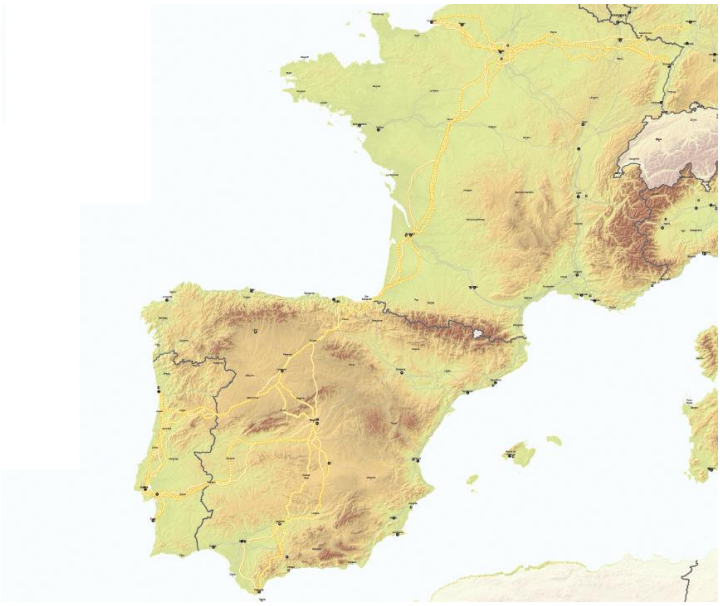
TEN-T Core Network Corridors

Atlantic Corridor

Progress Report 3
Annex: Review of Studies



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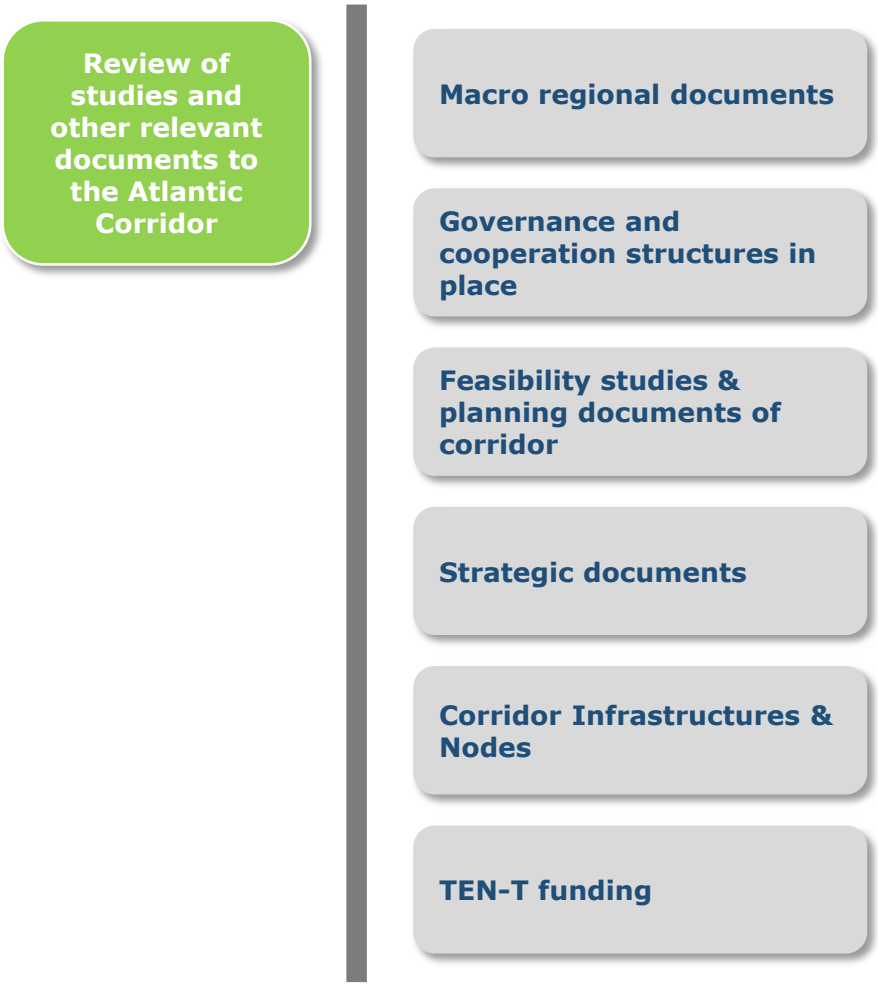
Abbreviations

CEF	Connecting Europe Facility
CF	Corridor Forum
COM	Commission Communication
CNC	Core Network Corridors
DFR	Draft Final report
ERA	European Railway Agency
EC	European Commission
ERTMS	European Rail Traffic Management System
ES	Spain
EU	European Union
DE	Germany
FR	France
ITS	Intelligent Transport Systems
MoS	Motorways of the Sea
MPPs	Multimodal Platforms
MS	Member State
PP	Priority Project
PR	Progress Report
PT	Portugal
RFC	Rail Freight Corridor
RRT	Rail Road Terminal
TEN-T	Trans European Transport Network
TENtec	information system of the European Commission to coordinate and support the TEN-T Policy
TSI	Technical Specifications for Interoperability

Introduction

This review covers the studies and other relevant documents that focus on the Atlantic corridor.

The literature framing the terms of reference for the Corridor studies were organised into 6 major categories:



This document is an annex to the Atlantic Corridor Progress Report 3. It includes the review of literature from previous studies and projects relevant for the corridor analysis.

Compared to the version delivered in June, the following changes were implemented:

New documents

- Weastflows - page 19
- Market research of Motorways of the Sea in Spain (West-MoS project, 2008) – page 47

- Prospective Study of Traffic Ro-Ro in the Strait of Gibraltar (TMSA and Port Authority of Bahía de Algeciras, 2009) – page 54
- Elimination of railway bottlenecks-freight services (Serantes Tunnel, Port of Bilbao) – page 118
- Project ANNA (Advanced National Networks for Administrations) – page 128
- SEAGAS – page 129
- Regulation 913/2010 concerning a European Rail Network for competitive freight: Implementation of rail freight corridor 4 – page 135

Updated documents

- Study for the development of Rolling Motorway services in the Iberian Peninsula in 2020 (EEIG Vitoria-DAX 2012) – page 20
- Study of the conditions of operation of Irun/Hendaya rail complex in medium term - long term scenarios, EEIG Vitoria-DAX - page25
- Market analysis, freight and passengers railway traffic in Atlantic Corridor in 2020, EEIG Vitoria-DAX – page 25
- Studies of definition of the international connection Vitoria-DAX, EEIG Vitoria-DAX – page 27
- Socio-economic studies and evaluation of carbon footprint in Vitoria-DAX project in 2020, EEIG Vitoria-DAX – page 27
- Regional and cross-border passenger traffic surveys, EEIG Vitoria-DAX – page 27
- Priority Reconditioning of the railway complex Irún-Hendaya, EEIG Vitoria-DAX – page 28
- Studies of the railway services in the international connection Vitoria-DAX in 2020, EEIG Vitoria-DAX – page 29
- French ERTMS Strategy – page 69
- Review of public information on the high speed rail line Tours-Bordeaux (LGV SEA) – page72
- Review of public information on the GPSO high speed rail line – page 73
- National Maritime Port Plan (PNMP, 2010) and Port Strategic Plans – page 79
- COSTA (CO2 & Other Ship Transport emissions Abatement through LNG) – page 120

Macro regional documents

EU strategy for the Atlantic Region

(COM(2011) 782 final)

The strategy covers the coasts, territorial and jurisdictional waters of the five EU Member States with an Atlantic coastline – France, Portugal, Spain, Ireland and the United Kingdom as well as their international waters, being focused on the challenges and opportunities.

Five main themes are elaborated in this document:

- Implementing the ecosystem approach
- **Reducing Europe's carbon footprint**
- Sustainable exploitation of the Atlantic seafloor's natural resources
- Responding to threats and emergencies
- Socially inclusive growth

The second theme (reducing carbon footprint) highlight the need to reflect on how Atlantic shipping would operate under the constraints of increased volume of shipping and lower emissions of carbon dioxide and the objective to shift freight from road to sea transport, emphasizing the existing and planned Motorways of the Sea routes and the further development of multimodal transport corridors, as part of the European Transport Network (TEN-T).

A methodology to implement the Strategy is established, including a specific reference towards the adoption of an Action Plan for the strategy by the end of 2013, indicating specific projects and actions recommended for support.

A first step towards the Action Plan include the set-up of a Forum bringing together Member States, Parliament, regional authorities, civil society and representatives of existing and emerging industries.

Action Plan for a Maritime Strategy in the Atlantic area: Delivering smart, sustainable and inclusive growth

COM(2013) 279 final

Action Plan takes as main objective "Creating jobs through blue growth", setting out priorities for research and investment to drive the 'blue economy' forwards in the Atlantic area, identifying four main priorities:

1. Promoting entrepreneurship and innovation;
2. Protect, secure and develop the potential of the Atlantic marine and coastal environment;
3. **Accessibility and connectivity**: link with the Transport Group. Ports as hubs of the blue economy;

4. Create a socially inclusive and sustainable model of regional development

Specifically in relation to the third priority - Improve accessibility and connectivity, a specific objective relates with promoting cooperation between ports, facilitating its development as hubs of the blue economy by:

- facilitating upgrades of infrastructure to improve connectivity with the hinterland, enhance intermodality and promote fast turnaround of ships through measures such as provision of shore side electricity, equipping ports with liquefied natural gas refuelling capacity and tackling administrative bottlenecks;
- enabling ports to diversify into new business activities such as the maintenance of offshore renewable energy installations or tourism;
- analysing and promoting port networks and short-sea shipping routes between European ports, within archipelagos and to the coast of Africa through initiatives such as Motorways of the Sea to increase seaborne traffic.

The role of Atlantic Forum in supporting the Action Plan is highlighted.

NAIADES II - Communication "Towards quality inland waterway transport" (2013)

The main objective of NAIADES II is to create the conditions for IWT to become a quality mode of transport: well-governed, efficient, safe, integrated into the intermodal chain, with quality jobs occupied by a skilled workforce, and adhering to high environmental standards. The NAIADES II aims thus at improving the quality performance of IWT, while remaining cost-effective.

NAIADES II has issued an action programme for 2014-2020 to achieve quality through different key areas of intervention:

- Quality infrastructure: make IWT interconnected and integrated with other modes of transport; removing bottlenecks of inadequately dimensioned locks, bridges or fairways; filling missing links; deploying innovative technology; developing smart infrastructure; providing a well-dimensioned network of core network ports with inland waterway-friendly access and facilities.
- Quality through innovation: development and innovation initiatives, especially for greening of the fleet.
- Smooth functioning of the market: review options for infrastructure charging to help achieve internalisation of external costs in IWT; assess barriers for the further development of inland ports and the need for a legislative framework to address these constraints. This is related to market access to port services and financial transparency of ports in order to relief administrative barriers in this field and to streamline the information flows.
- Environmental quality through low emissions: amend the rules to allow the transportation and storage of LNG and make (bunkering) infrastructure ready for LNG use
- Skilled workforce and quality jobs: foster entrepreneurial skills and use of innovative technologies; harmonisation and modernisation of the framework

governing skills and qualifications to improve quality and reduce administrative burden and costs.

- Integration of inland waterway transport into the multimodal logistics chain: integrate infrastructure (see first bullet point mentioned above), services (through IWT sector and land use planning) and information streams (through River Information Services or RIS).

NAIDES II is particular relevant, providing the framework for corridor objectives and gap analysis in what concerns Inland Waterways, in the specific case of the Atlantic corridor for the Seine waterway and inland core ports in the corridor, namely Le Havre, Metz, Paris, Strasbourg and Mannheim.
To support this process PLATINA II project has developed a checklist to verify the compliance on the field of IWT and inland ports with TEN-T regulation.

Governance and cooperation structures

Spain-France border observatory 2011

(Ministry of Ecology and Sustainable Development of France and Ministry of public works of Spain 2011)

Spain-France border observatory is created by Spain and France governments with the common purpose of creating a tool for measuring the volume and evolution of the Pyrenees cross- border traffic flows.

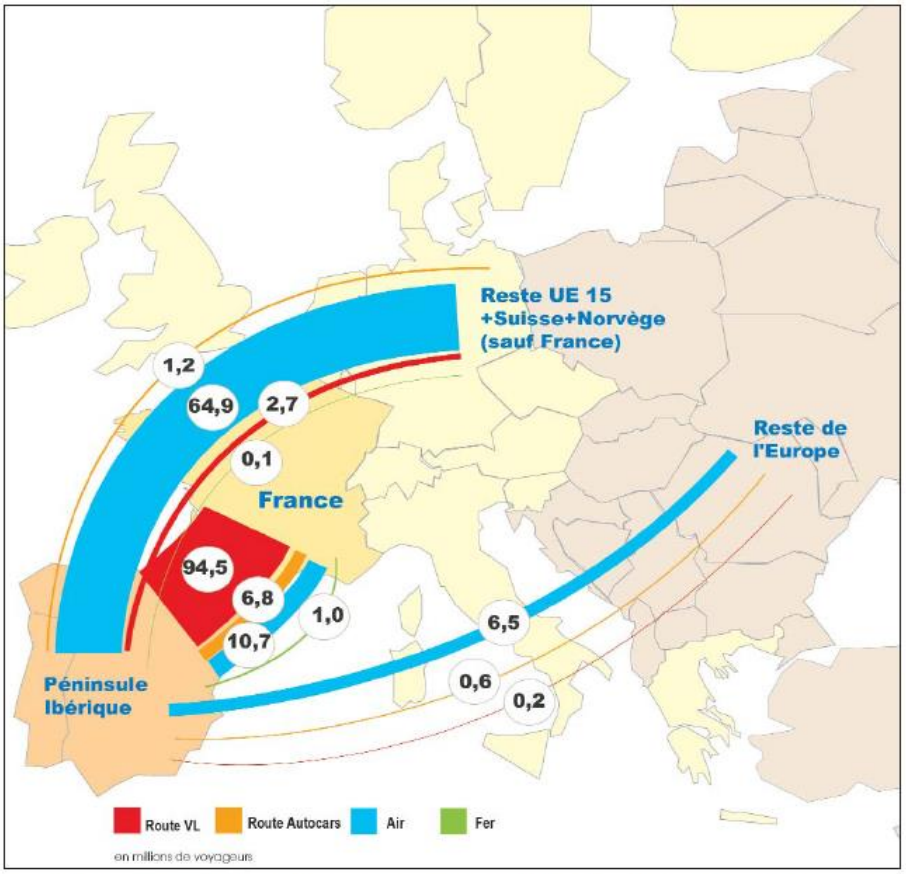
This document provides the latest figure for trans-Pyrenean flows. For passenger the main flow observed is between the Iberian Peninsula and France with 94.5 million of passengers crossing by car, 10.7 million by air, 6.8 million by bus and 1 million by train in 2011.

The result is a report with the next four chapters:

- Socioeconomic data
- Infrastructure: road and rail networks between both countries
- Passengers flows: modal split, traffic evolution and estimations
- Freight flows between Iberian Peninsula and France and the rest of Europe-15

Each of these chapters is supported by a set of statistics, databases and studies carried out in both countries.

Figure 1: Passenger flows between the Iberian Peninsula and the rest of Europe in 2011 in millions of persons



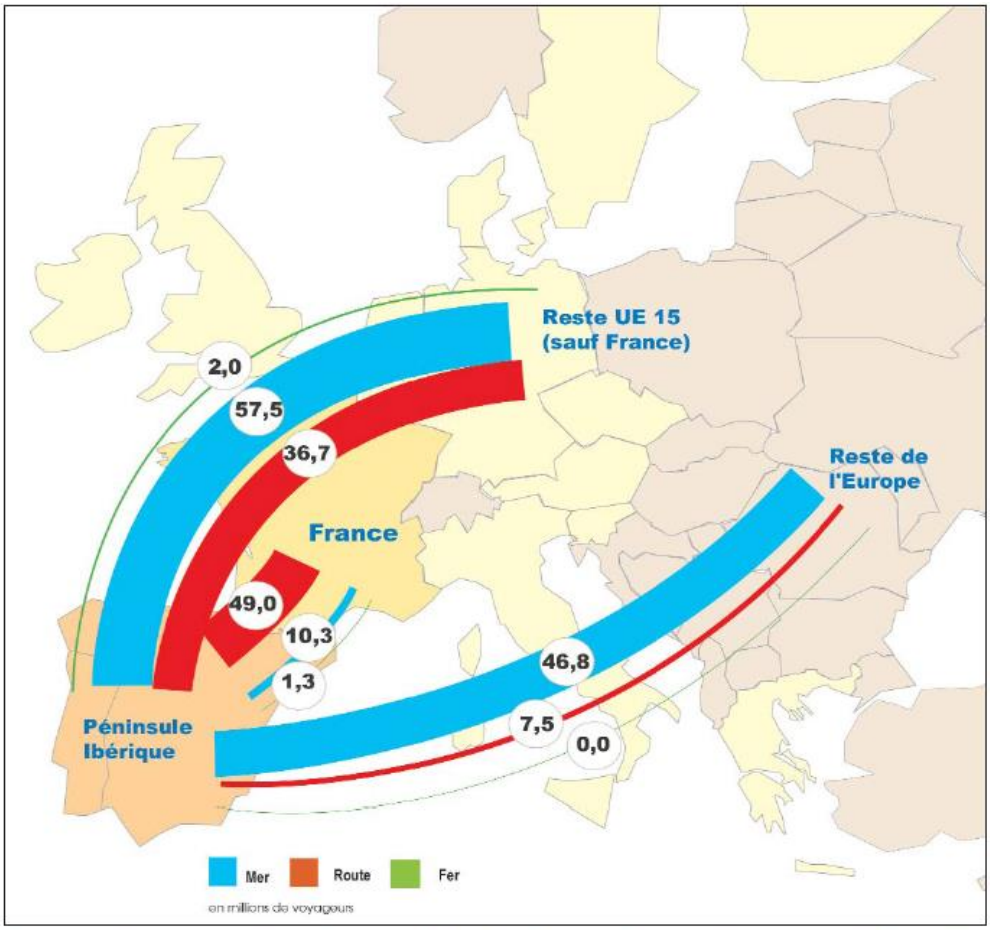
Observatoire franco-espagnol des trafics dans les Pyrénées - Document nº 6 – mise à jour de la carte 34 (page 74)

Most of the observed road traffic uses coastal roads on both wides of the Pyreneans. Regarding rail, almost half of trains crossing the border are reagional trains and 95% are trains originating from or going to France.

Though small, rail is the fastest growing market with an average yearly growth of 3.4% between 2007 and 2011 against 2.1% for road.

The map below describes freight flows. We notice that road and sea traffic are much larger than rail flows and that flows cover much longer distances.

Figure 2: Freight flows between the Iberian Peninsula and the rest of Europe in 2011 in millions of tonnes



Observatoire franco-espagnol des trafics dans les Pyrénées - Document n°6 – mise à jour de la carte 39 (page 93)

Source: Spain-France border observatory

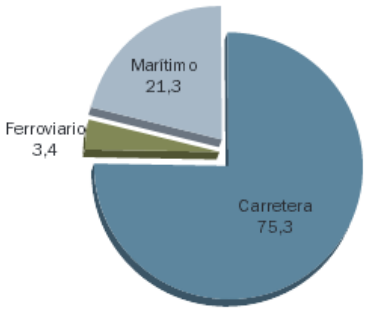
Spain-Portugal border observatory 2011

(Ministry of Public Works of Spain and Ministry of Economy and employment of Portugal 2013)

On June 2013, the Ministry of Public Works of Spain and Ministry of Economy and employment of Portugal disclosed the annual report of the Spain-Portugal Border Observatory for 2011.

In 2011, road transport presented the highest share of all modes with up to 75% of all tons transported between Spain and Portugal, followed by sea transport with a 21% share and rail with 3,4%.

Figure 3: Freight transport between Spain and Portugal and mode share in 2011



Miles de toneladas

	2010	2011	Δ (%) 11/10
Carretera	19.278	21.031	9,1
Ferroviario	798	943	18,2
Marítimo	4.645	5.966	28,4
TOTAL	24.721	27.940	13,0

Source: Spain-Portugal Border observatory in 2011

With an AADT (Annual Average Daily Traffic) of 2.820 heavy vehicles per day Fuentes de Oñoro/Vilar Formoso was the most important road cross border point between Spain and Portugal in 2011, followed by Tui/Valenca do Minho with 2.003 heavy vehicles per day.

Figure 4: Annual average daily traffic of heavy vehicles in the main road cross border sections between Spain and Portugal

Source: Spain-Portugal Border observatory in 2011

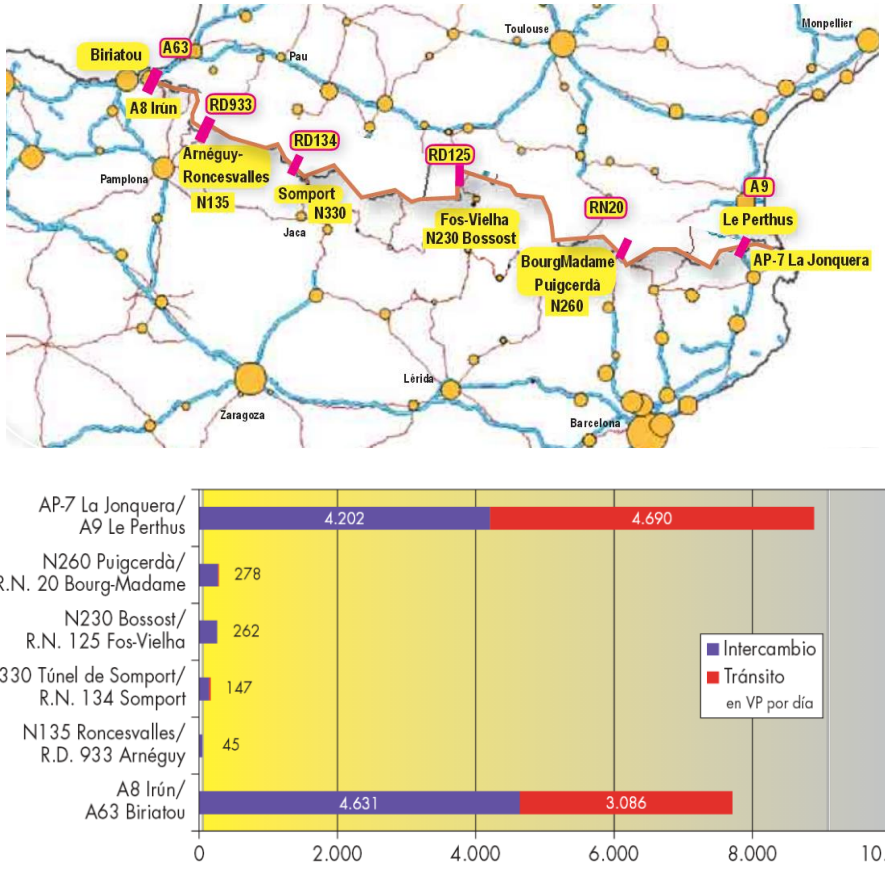
French-Spanish Observatory of the Pyrenees. March 2007. Transit Survey 2004

(Spanish Public Works Ministry and Transport Equipment Ministry of France 2007)

In 2004, on the road crossing border points of the Alps and the Pyrenees, a survey of international road freight flows was made. The purpose of this survey was to update the knowledge of the flow of road freight transport through the French territory in order to update the surveys developed in 1992-1993 and in 1999.

The results of this survey provide a detailed definition of the road freight transport flow by road between France and the Iberian Peninsula. In 2004, an average flux of 17.348 heavy vehicles per day crossed the Pyrenees, highlighting La Junquera/Le Perthus (8.892 heavy vehicles per day) and Irún/Biriatou (7.717 heavy vehicles per day) crossing points.

Figure 5: Crossing border points in the Pyrenees assessed in the Transit survey 2004



Source: French-Spanish Observatory of the Pyrenees. March 2007. Transit Survey 2004

Pyrenean crossing, survey on lorries (September 2012)

Data on road freight traffics between France and Spain is currently collected and analysed by the Pyreneans Traffics Observatory, which is directed in France by the DREAL Midi-Pyrénées. Every five years from 1992 to 2010, surveys have been conducted to focus on lorry traffic crossing the border on the main roads (highways A9 & A63, but also national roads RN134, RN125, & RN20).

Some of the traffic crossing the border is not taken into account in those surveys, such as the traffics on the two bridges over Bidassoa River, situated in Hendaye. The aim of the study is to identify and to define the motive of the traffic of "long vehicles" crossing the border by those two bridges.

The study is based on three sources of data:

1- The Spain counting data, corresponding to the heavy vehicle traffics observed on the two bridges in 2010. They report the following average daily traffic:
   - 785 heavy vehicles on Béhobie Bridge
   - 508 heavy vehicles on Saint Jacques Bridge

   Those traffics regroup the heavy vehicles traffics in a larger sense: not only the lorries, also the whole vehicles whose length is more than 6 meters (including motor home, caravans, coaches, and even some light vehicles).

2- A study of the CETE (May, 2009) defines the modal split of the real lorry traffic on the two bridges, respectively 81,6% & 80,6% of the whole heavy vehicle

traffic on Béhobie Bridge and Saint Jacques Bridge. So the real traffics considered in the framework of the study are the following:
- 640 lorries per day on Béhobie Bridge per day,
- 410 lorries per day on Saint Jacques Bridge per day.

3- The actual survey realised for the study (which took place during May & June of 2011).

The study distinguishes three kinds of traffic:

- **Real border crossings**: when the heavy vehicle passes through the bridge only 1 time without using on other bridge in its journey: 53% of the real lorry traffic & 43% of the whole heavy vehicle traffic.

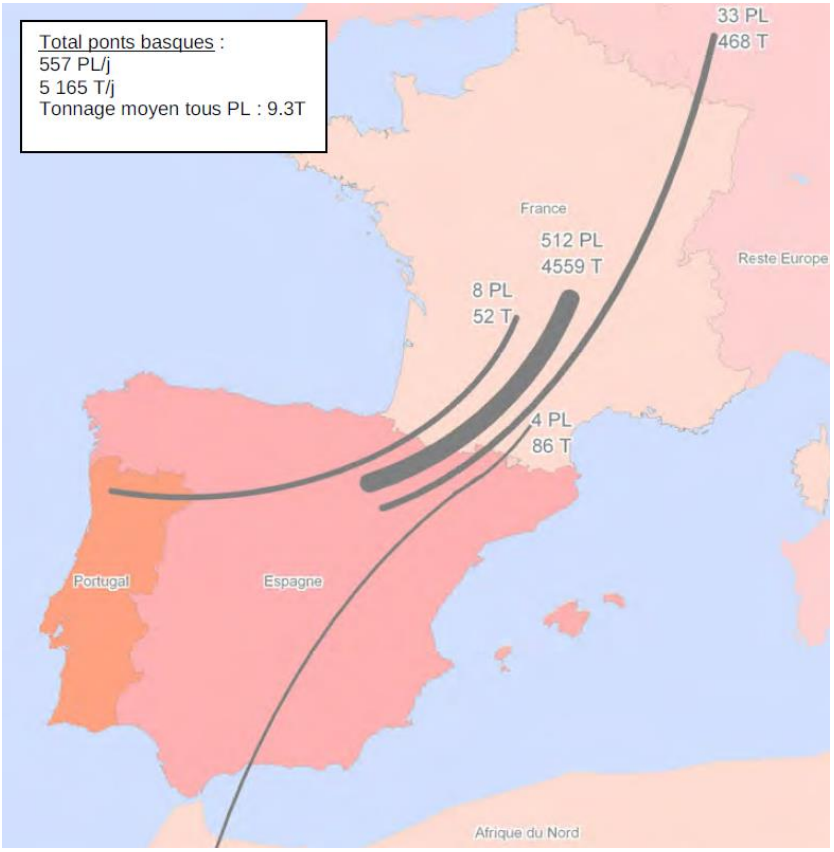
  - For the Béhobie Bridge, they represent 36% of the whole heavy vehicles traffic & 44% of the real lorry traffic.
  - For the Saint Jacques Bridge, they represent 54% of the whole heavy vehicle traffic & 67% of the real lorry traffic.
  - The average tonnage of the lorries for the medium and long distance is 14,8T, almost the same as the tonnage observed at Biriatou, which is the interchange A63 right next to the border on French side.
  - The following table summarizes the main features of those traffic:

		Béhobie Bridge	St Jacques Bridge
% of traffic loaded		64%	61%
Type of journey	Short bilateral traffic	45%	60%
	Medium and long distance traffic	50%	33%
	International transit	6%	6%
Load carried by year		0,94 MT	0,95 MT
Mean tonnage for a loaded lorry		14,2 T	15,6 T

Moreover, 27% of the real border crossings of lorries are in relation with the interchange Biriatou (which connects with the highway A63) in the case of Béhobie Bridge and 10% for St Jacques Bridge.

The following map summaries the distribution of the different relations passing through the two bridges in the framework of a real border crossing (number of lorries per day & total tonnage per day).

Figure 6: Franchissements pyrénéens, enquête PL ponts basques, *CETE du Sud-Ouest*



- **Local traffic**: the shorts relations between towns of France (Hendaye, Urrugne,Biriatou) & Spain (Irun, Fontarabie) which are very closed to one another (no notion of border crossing):

  - For the Béhobie Bridge, they represent 10% of the whole heavy vehicle traffics & 12% of the real lorry traffic.
  - For the Saint Jacques Bridge, they represent 13% of the whole heavy vehicle traffics & 16% of the real lorry traffic.
  - The following table summarizes the main features of those traffics:

	Béhobie Bridge	St Jacques Bridge
% of traffic loaded	75%	60%
Load carried by year	36 KT	16 KT
Mean tonnage for a loaded lorry	9,1 T	9,5 T
Type of merchandise	Mainly metallurgic products	Mainly building material

Weastflows

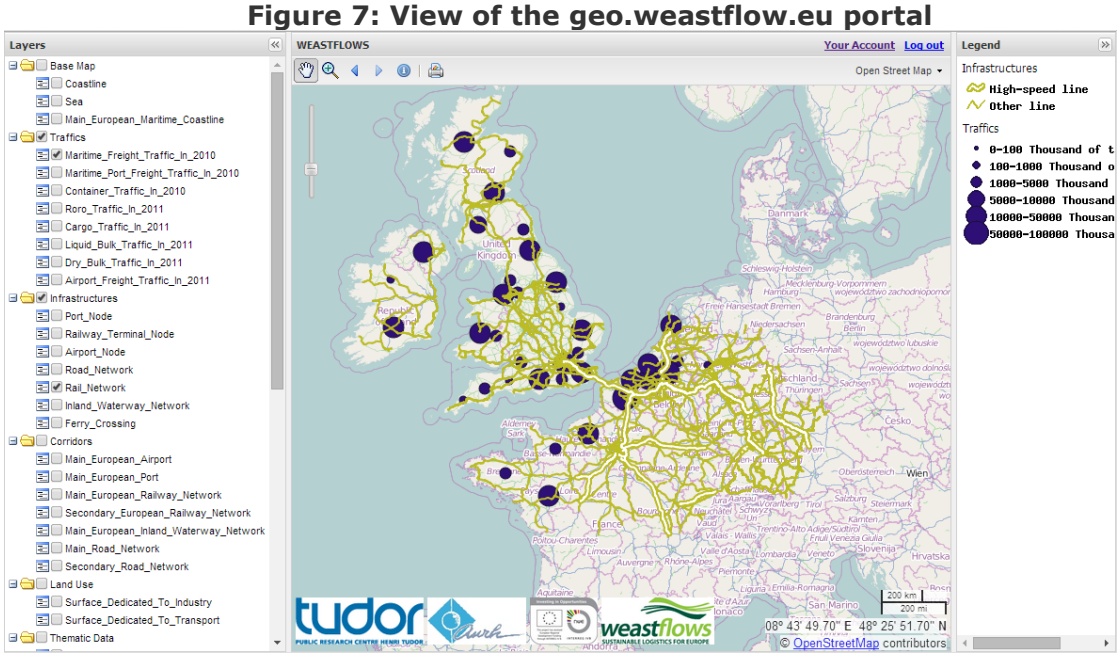
Weastflows (west and east freight flows) aims to encourage a shift towards more sustainable freight transport modes. It is an Interreg IV B North West Europe project funded by the European Regional Development Fund. The project is led by the French CRITT TL and the Institute for Sustainability in London. Together they manage 20 organisations which represent regional authorities, development agencies, research entities (institutes, universities and consortia) as well as ports.

The programme's five pilot projects are:

- Development of ICT solutions to encourage modal shift from road to rail and maritime
- A web-based portal to improve port operations and reduce congestion
- The development of an intermodal route planner to encourage sustainable, multi-modal supply chains
- Initial work to assist the creation of a multi-modal freight park to encourage the wider development of NWE sustainable supply chains
- Creation of track and trace solutions to encourage sustainable freight transport.

The Westflow website also features a geographical database (geo.weastflow.eu) with, among others, data on traffics, infrastructures and projects.

Figure 7: View of the geo.weastflow.eu portal



Feasibility studies & planning documents of corridor

Study for the development of Rolling Motorway services in the Iberian Peninsula in 2020 (EEIG Vitoria-DAX 2012)

The main objective of the study is to analyse the potential demand of Rolling Motorway services in the main transport axes of the Iberian Peninsula and its connections with France and the rest of Europe in order to estimate the future rail traffic flows in 2020 as well as to identify the main obstacles in infrastructure and rolling stock for its deployment.

The study is performed through 5 different steps:

1) Definition of the three types of rolling highways which will be analyzed through the study, including an analysis of the current network and services of the rolling highways in Europe:

   a) ROLA System: the ROLA (Rollenden Landstrasse) system is characterized by the use of low floor platforms equipped with special bogies with "small wheels", 335/360/380 mm, joined together continuously. The train is presented as a continuous and linear flat platform on which to embark on the tail truck by a removable ramp. The discharge is performed by the head of the train, once the engine and the car backing are disengaged.

Figure 8. ROLA System

Source: EEIG Vitoria-Dax

   b) Modalohr system: this articulated railroad car consists of two low-floor decks, resting on a single Y25 jacobs bogie in the middle and on two Y33 bogies on the extreme ends. Using standardized bogies resulted in lower maintenance costs compared with the similar rolling highway concept.

Figure 9. Modalohr system

Source: EEIG Vitoria-Dax

c) "Poche" carriage system: The two-axled or three-bogie wagons are equipped with a guide way, part of which swivels on an horizontal axis as a "draw bridge" which can be put on one or the other on the following positions:
   - Horizontal: to provide a continuous track so that vehicles can move from one wagon to the next.
   - Inclined: for loading.

   Semi-trailers are hoisted on or off the wagon along a mobile ramp by means of a tractor equipped with a hydraulic lifting device. The average length of this loading or unloading operation is roughly three or four minutes.

Figure 10. Poche carriage system

Source: EEIG Vitoria-Dax

As it was mentioned before, this step also performed an analysis of the developments regarding existing services in Europe as well as the European policies in relation to the European railway and funding and implementation conditions for rolling highways.

2) The second step carried out an analysis of the technical aspects of the different systems: dimensions, tare weight and maximum loads of wagons; specifications relating to the operation, loading and unloading systems, and characteristics of infrastructure and terminal-setting facilities, equipment and surfaces.

   The main conclusions of this section are the following:

   - According to the performed analysis of the upper part gauge, the more favorable technique is the Modalohr system, allowing heavy vehicles of 4,45 m tall for gauge GC. The most unfavorable technique is ROLA.

- Regarding the gauge in lower parts, both Poche and ROLA techniques conform to the contours of the UIC gauges, while the Modalohr system requires a special GI3 gauge in lower parts.
- The capacity of the station is strongly influenced by traction and ramp features, especially in rail highways where the road equipment tare must be add up to the railway tare.

3) The third section performs an analysis of the heavy vehicles traffic flows taking place at the Iberian Peninsula, both within its territory and with neighboring countries. Particularly it considers the following traffic flows:

    - International Flows: three types are considered;
        - Traffic Flows between the Iberian Peninsula and the rest of Europe
        - Ro-Ro Traffic Flows between the Iberian peninsula and the Maghreb region
        - Exchange flows between Spain and Portugal
    - National Flows:
        - Spain internal flows
        - Portugal internal flows

For each of the flows mentioned above, an analysis of the current situation and its evolution through the last years was performed. Additionally a study involving the rolling highways market was carried out following three different information sources:

a) Board of Experts, whose opinions may provide the necessary guidance for the analysis and expectations of the future demand of the rolling highways
b) Carriers survey, which will be the core of the study
c) Drivers, users and non-users surveys.

Based on all the analysis and studies performed, an estimation of the technically potentially absorbable daily traffic for both the international and national flows was performed. The results can be found here below:

Table 1. Technically potentially absorbable traffic 2020

International Flows

	Gross traffic	Truck / load filter applied	Gauge filter applied	Remaining
NST0	3688	3431	2402	65%
NST1	2398	2198	1539	64%
NST2	22	18	13	58%
NST3	208			0%
NST4	560	544	381	68%
NST5	1322	1218	852	65%
NST6	1123	1002	701	62%
NST7	84	83	58	68%

Iberian Peninsula Internal Flows

	Gross traffic	Truck / load filter applied	Gauge filter applied	Remaining
NST0	9442	6566	4596	49%
NST1	16708	12539	8777	53%
NST2	727	638	447	61%
NST3	3064			0%
NST4	7136	5373	3761	53%
NST5	5031	3982	2788	55%
NST6	29621	22431	15702	53%
NST7	1065	855	598	56%

NST8	2028	1910	1337	66%
NST9	9436	6380	4466	47%
Empty	2517			0%
TOTAL	23385	16784	11748	50%

NST8	4843	2891	2024	42%
NST9	42498	27368	191575	45%
Empty	79984		39885	0%
TOTAL	200118	82644	57850	29%

Source: EEIG Vitoria-Dax

4) Step 4 estimated the economically potentially absorbable traffic flow. For this purpose an economic analysis was performed which was focused on the following subjects:
   - Running Costs: The terminals, railway operation and administration and management costs were considered.
   - Freight companies costs
   - Profitability analysis: for this purpose both the net present value and the internal rate of return will be estimated in three different scenarios
   - Selection of corridors

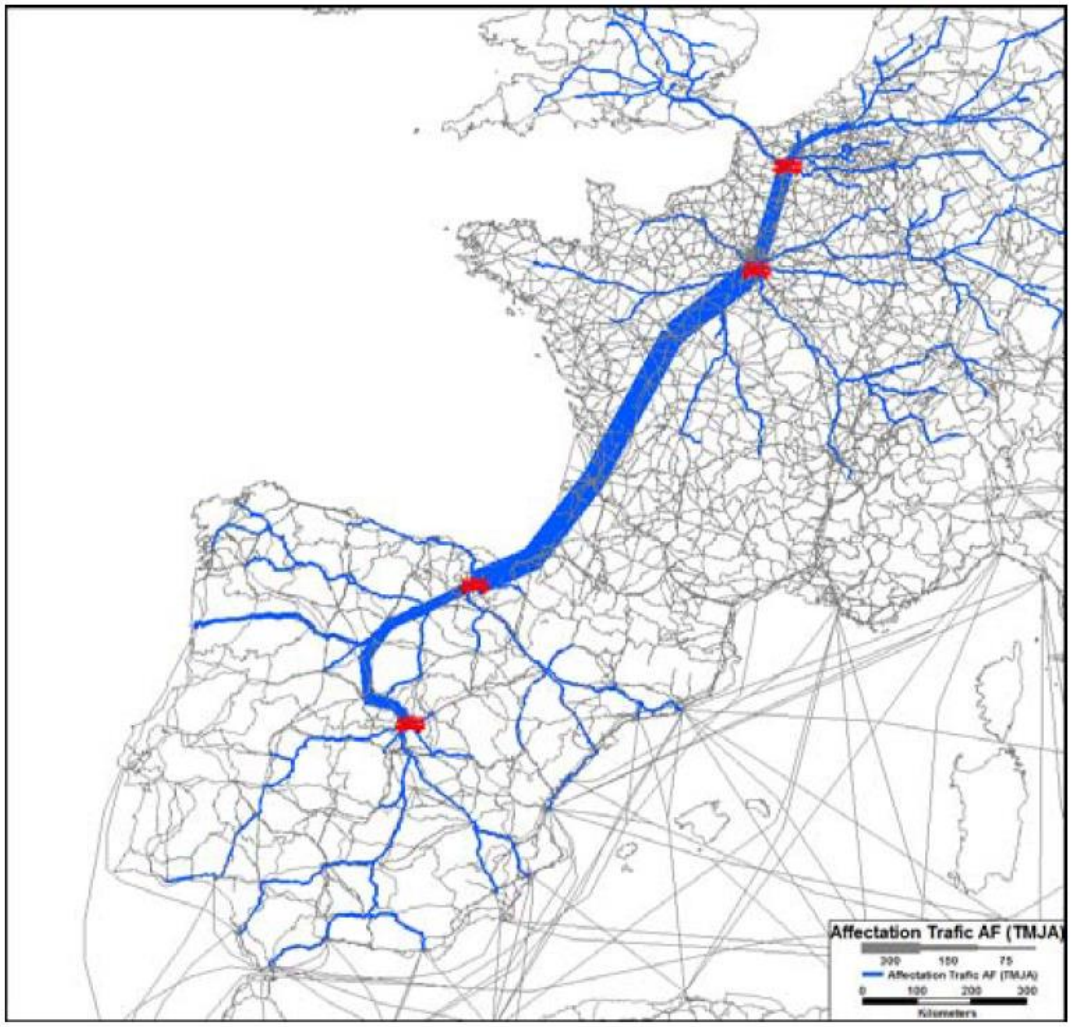
As a result of the previous analysis, the economically potentially absorbable traffic results can be found here below:

Table 2. Economically potentially absorbable traffic 2020

	Traffic in 2020	
Atlantic Corridor	ADT	Annual Traffic (HV)
Madrid-Paris stopover at Vitoria	492	179.665
Madrid-Paris no stopover at Vitoria	296	107.860
Madrid-Lille stopover at Vitoria	523	190.913
Madrid-Lille no stopover at Vitoria	340	124.190
Vitoria-Paris no stopover	376	137.108
Vitoria-Lille no stopover	389	142.133
Mediterranean Corridor	ADT	Annual Traffic (HV)
Valencia-Lyon no stopover	153	55.693
Barcelona-Lyon no stopover	118	42.997
Valencia-Bettembourg stopover at Nimes	397	145.069
Valencia-Bettembourg no stopover	275	100.502
Barcelona-Bettembourg stopover at Nimes	297	108.367
Barcelona-Bettembourg no stopover	303	110.704
Internal Corridor	ADT	Annual Traffic (HV)
Antequera-Barcelona no stopover	67	24.615

Source: EEIG Vitoria-Dax

Figure 11. Rolling Motorway services forecast for Atlantic Corridor in 2020



Source: EEIG Vitoria-Dax

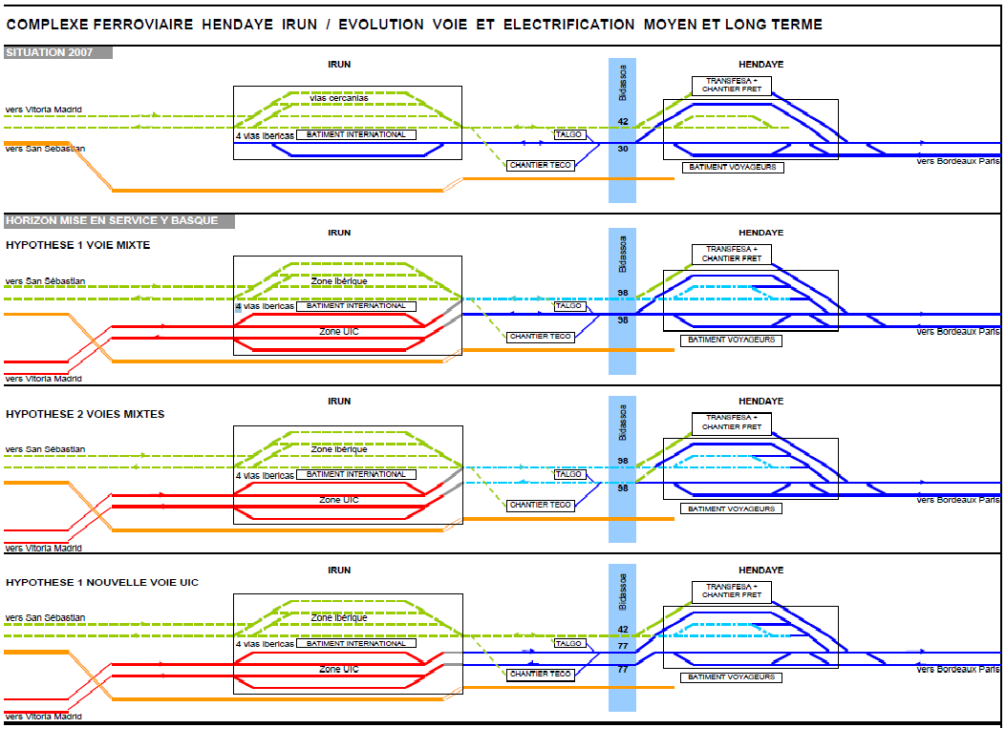
5) The last step focused on the action plan, which analyzes the real possibilities of establishing the rolling highways services along the considered corridors. The services which have been estimated the more interesting are:

   - Barcelona-Bettembourg
   - Valencia-Bettembourg
   - Vitoria-Lille
   - Madrid-Lille

Study of the conditions of operation of Irun/Hendaya rail complex in medium term - long term scenarios, EEIG Vitoria-DAX

This study analyzed the layout of Hendaya-Irún railway complex and attached facilities for the implementation of the new "Y Basque", its long term evolution after the commissioning of the international section (Vitoria-DAX) and the gradual implementation of UIC gauge in Spain. The main object of the study is to verify the ability to operate freight and passengers traffic of the railway complex at long and medium term.
The study includes two scenarios assessment, recommendations and measures to improve the operation in the railway complex and some infrastructures work.

