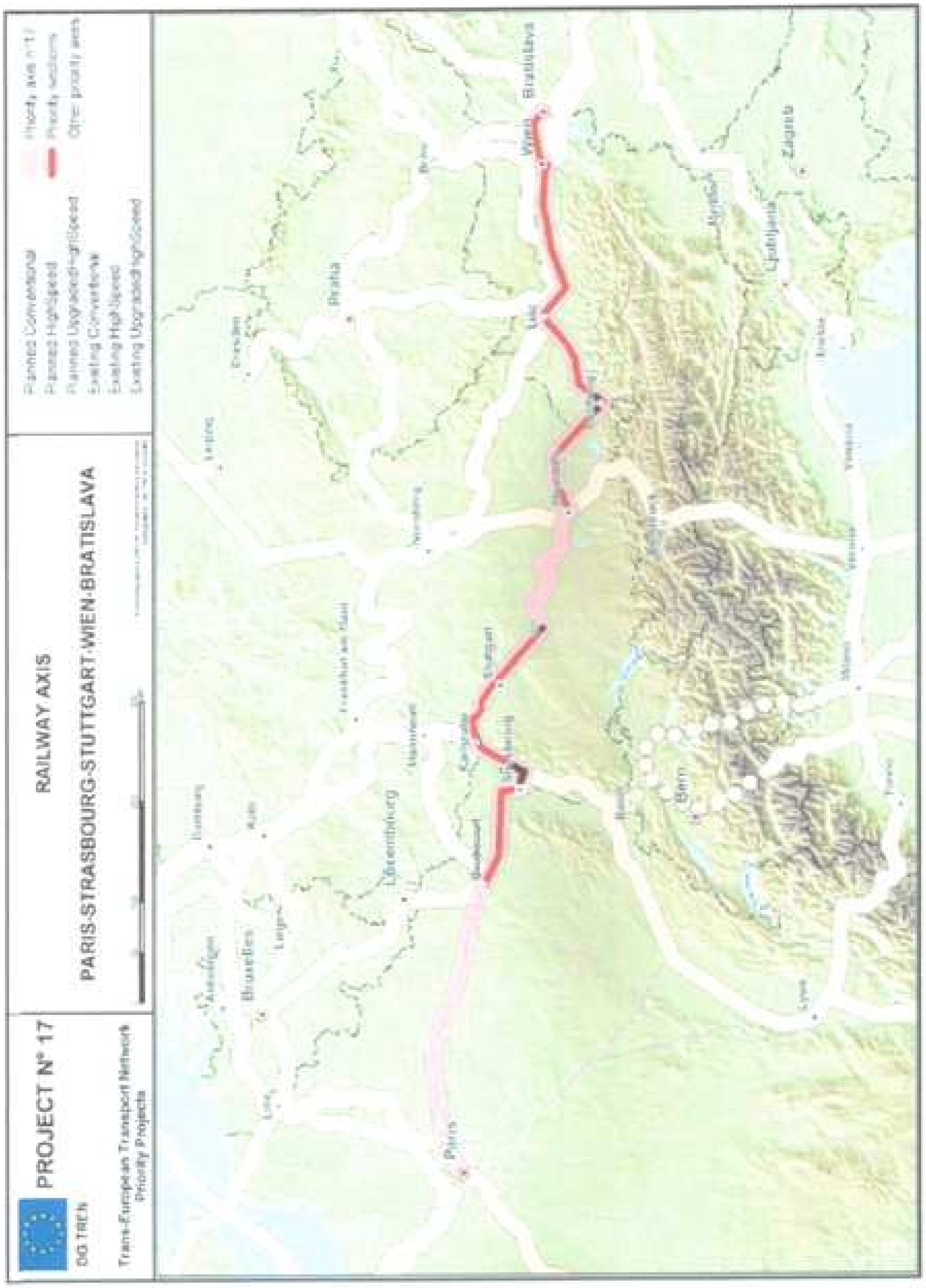
Appendix 1


PROJECT N° 16
DG TREN
Trans-European Transport Network
Priority Projects
FREIGHT RAILWAY AXIS
SINES/ALGECIRAS-MADRID-PARIS
Planned Conventional
Planned High-Speed
Planned Upgraded High-Speed
Existing Conventional
Existing High-Speed
Existing Upgraded High-Speed
Priority axis n° 16
Priority sections
Other priority axes
La Coruña
Bordeaux
Marseille
Barcelona
Mallorca
Madrid
Porto
Lisboa
Sevilla
Algeciras

Appendix 2


PROJECT N° 17
DG TREN
Trans-European Transport Network Priority Projects
RAILWAY AXIS
PARIS-STRASBOURG-STUTTGART-WIEN-BRATISLAVA
Planned Conventional
Planned HighSpeed
Planned Upgraded/HighSpeed
Existing Conventional
Existing HighSpeed
Existing Upgraded/HighSpeed
Priority axis n°17
Priority sections
Other priority axes
Paris
Bruxelles
Luxembourg
Strasbourg
Karlsruhe
Stuttgart
Wien
Bratislava
Praha
Ljubljana
Zagreb
Bern

