Atlantic

Core Network Corridor Study

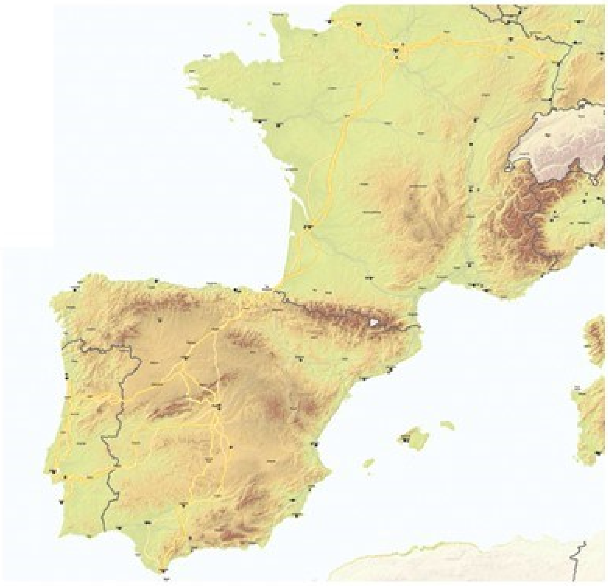
Final Report

December 2014

TEN-T Core Network Corridors

Atlantic Corridor

Draft Final Report



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Abbreviations

AENA	Aeropuertos Españoles y Navegación Aérea, Spain
ADIF	Administrador de Infraestructuras Ferroviarias, Spain
ATL	Atlantic Corridor
CBA	Cost Benefit Analysis
CEF	Connecting Europe Facility
CF	Corridor Forum
CNC	core network corridor
CO	Confidential
COMEXT	intra- and extra-European trade database
Compr.	comprehensive
cp.	Compare
DE	Germany
DG-MOVE	Directorate General for Mobility and Transport (European Commission)
DSS	Deep Sea Shipping
EC	European Commission
EP	Estradas de Portugal (road IM)
ERA	European Railway Agency
ERTMS	European Rail Traffic Management System
ES	Spain
ETCS System	European Train Control
ESTAT	Eurostat
ETIS	European Transport policy Information System
EU	European Union
FR	France
GDP	Gross Domestic Product
GIS	Geographic information systems
GPSO	Grand Projet du Sud-Ouest
GVA	Gross Value Added
HSR or HS	High Speed (rail)
IM	Infrastructure Manager
IMT	Instituto Mobilidade e dos Transportes (Portugal)
INAC	Instituto Nacional de Aviação Civil (Portugal)
IRR	Internal Rate of Return
ITS	Intelligent Transportation System
IWT	Inland Waterway Transport
IWW	Inland Waterway
KPI	Key Performance Indicator
km	Kilometres
km2	Square kilometres
LGV	Ligne à Grande Vitesse
LNG	Liquified Natural Gas
m	Metres
MED	Mediterranean Corridor
MoS	Motorways of the Sea
MS	Member State
Nat	National
NMSW	National Maritime Single Window
NPV	Net Present Value
NSTR	Nomenclature uniforme des marchandises pour les Statistiques de Transport, Revisée (break-down of commodities for all transport modes)

NUTS	Nomenclature of territorial units for statistics
O/D	Origin / Destination
OMCGIS	Open Method of Co-ordination of Geographic information systems
PP	Priority Project
PPP	Public Private Partnership
PR	Progress Report
PT	Portugal
PU	Public
RE	Restricted
REFER	Rede Ferroviária Nacional (rail IM)
RFF	Réseau Ferré de France
RFC	Rail Freight Corridor
RIS	River Information System
RRT	Rail–Road Terminal
SST	Short Sea Shipping
SESAR	Single European Sky ATM Research Programme
TENtec	Information system of the European Commission to coordinate and support the TEN-T Policy
TEN-T	Trans-European Transport Network
TEU	Twenty-foot equivalent unit (container)
TMS	Transport Market Study
TSI	Technical Specifications for Interoperability
UIC	International Union of Railways
UNECE	United Nations Economic Commission for Europe
VNF	Voies Navigables de France

Glossary

Missing link: perceived gap or discontinuity within transport infrastructure network, affecting long-distance and cross-border flows

Bottleneck: obstacles to speed and/or capacity which make impossible to guarantee the continuity of transport flows.

Cross-border: means a section which ensures the continuity of a project of common interest between the nearest urban nodes on both sides of the border of two Member States

Critical issue: an outstanding or decisive problem, disconnect or barrier of high strategic importance encountered within the transport network. Critical issues are directly relevant to the principles of corridor development, notably:

- interoperability and intermodality
- cross-border
- missing links and bottlenecks

Added value: European added value' means the value of a project which, in addition to the potential value for the respective Member State alone, leads to a significant improvement of either transport connections or transport flows between the Member States which can be demonstrated by reference to improvements in efficiency, sustainability, competitiveness or cohesion, in line with the objectives set out in Article 4 of Regulation (EU) 1315/2013.

0. Executive Summary

Core network corridors should help to develop the infrastructure of the core network in such a way as to address bottlenecks, enhance cross-border connections and improve efficiency and sustainability. They should contribute to cohesion through improved territorial cooperation.

This study aims to support the European Commission (DG-MOVE) in developing the work plan for the Atlantic Corridor, a diagonal corridor from Europe's South-Western regions towards the centre of the EU that links the Iberian Peninsula ports of Algeciras, Sines, Lisboa, Leixões (Porto) and Bilbao through western France to Paris and Normandy and further east to Strasbourg and Mannheim. It covers rail, road, airports, ports, RRTs and the River Seine inland waterway

The Atlantic Corridor has an important maritime dimension since it is linked to the crossroads of global maritime routes (via the Panama Canal and Straits of Gibraltar) notably toward North and South America, Neighbourhood countries and Africa; it is also endowed with high potential for deploying Motorways of the Sea and Short Sea Shipping as an alternative route to the inland backbone along the Atlantic coast.

One of Corridor's main objective, together with enhancing modal integration and maritime connections, is to enhance railway interoperability by a track gauge change to UIC standard on the Iberian Peninsula.