Figure 12. Scenarios of the Irun/Hendaya complex assessed in the study



Source: EEIG Vitoria-Dax

Market analysis, freight and passengers railway traffic in Atlantic Corridor in 2020, EEIG Vitoria-DAX

This study gathers in fact, four studies, all of those addressing traffic forecasts:

- Study of the passengers markets and traffic of the Atlantic Corridor in 2020: The purpose of this study is to analyze the passenger's traffic and markets which could potentially use the railway transport mode through the Atlantic corridor by 2020. Performed in 2009.

- Study of the freight markets and traffic in the Atlantic Corridor in 2020: This study is aimed at analyzing the freight traffic and markets which could use the railway transport mode by 2020. Performed in 2010.

- Study of the passenger transport on the Atlantic Corridor in 2020 and 2030*:* This study was performed in 2013 and is aimed at analyzing the passenger markets and traffic which could potentially use the railway transport mode on the Atlantic corridor by 2020 and 2030. It updates the previous passenger performed study (2009).

  One of the most important conclusions of this study was the estimation of the traffic railway that would make use of the Vitoria-Dax railway service in three different scenarios: 2020 and 2030 without considering the future railway service between Bordeaux and Spain, and in 2030 once this line is in service. The results can be found in the table below:

Table 3. Estimated Atlantic axe passenger traffic (millions)

		2009	Reference 2020	Reference 2030	Project 2030
France	National	13,7	22,1	25,7	25,9
	Regional	4,2	6,5	7,3	7,3
Spain	National	0,7	3	3,3	3,3
	Regional	0,5	3,2	3,6	3,6
International	Long distance	0,3	1	1,4	1,9
	Regional	0,4	0,9	1,2	1,6
TOTAL		19,8	36,6	42,5	43,6

Source: EEIG

  The study also estimated the share of railway transport on the Atlantic side in 2030 once the new service between Bordeaux and Spain is available:

  - 2,4% for international and cross border traffic.
  - 7,9% for national and regional Spanish traffic.
  - 19,0% for national and regional French traffic.

- Study of the freight traffic and market on the short, medium and long term at the European Rail Freight Corridor nº4 (RFC4)**:** The goal of the study, performed in 2013, is to analyze the freight traffic and market on the short, medium and long term in the European corridor nº4, which includes the Vitoria-Dax section. It updates the previous freight study performed in 2009.

Therefore, the overall goal of these studies was to analyze the market for freight and passenger traffic which could potentially use the rail mode in the Atlantic Corridor. This study corresponds to the Market Analysis of RFC4 described in detail in subsequent chapters.

Studies of definition of the international connection Vitoria-DAX, EEIG Vitoria-DAX

Definition of the principal design and operation parameters of international section DAX-French border and of "Y Basque" new line: electrification 25.000V, ERTMS signaling, maximum speed for freight and passengers, maximum slope and connections.

The development stages of the study are:

- Infrastructure studies.
- Environmental studies insertion.
- Operating Capability Studies (travel times, traffic distribution, interoperability).
- Recommendations for the choice of the international section.

Additionally, the definition of the international connection was supported by the study "Supplementary Studies of the international section definition, on the binational link Vitoria-Dax", which addressed several design and running parameters, like operating recommendations and the Bidasoa river special configuration.

Socio-economic studies and evaluation of carbon footprint in Vitoria-DAX project in 2020, EEIG Vitoria-DAX

After analyzing the market research and the freight and passengers traffic in the Atlantic Corridor in 2020, the object is to define the socio-economic balance and the carbon footprint of Vitoria - DAX project in 2020.

Socioeconomic assessments were developed based on traffic forecast in two scenarios: reference scenario and project scenario.

Regional and cross-border passenger traffic surveys, EEIG Vitoria-DAX

The goal of the study is to analyze the regional and cross border traffic flows composition in order to properly evaluate the estimated traffic levels of 2020. The surveys were performed for both railway and road transport.

In December 2008 a first survey phase was performed on the road and train network, for both Spain and France; a second phase was performed during May and June 2009 in similar conditions to the one performed at the end of 2008.

On the road side, the survey was performed the following way:

- In Spain, the survey was performed on the toll motorway A8, at the toll barriers and on nearby service areas.
- In France the survey was performed on the services areas of toll motorways A63 and A64.

On the railway side, the survey was performed the following way:

- In Spain, the survey was performed at Irun and San Sebastian stations, on the inside of the trains which travel between Irun and San Sebastian.
- In France, the survey was performed at Hendaye, Bayonne, Dax and Bordeaux Stations.

The following results were obtained:

- The road annual traffic which is captured by motorway A63 and the two border crossings between Irun and Hendaye is estimated to be 16,4 million light vehicles, which means 32,4 million travellers, distributed as follows:

  - 2.9 millions of light vehicles performed a long distance international tour, which means 8,2 million travellers.

  - 13.5 million of light vehicles performed a regional cross-border tour (of which 4,3 million light vehicles belong to the traffic between Hendaye and Irun), which means 24.2 million travellers (of which 6.9 million are obtained from the local traffic between Hendaye and Irun).

- The annual cross-border railway traffic between Hendaye and Irun stations is estimated to be 0.63 million travellers (the TALGO night service traffic has not been considered), distributed as follows:

  - 0.14 million travellers go through the border employing RENFE and SNCF services.
  - 0.49 million travellers go through the border employing Euskotren services (of which 0.14 million travellers are obtained from the local traffic between Irun and Hendaye).

After analyzing the means of access to Irun and Hendaye stations and the connection index with TOPO service (Euskotren), it is estimated that the railway international and cross-border traffic is approximately 0.5 million travellers (excluding TALGO night service), which means a modal distribution of 2%.

Priority Reconditioning of the railway complex Irún-Hendaya, EEIG Vitoria-DAX

The goal of the study was to analyze the first important reconditioning to be performed on the railway complex Irún-Hendaya. This study was limited to Hendaya Station Zone and produced operating and infrastructure reconditioning recommendations as well as the estimated necessary investments to perform the previously mentioned proposals.

Studies of the railway services in the international connection Vitoria-DAX in 2020, EEIG Vitoria-DAX

Definition of the railway paths offer for freight and passengers traffic in Vitoria-DAX section of the existing and new line, according to the characteristics of the infrastructure and operating conditions of the Spanish and French networks.
The results show that the new line could provide daily in both directions 630 railway paths (on the whole line or a part of it) distributed as follows:

- 360 railway paths for high speed (> 220 km/h), 25% international.
- 270 railway paths for 120 km/ h, 75% international.

The hourly offer of the international railway paths can be distributed for each direction as follows:

- Peak periods (7:00 am): 2 railway paths for TAGV and 4 for freights.
- Intermediate periods and valley (11:00 am): 1 for TAGV and 7 for freights.
- Night period (3:00 am): 7 railway paths limited to freight traffic.

According to the 2020 traffic estimations, the distribution of the daily railway paths is as follows:

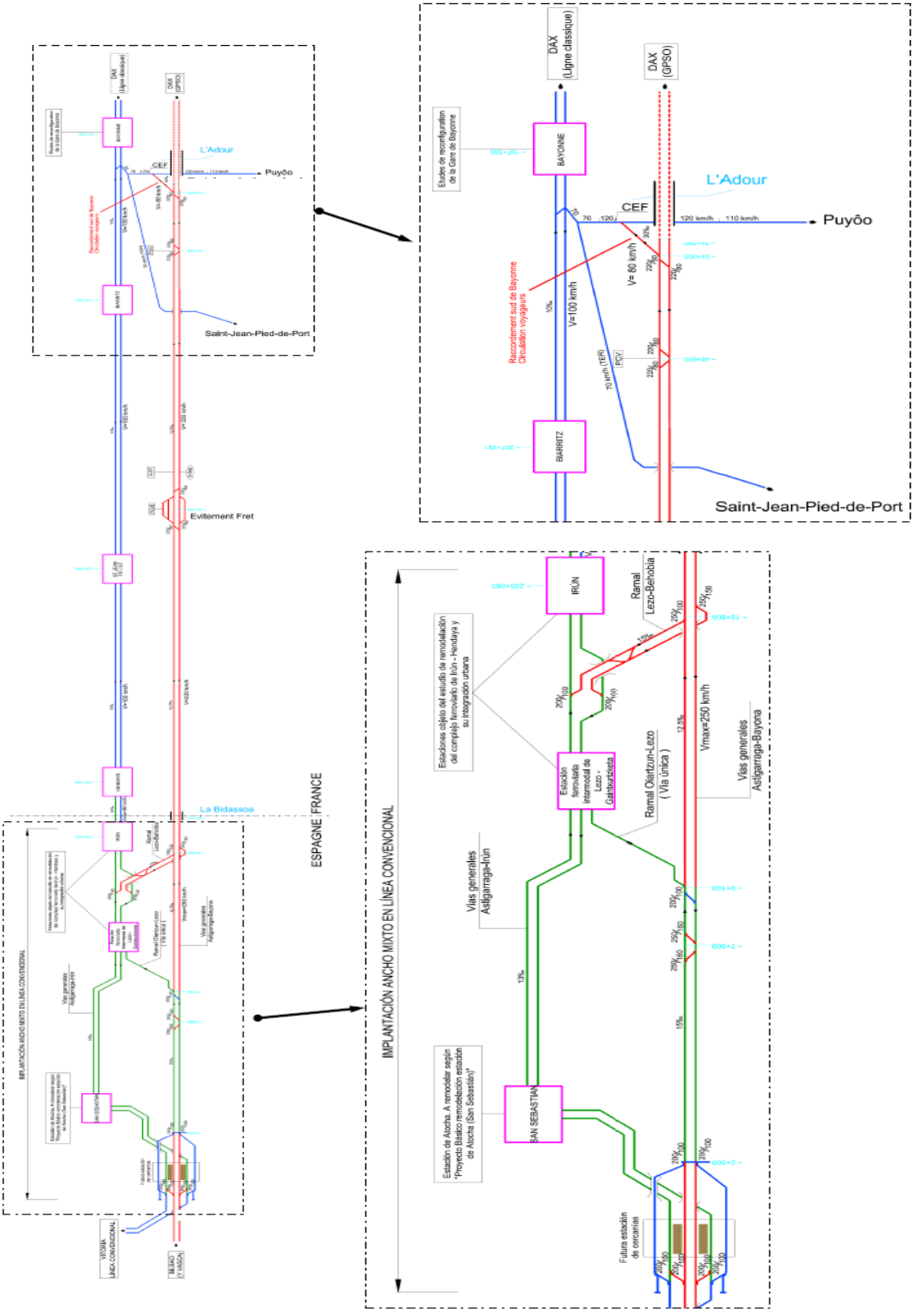
- 210 for high speed (> 220 km/h), 20% international.
- 140 railway paths for speeds between 100 and 120 km/h, 73% international.

This corresponds to a degree of use of 55% for the new line, with a residual capacity of 45%, available for future increases of long-term traffic.

The study is structured as follows:

- Analysis of current and future situation.
- Capacity of the corridor in 2020.
- Structure of railway services in 2020.
- Economic evaluation of the manager and administrator of the railway infrastructure RFF and ADIF.

Figure 13. Scheme of the international rail connection of Vitoria-Dax section



Source: EEIG Vitoria-Dax

Freight transport flows across the Pyrenees (EEIG TGC Pyrenees 2013)

The objective of this study is to update the existing freight transport model of traffics between France and Spain, especially reviewing the methodology and the data sources in order to obtain a tool for the analysis of freight traffic flows (current and future) between the Iberian Peninsula and the rest of Europe.

The existing model is a 5 steps model developed on CUBE that integrates the tools of a Geographic Information System (GIS) with classic transport analysis tools, ensuring an accurate representation of the network.

After the reviewing of the former transport model, three different scenarios were considered under certain growth assumptions. For 2040, three central crossing alternatives were studied between Huesca and three different points on the French side (Pau, Lannemezan and Pamiers).

The main results of the study are:

- The rail freight transport demand of TGC is between 2 and 2.5 Mt (depending on the scenario).
- Most of this rail freight demand of the TGC, between 0.8 and 1.6 Mt, comes from other rail crossing points, especially from the Atlantic Corridor (between 70% and 85%).
- The new demand created due to the construction of the TGC would be 1.1 Mt, which would increase the rail share from 6.7% to 7.1% in 2040.
- Most of this new rail demand comes from road transport (0.9 Mt); for this reason, about 160 VP / day would be removed from the road network.
- The results of this new model show a more moderate growth trend of the freight transport across the Pyrenees than forecasts of the previous model.
- Regarding to rail transport, the new model forecasts higher growth trend than the previous model.

Figure 14: Central Crossing alternatives considered

Source: EEIG TGC Pyrenees 2013

Technical Work Plan for the Atlantic Railway Corridor (Ministry of Public Works of Spain 2011)

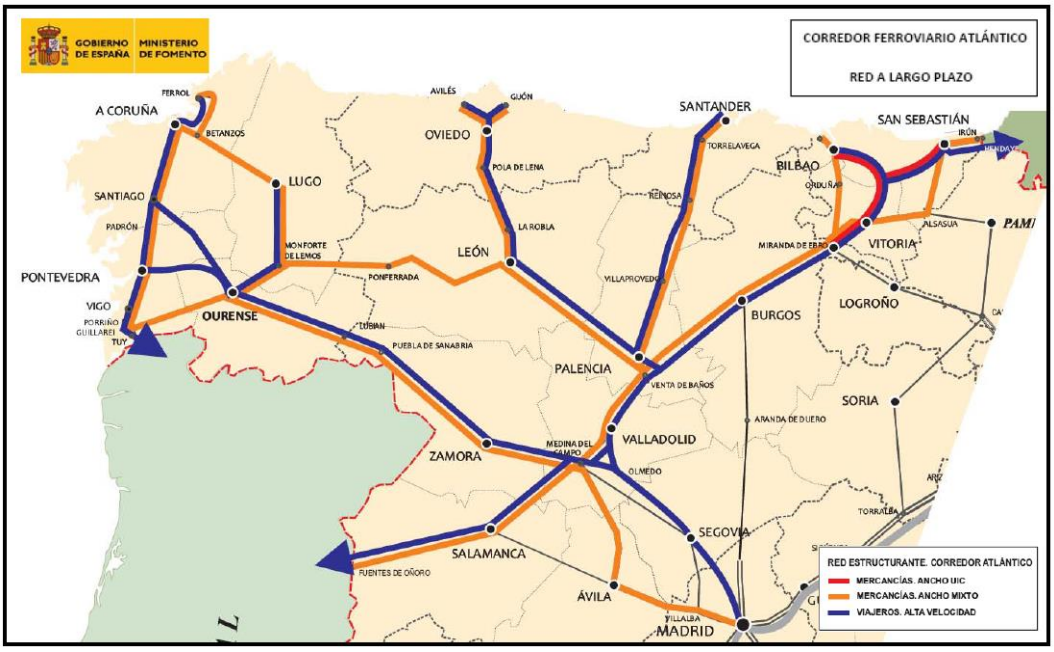
The main purpose of the Technical Work Plan for the Atlantic Railway Corridor is to identify actions to improve the functionality of the railway network and to promote the freight and passenger traffic along the Atlantic Railway Corridor in order to achieve a more balanced distribution among modes.

Regarding to rail freight transport, according to the European guidelines, the objective is to promote a competitive rail freight corridor as part of an integrated European network. For passenger transport, the objective is to complete a suitable rail infrastructure for high performance traffic along the corridor.

The Technical Work Plan defined is this study was divided in 5 specific work plans:

- High Speed lines work plan: prioritizing actions on the High Speed lines along the Atlantic Rail Freight Corridor across Spain.
- Core Rail Freight network work plan: upgrade and modernization of the line to increase competitiveness and reduce transport costs of the rail transport, implementing freight trains of 750 meters (40% saving in transport costs) and electrified lines operated by electric locomotives (13% saving in transport costs).
- Intermodal Terminals work plan: definition of the main intermodal terminals of the corridor.
- Sea-Rail intermodality work plan: upgrade of the rail access and the internal network of the ports of the corridor in order to promote the intermodality between these two modes.
- Interoperability: upgrade of the Spanish network to the European standards (750 meters of maximum length, load gauge, GSM-R, control and signalling system, electrification, gauge).

Figure 15: Atlantic Rail Freight Corridor (long-term network)



Source: Technical Work Plan for the Atlantic Railway Corridor (2011)

Trans-Pyrenean freight transport flows (July 2008)

EPYPSA, K+P & Nestear, 2008

The aim of the study was to develop a modal split and assignment model which correctly reproduce observed flows across the Pyrenean in order to extrapolate future flows in the years 2015 and 2025 at which time important upgrades to the railway network are due.

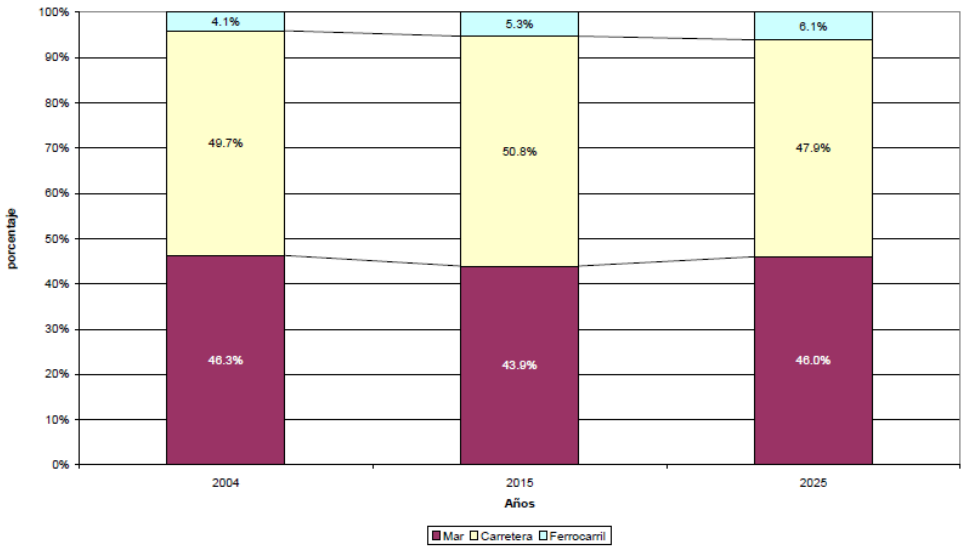
The first step was to estimate transport flows for the base year 2004 for different types of goods using mainly the 2004 Transit Study. Demand for the coming years was based on the growth rates indicated on a previous study done by BIPE for the French and Spanish ministries.

Total trans-Pyrenean flows were estimated to be 171.6 Million of tonnes in 2004, with forecasted traffic reaching 201.6 Mt in 2015 and 231.6 Mt in 2025. The following chart depicts observed modal split for 2004.

Models of road, railway and sea networks for 2004, 2015 and 2025 were also developed. Using demand and network data, observed modal splits were reproduced by using logit functions for the different kinds of goods.

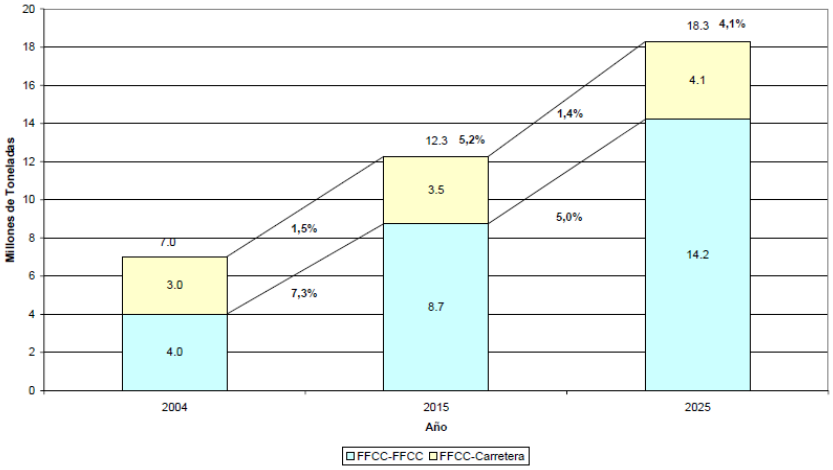
Finally, the study calculated the expected modal split and carried out a traffic assignment for the years 2015 and 2025. In the main scenario, rail modal share was expected to grow from 4.1% in 2004 to 6.1% in 2025, with most of the modal shift coming from the road (1.8 points versus 0.3 from sea transport).

Figure 16: Modal split for 2004, 2015 and 2025



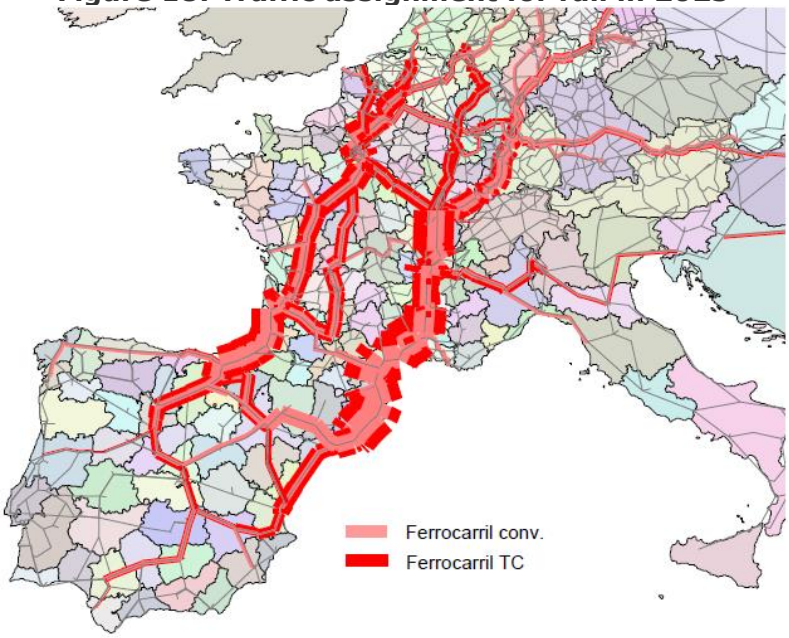
The following chart shows the expected growth of rail traffic for conventional (light blue) and combined transport (yellow) from a total of 7.0 million of tonnes in 2004 to 18.3 millions of tonnes in 2025. We notice a stronger growth in the conventional rail market compared with combined transport. 74% of the total growth between 2004 and 2025 comes from modal shift.

Figure 17: Rail market growth (conventional and combined transport)



Traffic assignment as represented on the map below show that, although the biggest trans-Pyrenean flow use the Eastern route by the Mediterranean Sea, important flows are expected on the Atlantic corridor between Spain and France.

Figure 18: Traffic assignment for rail in 2025



Study on freight transport on the Atlantic Corridor in 2020 (2008)

Geode & ALB

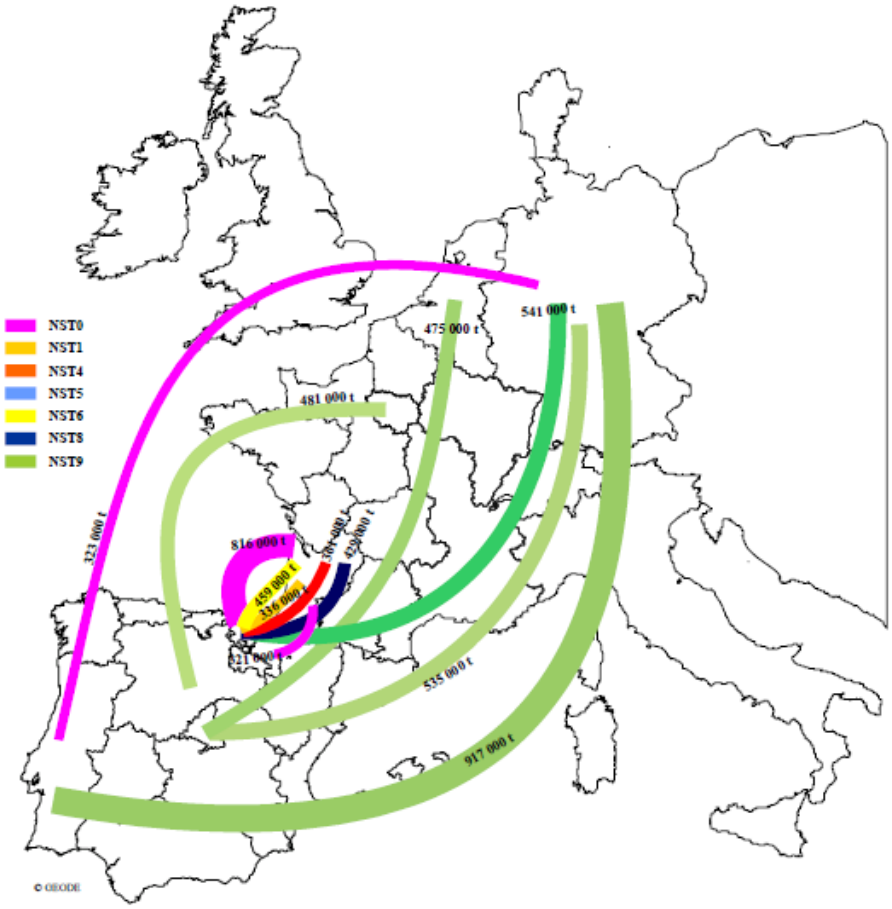
This study focuses on the Victoria-Dax cross border section. It aims at:

- Understanding the effect of a rail upgrade on traffics and trans-Pyrenean flows,
- Understanding territorial stakes associated to this new infrastructure,
- While integrating in the analysis the evolution of the rail sector, the impact of the UIC gauge implementation on parts of the Spanish network and the growing call for use of alternative modes to road transport.

The study was conducted in 5 steps:

1. **Flows analysis**: This first chapter is mainly based on the data from the 2004 transit study from the French ministry of infrastructure. It produced a matrix of trans-Pyrenean flows on the study perimeter.

Figure 19: Overland flows over 300'000 tonnes in 2004 by type of good



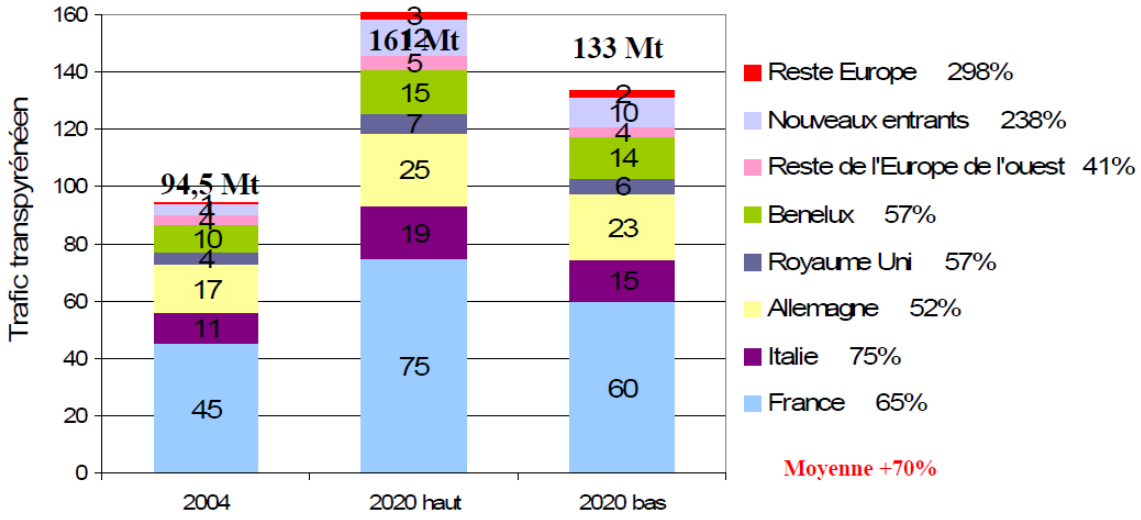
Source : GEODE d'après enquête transit 2004 et SNCF

2. **Territorial assessment** where the socio-economic profile of France, Spain and Portugal is analysed together with the countries' existing infrastructures.

3. **Transport system evolution**: This third phase put the emphasis on transport networks and markets by transport mode with a focus on current and coming developments.

4. **Traffic forecast**: The fourth step provides traffic forecast for 2020 with a high and low estimate based on observed flows and an analysis by sector. Total flows are expected to grow from 94.5 Mt in 2004 to 133 Mt (low estimate) or 161 Mt (high estimate) in 2020.

Figure 20: Trans-Pyrenean flows in 2004 and 2020 by origin



Source : LOUIS BERGER France – ALG

5. **SWOT analysis and action plan**: Finally, the last step consists of an analysis of strengths, weaknesses, opportunities and threats for rail freight transport on the Atlantic corridor (see table below).

WEAKNESSES	**THREATS**
▪ Lack of reliability ▪ Inadequacy to needs for several industries ▪ Rail network discontinuity ▪ Long delays to carry out new infrastructure projects ▪ Lacks of network coverage of industrial hubs and difficult access to cities ▪ Slow liberalization of the rail sector ▪ Lack of confidence of shippers in railways undertakings	▪ Uncertainty regarding rail infrastructure development ▪ Development of new road infrastructure ▪ Development of short sea shipping and highways of the sea ▪ New localization of freight flows ▪ Regulation on dangerous goods and restrictions on access to cities
STRENGTHS	**OPPORTUNITIES**
▪ Competitive transport mode for traffics with the following characteristics: ▪ Regular frequencies ▪ High volumes ▪ Easy handling ▪ Long distances ▪ Over long distances (500 to 2'000km) ▪ Ability to operate continuously and to several European countries ▪ Low externalities	▪ New niche markets: chemical sector, fertilizer, containers ▪ New competitive framework ▪ National and European policies to promote railways ▪ Development of rolling motorways and intermodal terminals ▪ Loss of competitiveness of road transport ▪ Growth and demographic concentration in the regions under study ▪ Demand from shippers to shift traffics

	from road to rail ▪ Societal demand for a use of transport modes with less negative externalities

Transports in the autonomous Basque Country (Spain) and Aquitaine (France): possible fields of cooperation

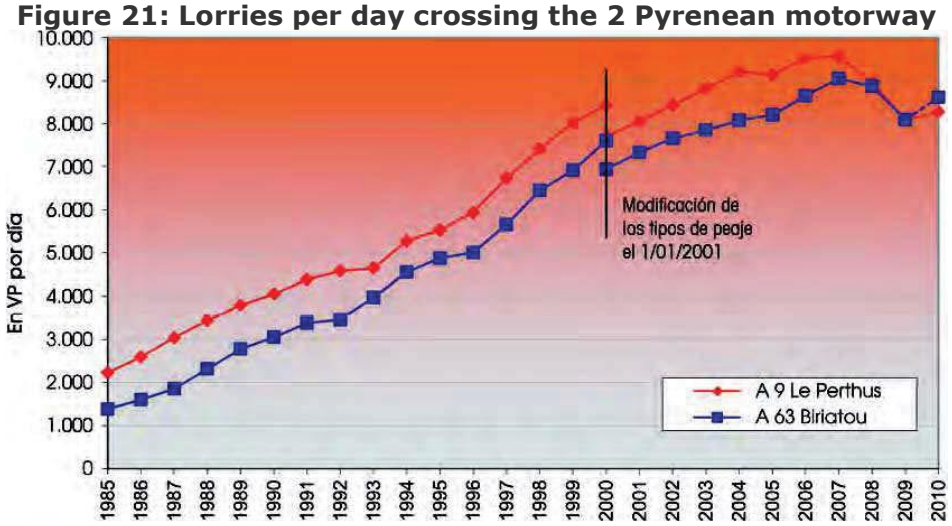
CESER Aquitaine and CES Basque (November 2013)

Since the creation of Auitaine-Euskadi Euroregion, freight and passengers transport has been an important issue. The geographical situation of the Euroregion (on the Atlantic passage of the Pyrenees chain) leads to consider the freight transport from an International perspective. The analysis of transport problematic between CAPB and Aquitaine covers all of the traffics coming in the Euskadi Aquitaine Euroregion.

Freight flows are larger than passenger flows. They are carried on the regional infrastructure together with national flows also used for regional mobility.

Freight transport: Trade has continuously been increasing between Iberian Peninsula and Europe since 1986, date of entry in the European union of Spain and Portugal. In 2010, 60% of 143 million tons of goods on the road network in France for transit or international exchange crossed the Pyrenees. This leads to numerous lorries crossing the Pyrenees (9000 lorries by day in 2007).

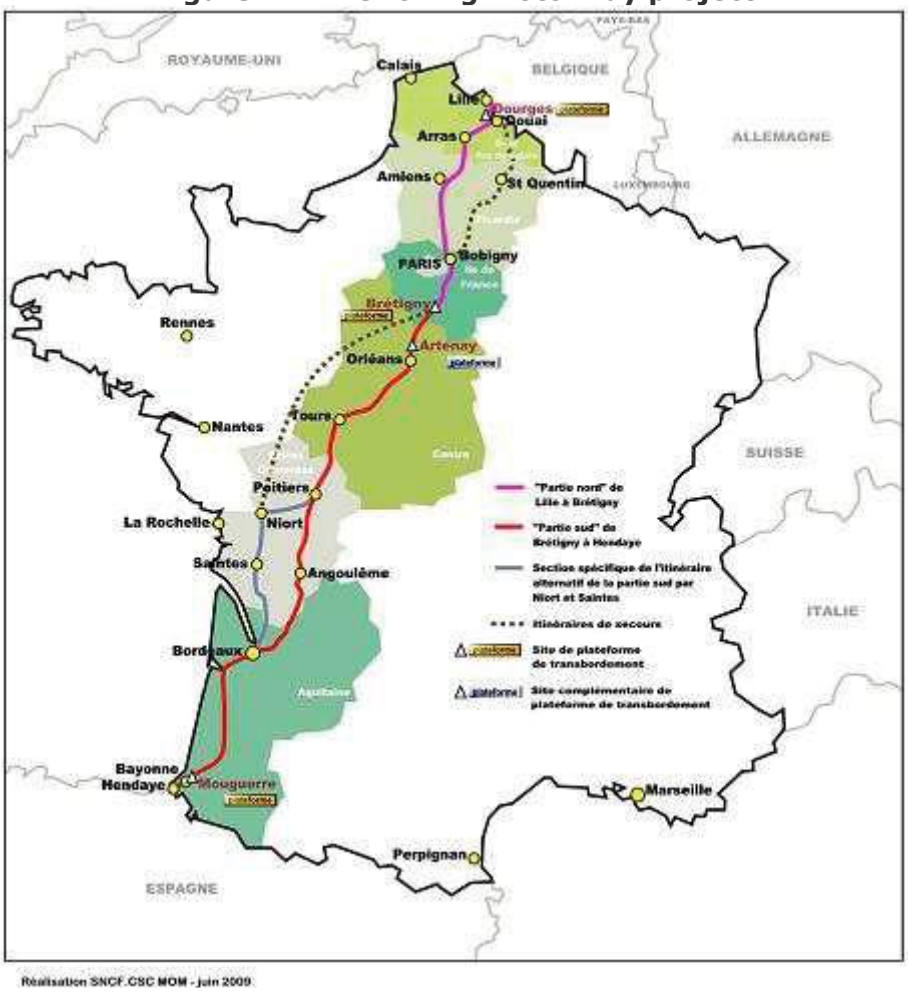
Figure 21: Lorries per day crossing the 2 Pyrenean motorway



The study describes in detail the current transport conditions and analyses issues with the different modes of transport. To limit road transport, the study recommends promoting continuity of rail network with European standards and short sea shipping and maritime highways. The main freight projects described in the study are:

- Rail freight corridor 4,
- The so-called Basque "Y" line (Donostia-San Sebastiàn, Bilbao, Vitoria),
- The Rolling motorway between Hendaye and the North of France.

Figure 22: The rolling motorway project



Passengers transport: Although cross-border passenger flows are smaller than freight flows, there is an increase in the use of individual transport with 32.4 million of passengers in 2 crossing (Irun, Hendaye) a year. Local cross-border trips are mostly made for purchases and leisure (85.8%) with only 9.3% of trips due to work.

There are few cross-border public transport services. Flows are mostly done by rail: 0.63 million of passengers between Irun and Hendaye per year, 25'000 bus passengers per year and 341'500 yearly ship passengers.

The main project for passengers is the GPSO high speed rail line. Apart from infrastructure issues, the study identifies soft measures to improve public transport's attractiveness:

- Establishing a transport authority
- Introducing regular train schedules,
- Unifying ticket systems,
- Improving the quality of service (regularity),
- Developing information systems.

Transport Market study for Rail Freight Corridor 4, 2013

ProgTrans, VTM, SETEC, EPYPSA, 2013

Market study for RFC4 is aimed at studying the traffic demand in the freight corridor (4 reports) and is followed by an Implementation Plan (5th report) defining the means and strategy to implement corridor.

Corridor No. 4 connects directly two other corridors – Corridor No. 2 ("North Sea – Mediterranean"), in Metz Woippy, and Corridor No. 6 ("Mediterranean"), in Madrid. With regard to the Atlantic coast, the European Commission has selected the rail freight corridor No. 4 connecting Portugal, Spain and France, namely the following points: "Sines-Lisbon-Leixões, Sines-Elvas/Algeciras–Madrid-Medina del Campo/Bilbao/San Sebastian – Irun – Bordeaux – Paris/Le Havre/Metz", which will constitute the hubs of the corridor.
The implementation of international rail freight corridors forming a European rail network for competitive freight should be conducted in a manner consistent with the Trans-European Transport Network (TEN-T) and/or the European Railway Traffic Management System (ERTMS) corridors.

Market study comprises four detailed reports:

- Previous studies analysis and socioeconomic background
- Freight demand: reference situation, current and future demand matrices
- Transport supply and traffic forecasting model
- Traffic forecasts

The market and traffic research on this corridor has been carried out in several steps: First of all, a diagnostic reports on the current situation. Therefore, the countries and regions crossed by the corridor have been subject to an analysis of economic indicators and of the overall situation of transport. Then a origin-destination matrix was drawn up to describe the existing flows in 2010. Afterwards, based on this matrix, the matrix of transport demand in 2010, projections were developed based on econometric models (differentiating countries and freight types) enabling the prediction of transport demand for 2020, 2030 and 2050 horizons.

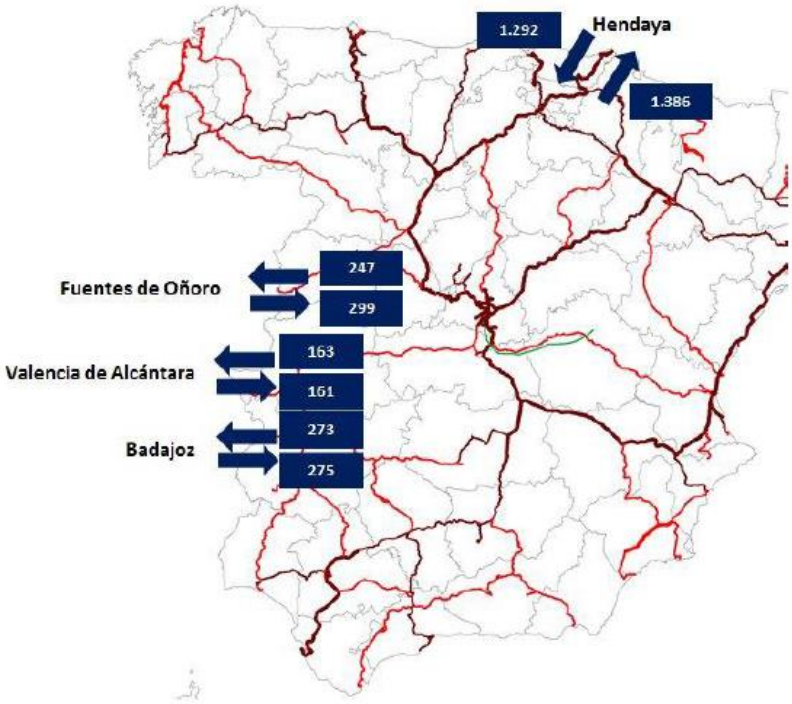
In terms of supply, the planned projects of transport infrastructures on the different horizons have been studied and modelled in order to take into account their impact on traffic projections.
To assess the determinants of the choice of mode of transport, stated preference surveys have been conducted on the players of freight transport (shippers or forwarders). An econometric model has been drawn up based on their results, enabling the assessment of the weight of the different determinants (price, duration, reliability...).
Finally, future traffic of the different modes of transport has been modelled and assigned to transport networks – as envisaged by the different forecast horizons – taking into account all the elements previously mentioned (context, demand, supply and determinants of mode choice).

The study included a set of interviews to companies and industries located all over the influence area of the Freight Corridor No.4, namely in Portugal, Spain, France,

Germany and Benelux. However, out of the observed trips, only the international transport services have been considered.
The model developed for this study's purpose has been based in the multimodal transport "Trans-Pyrenees" model, developed by K+P and by EPYPSA (see above), and combines the maritime, rail and road networks, coded using Cube Voyager software. It has a 5 step structure:

1. Data import: From the existing network in the model the reference situation is updated. Several scenarios are developed for different time horizons.
2. Freight traffic demand growth.
3. Level of service calculations: For each considered transport mode, several variables are obtained (time, cost, etc.) for each origin-destination.
4. Modal shift: obtained from the stated preference exercise, and calibrated with the current situation matrices, by type of cargo.
5. Rail and road network assignment: model's results.

Figure 23: International annual trains in 2010 in the various borders



Source: Rail Freight Corridor No. 4 (2013)

Complementary analyses were carried out:

- The first include the study of the interest value of a stretch of corridor No. 4 towards Germany (Mannheim) in order to offer an interconnection with corridor No. 1, an important European north-south corridor which extends from northern Italy to Benelux. With this extension of the corridor to Germany, the closest corridor and most interesting to connect would be corridor No. 1 (Genoa-Rotterdam/Antwerp). It is therefore a connection to the most used European freight corridor and would open the door to intermodal rail/river on the Rhine which is particularly well equipped in terms of infrastructures to ensure these operations. This connection, would turn rail freight corridor No. 4 into the only corridor crossing the French-German border. The figures provided in the study for this scenario are at the scale of the country, taking into

account the flows directly concerning the Atlantic corridor. According to the study, there is already a significant potential in 2010: about two weekly return services for Portugal and around twenty in the case of Spain. In terms of tonnages, it is forecasted that the transported flows will be multiplied by a factor between 2 and 4 on the period 2010-2030. Only rail flows with Germany were considered. Road flows are extremely important, representing in the case of France nearly 13.4 Mt of goods trade per year, which indicates a weak rail modal share (less than 5% on the flows considered).

Figure 24: International flows in Tonnes (KT) and number of trains to/from Germany

	Ferroviaire				Autoroute ferroviaire			Total
	France	Espagne	Portugal	Total	Espagne	Portugal	Total	
2010	486	775	76	1 337				1 337
2020	752	1 183	163	2 098	494	0	494	2 592
2030	1 082	1 462	303	2 847	830	90	920	3 767
2050	1 526	1 987	402	3 914	1 376	187	1 563	5 477

	Ferroviaire				Autoroute ferroviaire			Total
	France	Espagne	Portugal	Total	Espagne	Portugal	Total	
2010	748	2 213	218	3 179				3 179
2020	1 157	2 507	345	4 009	986	0	986	4 995
2030	1 664	2 658	551	4 873	1 657	180	1 837	6 711
2050	2 347	3 613	730	6 690	2 747	374	3 121	9 811

Source: Rail Freight Corridor 4, 2013

- The second complementary analysis was a SWOT of the rail transport on the space covered by corridor No. 4

Strengths:

- The possibility of transporting important volumes on long distances allowing potentially reduced costs
- The mobilization of public authorities and infrastructure managers and their organization in common structures
- The service done by the corridor for important production sites and consumption
- Rail transport reduced environmental impact

Weaknesses:

- High capital costs, at the same time for infrastructures and rolling stocks
- A lack of flexibility of the periods of transport
- An absence of priority for the freight trains on the rail network
- Lesser costs, at the moment, for the road and maritime modes of transport
- A direct competition of the maritime mode on the corridor and the efficient range of services of transport
- A lack of confidence of the actors of the transport in the rail mode

Opportunities:

- The liberalization of the market which can allow an increase of the competitiveness of the offered services and a price drop for the rail transport
- The simplification of the procedures of reservation of paths and the realization of new tools with benefit from new technologies
- A reduction in the competitiveness of the road mode in relation with the increase of the energy costs and creation of new taxes
- The development of the iberian ports in the hinterland of the Corridor 4 which, in support on the optimization of the rail network, can become a competitive alternative of the Northern ports of Europe and Mediterranean, in particular for the transcontinental traffics

Threats:

- The economic situation and the uncertainty which causes its impact on the countries of the Corridor 4,
- The relocation of the centers of consumption and production towards other countries of Europe,
- The development of the sea transport (cheaper in terms of investments) and services which develop themselves in this frame (maritime highways)

One of the main issues considered in the study is the conversion of the Iberian gauge to UIC gauge in the Portuguese and Spanish railway lines. Another aspect considered is the implementation of extension of the rail motorways services.