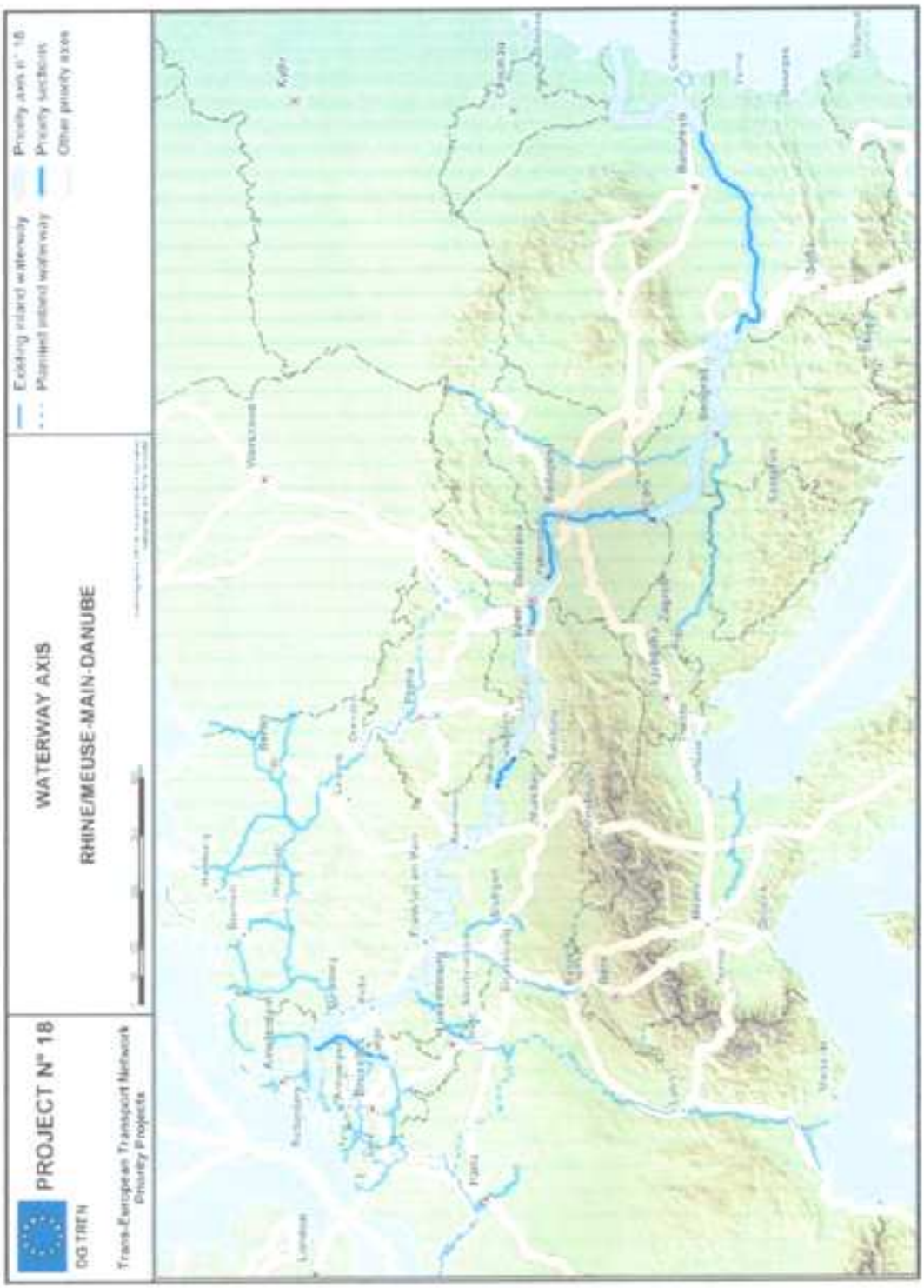
Appendix 3


PROJECT N° 20
Trans-European transport network
Priority projects
RAILWAY AXIS
FEHMARN BELT
København
Malmö
Puttgarden
Hamburg
Bremen
Hannover
Berlin

Appendix 4


PROJECT N° 19
DG TREN
Trans-European Transport Network
Priority Projects
HIGH-SPEED RAIL INTEROPERABILITY
IN IBERIAN PENINSULA
Selected for high speed interoperability
Conventional network
> 500.000
100.001 - 500.000
50.001 - 100.000
Barcelona
Zaragoza
Lleida
Tarragona
Valencia
Alicante
Murcia
Albacete
Madrid
Guadalajara
Toledo
Ciudad Real
Cuenca
Jaen
Granada
Malaga
Cordoba
Sevilla
Huelva
Cadiz
Badajoz
Merida
Caceres
Salamanca
Zamora
Valladolid
Palencia
Leon
Burgos
Logroño
Vitoria
San Sebastian
Pamplona
Huesca
Teruel
Castellon de la Plana
Palma de Mallorca
Lisboa
Porto
La Coruña
Oviedo
Gijon
Santander
Bilbao

Appendix 5


PROJECT N° 18
DG TREN
Trans-European Transport Network Priority Projects
WATERWAY AXIS
RHINE/MEUSE-MAIN-DANUBE