Overall, Atlantic Corridor main objectives are to:

- Contribute to efficient logistics and modal integration, exploiting its multimodal dimension in order to foster a shift of traffic from the congested air and road transport to rail and maritime;
- Fully exploit and enhance its maritime dimension, including the deployment of MoS and Short Sea Shipping along the Atlantic Coast as well as external trade;
- Address the missing links and lack of interoperability (notably rail gauge and ERTMS);
- Enhance and continue the progress in terms of road tolling interoperability;
- Contribute towards the continuous integration of inland waterways within multimodal chains

This Core Network Corridor (CNC) is connected with four other CNCs, creating the potential for generating additional network effects, one of the priorities within TEN-T. Important connections to the wider network include:

- A shared section between Algeciras – Madrid with Mediterranean Corridor (MED)
- Connections in Paris and a shared section between Metz and Strasbourg with North-Sea–Mediterranean Corridor (NSMED)
- Connections in Mannheim with Rhine–Danube (RDA) and Rhine-Alpine (RALP) Corridors

As established in the Regulation (EU) 1315/2013, the work of the European Coordinator has been assisted, in 2014, by a consultative Corridor Forum established in agreement with the Member States concerned. Attendees of the corridor fora are the Member States, infrastructure managers along rail, road, ports (maritime and inland), airports and inland waterways as well as the regional authorities along corridor regions. The main task of the Corridor Forum has been to:

- provide access to relevant data, information and projects relevant for the analysis; and,
- actively contribute to establish the corridor work plan by the end of 2014

During 2014, four meetings of the Atlantic Corridor Forum and two Working Group Meetings (one with Ports and Inland Waterways and other with Regions) were realised. That close coordination with stakeholders together with the findings of present study, will constitute background support and basis for the European Coordinator's corridor work plan.

Key areas of the corridor studies include: i) the gathering of technical information about the network, in relation to the technical interoperability standards set by the Regulation (as illustrated below) ii) the collection and analysis of market information, iii) identification of critical issues and iv) identification of measures and investments answering to those critical issues.

Corridor Infrastructure Performance

Mode	KPI (TEN-T requirements)	2014	2030	2050
Road	Express Road or Motorway	100%	100%	
	Sufficient Parking Areas	87%	100%	
	Availability of clean fuels			
	LPG	100%	100%	
	Electric	12%	100%	
	LNG	12%	100%	
	Hydrogen	0%		
	Interoperable tolling system	40%	100%	
Rail	Electrification Requirement	87%	100%	
	UIC Track gauge	58%	100%	
	line speed > 100 km/h (core freight lines)	96%	100%	
	Axle Load 22,5 t (core freight lines)	100%	100%	
	Train length > 740 m (core freight lines)	57%	100%	
	ERTMS/signalling system	7%	100%	
IWW	Length of vessels and barges - from 80-85m	100%	100%	
	Maximum beam/width - from 9.5m	100%	100%	
	Maximum draught allowed - from 2.5m	100%	100%	
	Tonnage - from 1000-1500t	100%	100%	
	Minimum height under bridges - from 5.25/7m	100%	100%	
	Class - CEMT IV (1000-1500t vessel)	100%	100%	
	RIS implementation	75%	100%	
Seaports	Rail Connection	100%	100%	
	IWT Connection (class IV)	100%	100%	
	Clean Fuels	13%	100%	
	Promoting MoS / regular SSS	8		
Inland Ports	Rail Connection	100%	100%	
	IWT Connection (class IV)	100%	100%	
	Clean Fuels	17%	100%	
Airports	Rail Connection (core network)	33%		100%
	Clean Fuels	0%	100%	
RRT	In operation	64%	100%	
	Multimodal transhipment capacity	N/A		

Status of infrastructure as from January 2014

Road

The Atlantic Corridor is characterised by the high quality of the existing road network, 99,5% fulfilling the TEN-T class requirements (motorways or express roads). The exception to this accomplishment is the cross border section PT-ES (few km on each side) that are to be upgraded to motorway. A few barriers or bottlenecks are present.

Only partial interoperability exists for road tolling systems amongst corridor countries: i.e., for example, the Spanish Via-T system can be used in all Portuguese tolls and in the cross border with France but in the reverse situation (the Portuguese Via Verde) is only interoperable on selected Spanish roads, none of which are in the core network.

TEN-T criteria for road are otherwise very much aligned with requirements, in areas such as comfort (motorway), security (safe parking areas) and sustainability (availability clean fuels).

There are however, a few road issues related to the availability of safe parking areas, in line with the established requirements, namely pre-booking. Several projects looking to evaluate safe parking areas and availability of clean fuels have been identified.

Most road bottlenecks are identified as last mile connections to corridor nodes; some projects addressing these issues have been identified (i.e. in Algeciras port). The section Los Barrios-Algeciras is an important link missing in the core road network of Atlantic Corridor.

Rail

Regulation (EU) 1315/2013 establishes several infrastructure related parameters: track gauge, electrification, train length, axle load and line speed as well as ERTMS deployment (signalling).

Although track gradient is not included in the requirements for core rail by 2030, this is a constraint present in the corridor with sections in Portugal with 20-21‰ (i.e. Pampihosa-Guarda) and Spain (i.e. Bobadilla-Algeciras line with 23‰). Reduction of the maximum gradient of some sections in order to improve the performance of freight trains remains a necessity. Equally, several sections of the corridor are single track lines limiting the available capacity and hindering timetabling. Those single track sections represent a quarter of the freight lines in the corridor (50% in Spain and 30% in Portugal). However, deciding whether these sections of single track represent bottleneck depends on the existing or expected demand for rail services. Each localised occurrence of high gradients and singe lines should be evaluated on a case by case basis, taking into account the costs and benefits of upgrade.

The rail network in the corridor is characterised by the presence of strong limitations to its performance, namely:

- **Missing link** between Évora and Caia in the border Portugal-Spain, forcing majority of rail flows to travel via the Vilar Formoso border
- **Different track gauges** in the corridor: Iberian Gauge (1668 mm) and UIC Gauge (1435 mm), and a lack of commonly planned technical solutions for UIC gauge deployment in Portugal and Spain
- Lack of **electrification in cross border sections**: Medina del Campo-Salamanca-Fuentes de Oñoro (currently being upgraded) and Madrid-Badajoz (cross borders Spain/Portugal)
- Lack of **electrification for** the section Bobadilla-Algeciras (conventional railway Madrid – Andalucía), section Gisors – Serqueux (upgrade and electrification planned) and Cacia (Aveiro) – Port of Aveiro.
- **Restrictions to the operation of long freight trains** in the rail network, rail-road terminals and port rail access in the corridor in Iberian Peninsula, particularly in Spain but also in Portuguese ports. The need to run shorter freight trains decreases the efficiency of rail and maritime transport and limits their competitiveness against other modes of transport (road).
- Presence of **different types of electrification**: 25 kV AC in Portuguese network, HS lines of Spain and northern France; 3 kV DC on conventional lines in Spain; 1,5 kV DC in conventional lines in mostly the South of France and 15 kV in Germany, requiring rolling stock able to cope with dual voltage
- **Slow implementation of ERTMS**: only high speed lines are equipped in Spain and France and no lines are equipped with ERTMS signalling in Portugal
- Presence of **sections with maximum gradient above 20‰** (i.e. Bobadilla-Algeciras line with 23‰) in single track sections

- Non harmonised loading gauge along corridor, , meaning that not all routes permit the same vertical clearance, thus limiting the interoperability of trains carrying intermodal units.