The gauge conversion implies large and long-term investments. And the duration of its implementation is long as well. However, the gauge conversion will allow an enormous step ahead in cross border traffic, as the present situation requires time consuming expensive and inconvenient transhipment operations at the French-Spanish border.

These infrastructure construction works should be performed in the following decades. The line that crosses the French border towards Valladolid shall be shifted to UIC gauge from 2020 (as well as the one from the French border towards Cartagena, in the Mediterranean corridor). Over 2030, an important part of the Spanish and Portuguese networks will be subject of UIC gauge implementation.

Rail Motorway has been considered in this study as a transport system that allows carrying non attended heavy trucks in adapted trains. Each train can carry up to thirty trucks for long distances without the several external negative effects related to road mode transport.

As we can see in the table below, the "trans-Pyrenean" flows in 2010 show a very weak modal share of the rail mode (with nearly 4% of inland flows). This can be partly explained by the differences in rail gauge: The adaptation to UIC gauge of a growing number of sections of the Iberian rail network and the increase in the maximum extension of freight trains up to 750m between 2010 and 2030 will result in the multiplication by 3.5 of the tonnage transported during this period (including rail motorways).

The "south" flows are also affected by this lack of interoperability which favoured the road transport that is observed presently (modal share inferior to 3% for the rail transport). The evolution of rail traffic follows a steady rhythm with the triplication of tonnages between 2010 and 2030.

Conversely, the "north" flows are characterised by a modal share closer to the average observed in the European Union as a whole (17% in 2010).The increase of tonnages and of rail modal share is, therefore, more moderate than in the other two markets.

Moreover, it is important to note that the internal flows on corridor 4 will merely represent 11% of global international flows going through corridor 4. For example, some major rail flows, such as the flows between the Iberian Peninsula and Germany were outside the corridor, and just assessed in the context of a potential extension of corridor.

According to this study, the average time consumed for border crossing services was considered to be 7 hours and 34 minutes. This corresponds the time for the coordination of the services in each side of the border and the gauge shift operation that takes roughly 6 hours to complete, and a coordination time of about 1,5 hours. Regarding maritime transport, is has been assumed a 24 hour time-penalty in each port.

Table 4: Total flows converted into annual number of trains forecasted (including in part empty returns)

		Flux de transport internationaux ferroviaires de marchandises sur le corridor n°4 (nombre de trains)							
		Interne		Echange		Transit		Total	
		Conv. + TC	Auto. Ferro.	Conv. + TC	Auto. Ferro.	Conv. + TC	Auto. Ferro.	Conv. + TC	Auto. Ferro.
Total	2010	1 476		8 258		4 177		13 911	
	2020	2 255	264	14 294	3 824	6 300	72	22 849	4 159
	2030	3 552	2 274	19 757	7 079	9 000	506	32 308	9 858
Trans pyrénéen	2010	866		3 291		1 451		5 608	
	2020	1 338	264	6 205	3 824	1 759	72	9 302	4 159
	2030	2 001	2 274	8 829	7 079	2 006	506	12 836	9 858
Sud	2010	610		1 656		0		2 266	
	2020	917		2 384		4		3 305	
	2030	1 551		2 729		9		4 289	
Nord	2010	Aucun flux comptabilisé		3 311		2 727		6 037	
	2020			5 705		4 537		10 242	
	2030			8 198		6 985		15 183	

Source: Rail Freight Corridor No. 4 (2013)

Table 5: Annual flows, differentiated by market and by type of relation, in 2010 and with different prediction horizons

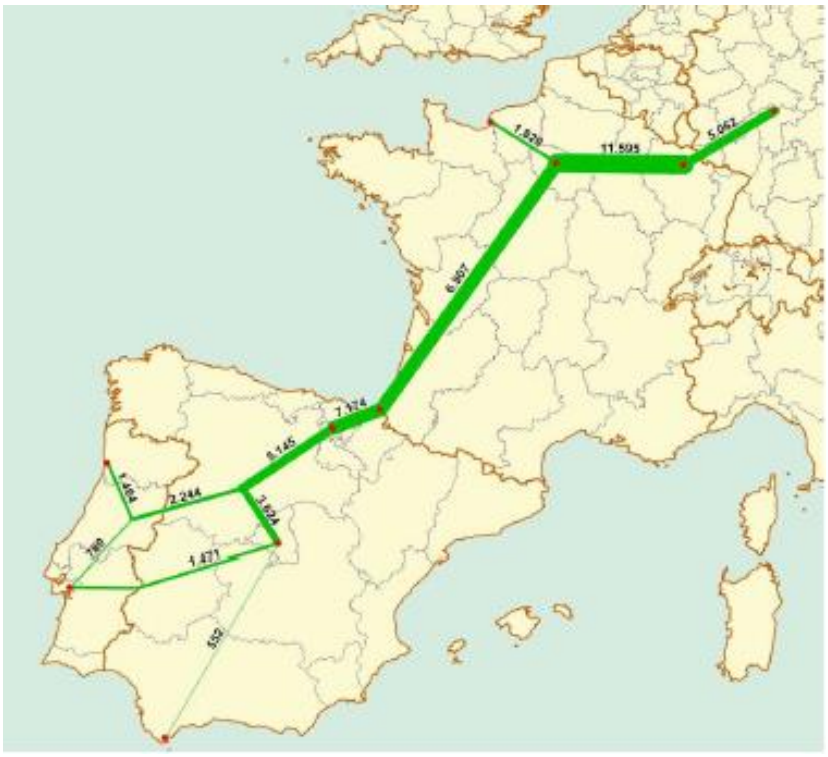
		Flux de transport internationaux terrestres de marchandises sur le corridor n°4 (Kt)															
		Interne				Echange				Transit				Total			
		Ferroviaire				Ferroviaire				Ferroviaire				Ferroviaire			
		Conv. + TC	Auto. Ferro.	Part mod. Ferro.	Traf. Terrestre	Conv. + TC	Auto. Ferro.	Part mod. Ferro.	Traf. Terrestre	Conv. + TC	Auto. Ferro.	Part mod. Ferro.	Traf. Terrestre	Conv. + TC	Auto. Ferro.	Part mod. Ferro.	Traf. Terrestre
Total	2010	517		2,7%	19 172	3 883		5,3%	72 672	2 280		10,8%	21 039	6 680		5,9%	112 884
	2020	953	132	4,8%	22 686	7 471	1 916	10,8%	87 308	3 781	36	14,6%	26 183	12 204	2 084	10,5%	136 177
	2030	1 953	1 139	9,9%	31 090	11 686	3 547	13,2%	115 571	5 648	253	17,2%	34 265	19 288	4 939	13,4%	180 926
Trans pyrénéen	2010	303		3,3%	9 255	1 152		3,4%	34 251	508		5,6%	9 095	1 963		3,7%	52 601
	2020	631	132	6,4%	12 020	2 929	1 916	11,6%	41 647	830	36	7,7%	11 241	4 391	2 084	10,0%	64 908
	2030	1 101	1 139	13,8%	16 192	4 856	3 547	15,7%	53 598	1 103	253	9,8%	13 904	7 060	4 939	14,3%	83 694
Sud	2010	213		2,2%	9 917	580		2,9%	19 657	0		0,0%	219	793		2,7%	29 792
	2020	321		3,0%	10 666	834		3,9%	21 345	1		0,6%	240	1 157		3,6%	32 252
	2030	853		5,7%	14 898	1 501		5,0%	29 791	5		1,5%	335	2 359		5,2%	45 024
Nord	2010	Etant donné que le corridor s'arrête en France, il n'y a pas de trafic international interne au corridor au Nord				2 152		11,5%	18 765	1 772		15,1%	11 725	3 924		12,9%	30 490
	2020					3 708		15,3%	24 315	2 949		20,1%	14 702	6 657		17,1%	39 017
	2030					5 329		16,6%	32 182	4 540		22,7%	20 026	9 869		18,9%	52 208

Source: Rail Freight Corridor No. 4 (2013)

Figure 25: Traffic flows (million tonnes) per section in 2020

Source: Rail Freight Corridor No. 4 (2013)

Figure 26: Traffic flows (million tonnes) per section in 2030



Source: Rail Freight Corridor No. 4 (2013)

The study presents an analysis of the evolution of the projected needs in terms of number of rail services necessary to respond adequately to the demand for freight in the various horizons. Its results can serve as a tool for planning services and definition of future train paths in the corridor, up to the extent that investment program is implemented.

2015 Implementation Plan for Rail Freight Corridor 4, 2013

In accordance to Regulation (EU) 913/2010, article 18, the EEIG·CFM4 draws up, regularly updates and publishes a Corridor Information Document [CID] for the Atlantic Corridor.

The CID contains, among other items, all the information regarding the Rail Freight Corridor in the national network statements of France, Spain and Portugal, the list and characteristics of terminals, the capacity allocation rules and procedures, the measures to be implemented for the set up of the corridor, the investment plan and the essential elements of the transport market study carried out for the Atlantic Corridor. The CID includes five main parts, being relevant for the CNC studies the Part 3 (Terminal Description, proving information regarding the terminals that are part of the corridor) and Part 5 (Implementation Plan)

This document corresponds to the Part 5 of CID and includes the following main chapters:

1. Corridor description
   - Infrastructure characteristics per line and section, limiting factors, complementary itineraries
   - Identification of the main managers of the terminals and sea ports operating in the corridor per country (corridor extension to Germany not considered in the document)
   - Factors limiting the performance of corridor
   - Advisory groups (undertakings and terminals)
2. Synthesis of the market study (see above)
3. List of measures
4. Identification of corridor objectives and performance monitoring
5. Investments plan, with the list of the planned projects on the corridor and respective financial needs per country
6. Deployment plan for interoperable systems, particularly:
   - coming on stream of sections of a new line with a UIC gauge fit for freight traffic in Spain, Portugal and France in the short and medium term,
   - the gradual adaptation to the UIC gauge of the main existing axes in Spain and Portugal in the short and medium term,
   - the electrification of existing lines connecting Spain to Portugal in the medium and long term,
   - the gradual entry into service of new high-speed lines in France enabling the liberation of capacity for freight traffic on the existing line in the short and medium term,

- the performance of operations of decongestion of certain railway junctions and/or increase of capacity, particularly in the border point of Hendaye/Irun
- on a timeframe further in the future, perspectives of deployment of an interoperable signalling system of the ERTMS type, when the majority of the precedent points will have been solved

7. Capacity management, referring to the investments to address current limitations:
   - Uniformity of the length of track with UIC gauge and possibility of circulation for trains with 750 m

     Spain and Portugal presently have the major section of tracks of their networks with an Iberian gauge (1,668 mm); within the framework of the Investment Plan of Corridor 4 defined over different periods, several projects will enable the unification of the track gauge on the whole Corridor by converting the Iberian gauge into an UIC gauge (1,435 mm) in these two countries. In conjunction with these works of uniformity of the track length, necessary investments for the circulation of trains with a maximum length of 750 m will be included. This uniformity will be carried out gradually and in a coordinated manner between each country, establishing as far as practicable itineraries functionally complete and adapted to the financial resources of each country.

   - Suppression of bottlenecks

     In addition to prior investments which will enable in some cases the resolution of bottlenecks by increasing the overall capacity of the Corridor 4 with the construction and entry into service of new lines for mixed or high-speed traffic (and consequently the liberation of the capacity for freight traffic on the conventional network), other investments are planned, aimed mainly at removing the current or future bottlenecks on the Corridor. These investments are mainly planned at the level of the major railway junctions of the corridor, namely: Lisbon, Madrid, the border between Spain and France, Bordeaux and Paris.

   - Creation and/or improvement of Terminals

     These investments are aimed at the sectors that create and receive major rail flows, through the development of new Terminals and the adaptation or improvement of existing Terminals. In addition to conventional freight traffic and combined transport, Terminals may also offer new international rail services of the rolling motorway over long-distance routes type.

   - Improvement of the efficiency of the transport system

     These investments include those regarding the improvement of the signalling system, as well as the improvement or development of electrification of the different sections depending on:

     - the topography of the different sections of the Corridor,
     - the length of journeys of freight trains (depending on speed and the maximum load of trains)
     - the transport plan of RU (including the working time for train drivers).

An assessment of the EU contribution is given. The implementation plan includes the following annexes (in bold, the annexes including relevant information to the CNC studies)

- Appendix 1 / Framework for capacity allocation on Corridor 4

- **Appendix 2 / Maps of the existing rail infrastructures on Corridor 4**
- **Appendix 3 / Detailed characteristics of existing rail infrastructures on Corridor 4**
- Appendix 4 / Summary of the PaPs and international paths offer 2015 for freight on Corridor 4
- **Appendix 5 / Maps of rail infrastructures planned at short term and in the medium term on Corridor 4**
- Appendix 6 / Cooperation agreement signed between regulatory bodies of corridor 4

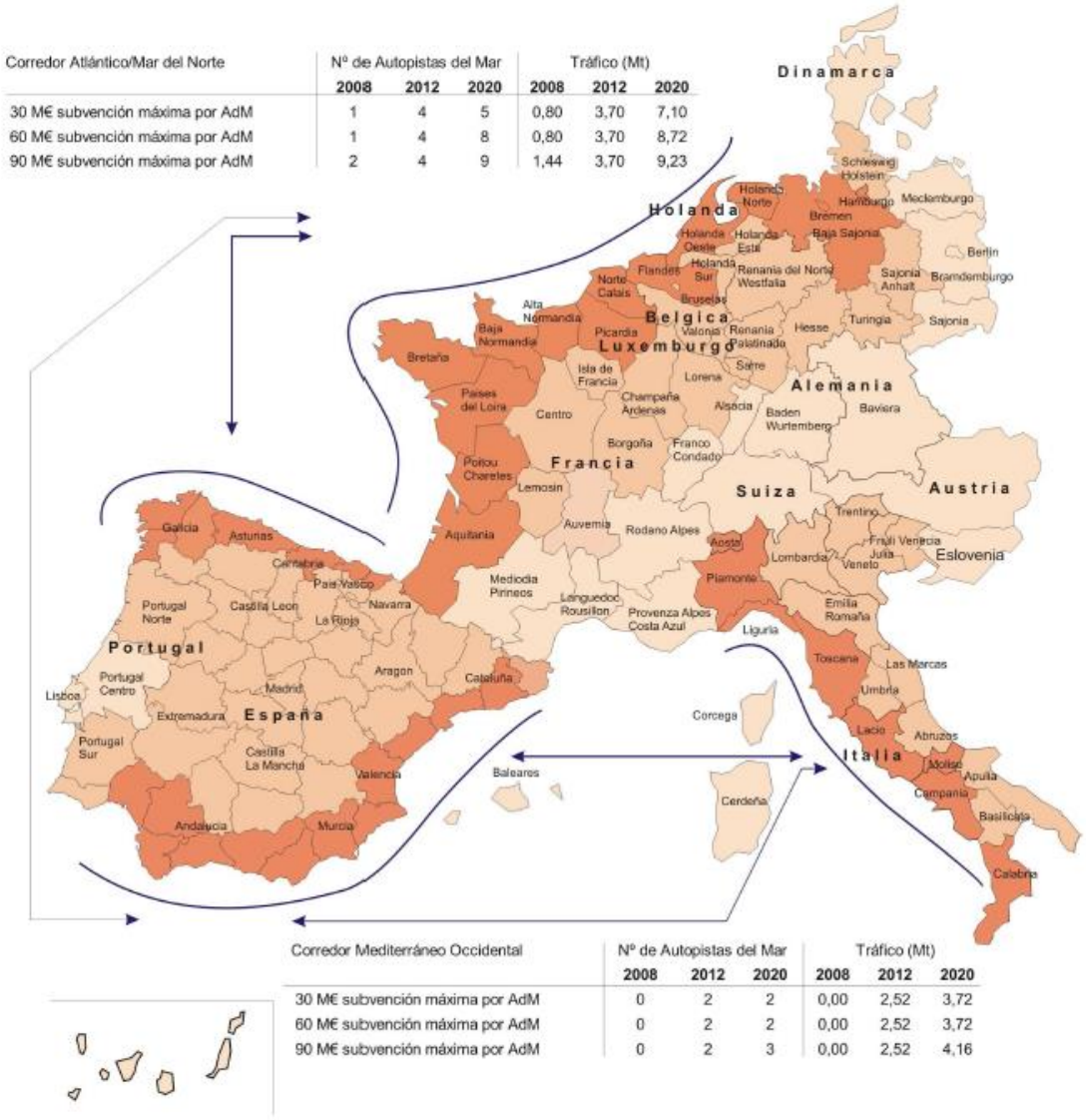
Market research of Motorways of the Sea in Spain (West-MoS project, 2008)

In this study the current status of the Motorways of the Sea in Europe and particularly in Spain is described, a forecast of the future demand of road transport through the Pyrenees is performed, and the quality criteria of the MoS in order to cause traffic transfers from road to maritime-terrestrial options is defined.

Making use of all the previous information, the potential traffic of the MoS which can be developed in Spain is finally estimated. The project recommends complementing the study with an analysis of the possible development of Motorways of the Sea in order to turn the potential traffic which is estimated into a reality.

According to the market research, the main role of a "Motorway of the Sea" is to replace the land highways in order to avoid saturation of land corridors as well as to access by sea outlying countries from the rest of the European Union. This concept is valid not only for the transport of goods but also for the passenger traffic.

Figure 27. Motorways of the Sea from Spain



Source: Market research of Motorways of the Sea in Spain (June 2008)

The study states that Spain's interest in the MoS arises from the congestion plaguing the roads through the Pyrenees, not only in the same crossing, but at points far from it. In the short term, Short Sea Shipping is a viable solution which the transport market itself has already managed to demonstrate as a complementary transport to the road. However, the reaction of road transport demand against the shipping option is being slowed down by historical habit inertia of road using and the suspicion which arises from undergoing a new operation system as well as the maritime-port handling.

The market study also states that, after some development of the service, the maritime Mediterranean network is now a reality and is performing a significant redistribution of traffic. However, road traffic growing pace through the Pyrenees is high enough to advise an effective action from the public side in order to accelerate the market reaction. It is not considered enough to wait for a road saturation scenario and that shipping services are developed after a degenerative process with excessive external cost. Public administrations should establish a set of measures to anticipate

this saturation and to encourage the creation of competitive maritime services. One of these measures could be the boost of the Motorways of the Sea.

As already mentioned, the ultimate goal of the market research is to predict the potential MoS traffic which could be developed in Spain. To achieve this objective it was followed a methodology based on determining the current and projected demand for the Motorways of the Sea, the volume of goods carried by heavy vehicles which could be transfer from the Pyrenees roads to the sea transport mode.

The traffic demand values obtained which could be absorbed by the MoS are expressed in the table below:

Table 6. Estimated evolution of potentially absorbable traffic of the Motorways of the Sea (million tons)

Europe	Spain	2004	2008	2012	2020
North Atlantic	Cantabrian Spain	0,37	1,24	2,03	4,71
North Atlantic	Western Spain		0,42	0,67	1,52
North Atlantic	Southern Spain		0,56	0,92	2,13
France - North Sea	Cantabrian Spain		1,12	1,79	3,96
France - North Sea	Western Spain		0,39	0,62	1,34
France - North Sea	Southern Spain		0,28	0,42	0,98
Atlantic France	Cantabrian Spain		0,9	1,42	3,1
Atlantic France	Western Spain	0,35	0,43	0,68	1,44
Atlantic France	Southern Spain		0,25	0,37	0,82
Northern Italy	North Eastern Spain	1,37	2,12	2,61	3,84
Northern Italy	South Eastern Spain	0,64	1	1,24	1,85
Northern Italy	Southern Spain		0,36	0,41	0,64
Southern Italy	North Eastern Spain	0,4	0,63	0,78	1,17
Southern Italy	South Eastern Spain	0,24	0,37	0,46	0,69
Southern Italy	Southern Spain		0,22	0,27	0,41
TOTAL		3,37	10,29	14,7	28,61

Source: Market research of Motorways of the Sea in Spain (June 2008)

As shown on the table above, there is an upward trend in the potential traffic growth of the Motorways of the Sea due to the increasing development of global mobility and the gradual increase of transferred traffics from road to other modes of transport.

Demand forecasts update for the Madrid-Lisbon high speed railway line, 2011

(EPYPSA and EXACTO, 2011)

This study is aimed at updating the study previously produced (in 2004) under the name "Estudo de Mercado e Avaliação Sócio-económica e Financeira da Linha de Alta Velocidade Madrid - Lisboa/ Porto".

This study's goals are:

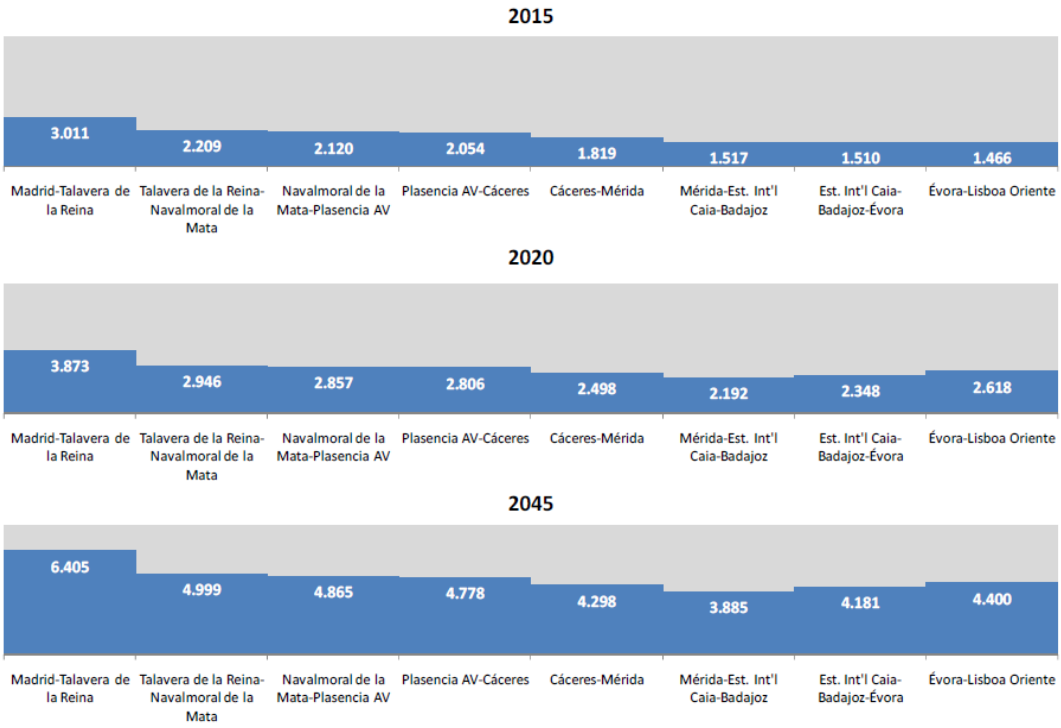
- to update the passenger and freight demand forecasts;
- to set the operational model dimension;
- to produce a cost-benefit analysis as well as a financial feasibility study.

The methodology adopted involved new traffic counts and surveys, statistical data updates, and model update, with a new validation of modal split, now considering also air traffic demand and national railway trips inside Portugal and Spain, new demand growing model assumptions, new services dimensioning, etc.

Accordingly, it also included a new financial feasibility and CBA analysis, sensibility analysis and risk assessment.

The zoning system considered the 11,8 million people of the corridor divided in 30 zones. As starting point, the network used considers 630km by road (travel time of about 6 hours from Madrid to Lisbon through A-5 in Spain and the tolled A6 in Portugal) and by rail 633km through Valência de Alcântara-Marvão (of which 418km are non-electrified) or alternatively 719km though Badajoz-Caia (of which 504km are non-electrified). The road networks improvements, namely the A-58 Trujillo-Cáceres new motorway have also been taken into account. The trends towards decreasing bus services and increasing air transport services have been considered as well.

Figure 28: Traffic forecast per section (in thousand passengers per year)



Source: Demand forecasts update for the Madrid-Lisbon high speed railway line (EPYPSA and EXACTO, 2013)

Statistical data from several Portuguese and Spanish entities, such as AENA, INIR, FRONTUR, RENFE, CP, etc. was used in the model produced.

The High Speed railway line considered had about 644km, double track UIC gauge for both freight and passenger services. Passenger intermediate stops considered are: Évora, Elvas/Badajoz, Mérida, Cáceres, Plasencia, Navalmoral de la Mata and Talavera de la Reina. The estimated travel time for a high speed direct service is 2h 45m, but in Phase I, (with transhipment for gauge change at Poceirão) the total travel time is 4h 15m (without direct service).

Regarding freight services, this study estimates that "the demand between Spain and Portugal will reach 55 million tons in 2045" and that "about 25% of it (13,5 million tons) will be produced within the studied corridor". The UIC gauge is assumed for the midterm, allowing the capitation of 930 thousand tons in 2025 and 1,25 million tons in 2045.

The total amount of the investment is 5 552 million €. The financial feasibility study presents, from the infrastructure administrator point of view, a NPV_{2011} of -4.081 million €, corresponding to a capital deficit of 88,3%, which means that the net revenues will allow a return of only about 12% of the initial investment. From the rail operator point of view, the analysis present a NPV_{2011} of 311 million € and IRR of 10,2%.

The CBA presents a socioeconomic IRR of 4,8% and a NPV_{2011} of -365,5 million €.

Development of an integrated model for the logistic infrastructures of the E-80 corridor

DHV/TEIRLOG, 2013

This study from May 2013, presents the positive and negative characteristics of the road, rail and maritime systems that frames the E80 corridor, now part of the Atlantic corridor.

The E-80 corridor is part from the international European Road Network, which starts in Lisbon crosses the Iberian Peninsula and goes towards the northern part of Europe.
The road system that frames the Iberian part of the E-80 corridor is characterized by good connectivity with the remaining road network and especially with the logistics platforms near the corridor. The similarities in vehicles dimensions (length, wide and height) in both countries enables a continuous road flow without any unforeseen border costs. Both countries have similar rules concerning the transport of dangerous goods, however if public holidays do not match some costs may happen as the vehicles will be stopping at the border line.
One other disadvantageous aspect is the raising costs of fuels in Spain and the electronic pay tolls in Portugal which may not be attractive to the road transportation, contributing to lowering the demand of goods transportation.

In the study, the Portuguese maritime ports are also fully characterized and compared among themselves in terms of service provided, type of activity and total transported tonnage.

Logistic platforms overview
In the two countries (Portugal and Spain) path there are in total nine logistic platforms. The study presents in detail their respective specifications, highlighting the following main issues:

- The logistic platforms are at different development phases (in terms of its operation, installation, construction, project, or planning).
- From the total logistic surface area (1.728 ha) of the E-80 corridor, only 16,6% belongs to the logistic platforms that are operational and functioning while 83,3% refer to platforms that are still being constructed, developed or in project phase.
- Only the logistic platform of Aveiro Port offers the three transport modes, road, rail and maritime mode, however the majority of the platforms presents the conditions to be rail-road.
- The logistic platforms have different management systems.
- The exploitation of the logistic platforms are based on the land and building provision for private use.
- The companies that are settled in the logistic platforms are from the transport and logistic sector and linked to commercialization and distribution of food products.

From the assessment conducted, majority of the platforms in the E-80 route are rail-road, being that justified as:

- These platforms deliver mainly dry containerized cargo;
- In every platform it can be found transport logistic operators and the co-existence of industrial and logistic activities. As in fact these logistic platforms have spaces for rent dedicated to receive offices from multiple areas.
- From the platforms assessed the Zaragoza and Venlo are the ones that presents higher success rates because they have established strategic and cooperation partnerships with relevant ports such as Rotterdam, Barcelona and Valencia.
- Some logistic platforms also present training centres in the logistic and transport areas widening the type of provided services. This fact gives great visibility to the companies that are installed in the logistic platform.
- The existence of customs warehouses in several logistic platforms has turned more efficient the process of importing and exporting goods.

The study developed a SWOT analysis and a demand study concerning the main logistic platforms of the frame Aveiro-Valladolid of the Corridor. Many were the results but concrete actions are synthetized here:

- Increase the rail infrastructure quality and intermodal services.
- Specify the technical requirements for an integrated management of services provided by the logistic platforms involved in the project.
- Promote the cooperation between the platforms nearby: Promoting the networking.
- Promote the logistic infrastructure, the international transport in the corridor, the linear infrastructure and the logistic platforms.

Identified actions to be implemented in an integrated way between Portugal and Spain, are related with:

- Electrification of rail infrastructure from Aveiro Port to Irún

- Increase the trains' compositions size in the Spanish side.
- Progressively introduce the European gauge in order to allow to increase the international flow of goods transported from all over Europe.
- Promote private investment in the logistic platforms like Aveiro Port platform, Guarda, Salamanca and Valladolid platforms.

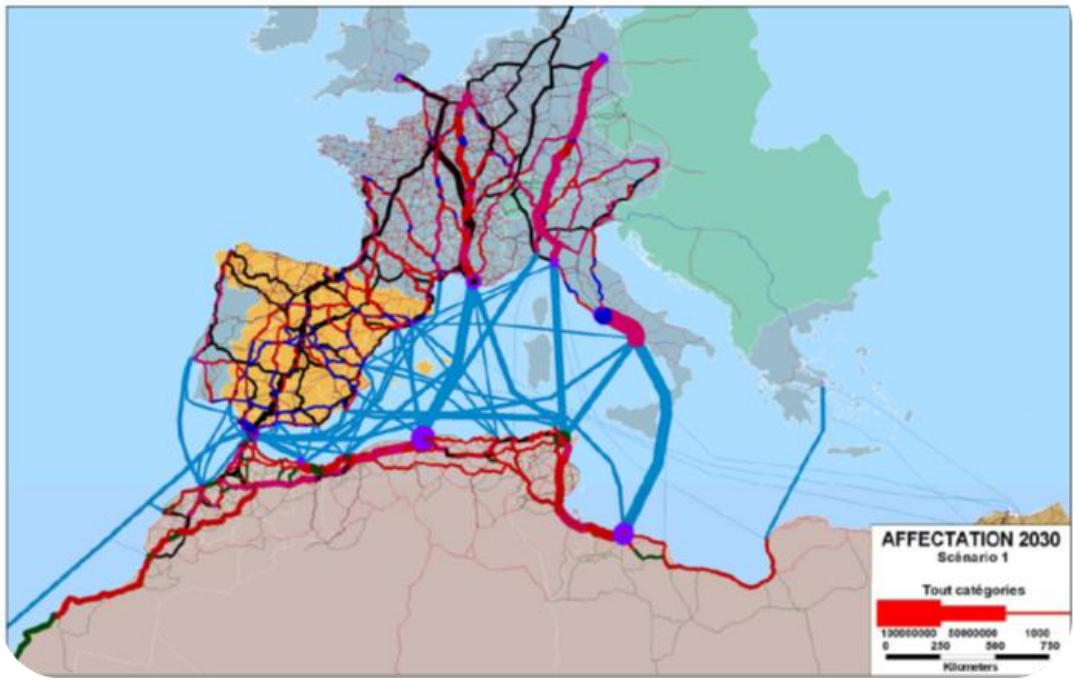
Study of freight and passenger flows through a fixed link in the Strait of Gibraltar (SECEG-SNED 2007)

The Society for the Study of fixed communication through the Strait of Gibraltar (SECEG) and the National Society of Studies of Detroit (SNED) needed to develop a tool for passenger and freight traffic forecast of a future fixed link across the Strait of Gibraltar.

In order to achieve this objective, traffic forecasting models and other tools provide the analysis and the traffic forecast of this study in the following terms:

- The demand of transport through the fixed link according to different growth scenarios and selected pricing strategy.
- The toll revenue of the fixed link.
- The economic surplus - both positive and negative - determined by the existence and use of the fixed link by the different economic agents: direct users, shippers, transport operators of different modes or governments.
- The estimation of the economic impact of the project activity.

Figure 29: Assignment model for 2030 (Scenario 1)



Source: SECEG-SNED 2007

Considering a wide zoning of 34 areas in Europe and 20 zones in Africa, the model forecasts freight-based socioeconomic parameters (population, GDP, active population, etc.), with allowance for 3 possible scenarios (high, medium and low).

Prospective Study of Traffic Ro-Ro in the Strait of Gibraltar (TMSA and Port Authority of Bahía de Algeciras, 2009)

The purpose of the study is to estimate the forecast of Ro / Ro traffic in the Strait of Gibraltar, the infrastructure and policies of the current and future transportation, prices and costs of each mode of transport and the technical and economic feasibility of the freight and travellers system using an evaluation model. This is referred to the 2010, 2020 and 2030 horizon years.

- Methodology

As a work methodology, the study comprises the following five phases:

- Phase I: Analysis and diagnosis of the current situation
- Phase II: Analysis and trend characteristics of the maritime fleet
- Phase III: Approach future scenarios affecting transport through the Strait of Gibraltar.
- Phase IV: Application of the model to the assignment of demand in future scenarios
- Phase V: Summary and conclusions

➢ Fleet

A significant part of all the analyzed data in the study is the old age of the fleet which leads to the assumption that it should not be far away in time its modernization including a variation of the size of the ships which will tend to be larger over time. Additionally the constant evolution of this fleet, plus the other two factors mentioned previously, leads the study to a series of considerations:

- Bigger vessel sizes will lead to the need of better infrastructures
- Boats speeds have also increased,
- The vast majority of boat ramps operate in both poop and prow. This issue plus the different sizes in the vessels require to have sufficient means to give ground service to the boats
- Something similar happens with the diversity of boat types: Is becoming normal the coexistence of old and new boats as well as small and bigger vessels.
- While in the rest of Europe passenger traffic is decreasing while the freight is increasing, in the case of the Strait of Gibraltar a high level of passenger traffic will be maintained while the freight will augment through time.

From the above considerations, the study concludes that the springs which are to accommodate these vessels should be adapted and prepared with the greatest versatility possible, given the wide variety of vessel types and sizes.

➢ Scenarios

The study defines three scenarios for the African countries and other three for the European countries, which would be considered when performing the forecasts:

African countries

- Trend Scenario
- Opening Scenario, which would take place in case of a Free Trade Area (FTA) established between the countries of the European Union and the Maghreb
- Integration Scenario of the Maghreb countries to the European Community

European countries:

- Trend stage
- Weak growth scenario
- Strong growth scenario

➢ Freight Forecast

The study follows two different methodologies to perform the freight forecast:

<u>First Approach: Linear regression</u>

To forecast these flows by category of product the study used as a starting point the same linear regression model type proposed for obtaining the total flows in each direction:

Traffic= f (POP, PIB, DET).

Table 7. Total Traffic Forecast

Trafico	Previsión de traficos				
	2005	2020	2030	2040	2050
N-S	27.008.626	34.887.561	40.959.958	47.080.979	53.435.716
S-N	133.626.951	169.581.640	196.838.222	225.177.627	254.504.886
TOTAL	**160.635.577**	**204.469.200**	**237.798.180**	**272.258.607**	**307.940.602**

Source: Study of Traffic Ro-Ro in the Strait Of Gibraltar

The following table shows the freight forecast on the opening and integration scenarios context:

Table 8. Total Traffic forecast according to scenarios

Trafico	Intervalo de previsión de traficos (millones de toneladas)			
	2020	2030	2040	2050
N-S	30,40< Traf<42,80	35,30< Traf<58,05	41,07< Traf<74,77	47,13< Traf<93,23
S-N	162,81< Traf<169,26	184,69< Traf<203,75	209,54< Traf<245,50	238,15< Traf<296,86
TOTAL	193,21< Traf<212,06	219,99< Traf<261,81	250,61< Traf<320,27	285,28< Traf<390,08

Source: Study of Traffic Ro-Ro in the Strait Of Gibraltar

Second Approach: TREAT model

As a second approach to obtain future flows of freight traffic in the Strait of Gibraltar, estimates have been made of this traffic from allocations distribution of traffic flows in the network considered in the model developed for the project "TREAT: traffic forecasting model on the Relationship Set the Strait of Gibraltar (2005)».

The following table reflects the traffic resulting from the allocation for the Trend Scenario E1 or Medium:

Table 9. Total Traffic forecast according to scenario in the strict strait of Gibraltar

	2020			2030			2040		
LINEA	E2 INFERIOR	E1 TENDENCIAL	E3 SUPERIOR	E2 INFERIOR	E1 TENDENCIAL	E3 SUPERIOR	E2 INFERIOR	E1 TENDENCIAL	E3 SUPERIOR
Algeciras-Tanger Med-Algeciras	2.619.445	4.562.483	6.941.394	4.094.710	5.945.460	9.292.879	5.219.070	6.794.133	10.743.853
Algeciras–Ceuta-Algeciras	695.932	1.212.157	1.844.184	853.921	1.239.881	1.937.960	1.023.816	1.332.793	2.107.603

Source: Study of Traffic Ro-Ro in the Strait Of Gibraltar

Table 10. Total RO-RO Traffic forecast according to scenario in the strict strait of Gibraltar

	2020			2030			2040		
LINEA	E2 INFERIOR	E1 TENDENCIAL	E3 SUPERIOR	E2 INFERIOR	E1 TENDENCIAL	E3 SUPERIOR	E2 INFERIOR	E1 TENDENCIAL	E3 SUPERIOR
Algeciras-Tanger Med-Algeciras	2.418.592	4.212.642	6.409.144	3.779.682	5.488.043	8.577.927	5.118.743	6.269.540	9.927.904
Algeciras–Ceuta-Algeciras	432.929	754.064	1.147.238	527.662	766.157	1.197.520	670.486	821.225	1.300.421

Source: Study of Traffic Ro-Ro in the Strait Of Gibraltar

- Passenger Forecast

The following table reflects the traffic forecast for 2030 (country by country) without considering the following enclaves:

- Ceuta and Melilla
- Gibraltar Territory

Table 11. Total Passenger's traffic forecast by country (excl. enclaves)

Para el año 2030	Marruecos	Argelia	Mauritania	Túnez	Suma
España	3.392.736	681.920	20.442	970.242	5.065.340
Francia	10.137.423	5.224.814	234.325	8.943.602	24.540.164
Allemania	1.338.388	91.874	0	4.484.896	5.915.157
Benelux	3.772.840	58.504	0	2.203.914	6.035.258
Italia	2.045.706	260.556	0	3.763.343	6.069.605
Portugal	164.536	0	0	0	164.536
Islas Británicas	1.178.501	274.696	0	2.221.431	3.674.628
Suiza	423.020	95.935	0	1.146.982	1.665.938
Austria	31.413	0	0	8.048	39.461
Europe Central	141.851	0	0	0	141.851
Países Nórdicos	154.317	0	0	0	154.317
Suma :	22.780.730	6.688.299	254.767	23.742.459	53.466.256

Source: Study of Traffic Ro-Ro in the Strait Of Gibraltar

The table below reflects the traffic forecast for 2030 for the enclaves:

Table 12. Total Passenger's traffic forecast for the enclaves

Para el año 2030	Ceuta	Melilla	Gibraltar	Suma
Ceuta	0	0	16.202	16.202
Melilla	0	0	0	0
Gibraltar	0	0	0	0
Marruecos	0	0	31.445	31.445
Argelia	0	0	0	0
Mauritania	0	0	0	0
España	3.383.720	1.280.250	0	4.663.969
France	15.424	259	0	15.682
Allemagne	3.265	0	0	3.265
Benelux	6.431	0	0	6.431
Italie	2.509	0	0	2.509
Portugal	23.093	27.107	0	50.200
Iles Britanniques	1.611	0	0	1.611
Suisse	231	0	0	231
Autriche	0	5.568	0	5.568
Europe Centrale	30	0	0	30
Pays Nordiques	30	0	0	30
Total	3.436.343	1.313.183	47.647	4.797.174

Source: Study of Traffic Ro-Ro in the Strait Of Gibraltar

The following table reflects the traffic forecast for 2030 according to scenarios:

Table 13. Total Passenger's traffic forecast according to scenarios

Miles de pasajeros	ESCENARIOS		
	E1	E2	E3
Aéreos	*44.450*	*28.855*	*62.522*
Automovilistas VP marítimos	*10.028*	*6.963*	*13.448*
Peatones marítimos	*3.785*	*3.313*	*4.200*
Suma:	*58.263*	*39.131*	*80.171*

Source: Study of Traffic Ro-Ro in the Strait Of Gibraltar

The traffic forecast for 2030 according to scenarios for the strict Strait of Gibraltar is shown in the following table:

Table 14. Total Passenger's traffic forecast in the strict Strait of Gibraltar

Tráfico año 2005	4.827		
Horizonte 2020	**E-2 Inferior**	**E-1 Tendencial**	**E-3 Superior**
Peatones	2.091	2.300	2.509
Automovilistas	3.972	5.048	6.242
SUMA	**6.063**	**7.348**	**8.751**

Horizonte 2030	**E-2 Inferior**	**E-1 Tendencial**	**E-3 Superior**
Peatones	2.216	2.532	2.809
Automovilistas	4.657	6.707	8.995
SUMA	**6.873**	**9.239**	**11.804**

Source: Study of Traffic Ro-Ro in the Strait Of Gibraltar

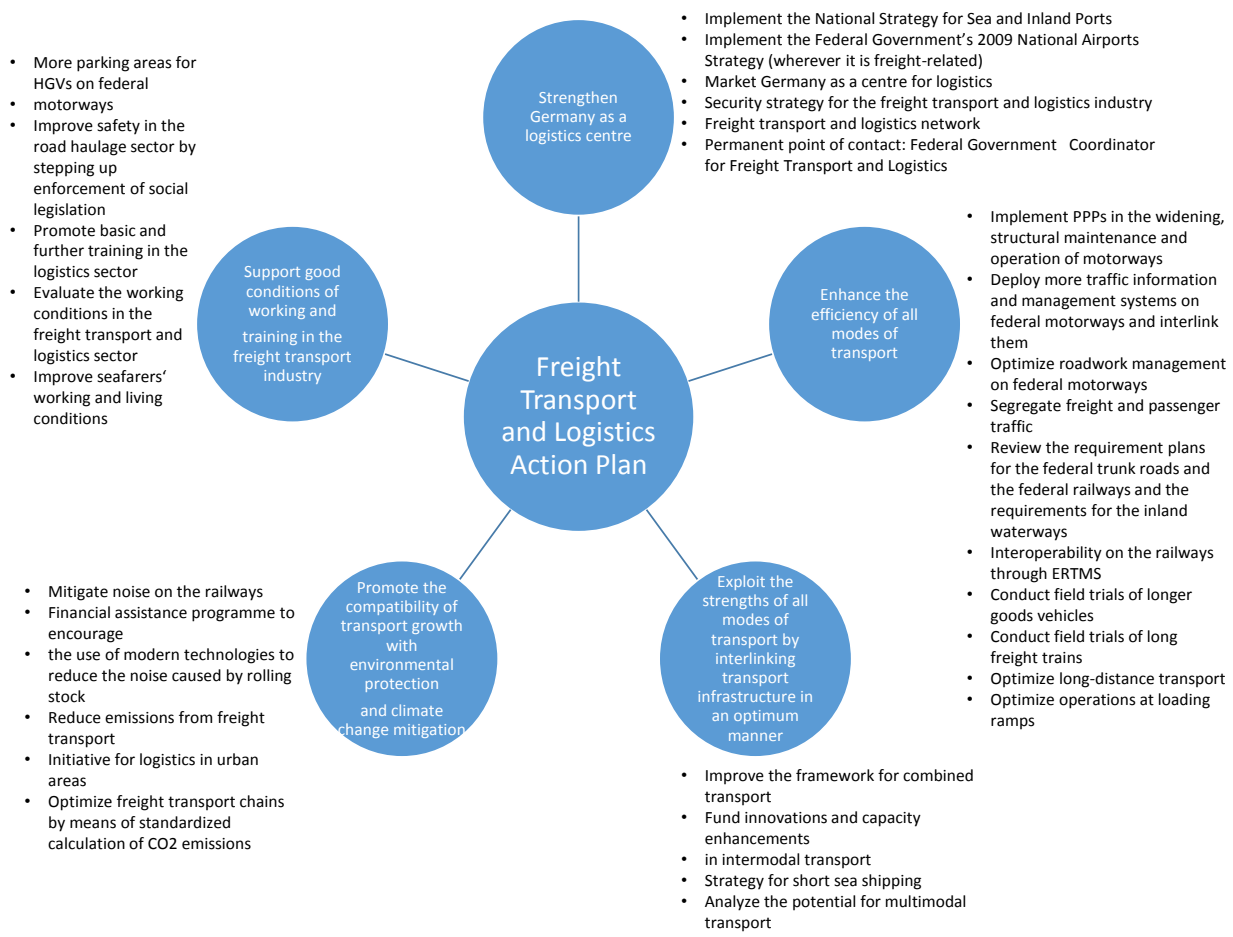
Strategic documents

Freight Transport and Logistics Action Plan – Logistics Initiative for Germany, 2010

One of the main objectives of Germany's transport policy is to enhance the competitiveness of Germany as a centre for logistics. To turn Germany even more attractive as a centre for logistics, the Federal Ministry of Transport joined forces with industry to evolve the 2008 Freight Transport and Logistics Masterplan into a Freight Transport and Logistics Action Plan. The Action Plan provides a framework for action to tackle the current challenges, and at the same time serves as a basis for further improvements to Germany as a centre for logistics. The objective is to facilitate mobility rather than hampering it.
Acton Plan sets the stage for a sustainable and efficient logistics and freight transport system in Germany, implementing a key objective of the Federal Government's transport policy: facilitating the smooth transport of goods, creating the conditions for growth and employment, without losing sight of the environmental protection and climate change aspects.