Existing inland waterway
Planned inland waterway
Priority axis n° 18
Priority sections
Other priority axes

Appendix 6

Table 1: Railway & road fatalities in the EU

Railway Fatalities

NUMBER OF RAILWAY PASSENGERS KILLED IN ACCIDENTS INVOLVING RAILWAY

	1990	2000	2001	2002	2003	2004	2005	2006	2007
EU-27							65	138	76

Road Fatalities

								%	
	1990	1995	2000	2001	2005	2006	2007	CHANGE '06/'07	CHANGE '00/'07
EU-27	75 977	63 106	56 412	54 314	45 126	42 952	42 448	-1.2	-24.8

Table 2: Goods traffic in the Pyrenees

Road

PYRENEES CROSSING TRAFFIC

GOODS TRAFFIC

VEHICLES PER DAY

	West coast Biriatou (inc. A63)	East coast Le Perthus (inc. A9)	Other crossings	TOTAL
1997	5 657	6 729	880	13 266
1998	6 447	7 413	905	14 765
1999	6 914	8 018	914	15 846
2000	8 224	8 200	1 519	17 943
2001	8 806	8 050	1 172	18 028
2002	8 864	8 535	1 505	18 904
2003	9 276	8 920	1 758	19 954
2004	10 655	9 302	1 875	21 832
2005	9 970	9 243	1 825	21 038
2006	10 390	9 602	1 939	21 931