A substantial number of investment projects are addressing these rail bottlenecks and missing links. Plans for the deployment of UIC gauge in Iberia Peninsula are a critical issue in the corridor, together with the necessary solutions for maintaining the operation of freight lines in Iberian gauge l throughout the Peninsula for longer periods.

The coordination between the strategic plans of the Member States involved in the Atlantic Corridor is of strategic relevance. While it may be confirmed below that in both Spain and Portugal, projects for the deployment of UIC gauge are defined, the compatibility of those plans in terms of calendar and technical deployment is still far from being articulated. It is thus suggested that a dedicated project supporting the definition of shared planning on the UIC deployment in Iberian Peninsula should be promoted. This should become a priority project for rail infrastructure managers and would aim to evaluate the possible options for the migration of each technical system to harmonized systems, establishing concerted deadlines for its implementation. Such a project should have a clear mandate and a regular joint reporting on progress to the MS and to the European Coordinator.

Inland Waterway

The Sine river section included in the Atlantic Corridor already reaches higher standards than the minimum established by the Regulation (EU) 1315/2013. Notwithstanding, relevant bottlenecks were identified and a set of measures were planned to address those critical issues. In the context of the broader TEN-T network, there are plans within the NSMED corridor to extend the navigable waterway from Paris via the Seine/Oise and Escaut rivers to connect to the Benelux countries. This is expected to substantially increase waterborne freight traffic related to Paris and the River Seine. Co-ordination between the work plans of the Atlantic and NSMED corridors is therefore necessary in this case.

Ports

The connection of ports with other modes, in particular rail (and inland waterways) is critical to guarantee capacity for freight traffic to and from the economic regions along the corridor and promote port competitiveness and strengthen hinterland connections. Combine throughput of core ports in corridor reaches more than 240 million tonnes[1]. Main issues and bottlenecks in the port areas, which need to be overcome for further growth relate to two main issues: capacity and connectivity. Several projects in the corridor work plan are addressing these bottlenecks.

Several ports are operating near capacity, facing the need to expand their facilities and upgrade port infrastructure and maritime accesses to cope with expected growth in demand. The ports sector is showing fairly consistent growth expectations. This goes in line with the necessary upgrade and reinforcement of terminal extensions for logistic and industrial platforms and intermodal terminals. Furthermore most ports also need to adapt facilities and equipment to the new standards required by the use of bigger ships, a trend that will be continued in future due to the Panama Canal widening.

Improvements in land access and last mile connections to ports are needed, with the majority of existing bottlenecks related to rail. Although all ports in the corridor are connected to rail, both in Portugal and Spain the upgrade of rail connections and rail freight terminals to allow

[1] An overall magnitude of 300 million tons if considering the other ports along the Atlantic Façade

750m trains to access the ports is critical, as well as the electrification of the railway line connecting to the port of Algeciras, which is the largest seaport by volume in the corridor.

Currently Motorways of the Sea (MoS) are not exploited to full potential, however, a reasonable number of successful MoS and SSS regular lines from the Atlantic ports are worth mentioning:

- Gijon – Nantes - Saint-Nazaire (currently suspended)
- Bilbao - Zeebrugge (Belgium)[2],
- Bilbao- Rotterdam;
- Bilbao – UK – Ireland – Poland - Baltics
- Leixões – Rotterdam
- Algeciras-Vigo-Nantes-Le Havre (planned to start operation)
- Containers shipping services with four departures per week between Le Havre, Rouen and Paris (inland waterway).
- Santander (MOS project SEAGAS for a corridor Santander-Rostock)

LNG deployment is taking place along the corridor. Analysis of LNG bunkering facilities in the Atlantic has been evaluated in the course of the TEN-T projects COSTA, BUNKER LOGIX (Algeciras), SEAGAS (Santander). In some of corridor ports, pilots are already ongoing (i.e. Algeciras, Bordeaux).

The Port of Bilbao has LNG infrastructure available as well as dedicated berth for loading/unloading LNG and supplying LNG as bunker to vessels and a petrol station for providing bunker to trucks.

Airports

Airport infrastructure on the Corridor is extremely important: air passenger transport is the preferred mode for long distance passenger between corridor countries.

Connectivity with heavy rail is a weakness: only Paris CDG (Roissy) complies completely with the requirement to be connected to TEN-T rail network. Madrid Barajas and Paris Orly are connected to suburban railway and metro. Lisbon and Porto airports are connected with urban rail (metro) while Bilbao and Bordeaux does not offer any rail connection. By 2050, Madrid and Lisbon airport should be connected to rail.

Presently none of the corridor airports offers clean fuel availability and the compliance perspective on alternative fuel availability in the airports by 2030 is rather limited. In all countries, projects looking to study this issue were identified.

Rail Road Terminal

Bottlenecks are mainly noticed for intermodal connectivity, both road and rail, the latter being a major source of bottlenecks in Spain (and Portugal) as a consequence of limits on train lengths as previously reported. All RRT terminals in Spain and Portugal are connected with rail in Iberian gauge.

The status of planned rail-road terminals in the Atlantic Corridor is still unclear, namely in respect of timings for their construction and operation, largely brought on by the economic crisis and associated difficulties in getting funds for its developments (either public or private).

There is potential for multimodal services along the corridor and further improvement of multimodal connections, making a seamless transition between modes could further improve this aspect. Together with the infrastructure related measures, a strong emphasis on the deployment of logistic single windows along the corridor, extending the current port single

[2] A potential closure of this service has been announced by the operator on the 4th December 2014

windows towards the hinterland and integrating with e-maritime services and information technologies could have a strong impact

Cross border sections

There are four Corridor cross border sections:

- one between Germany and France (Metz – Saarbrücken);
- one between France-Spain (Irún-Hendaya); and,
- two between Spain and Portugal (Vilar Formoso- Fuentes de Oñoro and Caia – Badajoz).