The Action Plan is defined along five main axes, comprising 30 individual measures, as below synthesized:

Figure 30: Freight Transport and Logistics Action Plan



Bundesverkehrswegeplan 2015

Germany is working on a new forecast for 2030, which will form the basis for the Federal Transport Infrastructure Plan 2015 (Bundesverkehrswegeplan 2015).

This forecast will be of highest importance for the future Infrastructure Planning in Germany. In the light of this all projects which have not yet started construction will be reexamined as subjects of a new cost benefit analyses.

This doesn't apply to the Saarbrücken – Ludwigshafen rail line.

Mobilité 21

(French ministry of transport, sea and fishing)

The report was conducted by 6 members of the French parliament and 4 experts mandated by the government and presided by Philippe Duron. Its mission was to evaluate over 50 national transport projects, all modes included, and to offer a plan for carrying them out. The report, however, does not include major international projects such as Lyon-Turin railway and Seine-Nord-Europe canal.

Over the year, many important infrastructure projects were put forward which could not be all carried out in time for financial reasons. This report is the result of the work of the Duron commission, which published its conclusions in 2013. The total amount of the projects' estimated cost reaches over 150 billion euros, around 120 billion of which regards railway projects.

The report offers two scenarios, depending on the total amount the government may choose to allocate to transport projects and classifies projects in 3 categories: first priorities (to be carried out before 2030), second priorities (to be carried out between 2030 and 2050) and distant horizon (after 2050).

Project name	Priority given	Cost estimate (M€$_{2012}$)
RAIL		
Gisors – Serqueux, electrification and upgrade	First priority	240
Paris – Normandy new line: upgrade of the Paris-Saint Lazare -Mantes node	First priority	low: 3000 high: 3500
Paris – Normandy new line: continuaton of the project including long term needs for the Paris-Saint Lazare - Mantes node	Second priority	low: 7300 high: 7800
Paris – Normandy new line: Rouen station upgrade	Scenario 1: first priority Scenario 2: second priority	1 200
Provisions for intervention on rail areas with issues (in particular Bordeaux, Toulouse, Strasbourg, Rennes, Creil, Nîmes, Metz, Nancy, Mulhouse, Saint-Pierre des Corps, Paris Gare du Nord)	First priority	low: 500 high: 1000

Project name	Priority given	Cost estimate (M€2012)
Provisions for first work on the following high speed rail lines projects: Paris-Orléans-Clermont-Lyon, interconnexion Sud Île-de-France, GPSO –Bordeaux-Hendaye, LN Perpignan-Montpellier et CFAL	Scenario 1: none Scenario 2: first priority	2 000
Interconnexion Sud Île-de-France	Second priority	low: 1600 high: 3800
High speed rail line GPSO Bordeaux – Toulouse	Scenario 1: first priority Scenario 2: second priority	7 100
High speed rail line GPSO Bordeaux Hendaye	Second priority	low: 6300 high: 5600
Further treatment of rail areas with issues (in particular Bordeaux, Toulouse, Strasbourg, Rennes, Creil, Nîmes, Metz, Nancy, Mulhouse, Saint-Pierre des Corps, Paris-Gare du Nord)	Second priority	low: 1100 high: 500
Bordeaux bypass	Long term	low: 800 high: 3000
ROAD		
A104 Méry-sur Oise Orgeval	Second priority	2 770
A28-A13 link, East bypass of Rouen	Scenario 1: first priority Scenario 2: second priority	880
IWW		
Upgrade of the upper Seine between Bray-sur-Seine and Nogent-sur-Seine	Scenario 1: first priority Scenario 2: second priority	230

PITVI - Plan of Infrastructures, Transport and Housing

(Ministry of Public Works of Spain, under approval)

The evolution of macroeconomic conditions in Spain in recent years and the inclusion of housing matters within the competence of Public Works required a new planning framework of strategic infrastructure planning and housing for the country.

The five strategic objectives of the PITVI are the following:

1. Improvement of the efficiency of the global transportation system of Spain.
2. Contribution to balanced development of Spanish economy.
3. Promotion of sustainable mobility.
4. Strengthening of territorial cohesion and accessibility.
5. Encouragement of intermodal transport.

On 26th September 2012, the Minister of Public Works presented the proposal of the Plan of Infrastructures, Transport and Housing (PITVI 2012-2024). After the strategic environmental assessment and public information processes, the final approval is expected to be completed in 2014.

Figure 31: Spanish proposal of Rail Freight Network for TEN-T in PITVI

Source: PITVI

Logistic Strategy of Spain

(Ministry of Public Works of Spain, November 2013)

The Logistic Strategy of Spain develops the principles and guidelines of PITVI (Plan for Infrastructure, Transport and Housing 2012-2024) in the field of freight transport and logistics, defining a common framework for all public administrations and private companies involved in logistics as well as establishing priorities and action programs of the Ministry and its agencies, in the same planning horizon of the PITVI.

This document is framed in the initiative of the Spanish Ministry of Public Works to create a Logistic Unit, with the mission of ensuring coherence and coordination of all actions carried out in this field and strengthening existing mechanisms for dialogue, collaboration and coordination among main agents in relevant productive sectors.

The main objectives defined in the Spanish Logistic Strategy for the freight transport and logistics sector are the following:

- Promoting Spanish logistics sector as one of the engines of the economy of the country.
- Improving the efficiency and sustainability of the transport system in the framework of cooperation between modes.
- Developing an intermodal network that allows connections between nodes and provides comprehensive and integrated logistics services.

- Empowering Spain as a gate of access, processing and distribution of intercontinental freights in Europe.

The Ministry of Public Works has planned and investment of 8.000 million euros in the frame of Logistic Strategy in order to achieve 66 actions, including 18 priority actions:

1. Strengthening the Logistic Unit
2. Development of logistics specific regulations and requirements
3. Impetus to the liberalization of rail freight transport
4. Improvement of training sector
5. Development of a code of good practices for the sector
6. Single-Window for administrative processing
7. Transport and Logistics Observatory
8. Analysis of load capacities for road freight transportation
9. Coordination of road freight transport restriction schedules
10. Commissioning Rolling Motorways
11. Optimization of intermodal terminal management model
12. Development of specific agreements with logistics and industrial sectors to strengthen the share of rail in chain transport
13. Improving ports competitiveness
14. Commissioning new Motorways of the Sea
15. Impetus for new strategic and priority logistics terminals
16. Rail corridors adaptation for freight transport
17. Improvement of land ports access
18. Improvement of connections between ports and their hinterland

PETI 3+, Strategic Transport and Infrastructures Plan

Ministry of Economy, 2014

The Strategic Plan for Transport (PET 2011-2015) defines the main investments and strategic orientations for the sector. The plan was concluded at the moment of the entrance of the Troika in Portugal, and it was clearly marked by the overall environment of budget constraints and need to reduce costs.

In preparation of the partnership agreement for the EC funding period 2014-2020, and in a context of potential economic growth, the Portuguese Government has on-going an extensive and exhaustive evaluation and prioritization of investments on value added infrastructures.

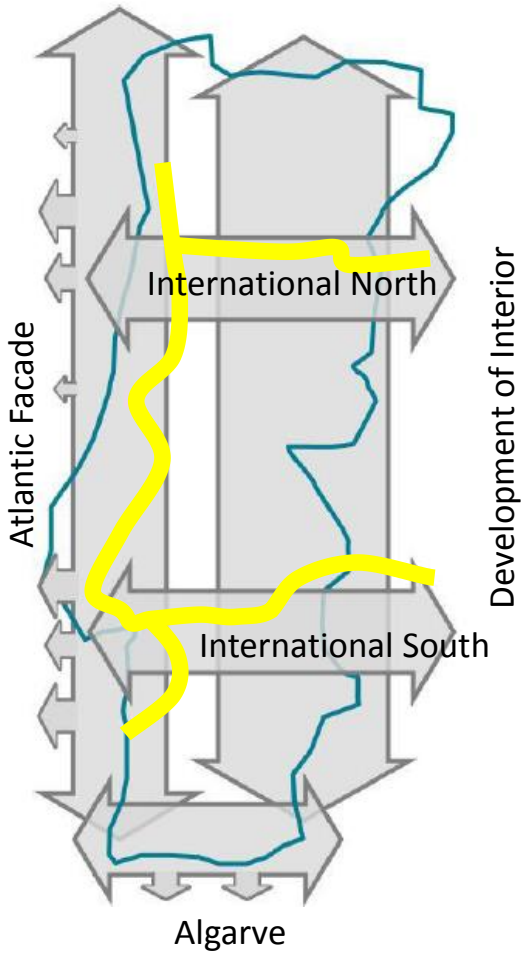
An inclusive working group (GT-IEVA) prepared and presented a list of preliminary proposals to feed the investment plan, which was object of a large public participatory process.

The PETI3+ results of GTIEVA, its public discussion inputs and further Government evaluation, providing the framework context for the strategic transport investments and policy orientations to 2020, being centred along three main axes:

- Economic growth and employment
- Competitiveness of the transport sector
- Social and territorial cohesion.

Selection of projects was done based on an exhaustive analysis taking into account the following dimensions:

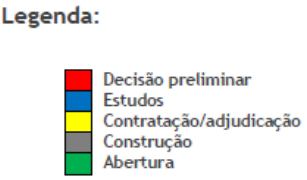
- Promotion of economy and transport system competitiveness and efficiency, namely solving main network constraints mainly of the core corridors of the Spatial Planning Policy National Program and TEN-T, increasing the transport system operational sustainability and raising traffic attraction either for freight and passengers;
- Promote intermodality between transport modes connecting main traffic poles either for freight and passengers;
- Framing with National and European transport policies;
- Financing sustainability and funding availability, namely regarding European grants in the framework 2014-2020 (Portugal 2020 and CEF), attraction of private funding and public funding;
- Maturity of the projects, namely studies and designs available and schedule for implementation;
- Social and territorial cohesion, namely structuring projects for regional development and connecting nodes and axis of the core network with areas of less transport coverage.";



Six axes for priority development were defined, which are aligned with the main corridors in the PNPOT (Land use National Plan) and the TEN-T. Each project identify first in one of those axes:

- Atlantic Facade
- International North
- International South
- Development of Interior
- Algarve
- Public Transport

An overall view on the priority investments per mode is presented in the tables below.



Rail

PROJETO	INVEST. (M€)	QREN	F. COM. 14-20	PRIV.	PUB.	RTE-T	1T 14	2T 14	2S 14	1S 15	2S 15	1S 16	2S 16	1S 17	2S 17	1S 18	2S 18	1S 19	2S 19	1S 20	2S 20	1S 21	2S 21
CORREDOR DA FACHADA ATLÂNTICA	734	0	520	0	214																		
Conclusão do Plano de Modernização -Linha do Norte	400		300	0	100	Principal																	
Linha do Minho (Nine - Valença, Ermesinde - Contumil, Ramal Secil na Trofa, Ramal Particular SN Longos da Maia)	145		110	0	35	Global																	
Linha do Oeste + Ramal de Alfarelos (Meleças / Louriçal, Ramal de Alfarelos, Ramal Secil, Ramal do Ramalhal - Valouro)	135		70	0	65																		
Linha do Sul (Porto de Setúbal + Praias do Sado)	20		15	0	5	Global																	
Linha de Leixões (Terminal de Leixões / Porto de Leixões)	20		15	0	5	Principal																	
Linha do Sul (Terminal de Termitrena)	14		10	0	4	Global																	
CORREDOR INTERNACIONAL NORTE	980	0	690	0	290																		
Corredor Aveiro / Leixões - Vilar Formoso | Linha Beira Alta (Ramal Porto Aveiro + Ramal Portucel Cacia + Plataforma de Cacia + Pampilhosa/V Formoso + Ramal de Viseu)	900		630	0	270	Principal																	
Linha Beira Baixa (Covilhã-Guarda)	80		60	0	20	Global																	
CORREDOR INTERNACIONAL SUL	800	0	320	0	480																		
Corredor Sines / Setúbal / Lisboa - Caia (Sine / Setúbal / Lisboa - Caia + Poceirão - V. Novas + Bombel - Casa Branca + Ramal Petrogal Sines)	800 a 1.000		320	0	480	Principal																	
CORREDOR DO ALGARVE	55	0	44	0	11																		
Linha do Algarve (Lagos - Tunes + Faro - Vila Real de Santo António + Ligação ao Aeroporto de Faro)	55		44	0	11	Global																	
DESENVOLVIMENTO DO INTERIOR	1.850	10	1.042	6	792																		
Linha do Douro (Caíde - Marco de Canavezes)	20	10	0	0	10																		

PROJETO	INVEST. (M€)	QREN	F. COM. 14-20	PRIV.	PUB.	RTE-T	1T 14	2T 14	2S 14	1S 15	2S 15	1S 16	2S 16	1S 17	2S 17	1S 18	2S 18	1S 19	2S 19	1S 20	2S 20	1S 21	2S 21
Linha do Douro (Marco - Régua)	20		16	0	4																		
Linha do Douro (Régua - Pocinho)	16		14	0	2																		
Linha do Vouga (Aveiro - Sernada do Vouga e Espinho - Oliveira de Azeméis)	3		2	0	1																		
Linha do Sul (Ramal de Neves Corvo)	11		0	6	6																		
Corredor Aveiro / Leixões - Vilar Formoso | Linha Beira Alta (Ramal Porto Aveiro + Ramal Portucel Cacia + Plataforma de Cacia + Pampilhosa/V Formoso + Ramal de Viseu)	900	0	630	0	270	Principal																	
Linha Beira Baixa (Covilhã-Guarda)	80	0	60	0	20																		
Corredor Sines / Setúbal / Lisboa - Caia (Sine / Setúbal / Lisboa - Caia + Poceirão - V. Novas + Bombel - Casa Branca + Ramal Petrogal Sines)	800	0	320	0	480	Principal																	
TOTAL	2.639	10	1.606	6	1.017																		

Maritime

PROJETO	INVEST. (M€)	QREN	F. COM. 14-20	PRIV.	PUB.	RTE-T	1T 14	2T 14	2S 14	1S 15	2S 15	1S 16	2S 16	1S 17	2S 17	1S 18	2S 18	1S 19	2S 19	1S 20	2S 20	1S 21	2S 21
CORREDOR DA FACHADA ATLÂNTICA	1.524	0	385	945	194																		
Porto de Leixões - Ampliação do Terminal de Contentores Sul	38		8	30	0	Principal																	
Porto de Leixões - Criação de um novo terminal de contentores a fundos - 14 m (ZH)	200		40	160	0	Principal																	
Porto de Leixões - Novo Terminal de Cruzeiros	50		0	0	50	Principal																	
Porto de Leixões - Plataforma Logística	118		24	94	0	Principal																	
Via navegável do Douro	50		10	0	40	Principal																	
V.N.Douro - Intervenções nas eclusas, procurando ultrapassar a obsolescência técnica, logística e funcional	24		5	19	0	Principal																	
Porto de Aveiro - Criação de condições (acesso marítimo) que permitam entrada e saída de navios de maior dimensão, incluindo durante o período noturno	26		19	0	7	Global																	
Porto de Aveiro - Logística: Infraestruturação, melhoria das infraestruturas marítimas, construção terminal intermodal da ZALI e expansão da plataforma logística de Cacia	54		35	0	19	Global																	
Porto de Aveiro - Melhoria das condições operacionais dos terminais ro-ro / contentores, de granéis líquidos e sólidos e reforço dos interfaces ferroviários	4		3	0	1	Global																	
Porto da Figueira da Foz - Aprofundamento da barra e canal de acesso e alargamento da bacia de manobras para receção de navios de maior dimensão	25		18	0	7																		
Porto de Lisboa - Aumento da eficiência do atual terminal - TC de Alcântara	47		9	37	0	Principal																	
Porto de Lisboa - Novo Terminal de Contentores	600		120	480	0	Principal																	

PROJETO	INVEST. (M€)	QREN	F. COM. 14-20	PRIV.	PUB.	RTE-T	1T 14	2T 14	2S 14	1S 15	2S 15	1S 16	2S 16	1S 17	2S 17	1S 18	2S 18	1S 19	2S 19	1S 20	2S 20	1S 21	2S 21
Porto de Lisboa - Reativação do Cais da Siderurgia Nacional (Terminal do Seixal)	6		1	5	0	Principal																	
Porto de Lisboa - Melhoria da navegabilidade e descontaminação do estuário do Tejo Seixal (SN) + Alhandra (Cimpor)	90		72	0	18	Principal																	
Porto de Lisboa - Nova Gare de Passageiros de Cruzeiros	25		0	25	0	Principal																	
Porto de Setúbal - Expansão do Terminal Roll-On Roll-Off para jusante	4		3	0	1	Global																	
Porto de Setúbal - Melhoria das acessibilidades marítimas - barra e canais Norte e Sul - e otimização de fundos/calado junto aos cais	25		18	0	7	Global																	
Porto de Sines - Expansão do Terminal de Contentores (Terminal XXI) e ampliação das infraestruturas de proteção marítima	139		0	94	45	Principal																	
CORREDOR DO ALGARVE	10	0	4	0	6																		
Portos do Algarve - Melhoria das condições de acesso marítimo e das instalações de passageiros e carga (Portimão e Faro)	10		4	0	6	Global																	
TOTAL	1.534	0	389	945	200																		

Road

PROJETO	INVEST. (M€)	QREN	F. COM. 14-20	PRIV.	PUB.	RTE-T	1T 14	2T 14	2S 14	1S 15	2S 15	1S 16	2S 16	1S 17	2S 17	1S 18	2S 18	1S 19	2S 19	1S 20	2S 20	1S 21	2S 21
CORREDOR DA FACHADA ATLÂNTICA	5	0	0	0	5																		
IC16. Radial da Pontinha	5		0	0	5																		
CORREDOR INTERNACIONAL NORTE	785	120	10	600	55																		
IP4. Túnel do Marão	173	120	0	0	53	Global																	
IP3. Coimbra - Viseu	600		0	600	0	Global																	
IP5. Vilar Formoso - Fronteira	12		10	0	2	Principal																	
CORREDOR INTERNACIONAL SUL	40	0	32	0	8																		
IC33. Reabilitação Relvas Verdes (IP8) - Grândola (IP1)	40		32	0	8	Principal																	
DESENVOLVIMENTO DO INTERIOR	893	120	96	600	77																		
Nó do IP1/A1 com o IC9	5		4	0	1																		
Acessibilidades na EN14 entre V. N. Famalicão e Maia	20		16	0	4																		
Corredor do IC35: Penafiel - Entre-os-Rios e Arouca - Stª Mª Feira	23		18	0	5																		
IP8. St. Margarida do Sado - Beja	15		12	0	3	Global																	
Abertura da ponte de Constância / Praia do Ribatejo a pesados	5		4	0	1																		
IP4. Túnel do Marão	*173*	*120*	*0*	*0*	*53*	*Global*																	
IP3. Coimbra - Viseu	*600*	*0*	*0*	*600*	*0*	*Global*																	
IP5. Vilar Formoso - Fronteira	*12*	*0*	*9,6*	*0*	*2,4*	*Principal*																	
IC33. Reabilitação Relvas Verdes (IP8) - Grândola (IP1)	*40*	*0*	*32*	*0*	*8*	*Principal*																	
TOTAL	898	120	96	600	82																		

For each of the identified priority projects a summary sheet describing the project and expected outputs from optimization measures is provided.

The global investment in PETI 3+ is estimated in 6.067 million euro, with a substantial allocation to the rail sector (2.639 M€, 43%) and ports (1.534M€, 25%). The Atlantic Façade and the two International Corridors (north and south) represent 83% of the total PETI 3+.

National Ocean Strategy and Mar-Portugal Plan 2013-2020

National Ocean Strategy (NOS 2013-2020) presents a new model of development of ocean and coastal areas that will allow Portugal to meet the challenges for the promotion, growth and competitiveness of the maritime economy, in particular, the important changes to the political and strategic frameworks at both European and Worldwide levels.

It identifies the areas of intervention and presents the action plan (Plan Mar Portugal - PMP) which includes the programs to be run and developed, in order to achieve specific objectives and produce the desired effects, being subject to proper monitoring, evaluation, review and update mechanisms.

The action plan mainly aims at the economic, social and environmental valorisation of the national maritime space through the implementation of sectorial and cross-sectorial projects, as well as the already existent national strategic plans or those in preparation. Framed by the idea of Ocean as a strategic development vector, it highlights the progress achieved in the previous years and develops the action plan (Plano Mar Portugal), with following objectives:

- To reaffirm the national maritime identity in a modern, proactive and entrepreneurial framework.
- Realising the economic, geostrategic and geopolitical potential of the national maritime territory, turning the Mar-Portugal into an asset with permanent economic, social and environmental benefits.
- To create conditions for attracting investment, both national and international, in all Ocean economy sectors, promoting growth, employment, Ocean sector in the national GDP in around 50%.
- To strengthen national scientific and technological capacity, stimulating development of new areas of action that promote the knowledge of the Ocean and effectively, efficiently and sustainably enhance its resources, use and activities as well as the ecosystem's services.
- To consecrate Portugal on a worldwide level, as a maritime nation and as an unchangeable part of the IMP and of the EU maritime strategy, in particular for the Atlantic area.

The MPP is a dynamic document, constantly being updated in line with the production of strategic thinking and is based on a matrix structure indexed to:

- Action Axes (AA) - Research (AA1), Exploitation (AA2) and Preservation (AA3)
- Strategic Development Domains (SDD) - Natural Resources (SDD1) and Infrastructure, Use and Activities (SDD2), in which Ports, shipping and logistics represent a major pillar.

Integration of ports in the international freight transport networks

Portugal holds a strategic position in the Atlantic front of the Iberian Peninsula and in the crossroads of the main equatorial and meridian maritime shipping routes and the largest international carriers, in particular container-carriers, that will boost namely with the widening of the Panama Chanel. The integration of national ports in the international freight transport networks will, undoubtedly, be a factor of distinction and competitiveness for Ocean economy.

The commitment, within the framework of the Europe 2020 Strategy, towards the development of a transport network infrastructure in Europe, based on innovation and addressing the environmental, climate and energy challenges, through non-polluting and low-carbon emission transportation systems, encourages the transfer of intra-European goods traffic for distances greater than 300 km to the rail, maritime and fluvial modes, thus promoting short-sea shipping and boosting the motorways of the sea, enhancing the development of the ports and shipping sector.

The Port of Sines is one of the few deep water ports of Europe, currently being one of the few harbours along the Atlantic side of the Iberian coast, able to respond to able to respond to the requirements of the largest international carriers and as such a port of relevance for the entry and exit of goods in Europe.

The Strategic Plan for Transport 2011-2015 also reference feasibility studies regarding to the increase of capacity to receive the largest international carriers, in particular container-carriers.

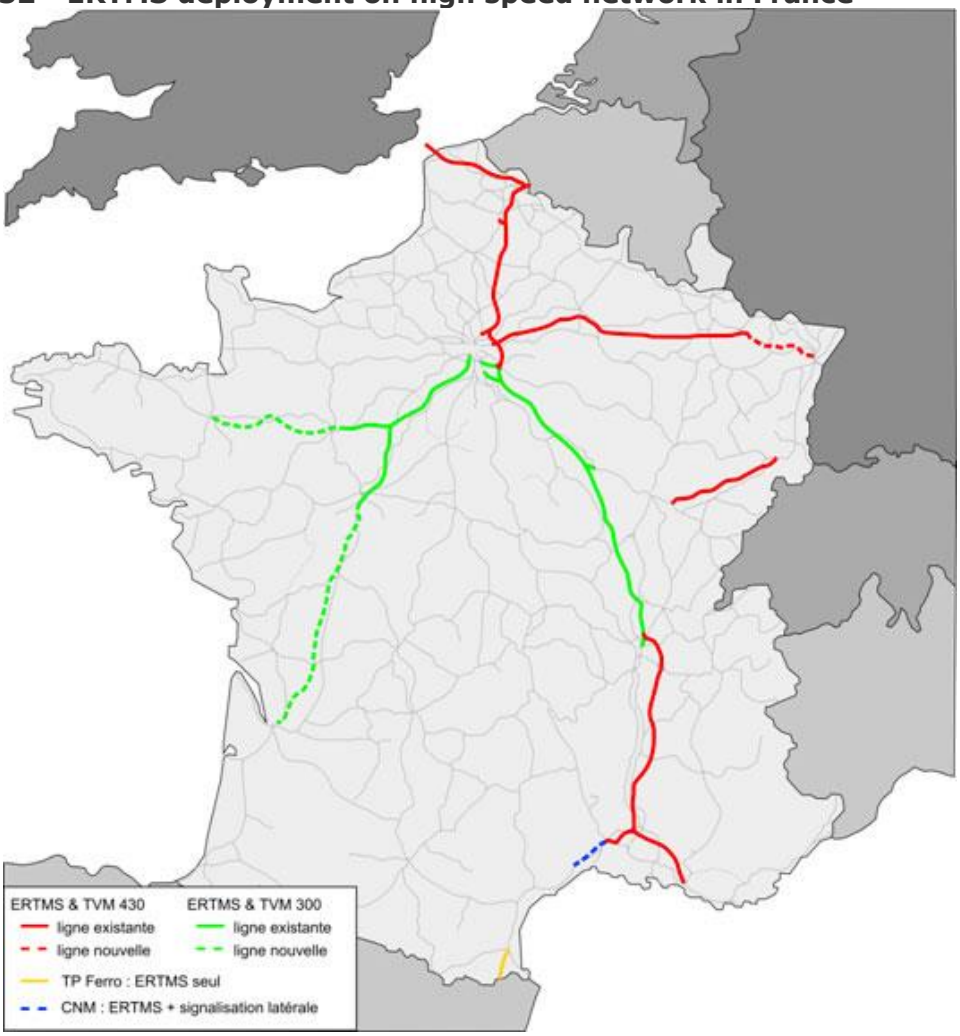
Corridor Infrastructure and nodes

French ERTMS Strategy

Highlights the present deployment of ERTMS in France and horizon for further deployment in HSL and conventional lines.

At the moment, the only part of the French rail network where ERTMS is already equipped is the eastern high speed rail line (Paris to Lorraine, soon to be prolonged to Strasbourg) since it is the last line built. The map below displays the different types of ERTMS to be deployed on the high speed network.

Figure 32 - ERTMS deployment on high speed network in France



Source: RFF

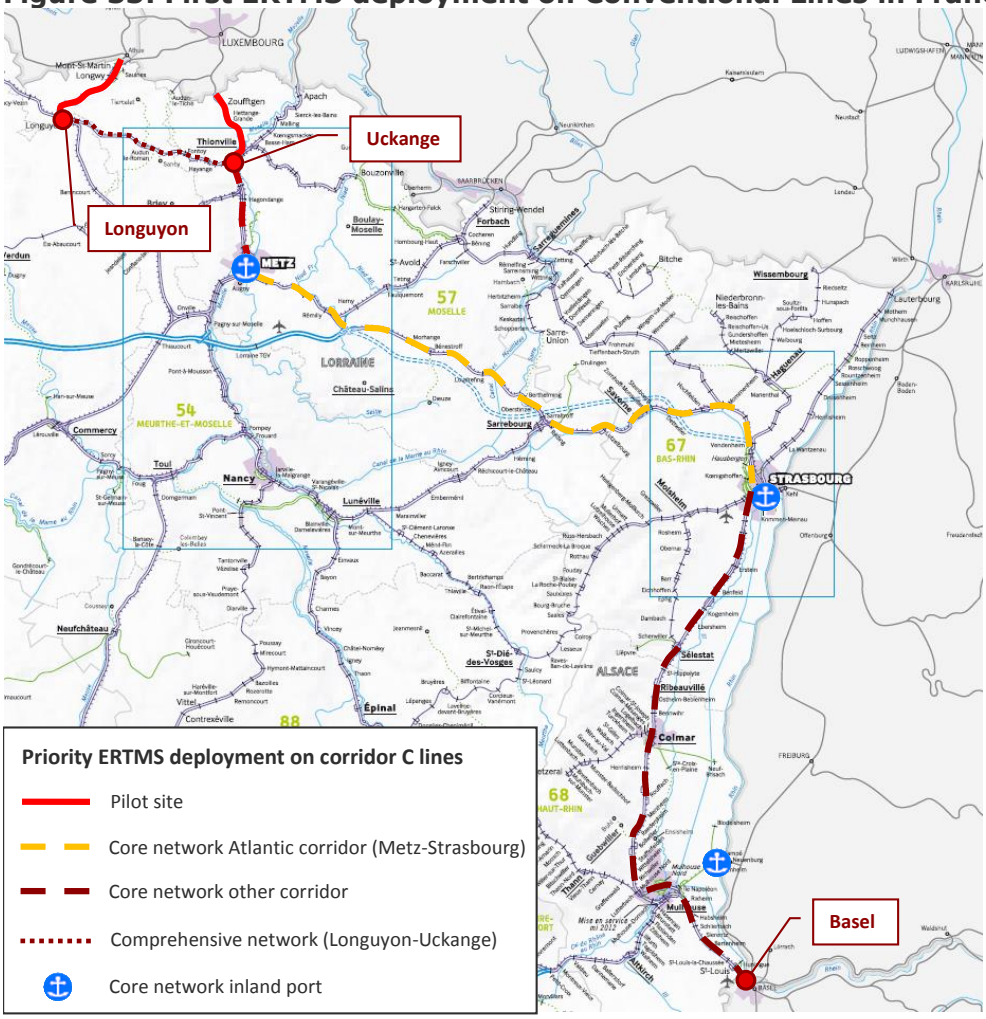
On the conventional network, the original ERTMS deployment plan is currently being redefined because of raising estimated costs and delays due to technical difficulties to integrate ERTMS to the existing signalling systems. A new framework is expected for 2014.

In France, most of the rail signalling systems are not obsolete yet as they date from the 1990s. Since only minor safety gains would come from deploying ERTMS, the benefits would be limited to an increase in infrastructure capacity and interoperability. France is therefore currently drawing up a plan for ERTMS deployment on the conventional network which takes into account system obsolescence. The plan should become available in 2014.
On the conventional network, ERTMS is being deployed since 2013 on 2 pilot sites:

- Uckange to Zoufftgen on the French-Luxembourger border (20km),
- Longuyon to Mont-Saint-Martin on the French-Belgian border (20km).

Apart from those two short links, priority is being given to the Longuyon-Basel line on ERTMS corridor C with an objective for 2018. Studies on this line have already started in 2013. An important part of this section is located on the Atlantic corridor, offering connections with 2 core network inland ports on the Atlantic corridor: Metz and Strasbourg.

Figure 33: First ERTMS deployment on Conventional Lines in France

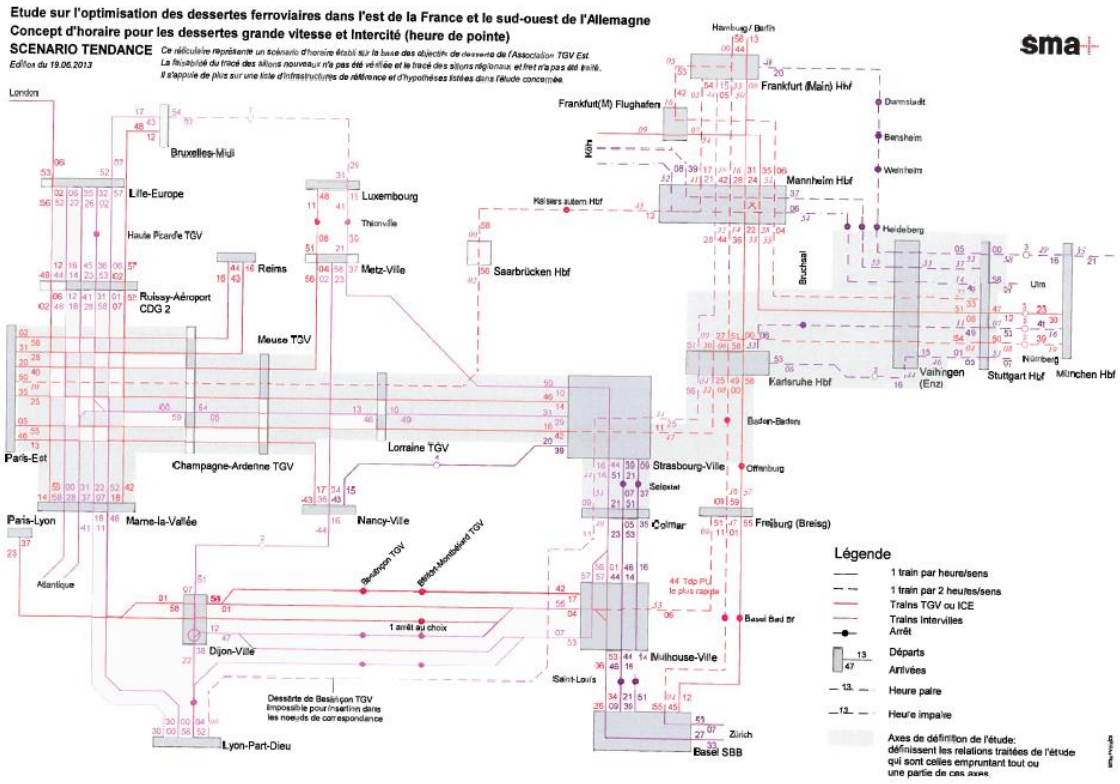


Study on the optimisation of rail services in the East of France and the South-West of Germany

(SMA, 2014)

The opening of the first phase of the LGV Est (Eastern high speed rail line) as well as the first phase of the Eastern branch of the LGV Rhin-Rhône (Rhine-Rhône high speed rail line) improved connections between France and South-West Germany. Nevertheless, the supply of international train services didn't follow the expectations. 2016 will see the opening of the second phase of the LGV Est with further reduced travel time between Paris, Metz and Strasbourg.

Figure 34: Suggested train timetables for 2016-2020 in East France and South-West Germany



The study's perimeter is the Paris-Strasbourg-Stuttgart axis, it aims at:

- To offer a new timetable concepts for high speed and intercity trains at an international level for East France and South-West Germany in 2016-2020
- To highlight issues in terms of infrastructures and organisation.

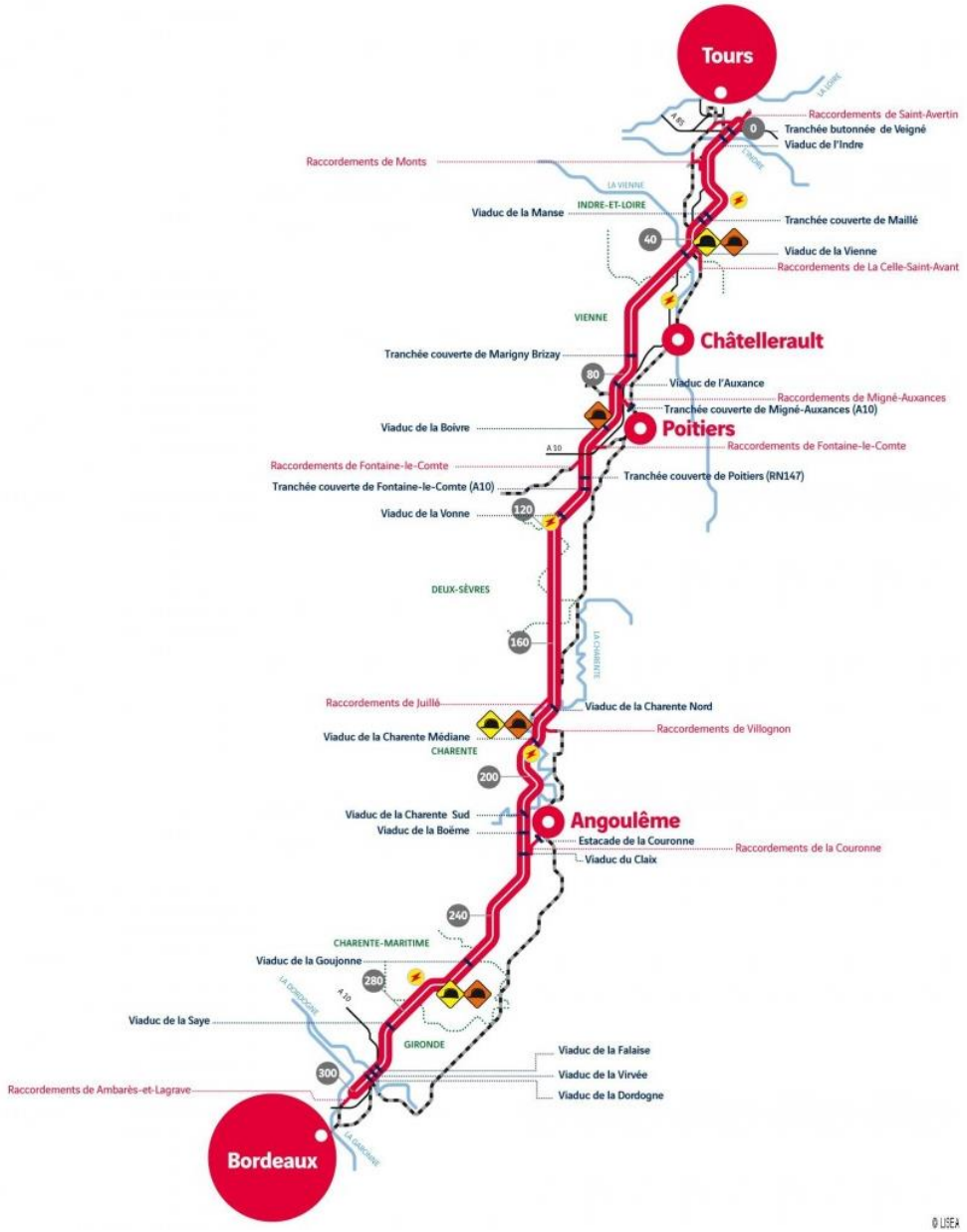
The study suggests not to limit services to axis from Paris, but to also develop North-South connections such as between Strasbourg and Brussels or between Lyon and Germany (Stuttgart and Munich). It recommends that timetables for high speed and international trains be planned well in advanced.

Review of public information on the high speed rail line Tours-Bordeaux (LGV SEA)

Currently under construction, the 300km high speed rail line between Tours and Bordeaux will further extend the French high speed network with around 1 hour travel time saved between Paris and Bordeaux. Apart from its national impact, this new line is a new step to connect the French and Spanish high speed networks.

The new passenger line will provide more capacity for freight trains on the existing conventional line.

Figure 35: High speed line between Tours and Bordeaux

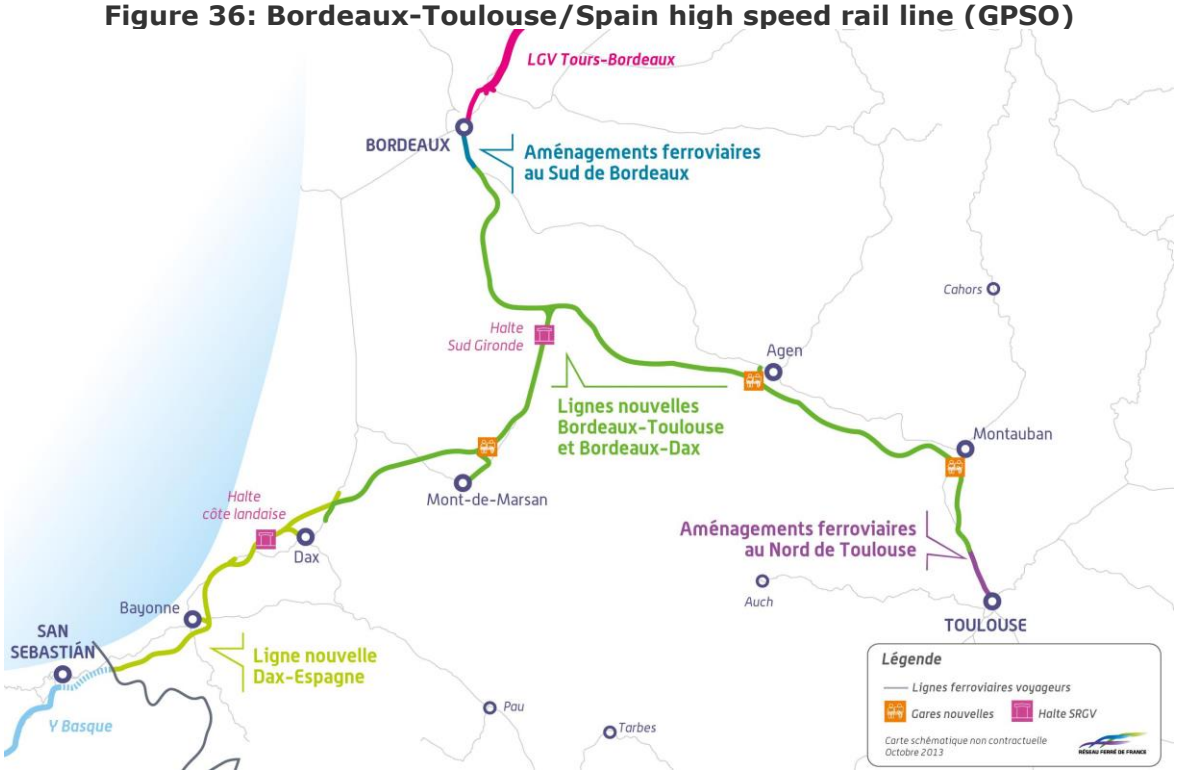


Work started in 2005 for an opening scheduled for 2017. It is conducted by a PPP with a 50 years concession agreement. Total investment cost is €7.8 billion for the PPP and €1 billion of complementary work by RFF.

Review of public information on the GPSO high speed rail line

GPSO is a high speed rail line project which complements the LGV SEA with southern links from Bordeaux. The project is composed of 2 branches: the first one to Toulouse and the otherr to Bayonne and Spain. Only the second one lies on the Atlantic corridor.

Figure 36: Bordeaux-Toulouse/Spain high speed rail line (GPSO)



From Bordeaux to the French-Spanish border, the new line will extend over 250 km with a maximum speed of 320km/h between Bordeaux and Dax and 220km/h between Dax and Spain. Travel time from Bordeaux to Bilbao will be under 2 hours. The line could also be used for freight and regional trains.
The project planned in 2 phases: the first phase is composed of the Bordeaux-Toulouse and Bordeaux-Dax lines. It also includes development of existing lines South of Bordeaux from Bègles to Saint-Médard-D'Eyrans and North of Toulouse, from Castelnau d'Estretefonds to Toulouse. The second phase consists of the line from Dax to the French-Spanish border.

Following a ministerial decision dating from 23 October 2013, the enquiry prior to the Declaration of Public Utility for the first phase of the project was started in the summer of 2014.

The project should be declared of public interest in 2016.

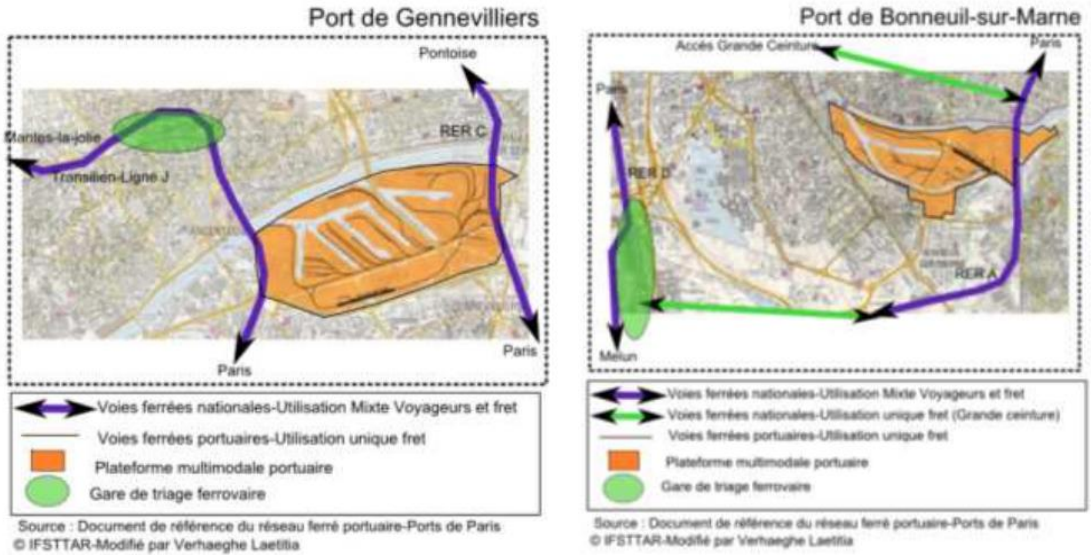
Rail connections to ports of the Paris area, A. Beyer and L. Verhaeghe (2013)

This is an academic study analysing the current situation and investigating future developments of rail connections to ports in the Paris area. French ports are increasingly conscious of the role of rail access to their success. Since 2011, the port authority for Paris ports (Ports de Paris) has also become a rail infrastructure manager for rail network inside ports.

First, existing infrastructures are described for 2013 and weaknesses as well as opportunities in terms of rail access are identified for each port. Despite an extensive internal network, the port of Gennevilliers suffers from a difficult access from the national rail network.

Bonneuil is in a somewhat better situation since its access is located on the Grand Ceinture ferroviaire, the freight-only line bypassing Paris. Nevertheless, available capacity for freight is limited on access lines to the Grand Ceinture.

Figure 37: rail access to Gennevilliers and Bonneuil ports



The document also describes rail access of the following smaller ports:

- Limay-Porcheville,
- Evry,
- Montereau-Fault-Yonne,
- Bruyeres-sur-Oise.

Issues and stakes of combining rail and IWW are analysed. It appears that the 2 modes are increasingly complementary, with rising interest from shippers and operators.

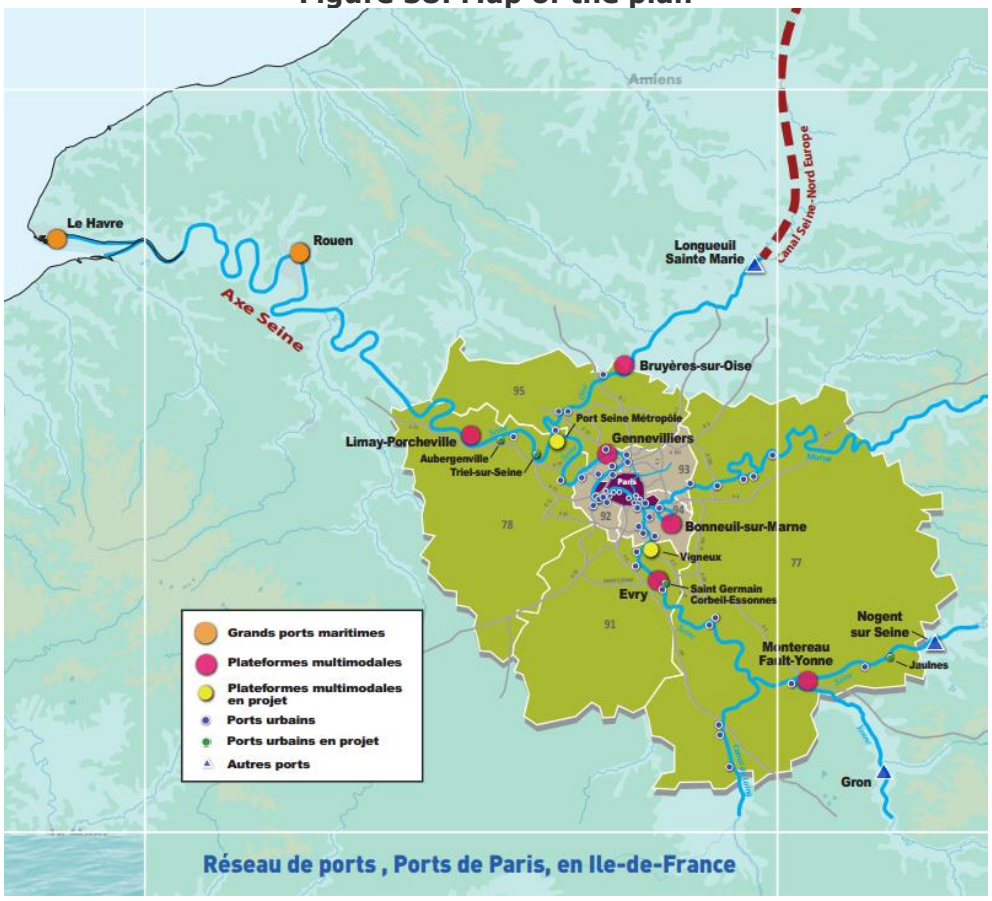
Port services plan for the Ile-de-France region (2013)

The document offers a plan for ports services in the Paris area for the years 2020-2025.

The plan transcribes Port de Paris' strategic project for years 2020-2025. The aims of the plan are:

1. Developing and adapting supplied port services on the network to the future needs of the different industries;
2. Pursuing the optimization of modal shift to IWW and rail;
3. Improve the ports' integration to their urban and natural surroundings;
4. Facilitate the ports' acceptability by strengthening the links to their territory.

Figure 38: Map of the plan



The document provides a detailed description of the plan with the future activities to be carried out at ports in the Paris region. In light of the corridor study, one of the main measure is the opening around 2020-2025 of a new port at Achères (Port Seine Métropole) which will complement the existing infrastructures for container activity.

It will be followed by 2 approaches conducted by Ports de Paris and HAROPA, infrastructure manager of the Rouen and Le Havre ports: a plan for the Seine axis and a reflection on the development and homogenisation of waterways and ports services.

Guide of inland ports, NPI, VNF and AFPI (December 2012)

This document was published by the trade newspaper Navigation, Ports and Intermodality (NPI). It provides data on all inland ports in France:

- Location on the network,
- Owner and infrastructure manager,
- Types of services,
- Opening times,
- Infrastructure characteristics,

- Main projects,
- Rail and road access

The guide also gives names and addresses of all IWW stakeholders:

- Ports,
- Public authorities,
- Service providers and companies located in ports,
- Port associations.

Mission to reconfigure the Canal Seine-Nord Europe, Seine-Escaut network

Report from MP Rémi Pauvros for the minister in charge of transport, the sea and fishing (2013)

The canal Seine Nord Europe project is the biggest element in a set of projets to strengthen IWW the link between the Seine basin and the river Escaut (Scheldt in English, Schelde in Dutch).

As central link of the European Seine-Scheldt Waterway (TEN-T priority projects n°30), the Seine-Nord Europe Canal (class Vb) will replace the Canal de Saint-Quentin and the current Canal du Nord, increasing maximum barge capacity from 650 to 4 400 tons for eliminating the major bottleneck. The canal will improve competitiveness of industry and contribute to regional sustainable development

- By offering high capacity connection between the river Seine (ports of Le Havre, Rouen and Paris) and the northern range ports (Dunkirk, Antwerp, Amsterdam and Rotterdam etc.) and the northern European countries (Belgium, Germany and Netherlands).
- By achieving a better modal split of freight movements.
- By reducing greenhouse gas emissions.

The project's budget was estimated at €4.2 billion, financed by the European Union, the French government, local regional governments and through public-private partnerships. Then the offers submitted by PPP candidates led to an increase in the project for a total cost of €7 billion. The project was reported, in July 2012, to be seriously in doubt, but significant cost reductions are deemed possible, and a decision is to be made in 2014.

As planned, the canal 106 km long from Compiegne to Aubencheul-au-Bac will include 7 locks (single chamber) , 2 water storage reservoirs, 3 aqueducts, 4 multimodal platforms, 5 grain docks, 2 transhipment docks and 5 tourist boating centers. The canal appears in orange on the map below.

Figure 39: The Seine-Escaut link and the canal Seine Nord Europe

Source: VNF Le réseau Transeuropéen de Transport (TEN-T)

The Seine-Escaut also link includes a series of smaller work to improve IWW connections between the 2 basins. The following table lists identified works on the network and their progress.

Table 15: Projects of the Seine-Escaut link and their progress (November 2013)

Lower Seine	**Progress**
Foster reliability of locks and dams	Work in progress
Direct access from the Seine-Escaut to the port 2000 dock	Studies
Dredging of the maritime channel of Rouen port	Studies
Upper Seine	**Progress**
Foster reliability of locks and dams	Work in progress
Dredging of the river Oise from Conflans-Sainte-Honorine to Creil (4 m depth)	Done
Deepening of the river Oise between Creil and Compiègne (4 m depth)	Studies
Raising of Mours bridge	Studies
Turning area (Longueil-Sainte-Marie)	Studies
Remote control of infrastructures (opening 24 hours a day)	Studies
Nord-Pas-de-Calais region	**Progress**
Recalibration of river Escaut (Valenciennes-Mortagne-Trith)	Done
Restoration of the Condé-Pommeroeul canal	Studies
Recalibration of river Deüle (Lille Deûlémont)	Work in progress

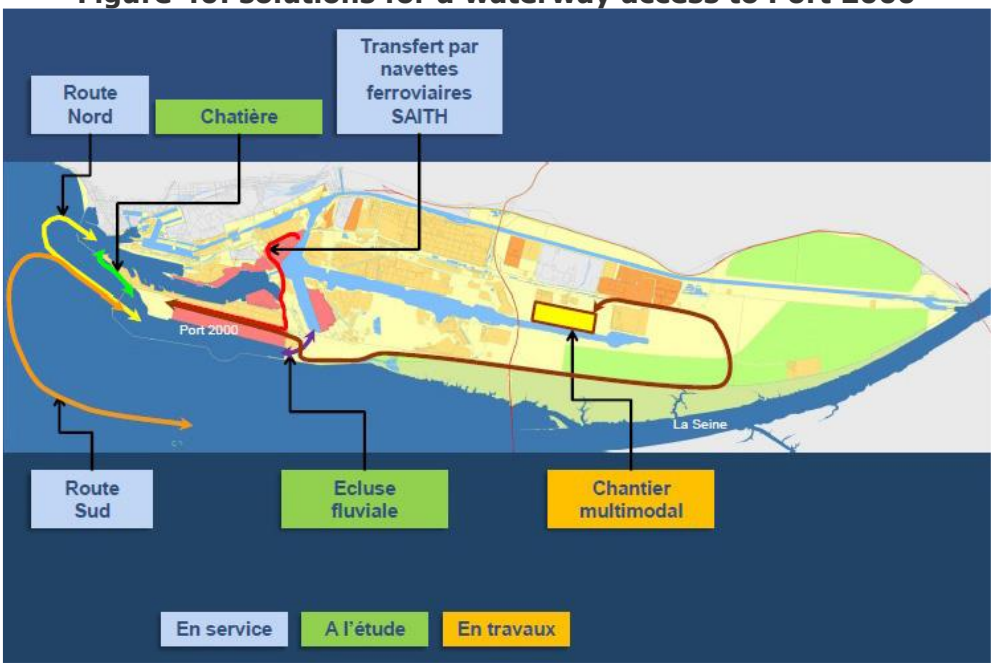
Recalibration of river Lys (Deûlémont-Halluin)	Studies
Raising of bridges on the Nord-Pas-de-Calais network (minimum height of 5.25m, 2 layers of containers)	Done
Doubling of the Quesnoy-sur-Deûle lock	Studies
Remote control of infrastructures (opening 24 hours a day)	Studies
Restoration of locks and dams	Studies
Services to users: turning basin and waiting areas	Studies

Source: Annexe 10: economic study by SETEC International

The report evaluates the economic impact of the project. It appears that the project would generate economic growth on short, middle and long term basis. The project's impact on French ports is also evaluated.

Le Havre
For Le Havre, the project will confront the French port to its North European competitiors. Therefore, it appears that Le Havre needs additional work to increase its competitivness, in particular a direct access to its biggest dock (Port 2000) from the Seine. Currently, access to the maritime port from the Seine is carried out with a rail shuttle, several possibilities are being studied to offer a boat access to Port 2000 from the Seine.

Figure 40: solutions for a waterway access to Port 2000



Source: HAROPA

Rouen
For port of Rouen, the impact should be neutral since the increase in comptetion should be made up for by the benfits coming with a larger hinterland.

Ports of Paris
Ports in the Paris area should benefit from the entire projects with new traffic and oppotunities. Ports of Paris, infrastructure manager for inland ports in the Paris area, plans to open a new multimodal plateforme at Achères, at the confluence of rivers Oise and Seine.

The report concludes with 2 recommendations:

- Follow a global approach of the project: integrate the Sein Nord Europe canal to the Seine Escaut project in an economic and european perspetive in order to benefit from a network effect.
- Adopt a gradual approach to the entire network upgrades.

National Maritime Port Plan (PNMP, 2010) and Port Strategic Plans

The National Maritime Port Plan started to be developed in 2009, were base studies and a draft of the plan were prepared, although the works were interrupted in 2011, and in consequence the plan not adopted by the Government, in order to wait for further integration of the transport sector in general and port sector in particular policy measures in development according the TROIKA Memorandum of Understanding, mainly in what regards to the new governance and regulatory model for the commercial port system of the mainland.

Study takes as main reference the 2006 Strategic Orientations for the Maritime and Port Sector as well as the main sources of information and statistics from 2008-2009, including forecasts to 2020. It includes a detailed BSC-SWOT analysis of the sector and profile of national ports.

2020 forecasts scenarios were made under the context of a previous economic background which, with the global economic and financial conjuncture of the last years, need to be significantly revised.

Despite so, key issues included in the BSC-SWOT analysis as well as the profiles of the main ports (already from Strategic Orientations for the Maritime and Port Sector) present a set of relevant information that remains valid for analysis of the Portuguese ports, with some detail adjustments/updates, in the context of the Corridor Studies.";.

Figure 41: Characterisation and Profile of Portuguese Ports

Port	Main vocations	Containers	General cargo	Solid bulk	Liquid bulk	Ro-ro	Tourism
Leixões *	Containers Energy Solid bulk	o	x	o	o	x	o
Viana do Castelo	General cargo	x	o	x	x		
Aveiro +	General cargo Bulks	x	o	o	o	x	
Figueira da Foz	General cargo Bulks	x	o	o			
Lisboa *	Containers Agro Tourism	o	x	o	x	x	o
Setúbal +	Ro-ro General cargo Solid bulk	x	o	o	x	o	
Sines *	Energy Hub	o	x	o	o	x	
Algarve (Portimão)	Tourism		x				o
Algarve (Faro)	General cargo		o	x	x		

o Main activity
x Secondary activity
* Core port
+ Compreensive port

Source: Strategic Orientations for the Maritime and Port Sector

Strategic profile of 5 main national ports

Leixões

- Reference as the main port of north western peninsular;
- Development of its multipurpose vocation;
- Development of containerized cargo segment, by acquisition of conditions allowing to enlarge the market served;
- Consolidation the position in the liquid bulk segment, particularly in the supply of energy products in the north region;
- Consolidation of national position in solid bulk cargo segment;
- Affirmation as a reference port in the national logistics system (taking advantage of integration of the Port of Viana do Castelo, connection with Leixões logistic platform, urban platform in Maia and Valencia cross border platform);
- Affirmation in the touristic cruise segment

Aveiro

- Development of the general cargo segment taking advantage of its strategic location in the corridor E- 80, and now part of the Atlantic Corridor
- Development of bulk segment associated with the installation of industries and logistics;
- Strengthening of the liquid bulk sector, particularly in the energy and supply chemical cluster in the Centro region;
- Development of Logistics Activities Zone as a hub and link to Cacia logistics pole and cross border terminal in Guarda;
- Strengthening its competitiveness through coordination with the port of Figueira da Foz ;
- Take advantage of the intermodal potential arising from the completion of the rail connection to North line, ensuring the connection with Beira Alta line enlarging the port hinterland to Castilla y León

Lisboa

- Development as a multifunctional port;
- Consolidation of its position in the general cargo, particularly in containerized cargo increasing its current capacity through the optimisation and upgrading of existing infrastructures;
- Strengthen of the position in the segment of agro solid bulk as the first national reference port and as second in Iberia;
- Strengthen its logistical capacity through the connection to the Logistic Platform Bobadela (with potential of waterway connections in the Tagus river) and, in the future to the Poceirão Platform;
- Leverage current situation as the first cruise port, making it a reference for the International tourist routes;

- Improve the integration as harbour city

Setúbal

- Reinforce its position in the general cargo segment, particularly as the first national port for ro-ro cargo and also for breakbulk cargo;
- Development of vocation for containerized general cargo, primarily using SSS;
- Strengthening its position in the handling of solid bulk;
- Leverage its position in the context of the national logistics system, enhancing its location close to Poceirão RRT and the connection to the cross border terminal Elvas / Caia

It should be noticed that since the document Strategic Orientations for the Maritime and Port Sector (dated on 2006) that supported the PNMP, the port of Setúbal has grown significantly on containers' traffic and this activity is no longer considered secondary. The concessionaires and port authority are mainly focused on that segment of container's traffic.

Sines

- Affirmation of Sines as deep-water port in the Iberian and European context
- Development of containerized cargo segment (reference port at national, Iberian, EU and worldwide contexts)
- Port as an economic engine, development of a large industrial and logistics area, including the port and industrial area logistics platforms, as well as with with Poceirão RRT and Elvas / Caia platforms
- Reinforce port competitiveness through the new freight corridor linking Sines to Elvas / Badajoz

Based namely in 2006 Strategic Orientations for the Maritime and Port Sector and with updates in some cases, all Mainland Port Authorities have strategic plans that complement the analysis of the National Maritime Port Plan.

Portuguese Ports: infrastructures (inventory of infrastructure conditions for GT-IEVA), 2013

Table 16: Portuguese mainland commercial ports facilities depths

Fundos Disponíveis nas instalações do sistema portuário comercial do continente				
Portos	Locais	Fundos Disponíveis	Fundos a	Ano Previsto de
		Atualmente m (ZH)	Disponibilizar m (ZH)	Disponibilização
Viana do Castelo	Barra / Canal Principal de Acesso Marítimo	8		
	Cais Comercial - Magem Sul	9		
	Cais da Margem Norte	5,5		
Leixões	Barra / Canal Principal de Acesso Marítimo	12	14	2018
	Terminal de Contentores Norte	10		
	Terminal de Contentores Sul	12		
	Terminal de Graneis Agroalimentares (D4N)	12		
	Cais de Carga Geral e Granéis	11		
	Trerminal Oceânico	30		
	Terminal Petroleiro	14,00; 10,00; 6,00		
	Terminal RO-RO	10		
	Terminal Multiusos (Molhe Sul)	10		
	Estação de Passageiros (D1N)	10		
	Novo Terminal de Passageiros (Molhe Sul)	10		
	Novo Terminal de Contentores		14	2018
Aveiro	Barra / Canal Principal de Acesso Marítimo	12,5	13,2	2014
	Terminal Norte (Multiusos)	12		
	Terminal para Contentores e RO-RO	12		
	Terminal de Granéis Sólidos	12		
	Terminal de Granéis Líquidos	12		
	Terminal Sul (Multiusos)	7		

Fundos Disponíveis nas instalações do sistema portuário comercial do continente				
Portos	Locais	Fundos Disponíveis	Fundos a	Ano Previsto de
		Atualmente m (ZH)	Disponibilizar m (ZH)	Disponibilização
Figueira da Foz	Barra / Canal Principal de Acesso Marítimo	7	*	
	Terminal de Carga Geral	6		
	Terminal de Granéis Sólidos	7		
Lisboa	Barra / Canal Principal de Acesso Marítimo	16.5	18.5	2014/2016
	Terminal de Contentores de Alcântara	14	16	2014/2020
	Terminal de Contentores de Santa Apolónia	11	13	2014
	Terminal Multiusos do Beato	7		
	Terminal Multiusos do Poço do Bispo	6		
	Terminal Multipurpose de Lisboa	6		
	Terminal de Granéis Alimentares da Trafaria	17.5		
	Terminal de Granéis Alimentares do Beato	7.3		
	Terminal de Granéis Alimentares de Palença	15		
	Terminal de Líquidos do Barreiro	9.5		
	Terminal do Barreiro (Granéis Sólidos)	10.5		
	Terminais de Serviço Privado (Licenças)			
	Terminal de Líquidos ´Banática	11.5		
	Terminal de Líquidos de Porto Brandão	14		
	Terminal de Líquidos de Porto dos Buchos	12		
	Terminal de Líquidos do Rosairinho	11.5		
	Terminal de Alhandra - IBEROL	5		
	Terminal de Alhandra - CIMPOR	5		

* Função dos resultados dos estudos de viabilidade a desenvolver relativamente à acessibilidade fluvio-marítima

Fundos Disponiveis nas instalações do sistema portuário comercial do continente				
Portos	Locais	Fundos Disponiveis	Fundos a	Ano Previsto de
		Atualmente m (ZH)	Disponibilizar m (ZH)	Disponibilização
Setúbal	Barra / Canal Principal de Acesso Marítimo	12,7	15/16	
	(Fundos à maré)			
	Terminal Multiusos Zona 1	9,50 12,50		
	Terminal Multiusos Zona 2	12	14/15	2016/2017
	Terminal RO-RO/VW	12		
	Terminal de Granéis Liquidos Sapec	10,5		
	Terminal de Granéis Sólidos Sapec	10,5	12,5	2016/2017
	Terminal da Secil	9		
	Terminal Tanquisado/Eco-Oil	9,5		
	Terminal Praias do Sado	10		
	Terminal Uralada	6		
	Terminal da Alstom	6		
	Terminal da Lisnave	9		
	Terminal Teporset	11		
	Terminal Termitrena	10,5	12,5	2016/2017
Sines	Terminal de Granéis Liquidos	28		
	Terminal Petroquímico	12		
	Terminal Multipurpose de Sines	18		
	Terminal de Gás Natural	15		
	Terminal de Contentores de Sines (Terminal XXI)	17,5		
Portimão	Barra / Canal Principal de Acesso Marítimo	8	10	2016
	Cais Comercial	8	10	2016
Faro	Barra / Canal Principal de Acesso Marítimo	7	8	2014
	Cais Comercial	7	8	2014

Traffic demand forecasts for the Port of Sines and CBA for a new railway line connecting Sines to Spain

(TIS, 2014)

The study aimed at analysing the traffic demand for the Port of Sines, with special focus on container traffic. The demand forecasts are followed by a cost-benefit analysis (both on the economic and on the financial perspectives) of a new railway line connecting Sines to Spain.

Interviews to the most significant stakeholders of container and rail traffic in the Port of Sines were conducted. It also included a characterization of the Port of Sines' competitive position among the main Iberian ports competing in container's traffic, both in the transhipment segment and in the Iberian hinterland market.

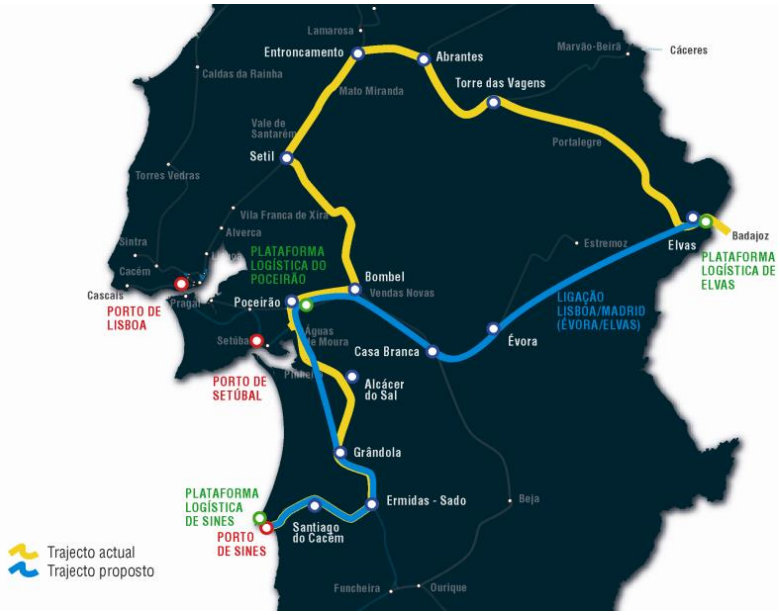
The study uses quantitative data from the Portuguese rail infrastructure manager (REFER) and from Sines Port Authority (APS) as basis, complemented by national statistics (INE) namely from border crossing freight traffic in road rail modes and other sources (Spanish Portuguese Border Observatory, etc.) for the current situation and for forecasting the container traffic expected growth in this port.

A strong share of Sines' port current container traffic is related with the transhipment activity, namely for its main client (MSC – Mediterranean Shipping Company), due to the port's competitive fares and overall performance but also due to its convenient

Mediterranean / Atlantic location and natural conditions (over 17metres depth, safe entrance). On the land side, the rail mode has a strong share of about 85% in getting the containers in the Lisbon area (through Bobadela), in the centre (through the Entroncamento Logistic Platform), and even to the North of Portugal (several weekly freight trains from Sines to Leixões).

This study considers both for the future demand and for the CBA a new railway connection between Sines and the Spanish border in Elvas-Badajoz, reducing the distance in 135km (more than 25%). This connection involves the construction of a missing link of about 90km between Évora and the Spanish border (since the rest of the connection, from Vendas Novas to Évora, is already built). The study takes as main assumption that during the horizon period the migration to UIC gauge will occur, and that migration will be done without influencing the service provision.

Figure 42. The current and the future "Sines – Spanish border" railway connection



The CBA is based on the comparison of the freight traffic with versus without the new connection for the 3 ports in southern Portugal: Sines, Setúbal and Lisbon. It also comprehends an improvement in the southern part of this rail connection (Ermidas do Sado), benefiting the Port of Sines. It considers as well the traffic diverted from the other important railway connection to Spain, namely through Vilar Formoso – Fuentes de Oñoro.

The main results from study include:

- A set of expected changes to the "Business As Usual" demand for the container market in the port of Sines, including infrastructure changes in competitors' ports and in their railway freight transport conditions that will necessarily change the current market balance and current trends, each having a different (positive or negative) impact in each transport mode (rail, road, SSS, DSS including transhipment).
- The investment (just below 900 million €) in the remaining part of the new rail connection is economically feasible (IRR of 14,1% and NPV just over 1000

million €) but not financially (IRR of 3,2% and NPV of -66 million €) in case this investment would not be co-financed.

- In the Cost-Benefit Analysis, the generation of new jobs was calculated and considered in the economic benefits as part of the shadow-price factor on the project's investment.
- The forecasted number of trains (per year) results not only from the expected evolution of traffic (in thousand tons) using the new rail connection, but also from the changes of the maximum train length and weight allowed in this new railway line, with effectiveness improvements in rail operation and costs, and in its competitiveness.

Table 17: Forecasted traffic (in thousand tonnes and trains per year) using the new railway connection to the Spanish border (Évora-Elvas-Badajoz)

UNIDADE	CENÁRIO	TROÇOS (&PRODUTO)	2016	2017	2018	2019	2020	2025	2030	2035	2040	2045	2049
KM	Ferrovia Do Minimum	Poceirão/Caia	293,6	293,6	293,6	293,6	293,6	293,6	293,6	293,6	293,6	293,6	293,6
		Sines/Poceirão	151,2	151,2	151,2	151,2	151,2	151,2	151,2	151,2	151,2	151,2	151,2
		Sines/Caia	444,8	444,8	444,8	444,8	444,8	444,8	444,8	444,8	444,8	444,8	444,8
	Ferrovia Do Something	Poceirão/Caia	293,6	293,6	293,6	293,6	171,0	171,0	171,0	171,0	171,0	171,0	171,0
		Sines/Poceirão	144,0	144,0	144,0	144,0	144,0	144,0	144,0	144,0	144,0	144,0	144,0
		Sines/Caia	437,6	437,6	437,6	437,6	315,0	315,0	315,0	315,0	315,0	315,0	315,0
	Rodovia	Poceirão/Caia	215,0	215,0	215,0	215,0	215,0	215,0	215,0	215,0	215,0	215,0	215,0
		Sines/Caia	171,0	171,0	171,0	171,0	171,0	171,0	171,0	171,0	171,0	171,0	171,0
TEU	Do Minimum	Sines/Caia DM	158.988	162.820	166.111	167.444	173.798	189.094	207.752	223.808	241.105	259.738	275.677
	Do Something	Sines/Caia DS	166.938	182.757	191.905	197.407	222.577	268.881	295.411	318.242	342.837	369.332	391.996
K Ton.	Do Minimum	Sines/Poceirão (T-XXI)	6310	6462	6592	6645	6898	7505	8245	8882	9569	10308	10941
	Do Something	Sines/Poceirão (T-XXI)	6625	7253	7616	7835	8833	10671	11724	12630	13606	14658	15557
	Indução	Sines/Caia	0	0	0	0	774	1900	2087	2249	2422	2610	2770
	Indução	Sines/Poceirão	315	791	1024	1189	1162	1267	1392	1499	1615	1740	1847
	Do Min&Do Sor	Sines/Poceirão (Carvão)	4207	4023	3843	3745	3588	2343	771	0	0	0	0
	Do Min&Do Sor	Sines/Poceirão (Outros prod.)	1600	1653	1682	1708	1725	1864	2012	2145	2287	2439	2566
	Do Minimum	APL+APSS/Caia	1258	1290	1317	1329	1380	1505	1658	1789	1933	2087	2219
	Do Something	APL+APSS/Caia					1678	3818	4195	4517	4868	5240	5562
Comboios	Do Minimum	Sines/Poceirão	3802	3893	3972	4004	4156	4521	4967	5351	5765	6210	6591
	Do Som. s/indu	Sines/Poceirão	3802	3893	3972	4004	3325	3359	3690	3975	4283	4613	4897
	Indução	Sines/Caia	0	0	0	0	374	851	935	1007	1085	1168	1240
	Indução	Sines/Poceirão	191	477	617	717	560	567	623	671	723	779	827
	Do Minimum	Sines/Poceirão (Carvão)	1826	1747	1668	1626	1558	1017	335	0	0	0	0
	Do Something	Sines/Poceirão (Carvão)	1826	1747	1668	1626	1247	756	249	0	0	0	0
	Do Minimum	Sines/Poceirão (Outros prod.)	964	996	1013	1029	1039	1123	1212	1292	1378	1469	1546
	Do Something	Sines/Poceirão (Outros prod.)	964	996	1013	1029	832	835	901	960	1024	1092	1149
	Do Minimum	APL+APSS/Caia	642	658	672	678	704	768	846	913	986	1065	1132
	Do Som. s/indu	APL+APSS/Caia	642	658	672	678	564	571	629	679	733	792	841
	Indução	APL+APSS/Caia					636	1447	1590	1712	1845	1986	2108
	Do Something	APS+APSS+APL/Caia	642	658	672	678	1574	2869	3154	3398	3663	3946	4189
			2016	2017	2018	2019	2020	2025	2030	2035	2040	2045	2049

Some of critical points not reflected in the study refer to:

- Although the new connection on the Portuguese side is considered to be built in a double platform compatible with a future gauge migration, this study does not consider the possible consequences of an ineffective gauge migration process or of the closure of the Spanish railway line from Badajoz-Madrid in Iberian gauge foreseen at the time the new railway line in UIC gauge is complete (construction ongoing).
- Since currently there is no rail container traffic from Sines to Spain and few from Lisbon and Setúbal crossing the border at Badajoz-Elvas, the future rail traffic forecasted includes both a share of freight rail traffic diverted from the

northern rail border crossing (Vilar Formoso-Fuentes de Oñoro) and also a share of the market now using road mode from Sines, Setúbal and Lisbon to Spain, namely to Extremadura and to Madrid regions. The traffic from Sines and Lisbon to central Europe will be induced depending on the rail connection new conditions, namely by the mitigation of the current restraints (gauge, signalling, electrification, maximum train weight and length, slopes).

Douro Inland Waterway

The study focus on the development of the navigation in the Douro river from 2011, aiming at proceeding to the strategy update concerning the development of the Douro waterway with special focus in the following key aspects:

- Define solutions to improve its utilization and exploitation;
- Establish the ground basis to improve the socio-economic aspects;
- Guarantee its particular and more traditional functions – passengers and goods transportation and Hydroelectric power production;
- Contribute to the role improvement as a hub region with high potential for tourism as a pole both at regional, national and international level.

The key stakeholders were consulted to gather their views, opinions and expertise, and from their point of views, especially from the one presented by the riverine municipalities, it became clear the need to review the adopted classification for the port facilities dedicated to the tourism activities. The reasoning for this is due to the recent evolution of the fleet dedicated to that business segment. Port facilities were ranked according to their capacity to receive vessels of their class.

Three navigation categories are presented:

- Touristic - Maritime,
- Recreational Boating, and,
- Goods Transportation, the one that is more concerned in the context of current study

The Touristic-Maritime is presently the leading activity developed within Douro waterway, followed by the Goods Transportation activity and the Recreational Boating.

Presently 20 companies are carrying out their activities in the Douro River, which deliver a vast and competitive offer of touristic tours. These companies sum up 55 ships fully designed and equipped able to present a good offer to tourism, as presented before. The Touristic- Maritime activity has transported in 2008 the lump sum of 160.016 passengers.

The Goods Transportation, started 20 years ago but due to multiple technical matters and studies that were needed to undertake only in 2005 the inland transportation activity started as a regular transport mode.

Freight transportation in Douro is performed between commercial ports, Sardoura and Várzea do Douro, both of them placed in the Crestuma bayou (about 50km from the Douro riverine). Apart from those two ports there is two other commercial ports to be considered, one from Régua-Lamego placed at the Carrapatelo bayou (about 100km from the Douro riverine) and the other, already in the Spanish side - Vega Térron (about 200km from the Douro) placed at the Pocinho bayou. However, these four ports are not fully operational at the moment.

The type of goods transported using this transport mode is still very limited and one possible reason behind this fact can be that the economic activity at the riverbanks is

considered very scarce. A study concerning the viability of the inland waterway transportation in the Douro River towards the commercial port of Veja Terrón was conducted, with its conclusions pointing out to the associated costs and the total travel time regarding the river transport, not turning it as a competitive solution.

Taking into account the current values and the forecasts to/from the Iron Moncorvo mines with flows between 4000-9000 tonnes / day of ore or derivatives in 1st phase of operation, which may reach 28 000 tonnes / day in peak phases, with an output of 10 Mtons / year in the future, a dedicated study on the transport accessibilities to the Moncorvo mines comparing the different alternatives has been issued[1].

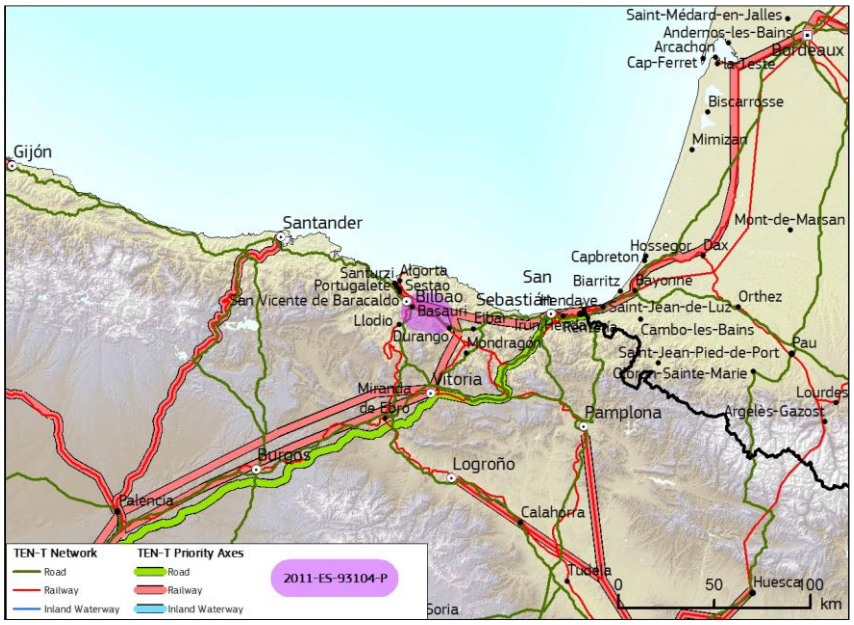
TEN-T funding

Track bed works of the sub-sections Amorebieta/Etxano-Lemoa and Lemoa– Galdakao

2011-ES-93104-P (Part of Priority Project 3)

2011-ES-93101-P (Part of Priority Project 3)

2011-ES-93094-P (Part of Priority Project 3)



Start date: April 2012
End date: December 2014

The 1st action involves the construction of an 8.87 km track bed, including three viaducts, one double viaduct and five tunnels on the railway line Madrid-Basque Country-French Border. The works to be performed on the sub sections Amorebieta/Etxano-Lemoa and Lemoa–Galdakao will allow the reduction of travel times and better transport links along the region.

[1] Report was received recently, not being possible to conclude the review in time to be included in the current report

The second action focuses on the construction of a 5.03 km track bed at Amorebieta/Etxano-Amorebieta/Etxano sub-section including five viaducts and four tunnels. The works will allow travel time reduction as well as better transport links in the region. The total cost of the project is 32.750.000 euros, while the EU support will be a 10% of the total cost.

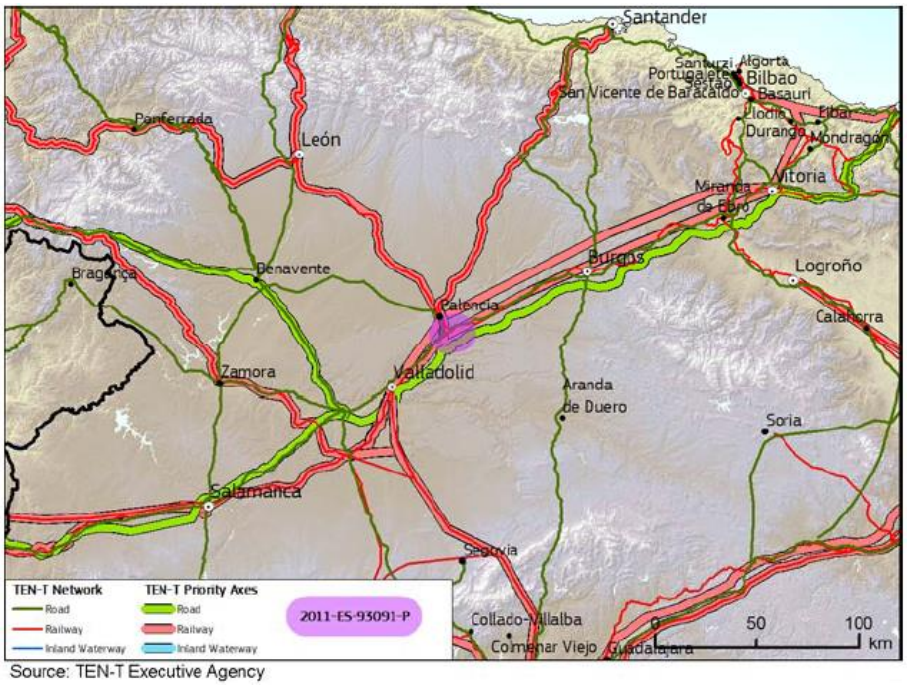
The third project will address the construction of a 4.60 km track bed at Durango-Amorebieta/Etxano sub-section including five viaducts and three tunnels. The subsection works will allow a maximum speed of 250km/h, which will allow time travel reduction. The total cost of the project is 41.890.000 Euros, while the EU financial support will be a 10% of the total cost.

By the end of 2012, the works have started and are ongoing in both sub-sections. Regarding the structures, the foundations of the viaducts have been completed as well as the excavation of tunnels (Ganzelai, San Román, Marrageruena and Galdakao II/Bekea, Arteako and Orrampe). One of the viaducts (Larriñagatxu) has been completed.

These action take place on the high speed railway line Madrid–Basque country–French Border, part of Priority Project 3 (High-speed railway axis of southwest Europe). They will provide continuity to the Madrid-Valladolid- Burgos- Vitoria-Bilbao-San Sebastian-French border HST connection, reducing travel times and improving transport links in the region.

Track bed works of the sub-section Venta de Baños junction: Valladolid-Burgos and Leon- Palencia-Burgos connections and services for follow up works

2011-ES-93091-P



Source: TEN-T Executive Agency

Start date: April 2012
End date: December 2014

Beneficiary:

Administrador de Infraestructuras Ferroviarias (ADIF)

The goal of the project is the construction of a 7.94 km high speed railway track bed in two connections of the Venta de Baños junction:

- Connection 1: The first connection will be located at Valladolid-Burgos HST line and will have a length of 4,64km.
- Connection 2: The second connection will be located at Palencia-Burgos HST line and will a length of 3,30km.

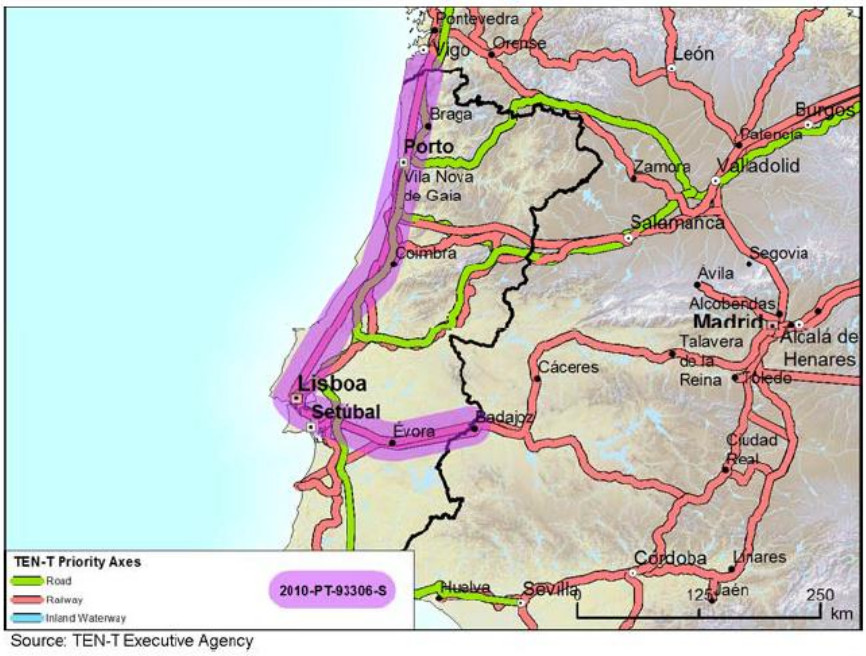
The total cost of the project is 50.000.000 euros and the EU financial support will go up to 5.000.000 euros.

The Action contributes to the implementation of Priority Project 3 (High-speed railway axis of southwest Europe), by addressing the link of the Madrid-Segovia– Valladolid HST line with the Basque Country-French border HST line. Furthermore, it also contributes to the implementation of the PP19 North-Northwest HST corridor.

The assessment conducted by the end of 2012, shows that works have started and are ongoing. Regarding the structures, the foundations of one viaduct (over Pisuerga river) have been completed and the construction of the other viaduct (over Highway A-62) has started.

Studies supporting the PPP programme for high speed rail implementation in Portugal

2010-PT-93306-S (Part of Priority Project 3)



Source: TEN-T Executive Agency

Start date: April 2012
End date: December 2014

This project aims to support the public private partnership (PPP) programme through the production of studies that contribute to the selection of the axes to be implemented and to support the contracting process for the rail infrastructure. It is part of the Priority Project 3, the High-speed railway axis of southwest Europe.

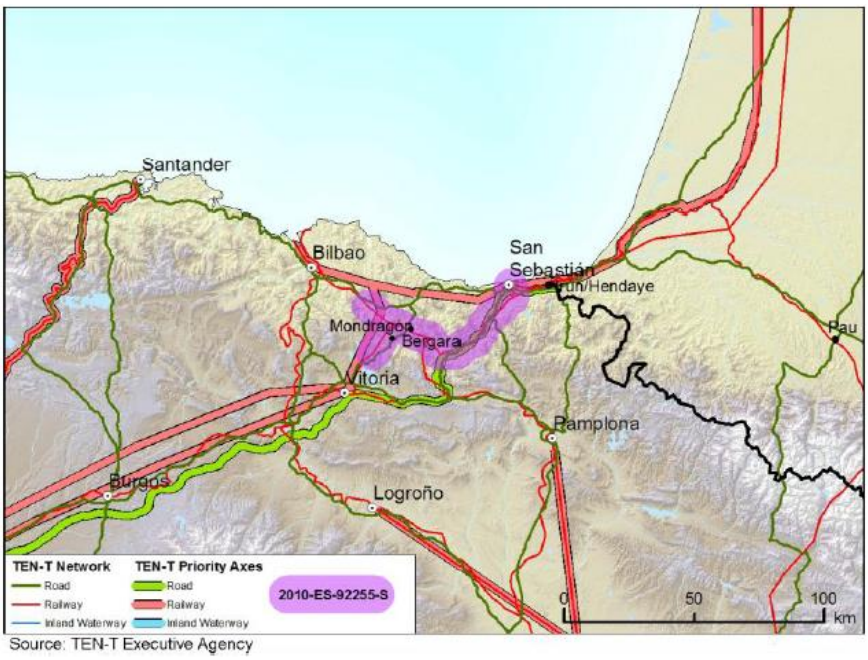
These studies to support the PPP implementing of the high speed rail network in Portugal are aimed at a faster creation and more efficient management of the works

projects to build the rail network. The studies developed are focused on the different needs for each of the axes:

- Global Projects: Essential studies for the efficient monitoring and management of the public private partnerships, e.g. development of a manual for contract management.
- Lisbon - Madrid Axis: Studies required to support the evaluation of proposals submitted to the tender process of PPP2 (Lisbon - Poceirão stretch) including further technical studies.
- Lisbon - Porto Axis: Essential studies to launch and accompany the PPPs for the construction of the axis, above all for the possible integration of stations.
- Évora – Faro - Huelva Axis (not part of PP3): Development of studies and assessments which are fundamental for the corridors definition and the development of the preliminary study and the environmental impact study, with the purpose of obtaining the environmental impact declaration.