The current cross border railway infrastructure between Spain and France represent a major bottleneck with the necessary actions to adapt the trains from Iberian and French railway networks (axle change, transfer of the load,…). The future Y Basque and GPSO connection will allow a direct connection to the line Bordeaux – Tours – Paris.

The rail lines crossing the Spanish-Portuguese borders are affected by the lack of electrification in cross border sections in Spain, namely Medina del Campo-Fuentes de Oñoro and Madrid-Badajoz. Electrification of Medina del Campo-Salamanca railway section is on-going and for Salamanca-Fuentes de Oñoro-Vilar Formoso it is planned.

The south cross-border section Évora-Caia in the corridor branch Évora-Mérida is a missing link, with works on-going on the Spanish side only.

On the road side, few barriers or bottlenecks are identified in the cross- border section between ES-FR. Between Spain and Portugal, the motorway upgrades on the last 3 km in the Vilar Formoso border are planned as well as on the Spanish side. Partial interoperability of road tolling systems among countries still exists.

There is no inland waterway cross border section in the corridor. The corridor waterway is internal to France.

Market Analysis

The analysis conducted shows that seaports are actively developing facilities and programmes to enhance capacity and to develop multimodal hinterland networks. Port forecasts within the corridor typically indicate expectations of throughput increasing in the order of 30% to 90%. The success of these will largely depend on solving bottlenecks and missing links, particularly on the rail infrastructure as well as on developing multimodal platforms.

Although headline activity indicators such as population and economic growth show modest levels for the EU as a whole, corridor countries show an expected moderate growth in Portugal, however above EU average for Spain and France.

In order to assess the potential effect of changes, a scenario analysis was performed. This reflects a top-down analysis using trade data to estimate cross-border flows, and transport data to estimate the flows per mode.

Network modelling considered the baseline case (i.e. forecast using GDP/GVA for 2030 and 2050 using socio-economic assumptions from the 2013 EU reference Scenario) and a “policy scenario” considering a set of inputs (European infrastructure related) as additional to baseline case. Additional assumptions, as for instance, related to the widening of the Panama are not considered in the current exercise).

The scenario development has been conducted for the whole EU network (i.e. not only for Atlantic) allowing to assess the various impacts of EU level measures and their effects on the corridor according to five model runs: 2010, 2030 baseline, 2030 policy scenario, 2050 baseline and 2050 policy scenario. Policy assumptions were based on expected investments in the Atlantic, Med, NSMed and Rhine-Alpine corridors.

In the baseline scenario, road shows the highest growth trend, followed by inland waterways (only France and Germany) and a slightly lower growth for rail. Thus, under baseline assumptions rail is losing freight market share, mainly due to the mix of commodities, favouring those that tend to use road transport. This is consistent with reviews done where road maintains highest growth rates. This trend is even more visible in the corridor links than at national level.

When considering the impact of the different policy measures, rail then shows faster growth rates than road, growing more or less at same average as inland waterways, which are also being boosted by investments in France. Rail gains are mainly due to the implementation of infrastructure measures addressing the most critical missing links and bottlenecks (electrification, UIC gauge, etc.) and also to the expected decrease in travel costs and times, which make rail a more attractive option for hinterland transport. The growth in rail tonne-km at national level is similar as to the rates estimated for corridor links.

The total demand (all modes combined) is expected to become larger in the policy scenario, compared to baseline.

Overall at national level, road is expected to grow by 57% (Index = 157) by 2050 under the baseline scenario and 53% in the policy scenario. For rail expected growth is 65% in the baseline and 87% in policy scenario, while in IWT is 52% in baseline and 57% in policy. Such a pattern is even more visible for the corridor links with road expected to grow 71% in baseline, 67% in policy and rail: 63% in baseline, 95% in policy.

Based on the above tables, with the corridor defined in terms of tonnages from selected O/D combinations, the shares of cross-border traffic per mode are as follows. This way it is possible to see the role played by maritime transport for those short-sea flows where there is competition between land and sea modes.

Modal Share, according to cross-border tonnage (000s)

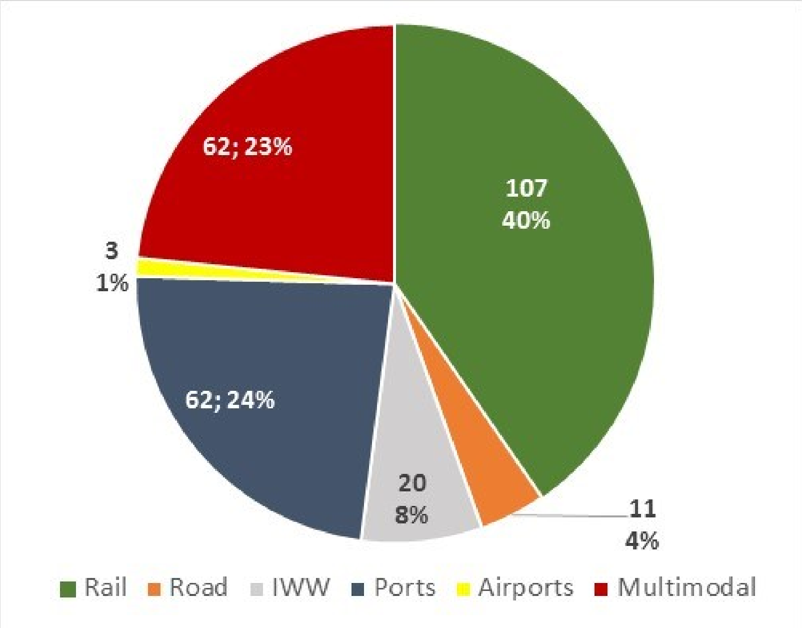
	2010	2010 Share	2050 (Scenario)	2050 Share
Rail	19 805	4.9%	41 048	6.0%
Road	233 004	57.9%	400 895	59.0%
IWT	28 306	7.0%	43 273	6.4%
Sea	121 334	30.1%	194 286	28.6%
Total	402 450	100.0%	679 502	100.0%

Workplan Measures

The aim of the work plan is to indicate projects of common interest demonstrating European value added; these are typically the cross-border projects, tackling critical issues such as bottlenecks, missing links, and lack of interoperability. To a large extent, those correspond to the CEF pre identified projects

In addition to the broader discussions with member States, Corridor Forum and Working group stakeholders towards the finalisation of a list of measures to be included in the work plan, it should be acknowledged that the large majority of identified measures and projects herewith presented, were the subject of extended analysis and evaluation prior to the realisation of current study and included in the national master transport investment plans. Such maturity is also revealed by the high number of projects categorised as “works” (60%).