High speed line Basque country-French border. Drafting of design studies

2010-ES-92255-S



Source: TEN-T Executive Agency

Start date: August 2010
End date: December 2012

The project consists of two drafting works:

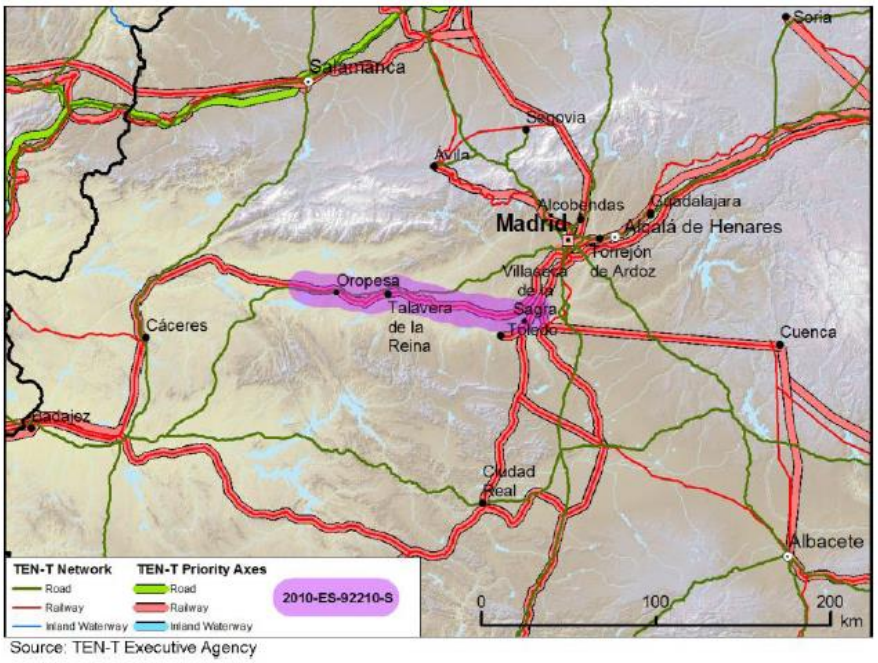
- Draft of the design studies for a 17km high speed track bed for three subsections: Elorrio-Elorrio (3.7 km), Elorrio-Bergara (4.5 km) and Mondragón-Bergara (8.8 km).
- Draft of the electrical supply equipment for the Vitoria-Bilbao-San Sebastian high speed line

The total cost of the action is estimated at 4.700.770 euros, while the EU support will go up to the 50% of the total cost.

The high speed line Vitoria-Bilbao-San Sebastian has an estimated length of 177 km and is designed to reach a top speed of 250 km/h. It has been designed with the technical parameters of a high speed line, in double UIC gauge track, which will allow the circulation of both passenger and cargo trains.

The accomplishment of the global project will improve connectivity between Madrid and the cities along the corridor (Madrid, Valladolid, Burgos, Vitoria, Bilbao, San Sebastian), decrease travel time and strengthen cohesion between regions in Spain.

2010-ES-92210-S: PP3 High Speed Line Madrid-Lisbon. Sub-section Madrid-Oropesa. Studies (Phase I)



Source: TEN-T Executive Agency

Start date: August 2010
End date: December 2012

The project is divided in 11 different activities which will be referred to different sections of the Madrid-Lisbon High Speed Line:

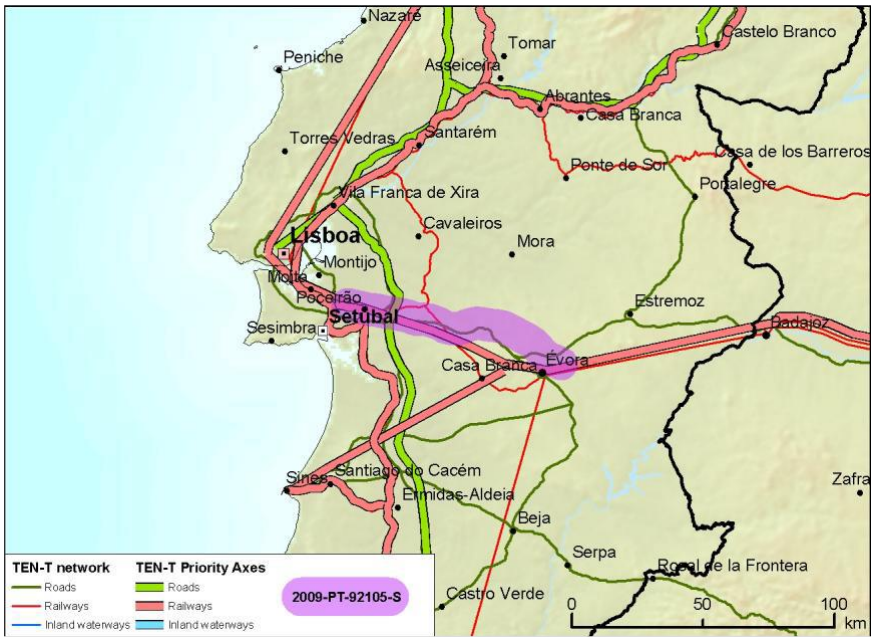
- The first 8 activities focused on the technical design study for the track bed
- The 3 remaining activities addressed geological and geotechnical studies, support for project management and a fauna study.

The total cost of the project was 12.700.000 Euros, while the EU financial support was 5.000.000 euros. The project was completed by December 2012

This Action forms part of the section high speed line Madrid-Lisbon in PP3. The accomplishment of the global project will enhance rail competitiveness between Madrid and the cities situated along the corridor (Talavera de la Reina, Cáceres, Plasencia, Mérida and Badajoz), significantly reducing travel times and enhancing cohesion with the rest of Spain and with Europe

Detailed design studies for the high speed railway section Poceirão-Évora, part of the Lisbon-Madrid axis

2009-PT-92105-S (Part of Priority Project 3)



Start date: December 2009
End date: April 2011

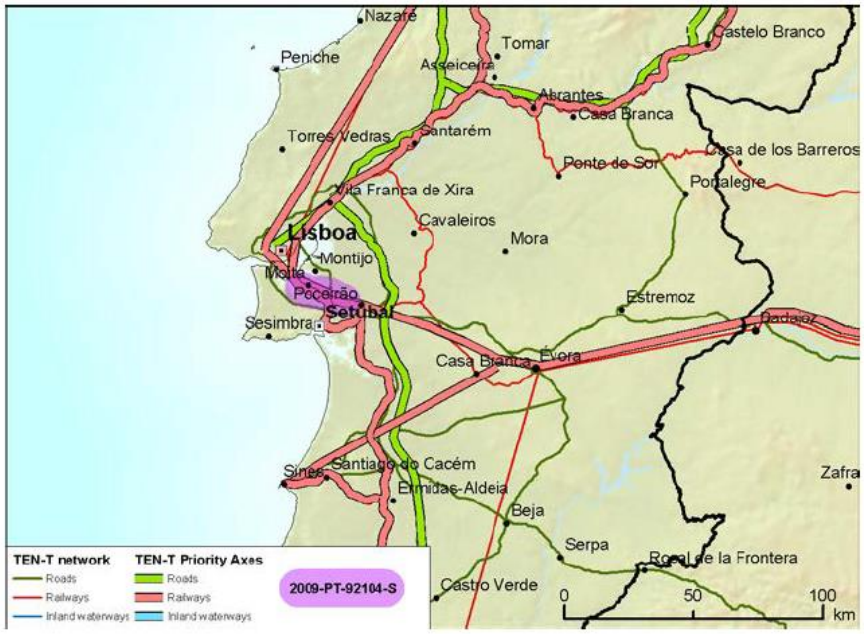
This project has been cancelled

This project is a key element for the high speed train corridor Lisbon - Madrid. It is part of the Priority Project 3, the high-speed railway axis of southwest Europe.
The project comprises the detailed definition of the technical works that are needed for the construction of the infrastructure, specifically the detailed technical design studies for the section Poceirão - Évora, which has a total length of 85 km.

The project is implemented through a Public-Private Partnership designated as concession RAV Poceirão - Caia (PPP1). The detailed technical design studies, as well as the construction works, for the section Évora - Caia, also implemented through PPP1, are co-funded by TEN-T Decision C(2008)7902 (action 2007-EU-03080-P).

Detailed design studies for the high speed railway section Moita-Poceirão, part of the Lisbon-Madrid axis

2009-PT-92104-S (Part of Priority Project 3)



Start date: December 2010
End date: December 2011

This project has been cancelled

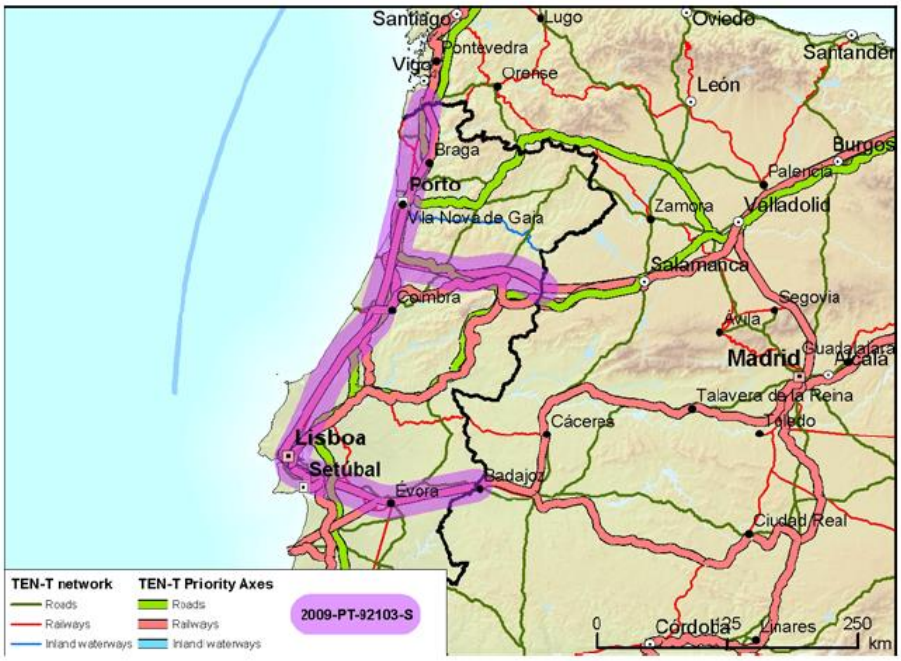
The project entails the development of the technical design studies for the section Moita - Poceirão, which has a total length of 20 km.
This project consists of the detailed definition of the technical works that are needed for the construction of the infrastructure. It is part of the Priority Project 3, the high-speed railway axis of southwest Europe and it is a key element for the high speed train corridor Lisbon-Madrid.

Works will be done to build this section in double track and UIC gauge. It has been planned to allow a maximum speed of 350 km/h for passengers' trains and 120 km/h for freight trains.
The action is implemented through a Public-Private Partnership designated as concession RAV Lisbon - Poceirão (PPP2).

Studies for the implementation of the Portuguese high-speed rail network – PP3 and PP19

2009-PT-92103-S (Part of Priority Projects 3 and 19)

The project consists in the development of studies to support the decision making processes related to these high speed train corridors. It is part of the Priority Project 3, the high-speed railway axis of southwest Europe and of the Priority Project 19, the high-speed rail interoperability on the Iberian Peninsula. It contributes to the development of the high speed train corridors Lisbon-Madrid, Lisbon-Porto-Vigo and Aveiro-Salamanca.



Start date: May 2009
End date: December 2011

Completed Action

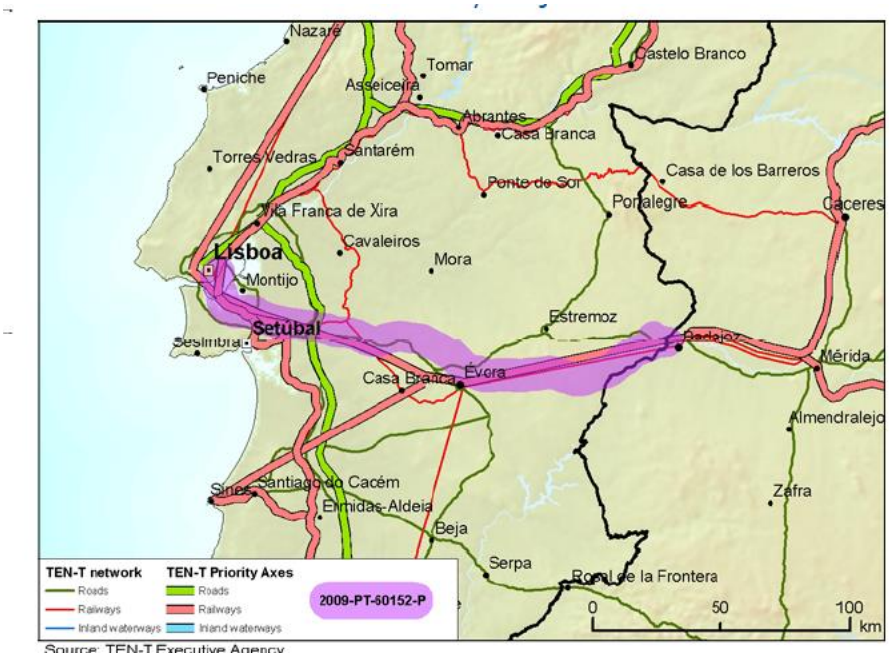
The activities foreseen play a key role in the scope of the execution and co-ordination of the planning, construction, contracting, funding, supply and operation of the Portuguese high-speed rail network.
The specific activities comprise the following studies:

- Studies for development of the Porto-Vigo corridor
- Studies for the development of the Lisbon-Porto corridor
- Studies for the development of the Aveiro-Salamanca corridor
- Other studies aiming at supporting the implementation of the high-speed rail network in Portugal, in particular addressing the preparation of the concessions Poceirão/Caia (PPP1), Lisbon/Poceirão (PPP2), Lisbon/Pombal (PPP3), Pombal/Porto (PPP4) and Braga/Valença (PPP5).

Implementation of the European Rail Traffic Management System on the high speed stretch between Lisbon and Caia, an integral part of the Lisbon-Madrid

2009-PT-60152-P (Part of Priority Project 3)

ERTMS projects play a key role in the trans-European network as they enable the rail sector to compete more successfully in a number of growing market segments. ERTMS is also a catalyst for the development of interoperable and competitive freight transport corridors.



Start date: July 2009
End date: December 2013

This project consists of the deployment of the European Rail Traffic Management System - ERTMS (ETCS Level 2) in the high speed network stretch between Lisbon and Caia. It foresees the track-side equipment of about 206 km of an electrified double track with ETCS Level 2 with European gauge and includes the Systems Requirements Specifications new version 3.0.0.

By the end of 2011, the preparation of the tender documentation for contracting for the signalling and telecommunications concession has started.

It is likely this action is delayed.

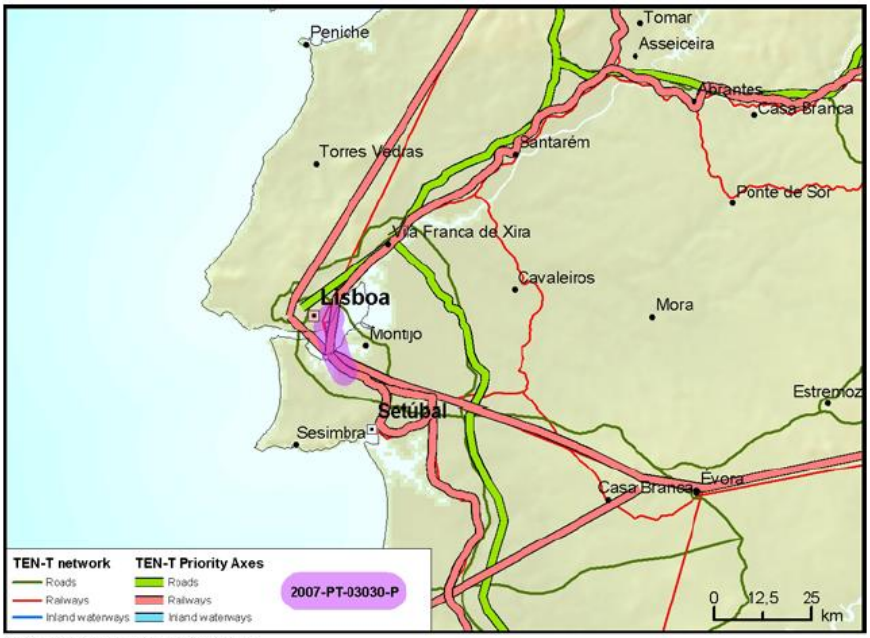
Studies and works in the high speed railway axis of South-West Europe (PP3) - Lisbon-Madrid Axis: Third Tagus Crossing (TTC)

2007-PT-03030-P (Part of Priority Project 3)

This project is part of the Priority Project 3, the high-speed railway axis of southwest Europe. This project is a key element for the Lisbon-Madrid High-Speed Railway Axis, as it will establish the connection between Lisbon and the rest of the axis, allowing a competitive travel time between the two capitals, which is a crucial aspect for the competitiveness of the service.

It consists of the design studies and works on the high-speed rail component of the Third Tagus Crossing (TTC). The location of the TTC is between Lisbon and Moita (north and south banks of the Tagus river, respectively). The 17 km long works include a 7.3 km bridge over the Tagus and 9.7 km of north and south access routes.

The project was cancelled.

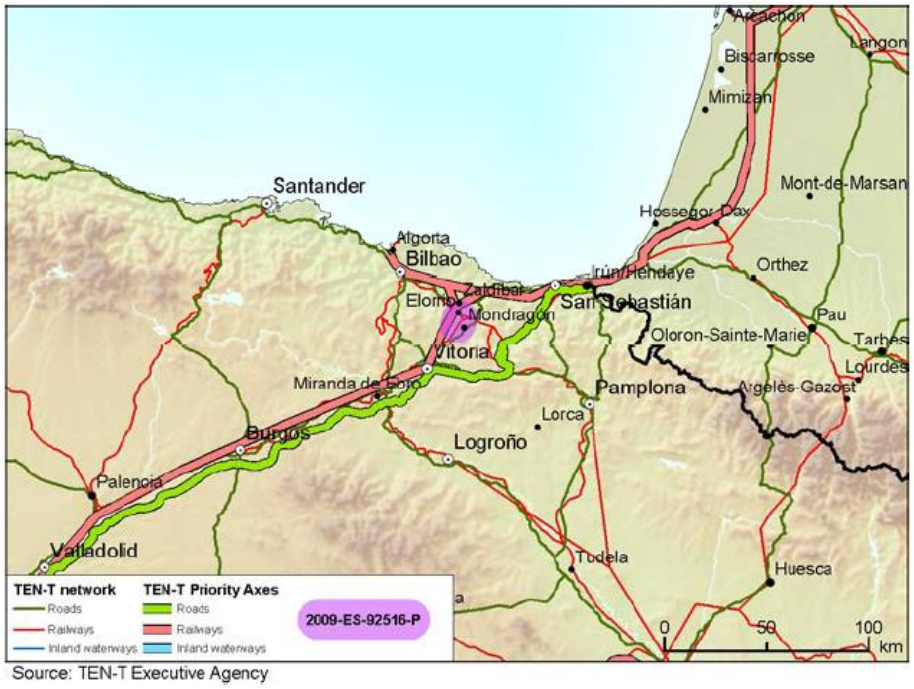


Source: TEN-T Executive Agency

Start date: January 2010
End date: December 2013

This project has been cancelled

2009-ES-92516-P: High speed railway line Paris-Madrid: section Mondragón-Elorrio



Source: TEN-T Executive Agency

Start date: May 2009
End date: December 2011

Completed Action

Beneficiary:

Administrador de Infraestructuras Ferroviarias (ADIF)

The project will address the construction of the railway section of Mondragón-Elorrio, which consists of three different works:

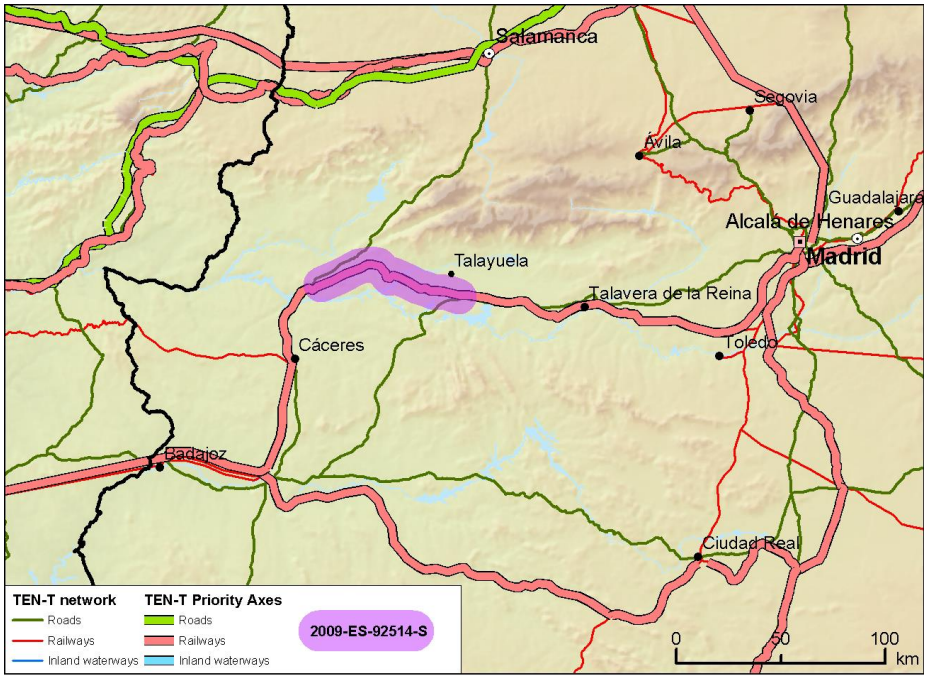
- Construction of 4.44 km of track bed, including 3.62 km of tunnels
- Construction of 0.32 km of viaducts
- And 0.50 km of track bed on surface.

The total cost of this project was 52.254.000 euros, while the EU financial support was 5.225.400 euros. The project was completed in December 2011.

2009-ES-92514-S: High speed railway line Madrid-Extremadura-Lisbon: studies and projects section Talayuela-Cáceres, phase II

The project performed the design study, including the definition of all the necessary technical work which goes before the construction, for an 81.6 km track bed along Madrid-Lisbon high speed line. Particularly the sections involved in this action were:

- Talayuela-Navalmoral de la Mata
- Navalmoral de la Mata-Casatejada
- Casatejada-Toril
- Toril-Río Tietar
- Río Tietar-Malpartida de Plasencia
- Malpartida de Plasencia-Estación de Plasencia/Fuentidueñas
- Estación de Plasencia/Fuentidueñas-Arroyo de la Charca
- Arroyo de la Charca-Grimaldo



Start date: May 2009
End date: December 2011

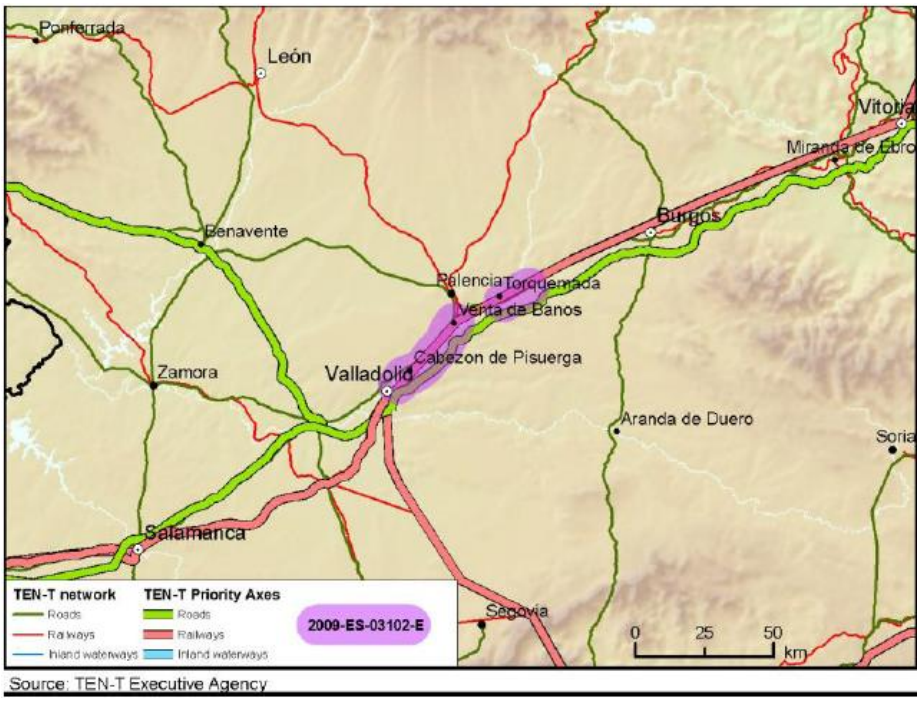
Completed Action

Beneficiary:

Administrador de Infraestructuras Ferroviarias (ADIF)

High speed line Valladolid-Burgos-Vitoria. Track bed works for sub-sections: Nudo Norte de Valladolid-Cabezón de Pisuerga, San Martín de Valvení-Nudo de Venta de Baños y Torquemeda-Quintana del Puente

2009-ES-03102-E (Part of Priority Project 3)



Start date: May 2009
End date: June 2012

Completed Action

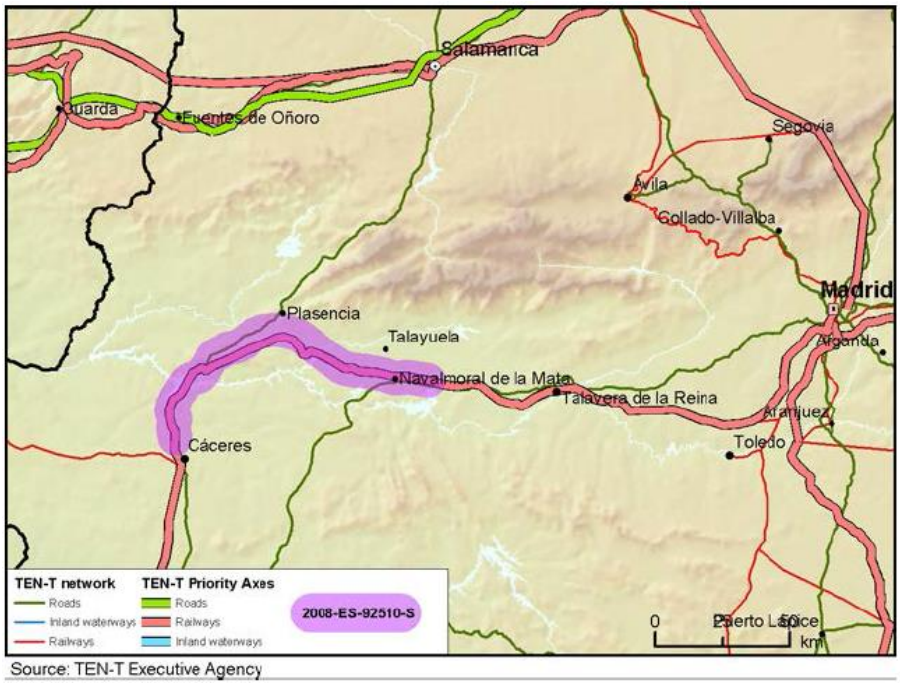
This action is part of Priority Project 3 (High-speed railway axis of south-west Europe) and comprises a key element for the corridor which connects the Madrid-Segovia-Valladolid high- speed line with the Basque country high-speed line and is focused on the track bed works on three different subsections:

- North Valladolid Link-Cabezón de Pisuerga
- San Martín de Valvení-Venta de Baños Link
- Torquemada-Quintana del Puente

Those subsections belong to the Valladolid-Burgos-Vitoria high-speed line, which has been designed to reach a maximum of speed of 350 km/h. The total cost of the project was 77.020.000 euros, while the EU financial aid was 15.404.000 euros. The action has already been completed.

Studies and projects for the development of the rail section Talayuela-Cáceres

2008-ES-92510-S (Part of Priority Project 3)



Start date: January 2008
End date: February 2010

Completed Action

The action was focused on two design studies within Madrid-Lisbon high speed line:

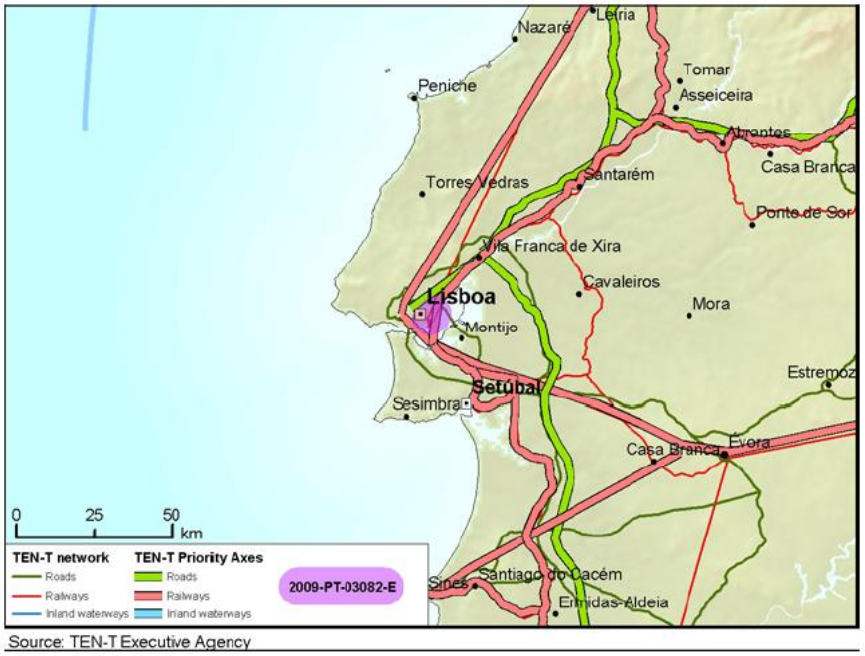
- The pre-design study for cartography and geotechnical studies of the Talayuela-Cáceres sub-section.
- The design studies of the sub-sections between Grimaldo and Cáceres

The completion of overall project will ensure faster travel times through the region both for passenger and freight rail transport, thus increasing the competitiveness of rail in relation to other transport modes

Preparatory works for the implementation of the connection between the third Tagus crossing and the Oriente-Lisbon station

2009-PT-03082-E (Part of Priority Project 3)

This project consists of preparatory works on the Belt and Northern railway lines between Areeiro and Sacavém in the Lisbon urban area due to the reformulation of the existing railway layout.



Start date: April 2010
End date: June 2011

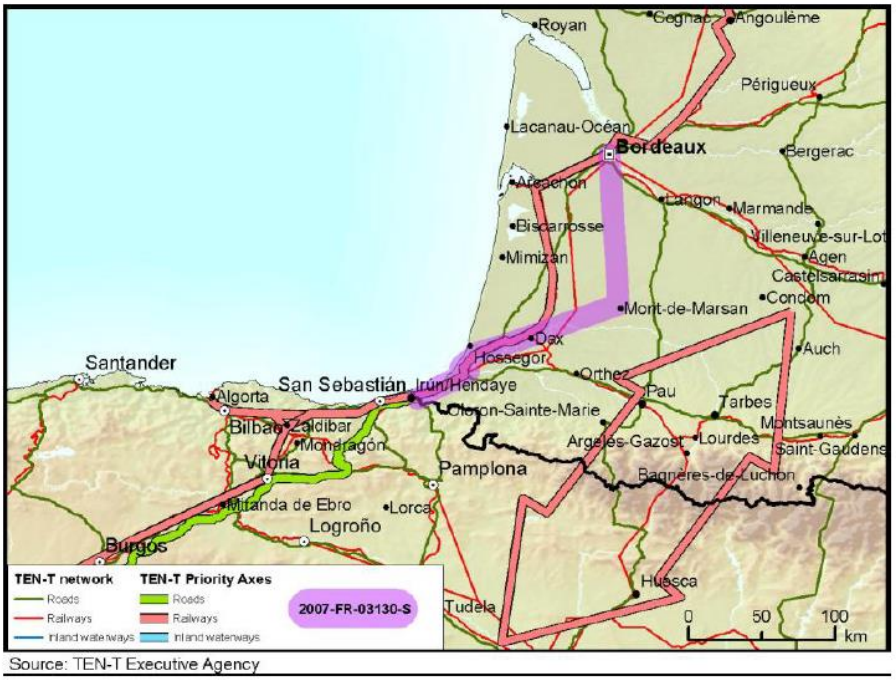
Completed Action

The works will contribute to the implementation of the Priority Project 3, the high-speed railway axis of southwest Europe, by facilitating the connection between the third Tagus river crossing and the Oriente railway station in Lisbon.

By bringing forward the works included in the project, the constraints to rail traffic caused by the construction of the high-speed line in Lisbon will be minimised.

High Speed Railway Line Paris-Madrid: Bordeaux-Spanish border

2007-FR-03130-S (Part of Priority Project 3)



Start date: January 2007
End date: September 2014

This project falls under the High Speed Railway Line Paris-Madrid (Atlantic branch of Priority Project 3) focusing on the section between Bordeaux and the Spanish border.

It consists of the preparation of studies for the construction of a two-track railway line to complete the existing Bordeaux-Irún line and ensure continuity in terms of both speed and capacity. This railway axis will eventually consist of four tracks in total - two tracks on existing lines plus two tracks on the new lines.

The studies will include the following two sections:

- Bordeaux-Dax (+/-155 km): new high speed line (320 km/h), mainly for passenger transport to the east of Landes
- Dax-Spanish border (+/-95 km): new line for mixed use (passengers/freight) to be connected to the future Spanish railway network ("Y Vasca").

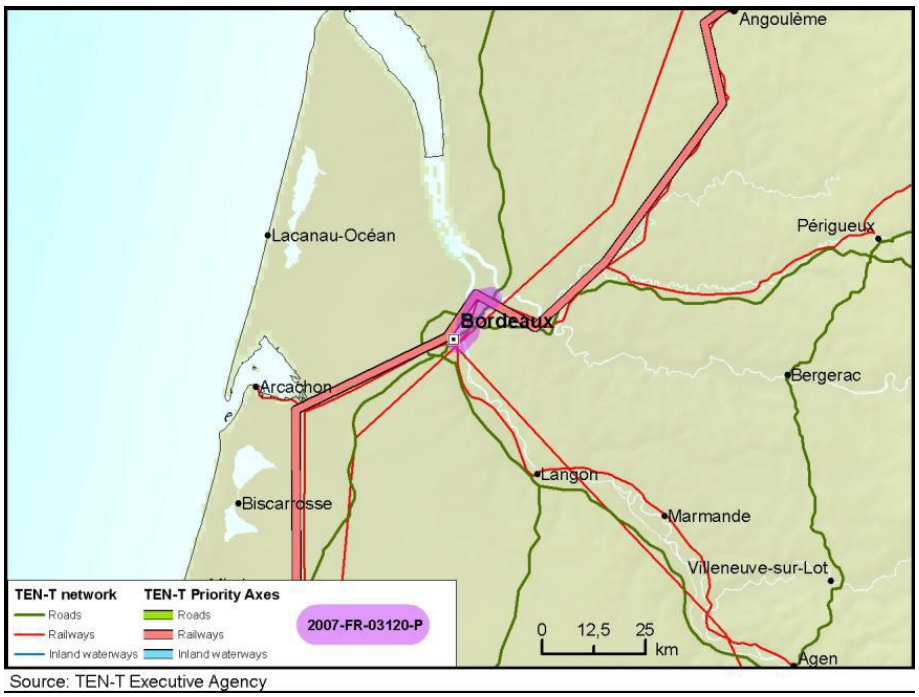
Activities also include the preparation of the public hearings, which include environmental studies, specific studies on compensation and the consultation of local bodies and population.

By the end of 2013, the studies for Bordeaux-Dax and Dax-Spanish border have been completed. Environmental studies and compensation measures prior to public hearings have been completed. The public hearing dossier has been finalised and is currently assessed by the ministerial inter-service consultation

RFF is the implementation body for this action.

High Speed Railway Line Paris-Madrid: Elimination of rail bottlenecks around Bordeaux

2007-FR-03120-P (Part of Priority Project 3)



Source: TEN-T Executive Agency

Start date: January 2007
End date: December 2015

This project forms part of the high Speed Railway Line Paris-Madrid (Atlantic branch of Priority Project 3) focusing on the Bordeaux railway hub. The hub is located on a strategic axis that links northern Europe to the Iberian Peninsula. The existing single track for each direction is insufficient to support the amount of traffic that passes through Bordeaux.

This project specifically aims to eliminate the rail bottlenecks around Bordeaux, mainly through the construction of two additional tracks (one for each direction). Activities covered by this project include:

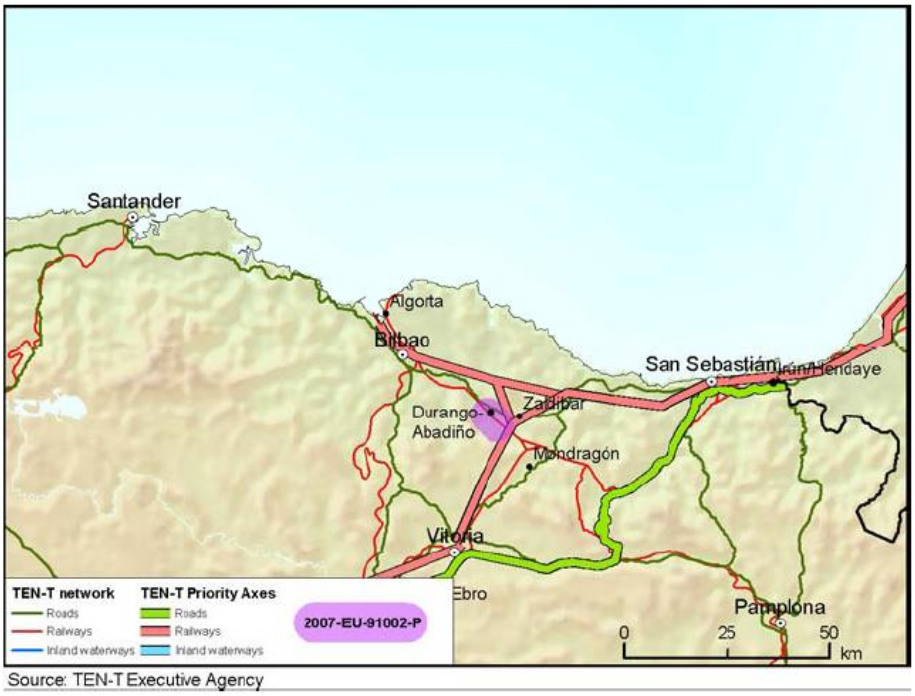
- works for the finalisation of four tracks between the Saint Jean station and the old station of Benauge (4x2 km);
- studies and works on the four tracks between the old station of Benauge and Cenon (4x3 km);
- studies related to the removal of two level crossings located between Cenon and the connection of Lagrave-Ambarès.

By the end of 2012, the progress of activities show that works have been completed for activity 1; preliminary studies have been validated, public enquiry declaration (DUP) obtained and land acquisition completed. Works on Cenon-Benauge section have started, civil works viaduct tender awarded some civil works lots completed in activity 2 and the preliminary design studies have been validated for activity 3.

HS railway line Paris-Madrid: section Abadiño-Durango

(2007-EU-91002-P)

The goal of the action is the construction of the track bed in the Abadiño-Durango section. This work will also include the Eguskiza and Mendigain tunnels and Untxilla and Mañaria viaducts.



Source: TEN-T Executive Agency

Start date: July 2007
End date: June 2011

Completed Action

Beneficiary:

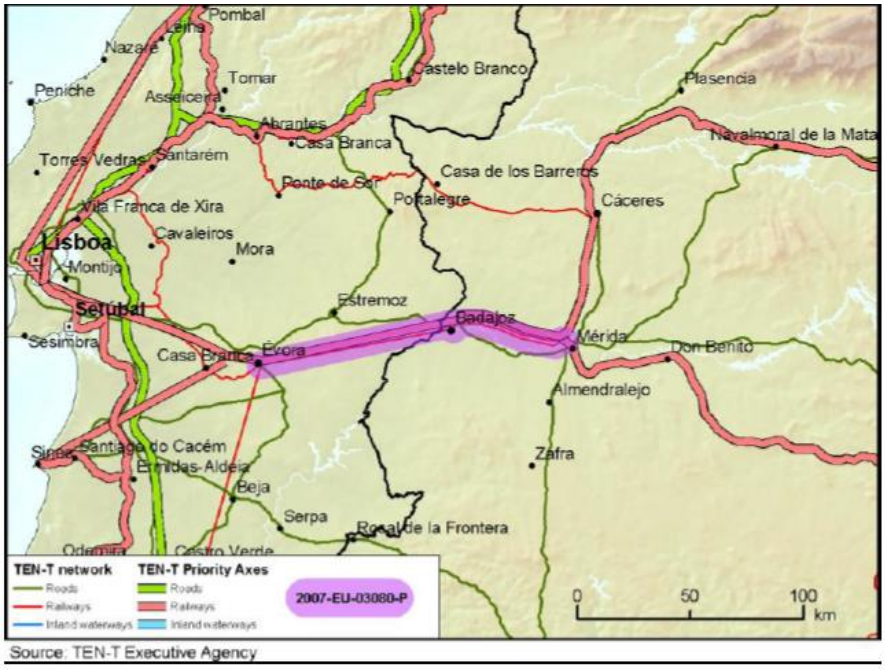
Administrador de Infraestructuras Ferroviarias (ADIF)

The installation of the international rail gauge will allow its full integration in the trans-European rail network and the possibility of mixed (passenger/freight) traffic use, contributing towards further integrating the Iberian peninsula in Europe, whilst improving the competitiveness of rail transport between Madrid and the cities located along the corridor (Valladolid, Burgos, Vitoria, Bilbao and San Sebastián). It also aims to substantially improve travel time along this line.

The total cost covered by this decision was €44,300,000, and the EU financial support of €4,430,000 (10%)

Studies and Works for the High-Speed Railway Axis of South-West Europe (PP3) - Lisbon-Madrid Axis: Cross-Border Section Évora-Mérida

2007-EU-03080-P (Part of Priority Project 3)



Start date: January 2007
End date: December 2015

Estimated end date of the Action:
31-12-2015[2]

This project consists of the design studies and works for the phased deployment of the high speed rail connection between Évora (Portugal) and Mérida (Spain). This cross border section is part of the High-Speed Railway Axis of southwest Europe between Lisbon and Madrid (Priority Project 3).

The studies and works to be carried out cover:

- Design studies for the sections Évora - Caia, Mérida-Badajoz and access to Mérida (technical documents for the construction of the rail bed, superstructure and other installations).
- Land acquisition works for the connection to the high voltage grid in the section Évora - Caia.
- Construction of the rail bed, superstructure and access to Mérida.
- Studies for the future international station.

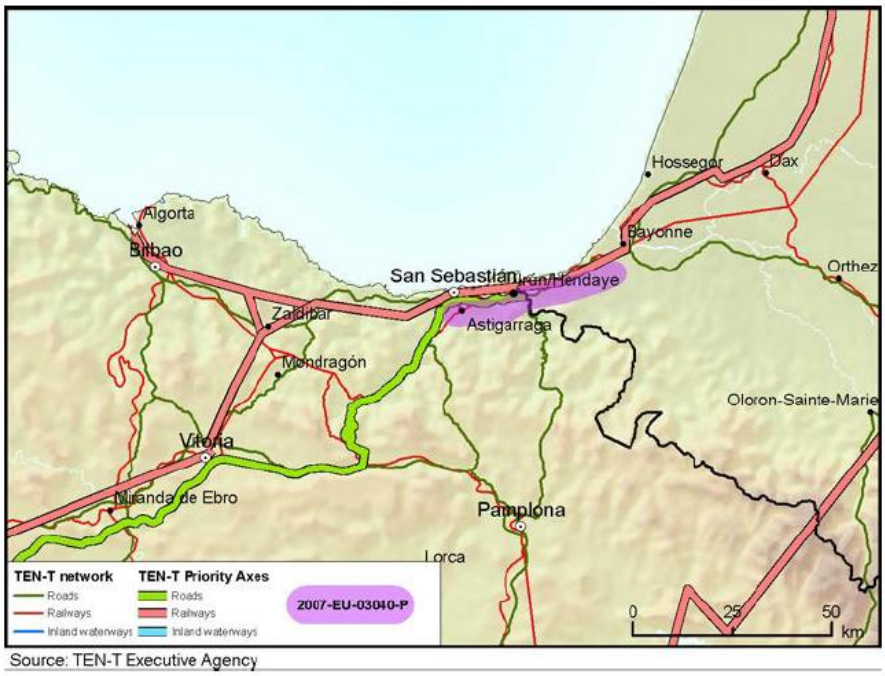
[2] The Spanish part is expected to be fully achieved by the 31st of December 2015.

By September of 2013, the studies for the sections Mérida-Badajoz and access to Merida have been started and are ongoing.

By April 2014, The Portuguese part of the project has not started pending environmental permit. The Spanish part of the project has started and is on-going.

High Speed Railway Line Paris-Madrid: Section Vitoria-Dax

2007-EU-03040-P (Part of Priority Project 3)



Start date: January 2008
End date: December 2015

Estimated end date of the Action:
31-12-2015

This project covers the studies-section San Sebastián - Bayonne and design studies and works-section Astigarraga - Irún:

- Studies and construction of a new high-speed line from Hernani-Astigarraga and further to San Sebastián;
- Studies and upgrading works of the existing line San Sebastián-Irún to ensure interoperability both in Iberian and UIC gauge, for conventional and high-speed traffic;
- Studies and upgrading works of the train stations in San Sebastián and in Irún.