Overall, 265 projects were identified:



About 40% of the projects address rail infrastructure, notably in view of the elimination of bottlenecks and missing links, a critical issue for the Atlantic corridor. Some 23% focused on ports, both inland and maritime, up to large extent related to capacity bottlenecks and increased of efficiency.

Multimodal projects, i.e. involving two or more modes, including ports-rail/road, ports /IWW, RRT, count for 24% of the total projects in the corridor. About 20 projects (8% of total) are projects addressing bottlenecks in core inland waterways (Seine as inland waterway corridor and Douro, also a core inland waterway feeding the corridor).

Pure road projects target essentially completion of missing links, notably in last mile, representing about 4% of the projects. Additionally to missing links, road projects target measures in view of accomplishing TEN-T requirements as availability of clean fuels, safe parking areas and tolling interoperability.

Globally, the investments for the corridor totals 50 to 65 thousand MEUR (low and high cost scenarios), of which 35 thousand MEUR are directly related with critical issues discussed along the study and summarised in the next pages. Some projects still do not have a clear cost estimation (i.e. those targeting clean fuels, parking areas). Equally projects resulting from the list of actions in RFC4 and described in the respective implementation plan for short (2020), medium (2030) and long term (2050) are presented with a cost variation, i.e. the minimum and maximum amounts are identified but at the current stage the infrastructure managers are not ready to provide more precise cost estimates.

Planned cost (in MEUR) of measures per country and mode

MEUR	DE	FR	ES	PT
Rail	680	33 132 to 39 962	7 608 to 13 458	2 599 to 5 299
Road	121		29	61
IWW		481-541		74
Ports		484	1 080	1 787 to 1 817
Airports			4	162
Multimodal		1057	977	139
Total (MEUR)	**801**	**35 154 to 42 044**	**9 680 to 15 530**	**4 823 to 7 553**

Measures to be implemented before 2020 represent nearly 70% of total planned investments. An overall repartition of investment cost per mode and country is summarised below:

Measures per country and mode to be implemented by 2020

	DE	FR	ES	PT	Total	Total MEUR)
Rail	3	29	15	3	**50**	**21 762**
Road	2	0	1	4	**7**	**211**
IWW	0	15	0	2	**17**	**318**
Ports	1	14	2	40	**57**	**2 289**
Airports	0	0	1	2	**3**	**166**
Multimodal	1	22	15	7	**45**	**1 415**
Total (nr)	**7**	**80**	**34**	**58**	**179**	**26 162**
Total MEUR)	**801**	**16 881**	**4 022**	**4 458**	**26 162**	

Includes the 15 projects for which there is no cost clearly defined but which implementation is planned till 2020

In the table below, the investment before 2020 addressing the most critical issues hindering the corridor deployment, namely the completion of missing links (rail and road), major bottlenecks and interoperability, notably in terms of track gauge, electrification, train length, ERTMS as well as to address bottlenecks on ports (maritime and inland) capacity and connectivity are summarised per mode and per country, totalling an investment of 18,8 thousand million euro.

Measures per country and mode addressing critical issues to be implemented by 2020

	DE	FR	ES	PT	Total
Rail	634	10 381	3 136,5	2 249	**16 400,5**
Road			26	12	**38**
IWW		107		74	**181**
Ports		30		453,5	**483,5**
Airports					**0**
Multimodal		1 376	329,3	18	**1 723,3**
Total (nr)	**634**	**11 894**	**3 491,8**	**2 806,5**	**18 826,3**

Not all critical issues identified are addressed within the 2020 horizon (i.e. some investments in critical issues are expected to be concluded until 2030[3]), but to a large extent the implementation of planned measures is covering and contribute to the Corridor objectives, addressing notably the rail missing links (Évora-Caia), improvement of rail and sea connection to ports as well as bottlenecks in rail, ports and inland waterways.

Uptake Corridor Strengths and Opportunities

In the Atlantic Corridor, there is a solid platform of co-operation, as a basis for future action. The study has highlighted many studies and projects, Priority Projects, signed MoUs, and existing territorial cooperation structures which have been established and promoted over the years. The need to take stock of the numerous cooperation structures in place (e.g. CRPM, Cross-border Euroregions) both for studies, innovation and coordination of services should be continuously reinforced.

The Atlantic Corridor has an important maritime dimension linked to its location in the crossroad of large maritime routes (via the Panama Canal and the Straits of Gibraltar) notably toward North and South America, Neighbourhood countries and Africa. This maritime component is crucial: ports along the façade are key interconnectors (inland/seaside) to stimulate the high potential for deploying Motorways of the Sea and Short Sea Shipping as an alternative route to the inland backbone along the Atlantic coast.

The developments related to the Transatlantic Trade and Investment Partnership (TTIP) with its EU-US-Canada trade agreement, together with the doubling of capacity in the Panama Canal represents an opportunity for the traffic coming from the Americas, Africa and Asia with destinations in Central Europe due to the important environmental and economic advantages related to more competitive transport costs and lower energy consumption.

Within this framework of opportunity, the need to solve the current bottlenecks and missing railway links is critical, notably, the availability of UIC gauge to the end points at the ports of Algeciras, Sines, Lisboa and Leixões and the achievement of network continuity to France. However, and as acknowledged in the Corridor Forum, a joint deployment plan for the UIC gauge in the Iberian Peninsula, together with the necessary evaluation of the Iberian gauge links necessary for the achieving access between the ports and their hinterland, is still to be realised.

To address this issue, the consultants reinforce the suggestion that a dedicated project supporting the definition of a shared planning on the UIC deployment in Iberian Peninsula should be promoted with a clear mandate and regular joint reporting on progress to MS and the European Coordinator. This should become a priority project for rail infrastructure managers and would aim to evaluate the possible options for the migration of each technical system to harmonized systems, establishing as well common deadlines for its implementation.

[3] i.e. UIC track gauge in cross border section Medina del Campo - Fuentes de Oñoro, connection to ports Leixões/Lisboa in UIC track gauge

1. Introduction

1.1. TEN-T Core Network Corridors

Development of the trans-European transport network will provide the basis for the balanced development of all transport modes in order to exploit their respective advantages, thereby maximising the network's value added for Europe. For that, uniform standards and requirements applied to the entire TEN-T network have been established, covering both existing and new infrastructures, in the TEN-T Regulation (EU) 1315/2013 on Union guidelines for the development of the trans-European transport network (TEN-T Guidelines).

One of the key components of the TEN-T is the concept of the "core network", as the "backbone of the multi-modal mobility network". The core network will contain all the requirements of the wider "comprehensive" network, as well as additional requirements reflecting the strategic priority assigned to the core. The EC has set 2030 as the target for achieving the goals of the core network and 2050 for completing the comprehensive network.

The core network has been defined on the basis of an objective planning methodology[4] which had identified the most important urban nodes, ports and airports as well as border crossing points. Wherever possible those nodes are connected with multimodal links.

Within the core network, nine corridors have been defined, in line with the rail freight corridors set up with EU Regulation 913/2010 as well as the European Deployment plan for the ERTMS (Commission Decision 2009/561/EC). Core network corridors should be intermodal and cross at least three Member States, and if possible, they should establish a connection with a maritime port.

The Core network corridors (CNC) should help to develop the structure of the core network in such a way as to address bottlenecks, enhance cross border connections and improve efficiency and sustainability. They should also address wider transport policy objectives and facilitate interoperability, modal integration and multimodal operations[5].

1.2. Core Network Corridor studies

In addition to the corridor infrastructure provisions (comprising road, rail, inland waterways, maritime, air, multimodal infrastructures and ITS equipment), specific guidelines for governance and co-ordination are also established.

Each corridor will have a European Coordinator, and a platform (Corridor Forum), which may be formally established as a permanent legal entity. One of the initial tasks of the corridor fora will be to support the Coordinator in drafting of a corridor work plan, incorporating amongst other, the following requirements:

- A description of the corridor, including its bottlenecks;
- The objectives in terms of performance and an analysis of the corridor's compliance with the network requirements;
- A multimodal transport market study;
- An implementation plan;
- An investment plan

[4] SDW (2013) 542 final, Commission Staff Working Document The planning methodology for the trans-European transport network (TEN-T) accompanying the document COM(2013) 940 final
[5] TEN-T Regulation (Regulation (EU) 1315/2013)

To establish the basis for the corridor development plan, detailed analysis of current status of infrastructure in the corridors is needed, informed by previous developments, studies and projects. The MoU's signed, Cooperation Structures established as well as Technical Cooperation structures are part of a common learning process and need to be evaluated as basis for future actions.

CNC studies for the nine corridors are developed following a common methodology centred in three main interlinked pieces.

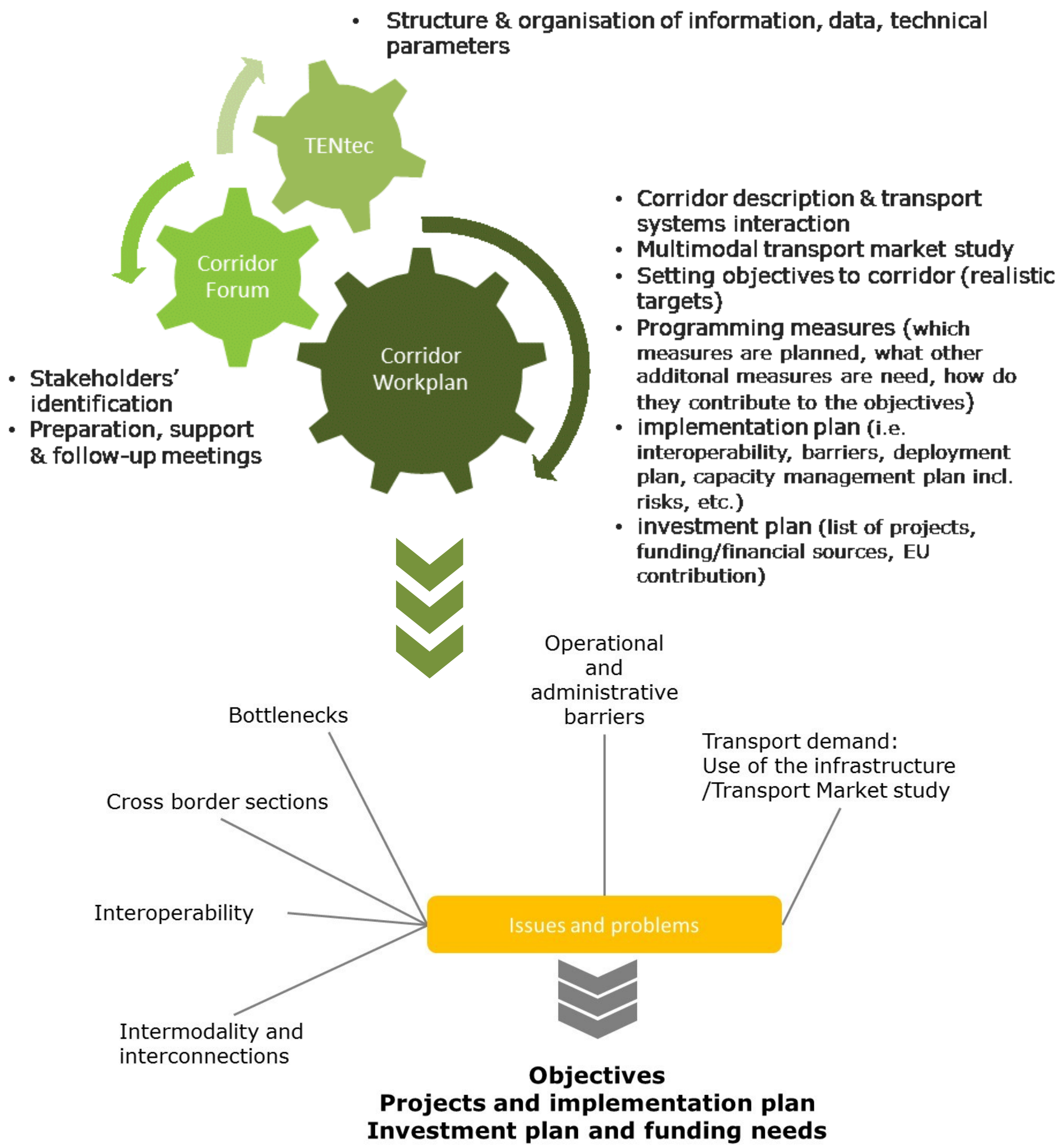


Figure 1: CNC studies methodology

1.3. Purpose and structure of this report

This document corresponds to the Final Report of the Atlantic Corridor core network study. This final document is the result of progress reported along four Progress Reports and interactions between DG MOVE, the consultants, the Corridor Coordinator, the representatives of the Member

States on the corridor and infrastructure managers, both along the four Corridor Forum, working group meetings and through bilateral meetings.