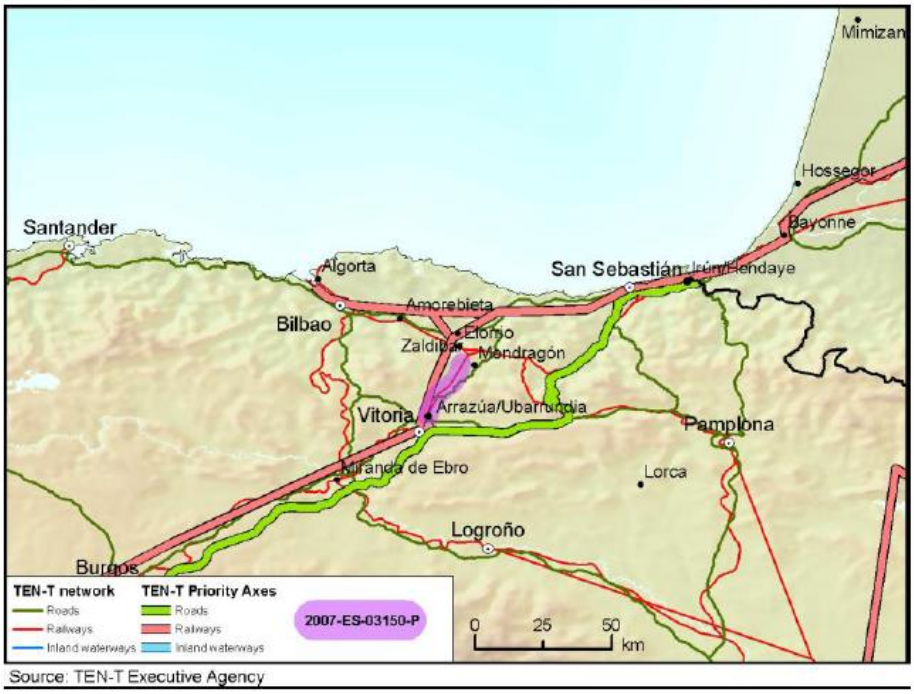
It is part of the High Speed Railway Line Paris-Madrid (Atlantic branch of Priority Project 3), focused on the French-Spanish cross-border section Vitoria - Dax.

By the end of 2010, all the preliminary studies common for France and Spain have been started and the pre-design studies for the international section have been tendered. The design platform studies for Spain have been started and are in progress.

By April 2014 the preliminary studies common for France and Spain have been completed. The pre-design studies for the international section are in progress, as well as the design platform studies for Spain. Works in San Sebastian-Irun have started.

High speed railway line Paris-Madrid: section Arrazua/Ubarrundia – Mondragón

2007-ES-03150-P (Part of Priority Project 3)



Start date: January 2007
End date: December 2015

Estimated end date of the Action:
31-12-2015

The action will focus on the construction of several high speed railway lines located in the Basque country. These high speed railway lines are:

- Arrazua/Ubarrundia-Legutiano
- Legutiano-Eskoriatza
- Eskoriatza-Aramaio
- Aramaio-Mondragón

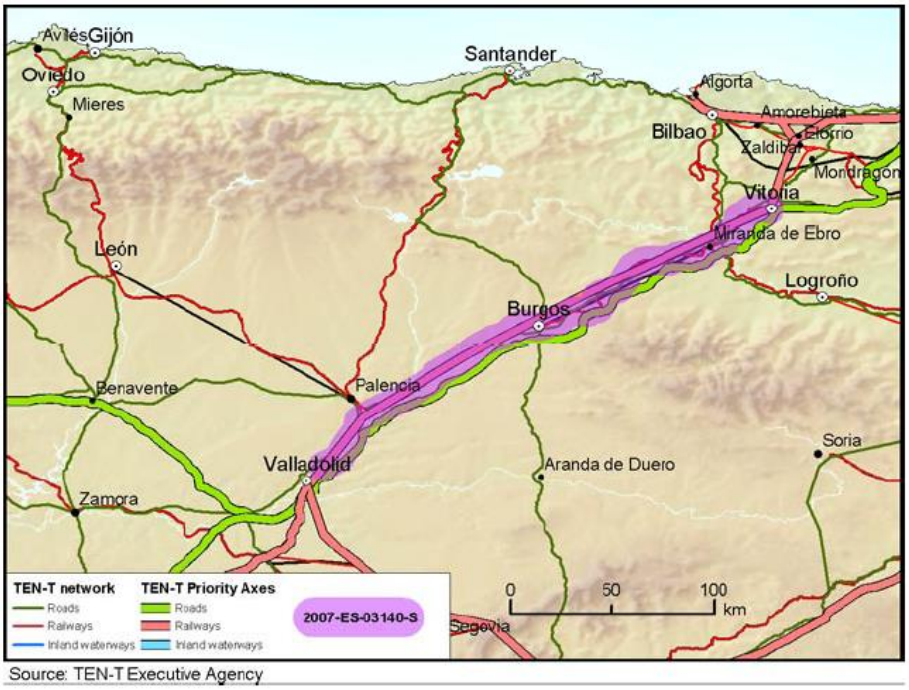
The works will include a series of viaducts and tunnels. Particularly out of the 24.1 km which makes the total length of the railway, 4.5 km are viaducts and 9.8 km are tunnels. The total cost of the project is 273.340.000 euros, while the EU financial aid is 26.759.986 euros.

This project will help improving the competitiveness of rail transport between Madrid and the cities located along the corridor (Valladolid, Burgos, Vitoria, Bilbao and San Sebastián). It also aims to substantially reduce travel time along this line.

Assessment by the end of 2012, show that all activities have started. The works on the section Arrazua/Ubarrundia-Legutiano have been completed. The works on the remaining sections and sub-sections are in progress

High Speed Railway Line Paris-Madrid: Valladolid-Burgos-Vitoria

2007-ES-03140-S (Part of Priority Project 3)



Start date: January 2007
End date: December 2015

Estimated end date of the Action:
31-12-2015

The project will focus on a series of preliminary and design studies involving the sections Valladolid-Burgos and Burgos-Vitoria, including:

- Cartography and geotechnical studies
- Studies for the platform design
- Studies for the track design
- Installation studies
- Vibration and acoustics studies

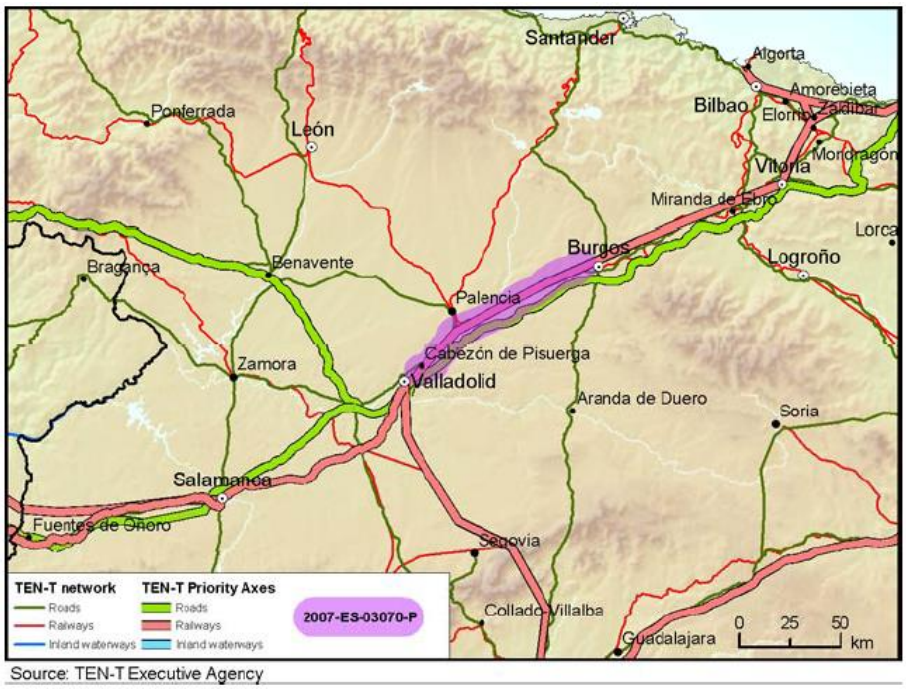
The total cost of the project is 29.300.000 euros while the EU financial support is 14.650.000 euros.

This project will contribute to improving the competitiveness of rail transport between Madrid and the cities located along this part of Priority Project 3 (Valladolid, Burgos, Vitoria, Bilbao and San Sebastián).

By the end of 2012, the cartographic and geotechnical studies have been finalised. All other studies have started and are in progress.

High speed railway line Paris-Madrid: Valladolid-Burgos

2007-ES-03070-P (Part of Priority Project 3)



Start date: January 2009
End date: December 2014

The goal of the action is the construction of 60 km of high speed railway in the Valladolid-Burgos line, which will contribute to advance in the Paris-Madrid high speed railway project. Particularly the action is focused on the last sections of the Valladolid-Burgos line:

- Cabezón de Pisuerga-San Martín de Valvení (3.5 km, including 2 km of tunnels)
- Nudo de Venta de Baños-Torquemada (12 km)
- Quintana del Puente-Villodrigo (11.1 km)
- Villodrigo-Villazopeque (10.4 km)
- Villazopeque-Estepar (11.5 km)
- Estepar-Burgos (11.5 km)

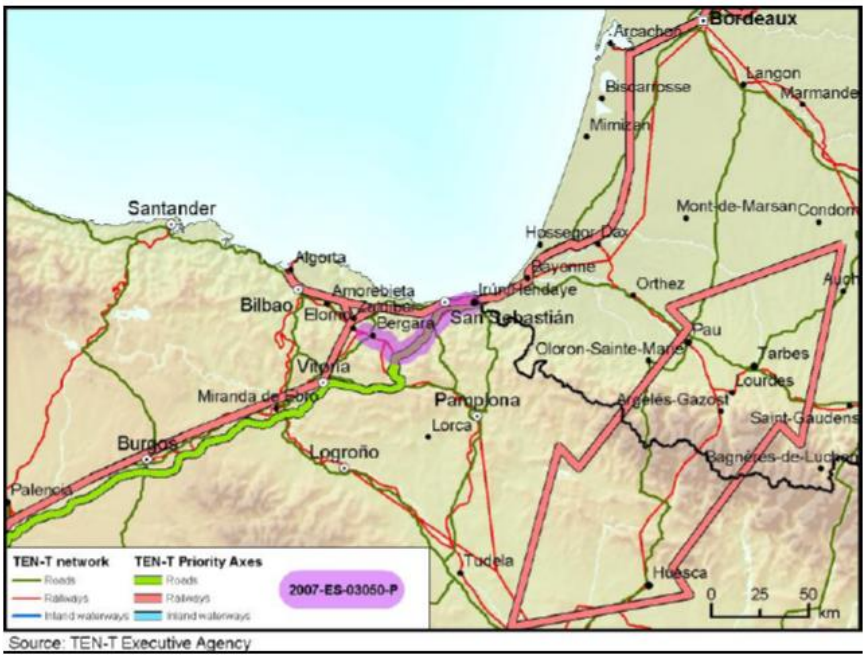
The total cost of the project is 219.298.000 euros, while the EU financial aid is a 24.999.972 euros

This project will contribute to improving the competitiveness of rail transport between Madrid and the cities located along this part of the Priority Project 3 (Valladolid, Burgos, Vitoria, Bilbao and San Sebastián).

By the end of 2012, works have started and are ongoing on all sub-sections. The excavation of the tunnel in the first sub-section has been finalized and minor works remain on the fourth.

High Speed Railway Line Paris-Madrid: New Railway Network Guipúzcoano

2007-ES-03050-P (Part of Priority Project 3)



Start date: January 2007
End date: December 2015

Estimated end date of the Action:
31-12-2015

This project aims to contribute to improving the rail transport services between Madrid and Bordeaux. It consists of the design studies and the follow up of construction of the new high speed railway line between Bergara and Hernani, located in the Basque country (66Km) and covering:

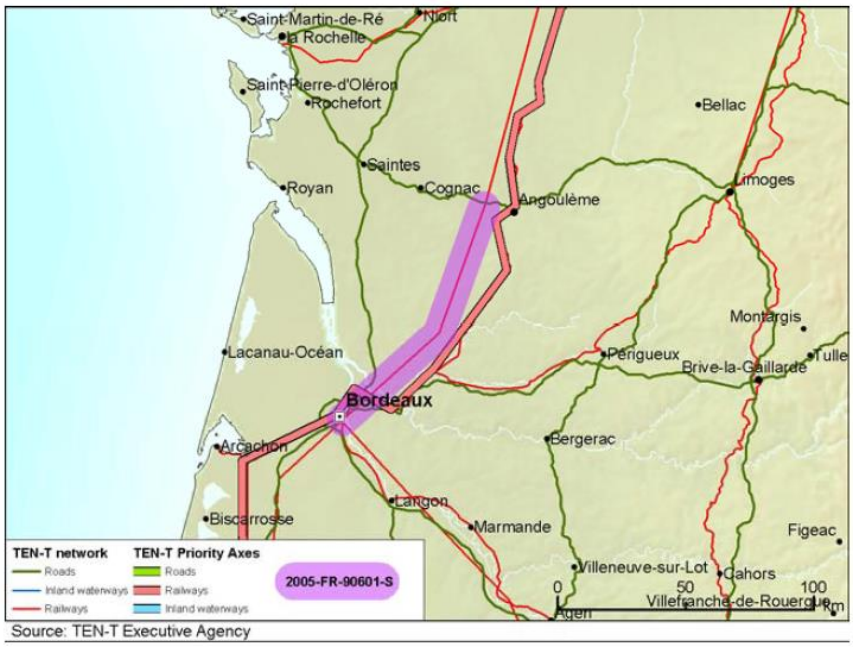
- West section (Bergara - Ezkio/Itsaso): 14km
- Central section (Ezkio - Itsaso - Tolosa): 20km
- East section (Tolosa - Hernani): 32km

It is part of the high speed railway line Paris-Madrid (Atlantic branch of Priority Project 3), focused on the station between Bergara and Hernani which is located in the Basque province of Guipúzcoano, close to the French border.
In this specific project, due to the mountainous landscape, the works include the construction of several viaducts, tunnels, embankments and ditches.

By the end of 2012, the design studies for all the sections have been completed. Works have started on all sub-sections and finalised on 2 sub-sections (Beasain Este and Ordizia-Itsasondo).

South Europe Atlantic high speed line - Angoulême-Bordeaux section - Studies

2005-FR-90601-S (Part of Priority Project 3)



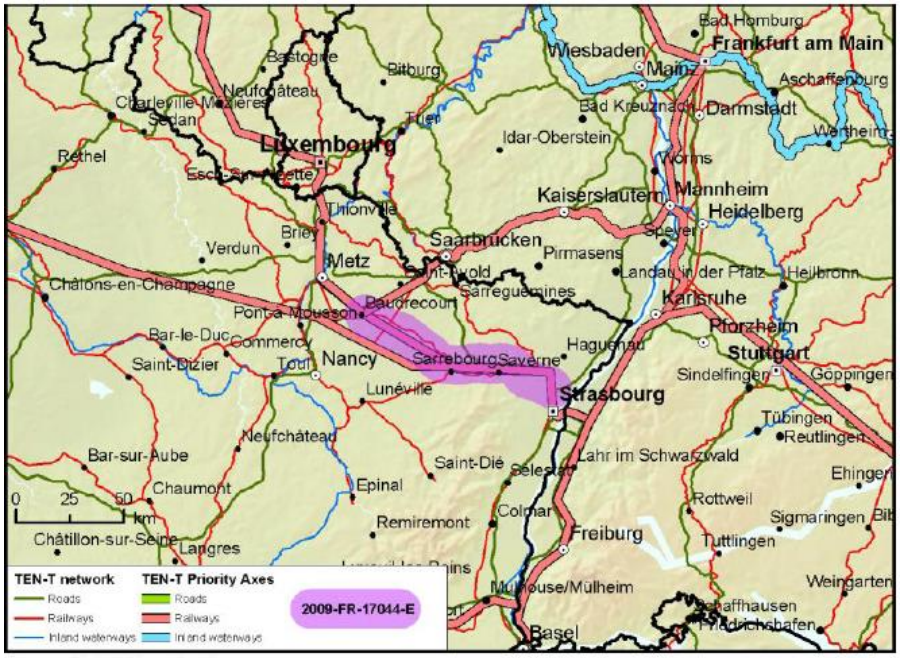
Start date: June 2005
End date: December 2009
This project has been completed

The project, part of Priority Project 3 (High-speed rail line in the southwest of Europe) concerns studies in view of the construction of a new high speed rail line between Tours and Bordeaux (300 km long, dedicated to passenger traffic).

The specific studies to be performed concern the preliminary investigations (topography, geotechnical) to prepare the launch of administrative procedures (water law, land development, archeology ...). This will enable to initiate the land acquisition and prepare the consultation for the concession of the line.

New railway high speed line "LGV Est" Second phase: section Baudrecourt- Vendenheim

2007-FR-17210-P (Part of Priority Project 17)
2009-FR-17044-E (Part of Priority Project 17)

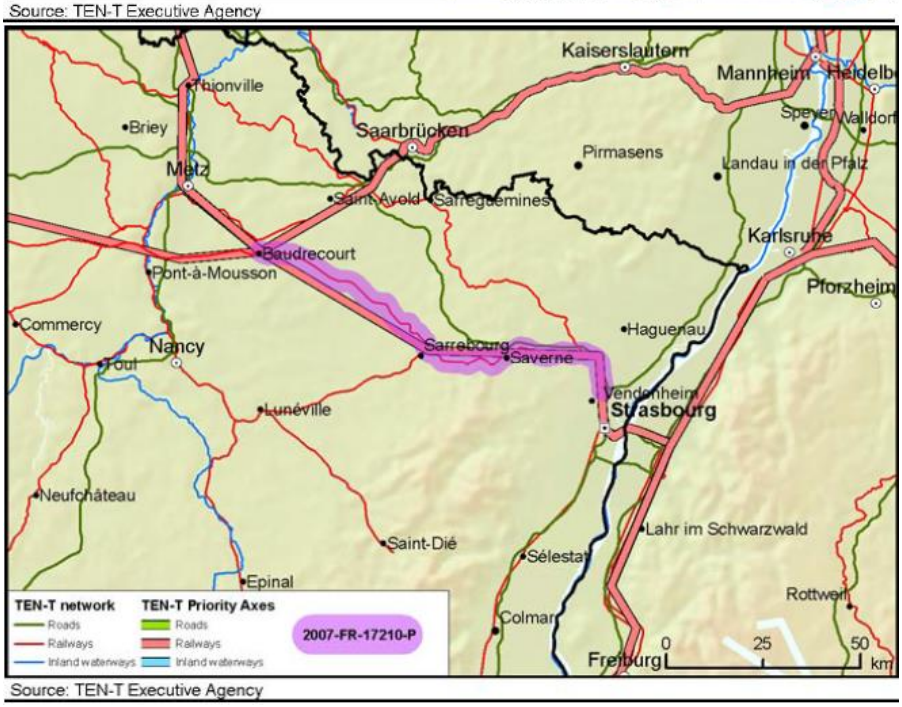


Source: TEN-T Executive Agency

Start date: January 2007
End date: December 2012

Completed Action

Implementing body: Réseau Ferré de France



Source: TEN-T Executive Agency

Start date: January 2010
End date: December 2012

Completed Action

Implementing body: Réseau Ferré de France

The aim of the "LGV Est" high speed railway line was to improve links between Paris and the main cities in eastern France, as well as improve connections with Luxembourg and Germany. The first phase of the project (part of Priority Project 4, High-speed railway axis east) linked Vaires-sur-Marne (Ile-de France) to Baudrecourt (Moselle) and reduced the travel time between Paris and Strasbourg to 2h20.

This project covers the second phase of the "LGV Est" (part of Priority Project 17, Railway axis Paris-Strasbourg-Stuttgart-Wien-Bratislava), which includes 106 km of high speed rail line between Baudrecourt and Vendenheim (Bas Rhin). This will further reduce travel times (Paris-Strasbourg to 1h50), develop connections with Germany and Switzerland and confirm eastern France's place in the heart of the European high speed railway network.

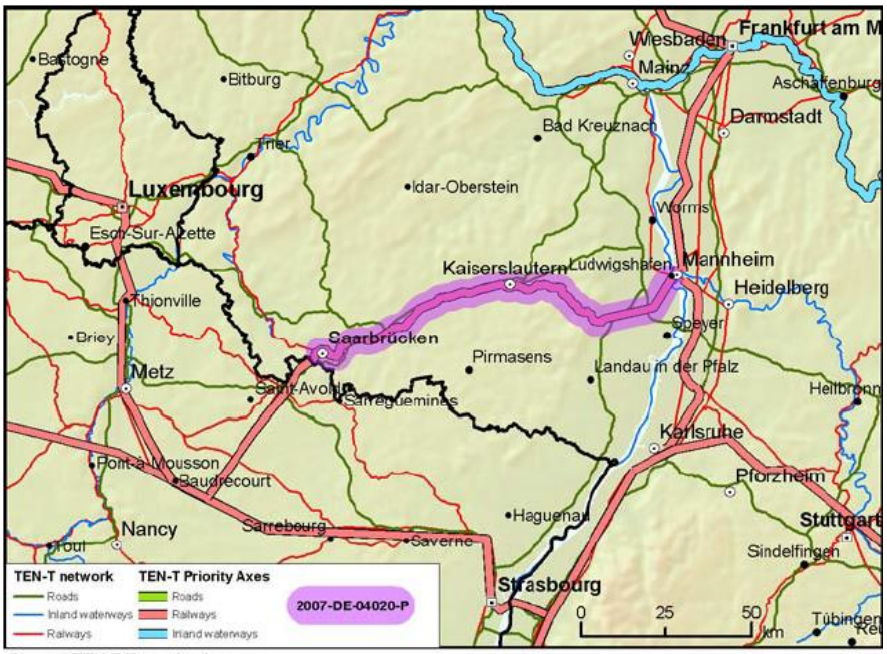
Activities covered by the funding decision have include: general earthworks, bridges and tunnels (including the 4 km long Saverne Tunnel under the Vosges), re-connecting road and other communications links cut by the line, drainage and hydraulics, other engineering work on the line and associated project owner costs.

The second phase of "LGV Est" was also supported by TEN-T funds through project 2009-FR-17210-P, which covered activities as design studies, land acquisition, environmental studies and preparatory works.

The section Metz – Strasbourg is a common to the Atlantic and NSD Med Corridors.

High speed line east – Vaires-Baudrecourt section: new maintenance facility at Ourcq and new stations

2005-FR-401b-P (Part of Priority Project 17)



Source: TEN-T Executive Agency

Start date: January 2005
End date: December 2006

Complete action

The global project (East European High Speed railway) is the French part of the Priority Project 17 (Paris-Strasbourg-Stuttgart-Wien-Bratislava). This Action aims more specifically at: 1- Carrying out the redevelopment of the site of Ourcq to create a new maintenance facility for trains

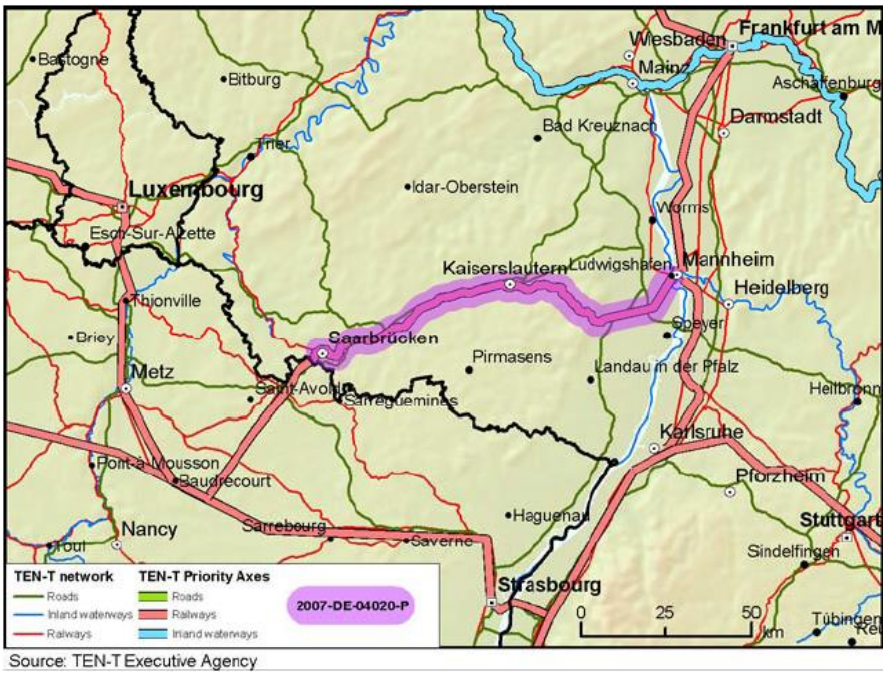
2- Conducting detailed preliminary design works, preparing building permits files as well as procurement files for the construction of 3 new train stations: Champagne-Ardennes (in Bezannes), Lorraine TGV (in Louvigny), and Meuse TGV.

These activities are complementary to the ones related to the construction of the new high speed railway itself, carried out by Réseau Ferré de France, and benefiting of a separate EU contribution.

Paris – Strasbourg is one of the branches of the Atlantic corridor, a shared section to the NSM corridor.

Works for the construction of the high speed rail line section between Saarbrücken and Ludwigshafen

2007-DE-04020-P (Part of Priority Project 4)



Source: TEN-T Executive Agency

Start date: January 2007
End date: December 2013

Estimated end date of the Action: 31/12/2018

This project aims at reducing an important bottleneck on the rail section between Saarbrücken at the Franco-German border and Ludwigshafen. It is part of the Priority Project 4, the east-west European railway axis from Paris to Budapest, via Eastern France and further to Southwest Germany.
Works will upgrade this rail section in order to enable travelling speed up to 200 km/h. They primarily constitute of track engineering tasks such as carrying out refined line alignment, upgrading underground tracks, improving the clearance of level crossings and widening of bridges.
At the same time, the track's wiring and control and communications technologies will be renewed - including equipment of the track with ETCS (European Traffic Control System) technology along the entire rail section

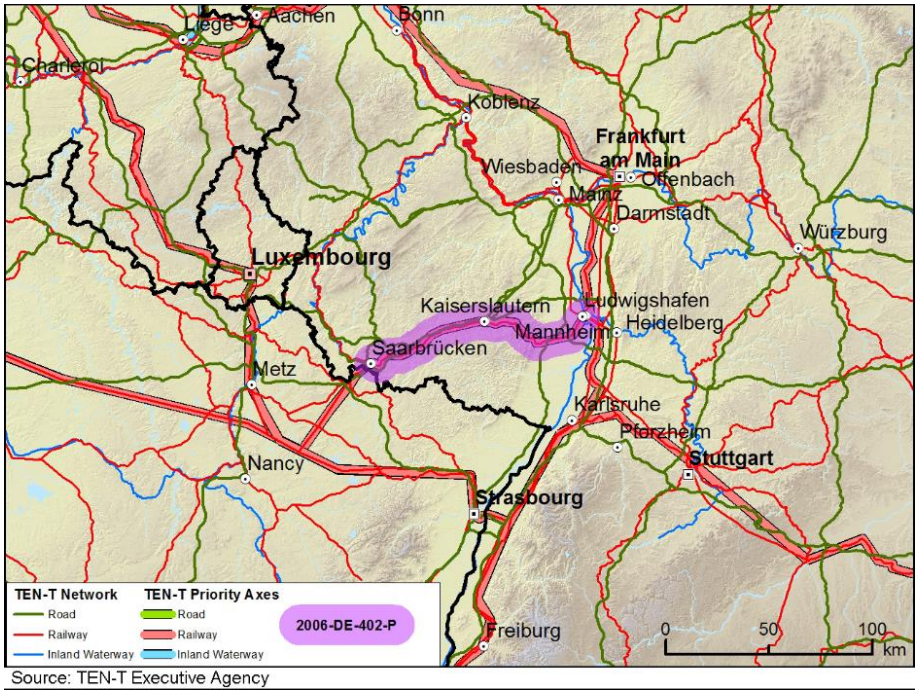
By the end of 2012, the equipment works of the track with electrodynamics gearshift, and the works for upgrading the high-speed rail section between Kirkel and Kaiserslautern have been completed. The high-speed upgrading works for the underground tracks between Neustadt, Böhl and Iggelheim are in the planning phase. The planning of the three tracks widening between Limburgerhof and Ludwigshafen-Mundenheim has been completed and the works started. Noise protection measures are being implemented for this section. The works for the installation of ETCS technology along the Saarbrücken-Ludwigshafen section have started.

Activities planned for 2014 include the execution of underground upgrading Neustadt - Bohl / Iggelheim and execution of the 3-track expansion between Limburgerhof and Ludwigshafen-Mundenheim (1st Stage), continuation and completion of mitigation

measures (active and passive), continuation of works for the installation of ETCS technology along the Saarbrücken-Ludwigshafen section.

Railway link Paris-East-France-South-West-Germany, Upgrade of the Ludwigshafen-Saarbrücken section

2006-DE-402-P (Part of priority project 4)



Source: TEN-T Executive Agency

Start date: January 2006
End date: October 2008

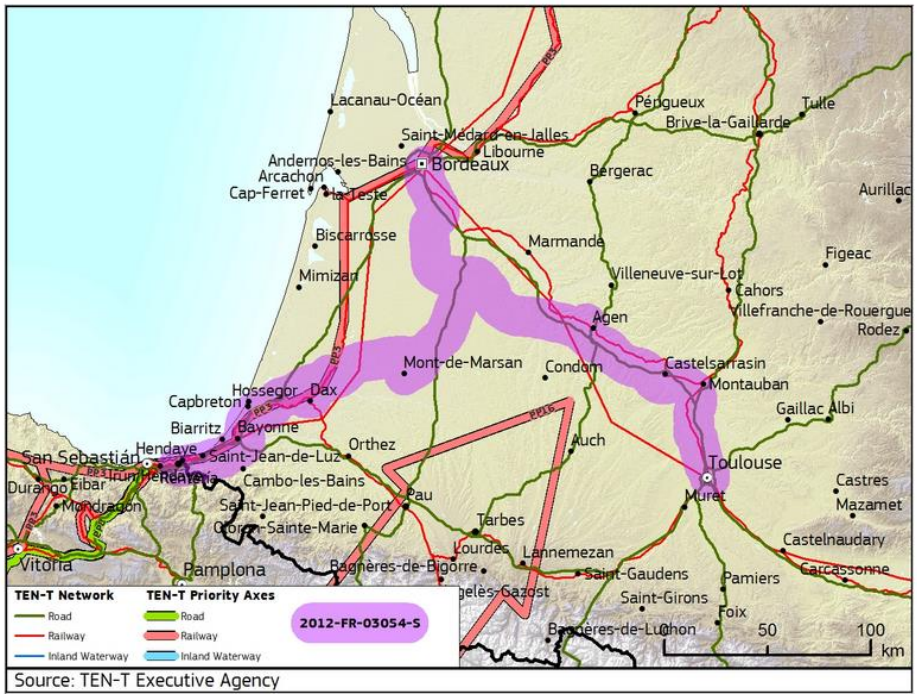
Completed Action

Implementing body: Deutsche Bahn Netz AG

The works aimed at increasing the maximum speed up to 200 km/h on a number of sections by improving the alignment and underground conditions of the railway line. They also include the renewing of the communication and security technologies as well as the catenary. Civil infrastructure elements such as bridges and drainage have been adapted accordingly.

Grand Projet du Sud-Ouest – Bordeaux-Spain

2012-FR-03054-S (Part of Priority Project 3)



Start date: January 2013

End date: December 2015

Located on Priority Project 3 (High-speed railway axis of southwest Europe), the Action covers studies on the Bordeaux-Spanish border section. Foreseen activities include:

- technical design studies;
- complementary environmental studies;
- preparation and management of the public interest enquiry phase.

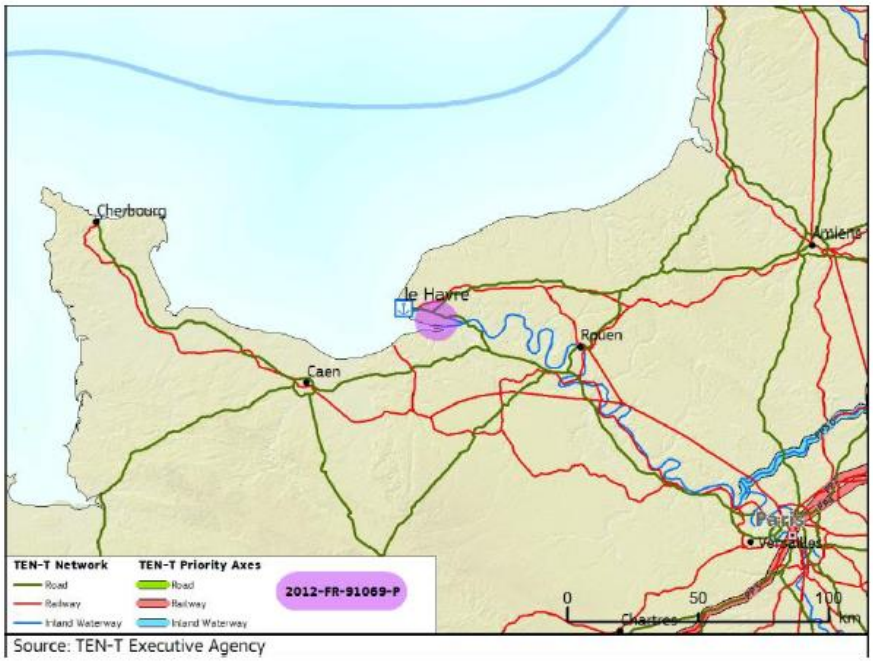
The action is designed to obtain the public interest declaration (DUP), and is therefore a key stage in the project before its implementation.

The main Beneficiary is the Ministère de l'écologie, du développement durable, et de l'énergie and the Implementing body is the Réseau Ferré de France.

Rail and river services for the Havre multimodal site

2012-FR-91069-P

The Action is part of a global project which concerns the development of a multimodal platform - industrial collection / distribution system - for the port of Le Havre, designed to develop the performance of mass overland transport modes of containers in order to increase their modal share and expand the hinterland of the port.



Start date: March 2013

End date: December 2014

The multimodal project, which covers an area of 60 hectares, will increase the productivity of the transport chain for rail and waterway modes in Le Havre.

The Action aims to connect the multimodal terminal

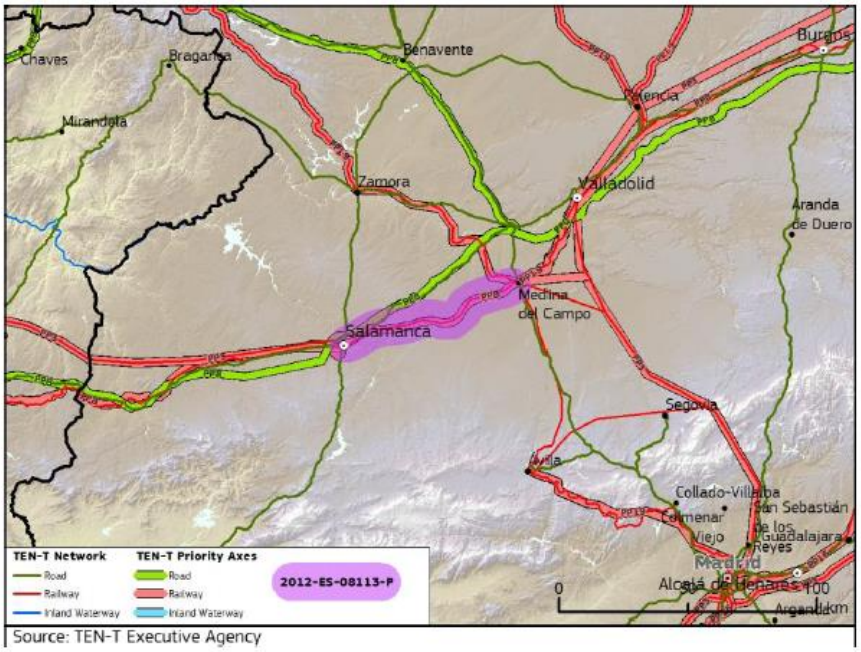
- to the port rail network, and thus to the national rail network, by electrified rail link accepting trains up to 1000 meters in length.
- to the large gauge waterway system by a quay capable of simultaneously berthing two pushed convoys 200 m long (5000 tons).

The multimodal platform will provide companies based on the port area and maritime terminals with the delivery of containers.

Both the Beneficiary and Implementing body tasks are committed to the same entity: Grand Port Maritime Le Havre.

Electrical facilities for Medina del Campo- Salamanca section. Railway line Medina del Campo-Salamanca-Fuentes de Oñoro

2012-ES-08113-P (Part of Priority Project 8)



Start date: February 2013

End date: December 2015

The Action consists of works for the implementation of 25 kV electrification, energy facilities and services on the 71 km-long Medina del Campo-Salamanca section, belonging to the Salamanca-Portuguese border-Lisbon conventional railway line, part of PP8 (Multimodal axis Portugal/Spain-rest of Europe).

The Action contributes to the implementation of PP8 by reducing travel times of passenger and freight services, minimizing the environmental impact of the corridor and strengthening the territorial cohesion in Southwest Europe. These upgrading works will allow the traffic of interoperable trains, contributing to the interoperability with the high speed rail line Madrid-Valladolid-Galicia (Atlantic Branch of PP19) and the high speed rail line Madrid–Valladolid–País Vasco–Frontera Francesa (Atlantic Branch of PP3).

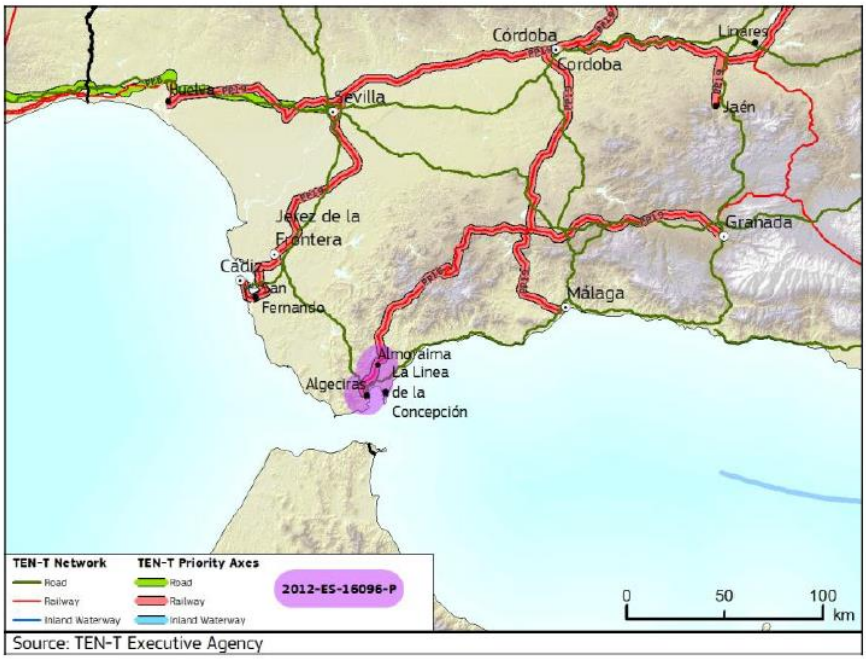
Both the Beneficiary and Implementing body tasks are committed to the same entity: Administrador de Infraestructuras Ferroviarias (ADIF).

Track bed works, signalling and telecommunication facilities: Section Pk 3,1 to Pk 6,8. San Roque Mercancías. Railway line Bobadilla-Algeciras

2012-ES-16096-P (Part of Priority Project 16)

The Action consists of track bed works, signalling and telecommunications facilities in the section from the pk 3.1 to the pk 6.8 San Roque Mercancías, belonging to the conventional Bobadilla-Algeciras line, part of Priority Project 16 (Freight railway axis Sines/Algeciras-Madrid-Paris). The works include inter alia the: i) complete renovation of the existing single track in Iberian gauge, by laying down polyvalent sleepers; ii) installation of a Centralised Traffic Control (CTC) system; iii) construction of small variants and rail side track; iv) curve corrections and embankment stabilisation, v)

reduction of the number of level crossings and v) power supply to equipment and facilities.



Start date: January 2013

End date: December 2015 (delayed)

The Action contributes to increase the capacity of the line Bobadilla-Algeciras, improves its passenger and freight traffic conditions, in particular in the rail access to the port of Algeciras. Furthermore, it contributes to the implementation of PP16 by enhancing the competitiveness of the rail mode in the connections between the cities along the corridor Algeciras/Ronda/Bobadilla/Granada/Madrid, minimizing the environmental impact of the corridor and strengthening the territorial cohesion in Southwest Europe.

Both the Beneficiary and Implementing body tasks are committed to the same entity: Administrador de Infraestructuras Ferroviarias (ADIF).

The section Algeciras – Madrid is a shared section between Atlantic and Mediterranean corridors.

As from mid-2014, the works has not started and the project will be delayed.

Elimination of railway bottlenecks-freight services (Serantes Tunnel, Port of Bilbao)

Project 2006-ES-GR-1007-P

The project goal was to construct a 4 km long tunnel under the Serantes Mountain, in order to facilitate freight access to the Port of Bilbao.

Additionally, an electric substation and a power line which connects to the electrical company's distribution center were also constructed.

The project was divided in two main activities:

- Tunnel: refers to the tunnel excavation works.

- Structures: refers to the construction of structures next to the other side (port side) of the tunnel, including an underpass beneath the railway line Bilbao-Musquiz and a false tunnel in the Ortuella area.

Figure 43. Overview of Project 2006-ES-GR-1007-P

Source: Spanish Ministry of Fomento

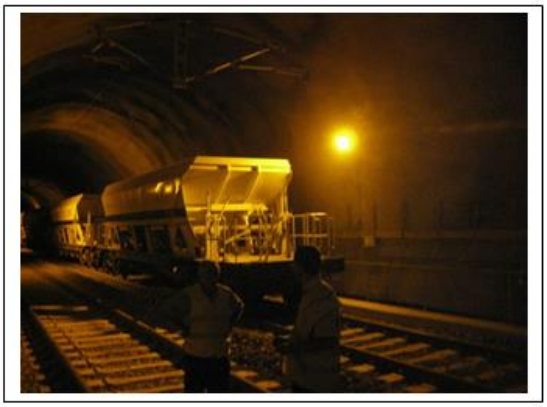
More specifically, the action covered the following activities, as it can be observed on the pictures of next page:

- Excavation
- Support of tunnel, coating and waterproofing
- Structures
- False tunnels and other works
- Earth movement
- Tracks, electrification and installations
- Expropriation
- Technical assistance for the control and safety of the works
- Other

Figure 44. Serantes Tunnel

Port side: false tunnel and entrance to the tunnel

Inside the false tunnel. Please note that the catenaries have not yet been put in place.



Inside the tunnel. The excavation and lining is fully complete as is the coating, waterproofing and drainage.

Ortuella side. The tunnel's exit is complete, although it has been temporarily closed for safety reasons.

Source: TEN-T

The majority of the works were completed by the end of 2009 and TEN-T officers were able to confirm through their on-site visit on September 2009 that the objectives of this project were achieved.

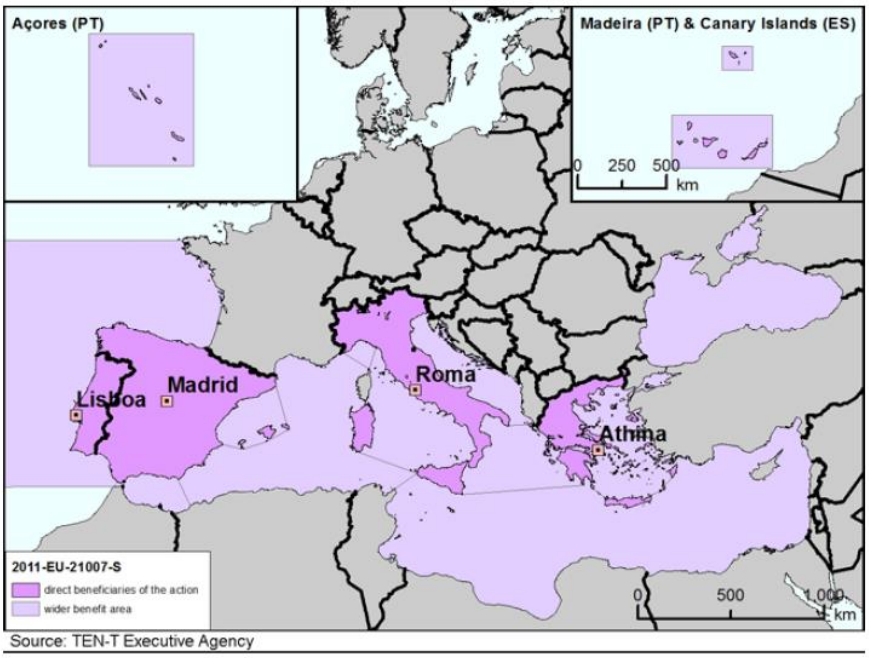
Motorways of the Sea projects

COSTA (CO2 & Other Ship Transport emissions Abatement through LNG)

2011-EU-21007-S (Part of Priority Project 21)

The COSTA project developed structuring conditions for the use of LNG in the Mediterranean, Atlantic and Black Sea. A Master plan for the short sea shipping

maritime transport between the Mediterranean and the Atlantic, as well as for the vessels for the deep sea cruises in the North Atlantic between the Azores and Madeira islands is developed.