It includes the following main chapters:

- Overview on the progress of activities
- Review of studies, highlighting the main conclusions and relevance for the current study
- Elements of the corridor work plan, structured along three main aspects: i) description of the characteristics of the corridor (technical parameters compliance with TEN-T requirements, ITS deployment, bottlenecks and missing links and Transport Market Study key results), ii) overall corridor objectives and, iii) implementation plan, comprising a list of projects and deployment plans for transport management systems as well as plans for the removal of physical, technical, operational and administrative barriers between and within transport modes and for the enhancement of efficient multimodal transport and services
- Overall conclusions

The report includes the following exhaustive annexes:

- List of projects with investment needs (standard tables)
- Comprehensive list of corridor stakeholders;
- Transport Market Study
- Port factsheets for "Atlantic Maritime Ports"
- Minutes of Corridor Forum
- Comprehensive analysis of studies reviewed

1.4. Information on the study as such

Corridor implementation Structure

In order to facilitate the implementation of the Core network corridors, corridors are headed by a European Coordinator; in the case of the Atlantic Corridor the appointed coordinator is Prof Carlo Secchi. An advisor within DG MOVE supports and accompanies the development and progress of activities; in case of Atlantic corridor the appointed advisor is Mr Carlo de Grandis. Other units with the Commission closely follow the corridor developments, in particular INEA and DG Regio.

As established in the Regulation (EU) 1315/2013, the work of the European Coordinator has been assisted by a consultative Corridor Forum, established in agreement with the Member States concerned. Attendees of the corridor fora are the Member States, infrastructure managers along rail, road, ports (maritime and inland), airports and inland waterways as well as the regional authorities along corridor regions. The main task of the Corridor Forum has been to

- provide access to relevant data, information and projects relevant for the analysis; and,
- actively contribute to establish the corridor work plan by the end of 2014.

By December 22nd the Coordinator must submit to the Member States concerned the work plan, which, after approval by the MS, shall be submitted for information to the European Parliament, the Council and the Commission.

The European Coordinator and the Member States in the Corridor Forum are supported by a consortium of consultancy companies contracted by the European Commission.

Members of Atlantic Corridor consortium are:

- TIS.pt, consultores em Transportes, Inovação e Sistemas, SA (Portugal), the lead partner
- INECO, Ingeniería y Economía del Transporte, S.A. (Spain)
- EGIS France
- Panteia B.V. (Zoetermeer, The Netherlands), as subcontractor

Consultant's main tasks (see Figure 1) are:

- Fact finding: identifying stakeholders, gathering and reviewing existing studies and material, introducing infrastructure parameters in the TENtec system;
- Preparation of the work plan elements;
- Support for the meetings of the Corridor Fora.

The progress in each of the study activities is below summarised.

1.4.1. Fact finding

Review of studies

Collection, review and synthesis of previous studies and other corridor relevant material represents a key activity for drawing out a complete picture of the past, present and future views at the corridor level.

A summary of the reviews conducted and its main findings in the context of the study are described in chapter 3, while full synthesis is available in annex.

Technical parameters information gathering (TENtec)

Gathering, processing and analysing of technical data (i.e. infrastructure data, technical equipment and traffic data) is a major pillar for compiling the characteristics of the corridor. A subset of 68 parameters in TENtec glossary (dated 6-2-2014) were marked as mandatory for collection. Data collected is referred to January 2014 in what concerns infrastructure and December 2013 for traffic data.

Table 1: TENtec parameters

TENtec technical files	Nr of parameters
Railways	24
Roads	14
Airports	3
Ports	10
Inland Waterways	13
Rail-road terminals	3
Alternative fuels	1
Total	**68**

Parameters have been collected for all networks and nodes. For common and shared sections in the corridor, the responsibility for data collection and upload in TENtec was allocated to a single team.

Country	Node /Section	Shared with	Data collection /TENtec upload responsibility
Germany	Mannheim, Ludwigshafen	Rhine Alp Rhine Dan	RALP
France	Metz	NSM	ATL
	Paris	NSM	
	Strasbourg urban node	NSM Rhine Alp Rhine Dan	
Spain	Algeciras - Madrid	MED	MED
	Madrid node	MED	

At the present date, data upload in TENtec still present weaknesses on traffic demand data. This is particularly the case for rail and rail-road terminals.

1.4.2. Preparation of the work plan elements

Characteristics of the corridor

Based on the corridor definition and the gathered technical data for the TENtec system, a verification of their compliance with selected parameters has been carried out. This exercise was made for the relevant modes focussed on the infrastructure parameters laid down in the "Annex 1 of the Working Paper" prepared by the European Commission.

Based on that assessment and study reviews, missing links and bottlenecks have been identified. Inputs gathered during the Corridor Forum and discussions with MS were considered.

A set of Working Meetings have been promoted with MS representatives in the Corridor Forum as well as with Infrastructure Managers, in particular:

Spain	Meetings with designated MS representative and other members in respective department in the Ministry as well as with ADIF and D. G. of Railways in the Ministry and with Puertos del Estado.
Portugal	Meetings with designated MS representative and other members at IMT, REFER, all Port administrations, Estradas de Portugal and with INAC. Both joint meetings with all modes and modal meetings have been promoted
France	Meetings with designated MS representative and other members in respective department in the Ministry as well as with VNF, RFF and port authorities. Bilateral discussions with RFC4 representative and port authorities were also promoted
Germany	Discussions with Germany have been mainly supported in the Corridor Forum and bilateral e-mail messages with MS representative.

The list of projects and investments in each of the MS largely results from the concerted work between the consortium and MS representatives along the meetings promoted.

The current version of the work plan considers all project information provided and coordinated with the Member States. It provides an analysis of the projects regarding scope of measures, maturity / status of work as well as costs and funding and the assessment of projects compliance with the identified critical issues.

Multimodal Transport Market Study

The transport market study is carried out considering rail, road, maritime and inland waterway transport, air transport and intermodal transport chains as an essential input for the assessment of the further development of the Atlantic Corridor.

It describes the situation, i.e. O/D flows, taking as reference the year 2010, the year with harmonised data for all countries. This is completed with additional data collected along the study. The aim of the forecast is to explore the development of the entire corridor-related transport market and in particular the modal split due to estimations and assessments on potentials to modal choice decisions in passenger and freight transport for 2030 and 2050. The analysis of the modal share shall assume the completion of the Atlantic Corridor as foreseen in the TEN-T Regulation and that the corridor-related infrastructure will provide the capacity required by the forecasted transport demand.