Start date: February 2012

End date: April 2014

The motorways of the sea sustainability will be supported in the future requirements concerning the annex VI from the MARPOL convention - Reducing the emissions of CO2, NOx and SOx together with the green corridors and the utilization of LNG as maritime fuel. Additionally it will contribute for the use of new technologies and systems to promote the highways of the sea efficiency.

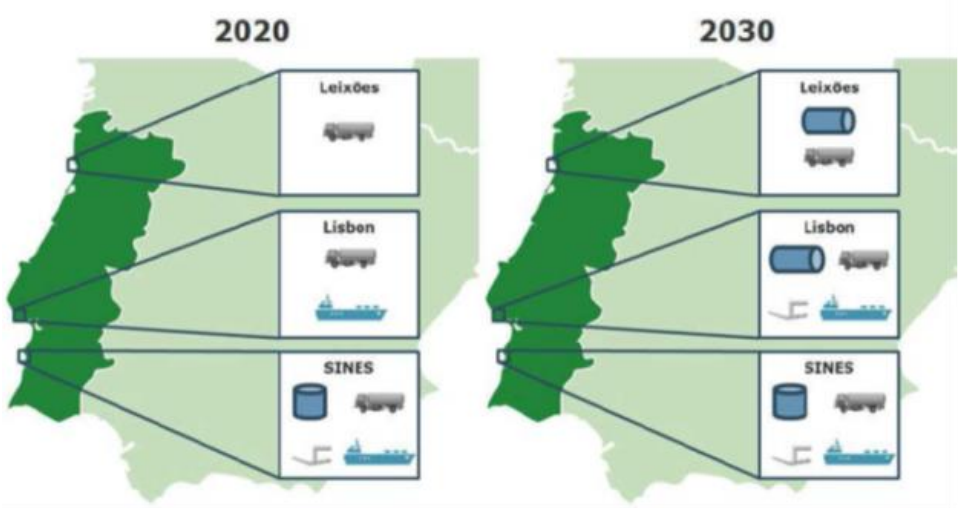
The development of a LNG master plan has clearly identified, at the level of the basins from the Mediterranean, Black Sea and North Atlantic (reasoning for the Azores and Madeira Islands involvement), that it is outmost importance to develop the scenarios for 2020 and 2030. Whereas, taking into account the location of the Azores and Madeira ports they could benefit from a close collaboration to create a complete LNG infrastructure network benefitting the Atlantic corridor ports.

In the Azores it will be necessary, until 2030, to acquire an intermediate terminal, truck-to-ship bunkering quay, LNG cargo vessel to load and LNG terminal to perform ship-to-ship bunkering.

In the Madeira Island the LNG supply for electricity production is now done with containers. Thus if strategic decision is taken to construct an LNG intermediate terminal and regas plant for electricity production for domestic/industrial use, then the adaptations to make it suitable for bunkering of vessels can be quite straightforward.

Portugal together with Italy (ccordinator), Spain and Greece are partners in the COSTA project.

Proposed components based on forecasted LNG demand and required bunker infrastructure in Portugal were assessed as depicted in the figures below



		Leixões	Lisbon	Sines	Madeira	Azores
2020	Low	• No bunker vessel or feeder vessel • No storage in port	• Medium bunker/feeder vessel (1,500-7,000 m³) shared with port of Sines (loads in the port of Sines) • No storage	• Medium bunker/feeder vessel (1,500-7,000 m³) shared with port of Sines (loads in the port of Sines) • Import terminal available	• No bunker vessel or feeder vessel (no storage in port)	• No bunker vessel or feeder vessel (no storage in port)
	High	• No bunker vessel or feeder vessel	• Medium bunker/feeder vessel (1,500-7,000 m³) shared with port of Sines (loads in the port of Sines) • Potential small scale storage in port	• Medium bunker/feeder vessel (1,500-7,000 m³) shared with port of Sines (loads in the port of Sines) • Import terminal available	• Small bunker vessel (<1,500 m³) • Small scale or intermediate terminal (supply by feeder vessel from Sines)	• Small bunker vessel (<1,500 m³) • Small scale or intermediate terminal (supply by feeder vessel from Sines)
2030	Low	• No bunker vessel or feeder vessel	• Medium bunker/feeder vessel (1,500-7,000 m³) shared with port of Sines (loads in the port of Sines) • Potential dedicated bunker vessel • Intermediate storage in port	• Medium bunker/feeder vessel (1,500-7,000 m³) shared with port of Sines (loads in the port of Sines) • Intermediate storage in port	• Small bunker vessel (<1,500 m³) • Intermediate terminal (supply by feeder vessel from Sines)	• Bunker vessel (size dependent on bunker ambitions w.r.t deepsea vessels) • Intermediate terminal (supply by feeder vessel from Sines)
	High	• Bunker vessel or feeder vessel • Small scale storage in port	• Dedicated bunker vessel (1,500-7,000 m³) • Intermediate storage in port	• Feeder vessel supplying other ports in the area • Dedicated bunker vessel (1,500-7,000 m³) • Intermediate storage in port	• Small bunker vessel (<1,500 m³) • Intermediate terminal (supply by feeder vessel from Sines)	• Bunker vessel (size dependent on bunker ambitions w.r.t deepsea vessels) • Intermediate terminal (supply by feeder vessel from Sines)

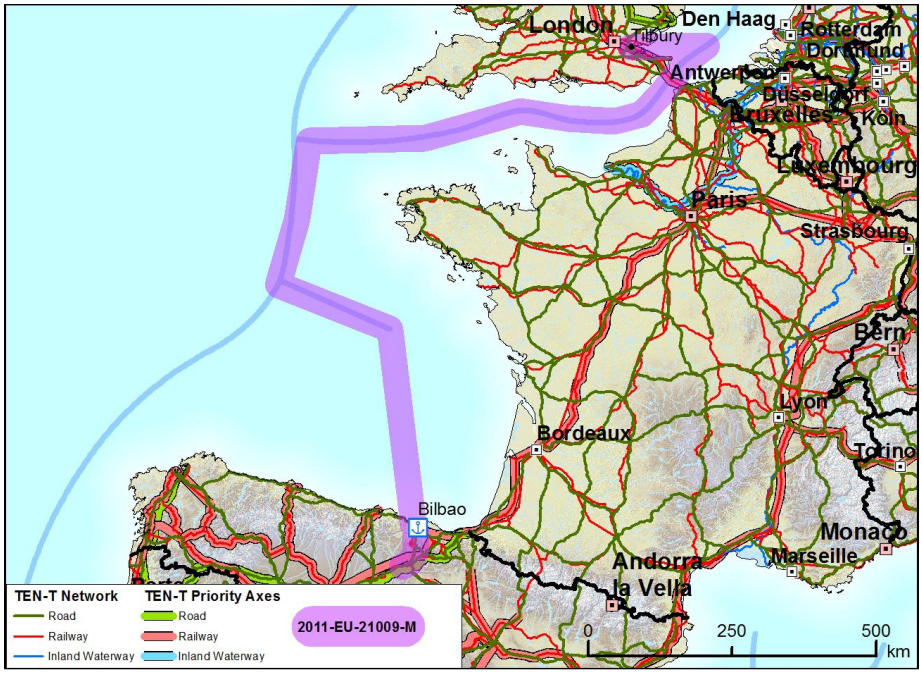
Intermodal corridor from Bilbao

(2011-EU-21009-M IBUK)

The goal of this project is to enhance the capacity of the Motorways of the Sea (MoS) along a corridor from the Iberian Peninsula to the United Kingdom.

For this purpose the project will have a strong focus on improving the links of multimodal transport as well as ensuring that the sea route from Bilbao to Tilbury has the necessary infrastructure and a suitable information technology system to handle the projected freight volumes.

The European Union financial contribution is 7.299.000 euros.



Source: TEN-T Executive Agency

Start date: October 2011
End date: December 2014

Beneficiaries
Port of Tilbury (London) Ltd

Port of Bilbao Authority

"IBUK" Intermodal Corridor focus on:

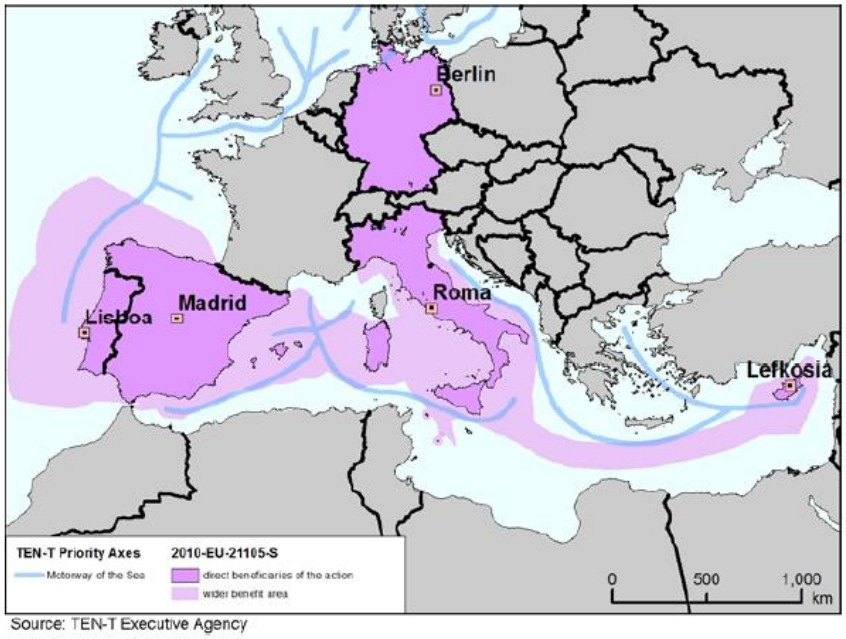
- **Rail infrastructure for a new Port-Railway logistics terminal in El Prado, Spain**
- Infrastructure at the Port of Tilbury to ensure efficient handling of freight
- **The development of an innovative Information Technology system, the "Intermodal Corridor Community System**

By the end of 2012 (date of last assessment), some delays were noticed in the infrastructure activities, whereas the IT pilot activity is progressing as planned. The project is expected to be completed by December 2014.

MIELE (Multimodal interoperability of e-services for the logistics and environmental sustainability)

2010-EU-21105-S (Part of Priority Project 21)

The MIELE project aims at developing e-services for the multimodal interoperability towards the logistics and environmental sustainability, with a strong focus on the maritime sector especially on the freight transport for the existent connections and in the newer ones.



Source: TEN-T Executive Agency

Starting date: September 2010

This project has achieve its **end in December 2013**,

The project's global objective is to develop a pilot system based on the European Commission communications and implementing a community acquis (existent or ongoing) in the area of transport facilitation, namely the simplification and facilitation of the administrative procedures for vessels that operates in the European Ports.

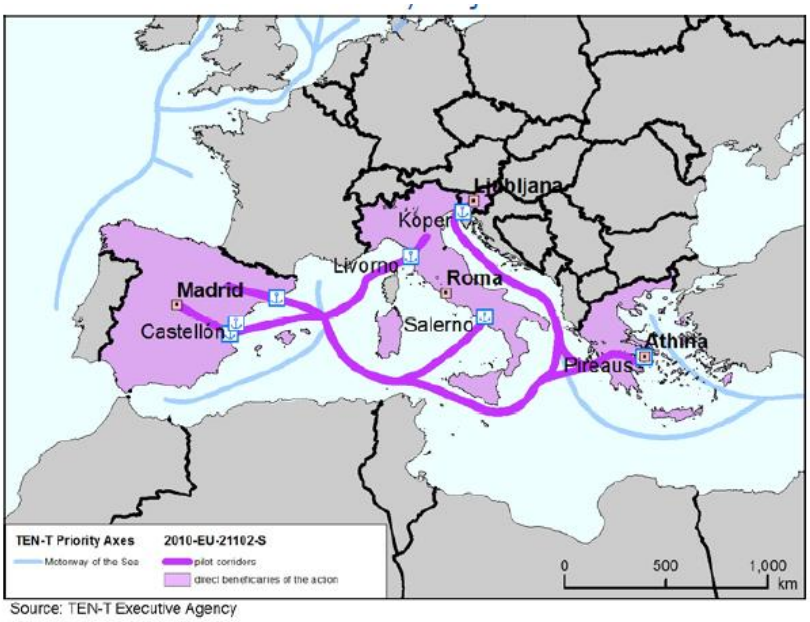
This pilot system called middleware MIELE, has interact with IT systems already in place in the e-maritime and e-freight domains. Portugal together with other European member states (Italy, Germany, Cyprus and Spain) are active partners in the MIELE project. Results of MIELE are strong contributors towards the single windows deployment.

The final report is being concluded and a follow up project is under evaluation.

Monitoring and Operation Services for Motorways of the Sea (MoS4MoS)

2010-EU-21102-S (Part of Priority Project 21)

The MoS4MoS project is a pilot action primarily aimed at preparing the different key stakeholder systems (ports and terminals, railways, rail freight stations, maritime carriers, short sea consolidation centres, etc) to provide integrated and interoperable services for door-to-door MoS supply chains.
Overall goal is to provide the proper combination of measures for ports to become efficient gateways for SSS freight



Source: TEN-T Executive Agency

Start date: March 2011

End date: May 2012

Partners from: Spain, Italy, Slovenia and Greece.

The main approaches followed towards efficient gateways for SSS freight focus on two main types of traffic: Ro-ro traffic and container traffic. In particular it distinguishes between 3 different scenarios that differ in customs control requirements.

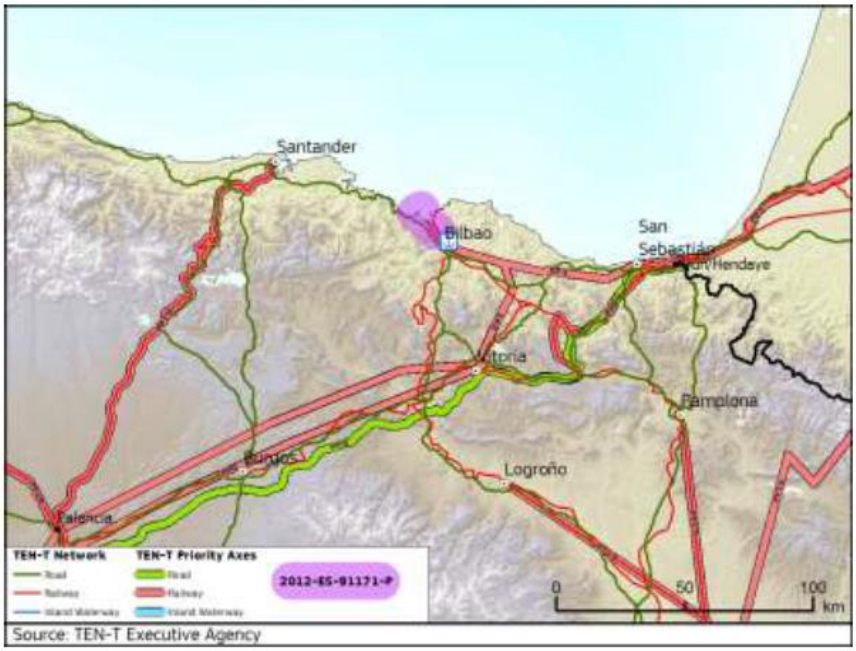
- 1stly – Ro-ro services connecting EU ports to each other. These routes are also called the EU authorised regular services. The conflicts surround the freight transferred between terminals inside the customs area and terminals outside the customs area.
- 2ndly – Container services being carried out within the European Union, and issues surrounding the terminals within the customs area, intermodality, freight concentration, and multimodal corridors.
- The third focus was on the short sea services (SSS) that connect EU ports with other intermediate ports outside of the European Community area. Measuring the impact of the new customs security amendment from January 1st 2011.

Thus, the MoS4MoS action demonstrated 15 prototypes improving the operational coordination of transport flows and facilitating tight co-ordination between the various administrative services and operators at port level. The test prototypes were applied to existing door-to-door MoS supply chains in the Mediterranean region, namely in: Spain-Italy, Spain-Slovenia, Spain-Greece, Slovenia-Greece and Italy-Greece, addressing two different types of traffic: ro-ro and containerised freight.

MoS4MoS has identified current constraints and bottlenecks in MoS corridors for both types of traffic and has presented actions to improve the observed situation through the use of information and communication technologies. It was particular interesting the definition of ICT solutions which become standards, flexible enough to be applied widely.

Efficient Operations and Environmental Performance Improvement of the Port of Bilbao

2012-ES-91171-P



Start date: March 2013

End date: December 2015

The level and quality of infrastructure have a direct effect on the port business productivity and growth, especially during the period of economic transition.

Time is crucial in the fast moving maritime market. Berthing and loading phases have to be kept to a minimum and delays avoided. Construction of upgrades and refurbishment works often has to work around tidal possessions with structures designed to suit. Vessel characteristics vary widely and there are compatibility complexities in combining high speed and conventional vessel on the same berth.

In order to achieve the sustainable development of the Port of Bilbao 3 key areas for improvement are financed by this Action are the following:

- Investments to increase the port operations in the Sollana area by lengthening of the Punta Sollana Breakwater and offering a safer maritime access to that area:
- For safe and efficient maritime operations within port area, the depth of the Axpe docks will be increased and its quayside will be reinforced.
- The Ro – Ro link span will be improved with the purpose of allowing RoRo vessels and RoPax ferries to berth safely at quays that are otherwise unsuitable because of their size and shape and/or because of tidal conditions. This will increase level of environmental safety and efficiency for cargo handling operations.

Both the Beneficiary and Implementing body tasks are committed to the same entity: Port of Bilbao

WiderMoS

2012-EU-21021-S (Part of Priority Project 21)

Start date: June 2013

End date: December 2015

The Action relates to the recent policy developments within TEN-T. It contributes to the European policy developments and in particular to the revised TEN-T guidelines that contains a new approach within the entire transport infrastructure designed with two layers: - the "comprehensive network", a general network reaching all regions and ensuring that all citizens and businesses have easy access to European transport; - the "core network", covering the main transport streams between capitals, large urban nodes, major ports and border crossing points, identified with an objective methodology. As an operative and policy supporting framework, the Action will improve long term effective and sustainable connection between the sea and other transport modes (mainly rail) by developing new port/ship/train interfaces and will contribute to kick off the analysis of how MoS will be linked to the governance model of the TEN-T priority corridors.

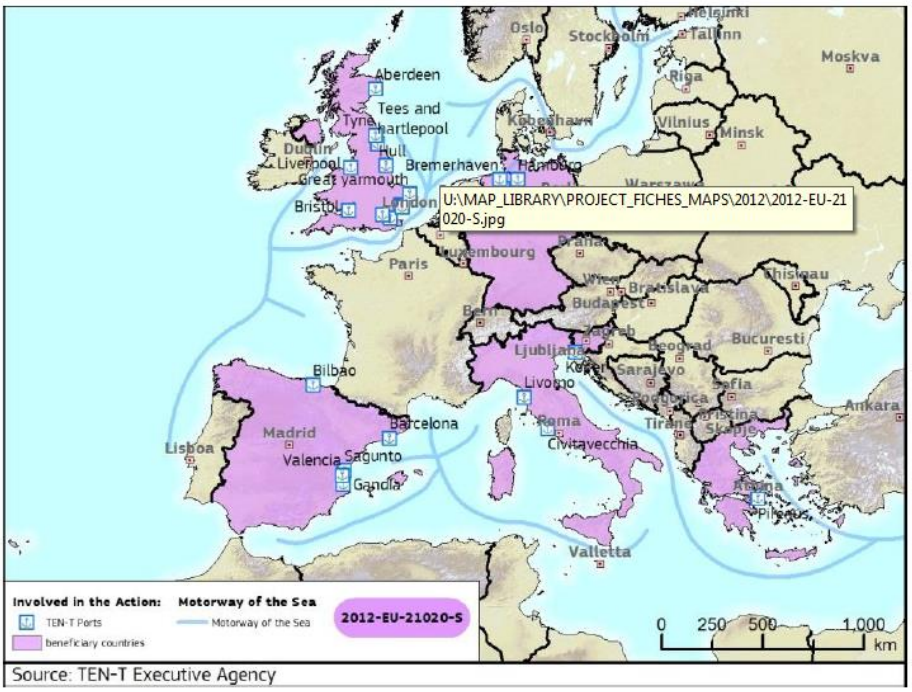
The expected results are:

1. Five Pilot Projects, demonstrating the effectiveness of a better structured interoperability between modes, with particular integration of MOS
2. A policy supporting activity defining the medium term prospective options for MoS in 2020
3. A deeper analysis of 4 very specific topics concerning the role of MoS in the development of the TEN-T core network corridors governance model.

The project involves Italy, Portugal, Spain and Germany , being coordinated by the Autorità Portuale della Spezia La Spezia, Container Terminal S.p.A.

Project ANNA (Advanced National Networks for Administrations)

2012-EU-21020-S (Part of Priority Project 21)



Start date: July 2012

End date: December 2015

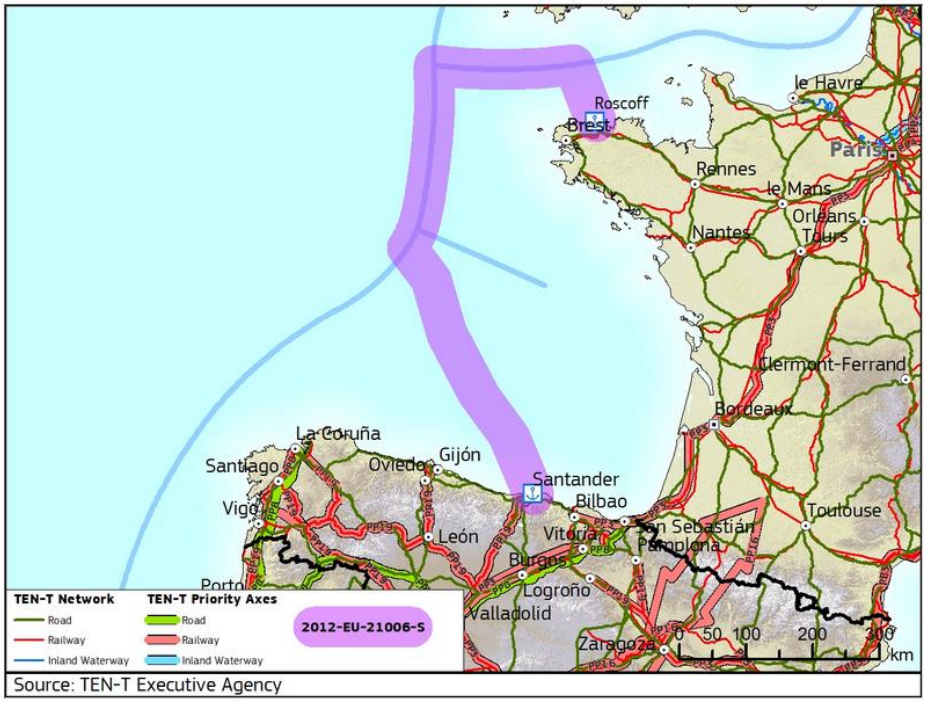
Overall objective of AnnA is the adoption of the National Maritime Single Windows and electronic data transmission for the fulfilment of reporting requirements for vessels entering and departing European ports in accordance with Directive 2010/65/EU. The objective of the Action is to gain consensus between participating countries and develop cooperation measures to be implemented leading to the simplification and harmonisation of reporting and thereby a reduction of the administrative burden through:

- The development of a common implementation framework for EU Directive 2010/65/EU to ensure appropriate (European) interconnectivity;
- The development of national scenarios and a mechanism for gauging degree of national implementation;
- Interaction and involvement of administrations and business where necessary in accordance with this Directive;
- Development of a 2015+ strategy, possibly connecting the various National Maritime Single Windows to national logistics platforms, to be included under the Master Plan "Extended Collaboration";
- Trade facilitation.

The project is ongoing and involves 14 Member States, including Portugal, Spain and France. The coordination is from Netherlands

SEAGAS

2012-EU-21006-S (Part of Priority Project 21)



Start date: January 2012
End date: December 2015

The Action aims at determining the feasibility of implementing LNG bunkering facilities in the Port of Roscoff (north-west of France) and the Port of Santander (north of Spain). The studies will take into account the conformity of the infrastructures and the equipment with the standards for risk prevention (SEVESO Directive), and the eventual constraints, to be revealed by the environmental impact assessments studies and the public inquiries.
The findings of these studies will be an essential decision making tool a) for the ferry operator, to start the construction and the retrofit of LNG vessels; b) for port authorities in Roscoff and Santander that will be able to plan the design and the implementation of LNG bunkering stations; and c) for the authorities in charge of the public passenger transport in Cantabria.

The project will contribute to the development of the Atlantic Motorway of the Sea as a wider benefit action, serving all the shipowners operating in the region and looking into synergies of different transport modes.

State of progress on 31 December 2013: The project is on-going, though slightly delayed. Activity 1: Cost /Capacity Analysis of Marine fuel Oil as Compared to LNG has been completed.

The Beneficiaries and Implementing bodies are: B.A.I. Bretagne Angleterre Irlande SA (Brittany Ferries), Chambre de Commerce et d'Industrie de Morlaix, Autoridad Portuaria de Santander, Fundación Centro tecnológico en Logística Integral Cantabria.

ERTMS projects

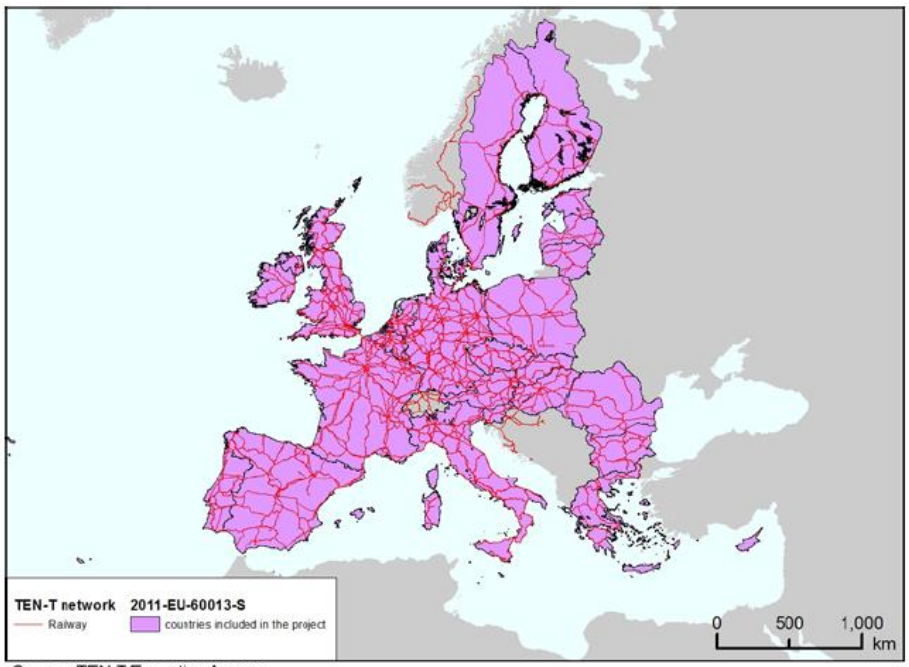
Facilitating and speeding up ERTMS deployment

2011-EU-60013-S

The overall goal of this project is the standardization of ERTMS and related processes. For this purpose the project will focus on several actions such as: define an independent testing strategy, support the validation of baseline 3 (B3) and coordinate the support of Railways and Manufacturers to the European Railway Agency (ERA) in the development and improvement of Technical Specifications for Interoperability (TSI) in the field of ERTMS.

The Action groups and coordinates several activities aimed to support the implementation of the provisions of two Memoranda of Understanding (MoU) between the European Commission and the European Railway Associations in the field of ERTMS (signed in 2005 and 2009).

The total cost of the project is 30 million euros, while the EU will contribute with 15 million euros.



Source: TEN-T Executive Agency

Start date: October 2011
End date: December 2014

By the end of 2012 (last assessment) 11 out of 12 activities were launched. A number of documents related in particular with Train Interface Unit and Sub-set 110, 111 and 112 were provided to ERA

Beneficiaries & Implementing bodies of this project:

- EEIG ERTMS Users Group
- Union of European Railway Industries (UNIFE)
- Centro de estudios y experimetatión de obras públicas
- Multitel
- Deutsches Zentrum fuer Luft-und Raumfahrt

- Nokia Siemens Networks Oy
- Kapsch Carriercom Deutschland GmbH
- Siemens Plc
- Hörmann Funkwerk Kölleda GmbH
- Alstom Ferroviaria Spa
- Selex Elsag Spa
- Union Internationale des Chemins de Fer
- Ingenieria y Economia del Transporte, S.A.
- Frequentis AG
- MER MEC S.p.A.
- Seinalia SL

It is likely that the end of this action will be postponed to December 2015.

Upgrade of Spanish high speed lines and trains to ERTMS 2.3.0.d

2011-ES-60001-P

The project's goal is to migrate all Spain's trains and high speed lines to ERTMS 2.3.0.d, to achieve full interoperability by the end of 2014.
The action includes a group of activities which goes beyond the upgrading of lines and trains to ERTMS 2.3.0.d like: Trackside upgrade verification, On-board subsystem verification, Laboratory and on-site testing and action management. The EU financial support will go up to €18.386.000, which means a 50% of the total cost.

Source: TEN-T Executive Agency

Start date: October 2011
End date: December 2014

Beneficiaries & Implementing bodies:

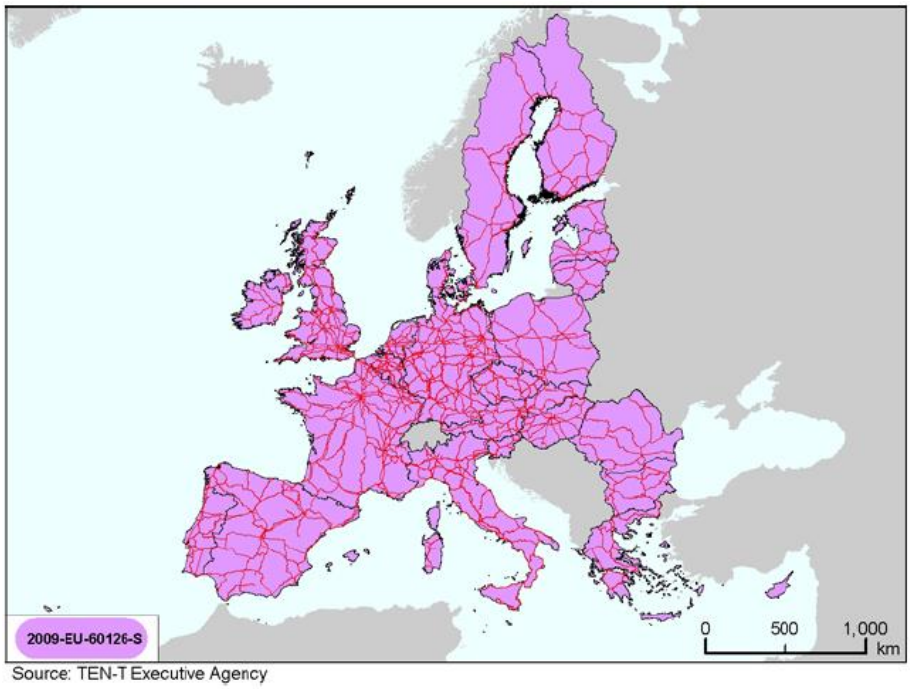
Administrador de Infraestructuras Ferroviarias

RENFE operadora

By the end of 2012 (last assessment), the migration of the section Cordoba-Malaga has started as well as the upgrading of part of the trains.

Support to the ERTMS Consolidation

2009-EU-60126-S



Source: TEN-T Executive Agency

Start date: October 2011
End date: December 2014

Beneficiaries & Implementing bodies:

Administrador de Infraestructuras Ferroviarias

RENFE operadora

The action focuses on implementing ERTMS Memorandum of Understanding of 4 July 2008, which means carrying out a group of activities:

- To coordinate the overall project
- To support the actions of ERA in the field of technical and operational harmonisation
- To support the international freight corridors in the ERTMS field
- To provide a baseline 3 on-board prototype for testing
- To improve the testing phases, of both specifications and products, in order to increase the effective interoperability

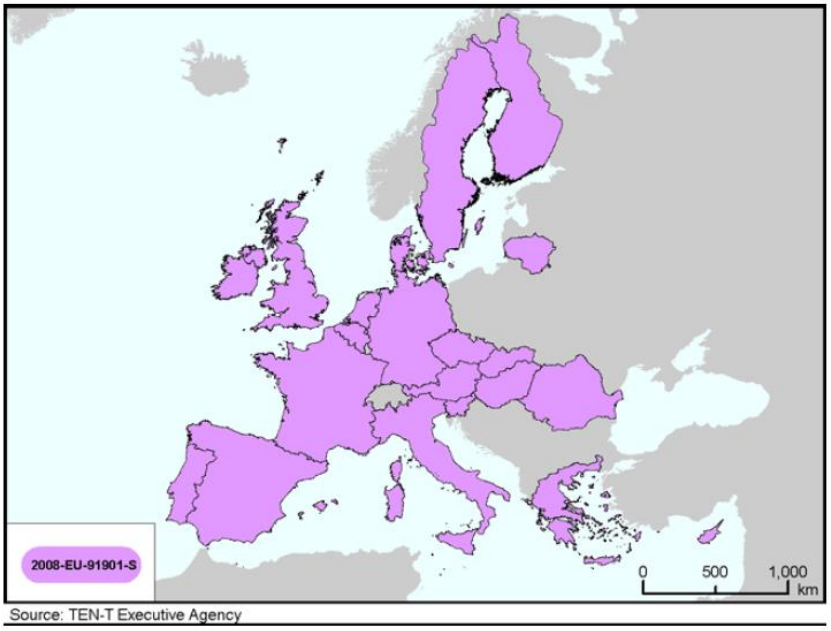
Certain activities of the Action represent the continuation of the activities already started and carried out within the framework of the EU co-funded TEN-T project 2007-EU-60040-P

The EU financial contribution is €3.040.000

Assessment done by the end of 2012, highlights that action is progressing according to the schedule. Several important deliverables are already available in the form of technical reports/opinions, updates/reviews of the subsets and test cases

NETLIPSE

2007-DE-04020-P (Part of Priority Project 4)



Start date: June 2008
End date: December 2010

This project has been completed.

The main objective of the NETLIPSE project is to improve the management, organisation and execution of "Large Infrastructure Projects" (LIPs), and in particular TEN-T projects.

The NETLIPSE project will:

- Expand and support the NETLIPSE network by organising activities to actively promote knowledge exchange regarding execution LIPs through various communication means and publications;
- Developing a model ("Infrastructure Project Assessment Tool" - IPAT), with the objective to increase the effectiveness of large infrastructure project by reducing the risk of cost overruns and time delays, and improving the implementation of transport infrastructure policies.

The IPAT will allow:

- Member States, project managers and project promoters to increase the certainty of successful execution of projects, and;
- the EU, local governments, the EIB and Worldbank to monitor and evaluate projects (ex ante and ex post) in a systematic way, and;
- will provide information on research forecasts and future research demands.

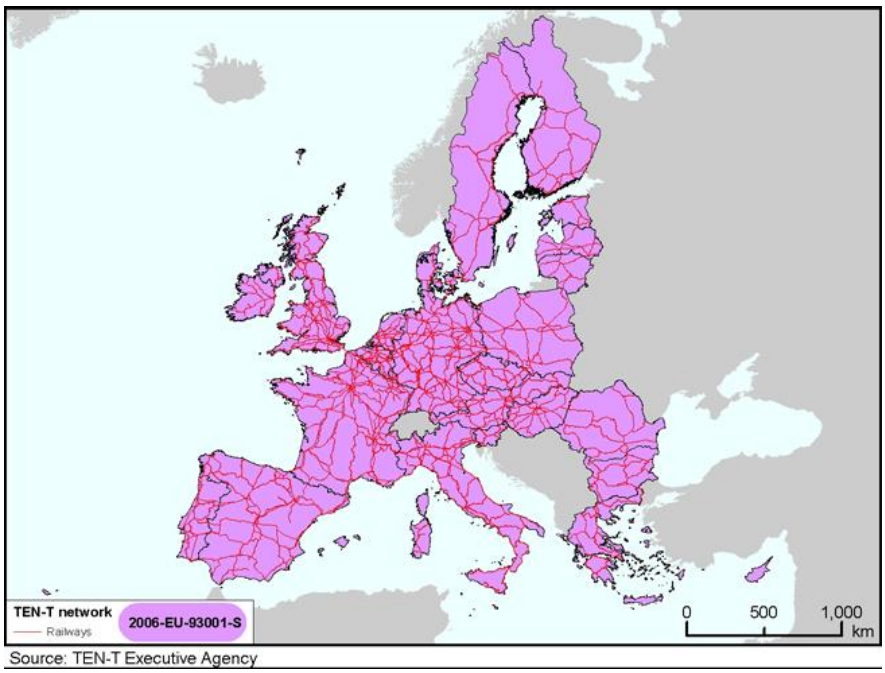
The IPAT will be open and free of charge (or at a reasonable cost) to the public.

The NETLIPSE network focuses on creating added value through knowledge exchange by sharing, discussing and disseminating best practices and lessons learnt. The information gathered will be used in the development of the "Infrastructure Project Assessment Tool".

The Beneficiary of the grant is the Ministry of Transport, Public Works and Water Management (Netherlands) and the implementation is committed to Department for Transport (UK).

ERTMS development and consolidation

2006-EU-93001-S (ERTMS)



Source: TEN-T Executive Agency

Start date: May 2006
End date: November 2010

This project has now been completed

European Rail Traffic Management System (ERTMS), composed of a unique European Train Control System (ETCS) and radio system GSM-R, is designed to gradually replace the existing incompatible national systems throughout Europe.

This important, EU-wide project directly contributes to the development of the ERTMS technical specifications.

The project's main objective is to update and upgrade the test specification to version 2.3.0 and 2.3.0d of the System Requirements Specifications. This will ensure that when an on-board ETCS computer (or a "European Vital Computer") completes all of its test sequences, it will be able to run on all ETCS lines equipped with version 2.3.0d.

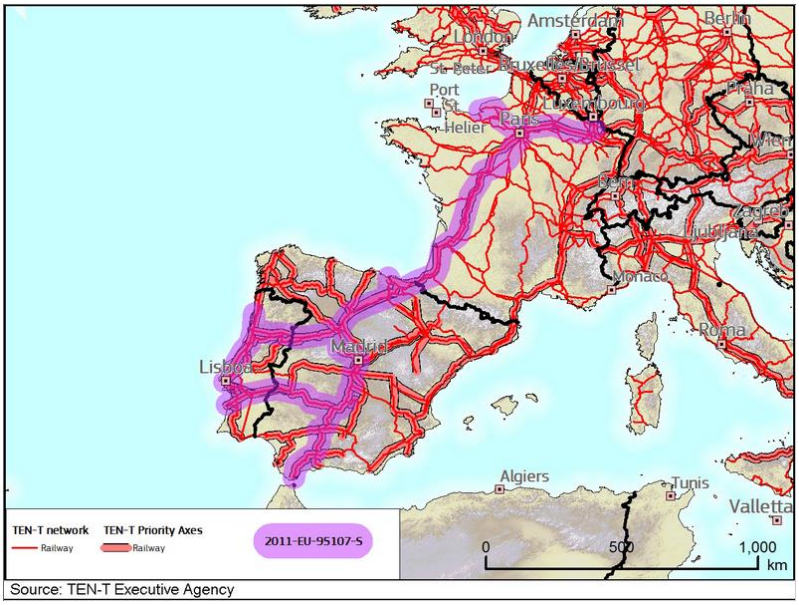
The project encompasses three main groups of activities:

- project management
- upgrading the specifications, in particular test specifications
- test campaign to validate the specifications and the products

The Beneficiary of the grant and responsible for its implementation is ERTMS Users Group (EEIG) the co-beneficiaries are CEDEX, DLR, TIFSA, ERSA, MULTITEL, NOKIA SIEMENS, NORTEL, UNIFE.

Regulation 913/2010 concerning a European Rail Network for competitive freight: Implementation of rail freight corridor 4

2011-EU-95107-S



Start date: April 2012
End date: December 2014

The Action consists of studies addressing the establishment and implementation of the international freight corridor 4, in line with the provisions of the Regulation (EU) n° 913/2010 concerning a European rail network for competitive freight.

In particular, the studies address the analysis of transport market demand, the analysis of rail infrastructure and the assessment of rail capacity along the corridor.

The main objectives of the Action are:

- To investigate the potential for the development of the corridor, so to derive improving measures and operational concepts;
- To improve the quality of operations, capacity and competitiveness of the freight corridor;
- To prepare the freight corridor implementation plan, as defined in Article 9 of the Regulation;
- To produce information regarding the conditions of use of the freight corridor.

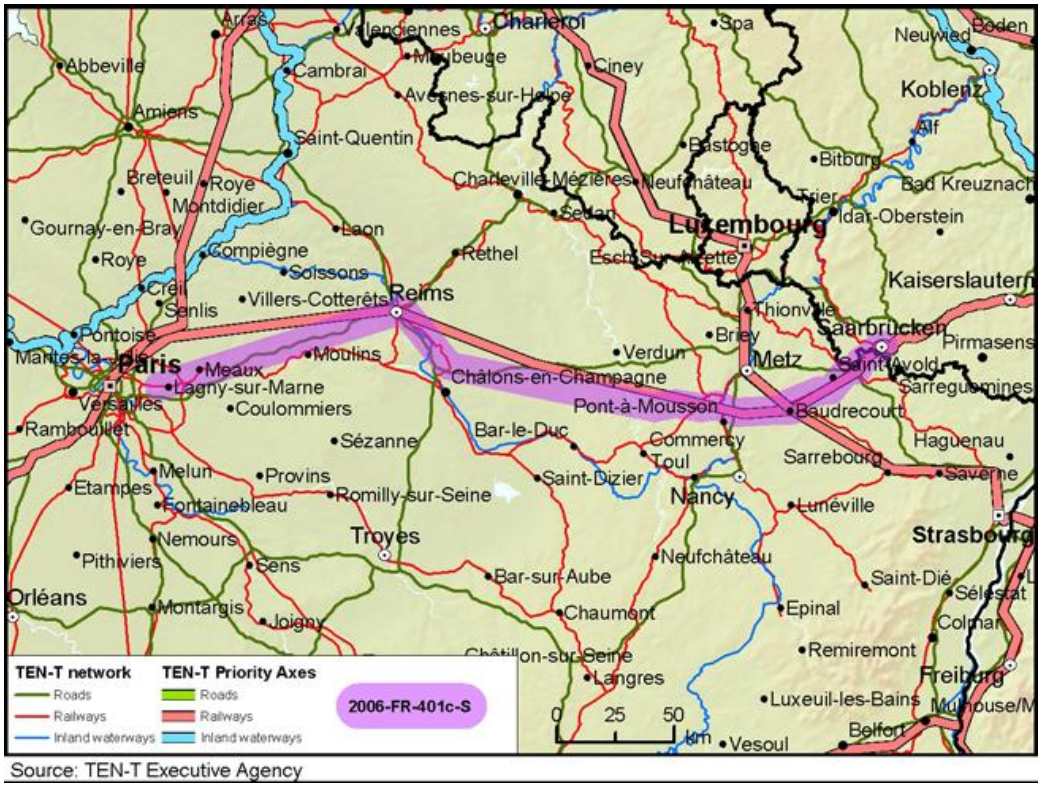
The total project will cost €2,140,000 and the EC's contribution will be 50% (€1,070,000) the remaining 50% will be funded by national budget.

State of progress on 31 December 2013: The project has started and is ongoing. The final report of the market and demand study has been approved. The infrastructure study and the capacity analysis study have started and their draft versions have already been approved. A draft version of the corridor implementation plan was also released.

The Beneficiaries are: Ministerio de Fomento – Dirección General de Ferrocarriles, Ministère de l'Écologie, du Développement durable et de l'Énergie, Gabinete de Planeamento Estratégico e Relações Internacionais.
The Implementing body is: EEIG Rail Freight Corridor 4.

High speed railway line "LGV Est" section Vaires-Baudrecourt-Saarbrücken: Migration of ERTMS, corridor Paris-Frankfurt

2006-FR-401c-S (ERTMS)



Source: TEN-T Executive Agency

Start date: May 2006
End date: December 2009

The project has now been completed.

European Rail Traffic Management System (ERTMS), composed of a unique European Train Control System (ETCS) and radio system GSM-R, is designed to gradually replace the existing incompatible national systems throughout Europe.

The aim of the global project is to equip railway high speed line between Paris and Frankfurt with ERTMS. It covers both track side and on-board activities.

This specific project includes studies for the section Vaires-Baudrecourt-Saarbrücken. The study is concentrated on the elaboration of the specific transmission module (STM) for the trains equipped with KVB, a French system of speed control. The studies also cover the technical validation of ETCS system and cross-border studies between France and Germany.

The project is of significant importance for the ERTMS deployment on the railway connection between France and Germany.