As foreseen in the study specifications, it is envisaged that TMS falls back on relevant previous studies available for sections or the entire corridor. In the case of the Atlantic Corridor this results primarily from the following market analysis for the corridor:

- Transport Market Study of the Rail Freight Corridor 4
- Market analysis for passengers railway traffic in Atlantic Corridor in 2020, EEIG Vitoria-DAX
- Study for the development of Rolling Motorway services in the Iberian Peninsula in 2020

1.4.3. Support the Corridor Forum Meetings

During 2014, four meetings of the Atlantic Corridor Forum and two Working Group meetings (one with Ports and Inland Waterways and other with Regions) were realised. That close coordination with stakeholders together with the findings of present study, will constitute background support and basis for the European Coordinator's corridor work plan.

As foreseen the participants in the Corridor Forum have been progressively enlarged:

- The first Forum held in Brussels on the 3rd April 2014, was attended by MS representatives and focused on:
    - General background on Core Network Corridors
    - First outline of the Corridor, including first description of bottlenecks / critical issues
    - Overview on-going TEN-T projects
    - Exact determination of the infrastructure belonging to the corridor
    - Identification of responsible persons within the Member States
    - Identification of possible stakeholders in the Corridor Forum
    - Data encoding/missing data in TENtec
    - Presentation of the timing and process for the establishment of the work plan
- In the second forum, held on the 19th June 2014, counted in addition to MS representatives with the participation of infrastructure managers from rail, ports (both maritime and inland) and inland waterways as well as the Director of RFC4. The 2nd Corridor Forum was focused on:
    - Current outline of the Corridor: State of play of the 2nd progress report of the Corridor analysis and revision of existing studies
    - Determination of the infrastructure belonging to the corridor – fine tuning; discussion with Member States Representatives and Infrastructure Managers
    - Data encoding/missing data Identification in TENtec – State of play
    - Presentation of the activities of Rail Freight Corridor 4
    - Transport Demand Analysis: methodology and key assumptions, relevant studies, and planning, outline

- Presentation of the potential stakeholders in the 3rd Corridor Forum
- In the third forum, held on the 1st October 2014, in addition to the previous, also road and airport infrastructure managers and regional authorities for corridor regions participate. The focus of third forum was:
  - Current outline of the Corridor, notably its characteristics and compliance with TEN-T requirements, objectives, market study and outline of workplan, in particular the overview on measures and investments.
  - Feedback from working group on ports and IWW managers held in the day before
  - Presentation of Atlantic Rail Freight Corridor activities
  - Feedback from the different Infrastructure managers and Region representatives
  - Presentation by the EC on the next steps for the Corridor Forum and new working group for regions
- The fourth forum, held on the 19th November 2014, counted with the same group of participants as the third and was focused on:
  - Presentation and discussion of the draft final progress report
  - Presentation by Portugal and Spain on the UIC gauge deployment plan in Iberian Peninsula
  - Feedback from working group on regions held in the day before
  - Presentation of cross-cutting issues by the EC, notably ERTMS, ITS and Innovation

Consultants ensured the preparation of participant lists (in agreement with the MS representatives) and respective invitations (anticipated by a "save the date" message), prepared the background material and ensured the relevant presentations in the Forum. Minutes of Forum meeting were prepared and circulated among all participants for comments. A consolidated version of Corridor Forum meetings was enclosed to each report produced and approved by Member State Representatives in the subsequent Fora.

Regulation (EU) 1315/2013 allows that the European Coordinator sets up working groups upon approval of Member States. From the 2nd Forum, the European Coordinator proposed to establish two working groups on the Atlantic Corridor: one working group with Port and Inland Waterways, and a working group with Regions.

The working group on Ports and Inland Waterways met in the day before the 3rd Corridor Forum, being focused on the following main topics:

- to gather input for and feedback on the corridor study
- to allow for in-depth exchange on issues related to ports
- to develop a joint vision of the corridor

The working group on regions met the day before the 4th Corridor Forum and was oriented towards:

- role of the Corridor for the Atlantic regions
- existing cooperation structures / cross border initiatives / projects and how they articulate with Atlantic Corridor
- vision for sustainable and efficient transport pattern in regional development plans and investment strategies and how are they synergic with the Corridor

Other working group meetings for Ports (or other topics) may follow in 2015 (upon approval of Member States). The potential interest of new WG going beyond only cross-border section projects, including wider scope common interest issues, as for example rail interoperability, has been proposed during the 4th Corridor Forum.

1.4.4. Atlantic CNC and Atlantic Rail Freight Corridor

Although both the Atlantic core network corridor and the Atlantic Rail Freight Corridor (RFC4 cover the same geographical area, the elaboration of the TEN-T Core Network Corridor Study and the RFC 4 Implementation Plan are based on different European regulations and thus follow different methodologies:

- Regulation (EU) No 913/2010 for the RFC4
- Regulations (EU) No 1315/2013 and (EU) No 1316/2013) for the CNC

The following table highlights some of the differences in both studies:

	Core Network Corridor	Rail Freight Corridor
Alignment	Core network sections as defined in the Regulation (EU) 1315/2013	Include diversionary routes and principal lines which are classified as comprehensive links inside the core network
Nodes	Only core network nodes as defined in the Regulation (EU) 1315/2013 are described for compliance assessment. (ports / terminals)	Include various connecting links classified as comprehensive links inside the core network (and other nodes not classified)
Assessment of infrastructure characteristics	Core parameters defined in Regulation (EU) 1315/2013: • Electrification • Axle Load: 22.5t • Line speed: Freight: 100 km/h • Train Length: 740m • ERTMS • Track Gauge: 1435mm Other parameters are analysed but not reported as a critical issue	All parameters
Main focus	Infrastructure planning (EU level coordination)	Implementation Plan (annual time table among business partners, pre-arranged train path, One-Stop-Shop)
Traffic	Network load on respective corridor sections	Trains crossing one corridor border and origin and/or destination on corridor
Scope	Multimodal Passengers & Freight	Rail Freight

2. Identification of Stakeholders

Corridor stakeholders fall into four main categories:

- Member States (MS) – Transport Ministries
- Infrastructure Managers (IM) – for each mode of transport
- Corridor Regions (CR) – equivalent to either NUTS1 or NUTS2 regions.
- Infrastructure users and wider society (IU).

The role of stakeholders can be distinguished as follows:

- providing with studies and information in the field of analysis, as well as various databases and sources of information useful to identify and analyse current and emerging issues;
- as participant of the Corridor Forum, providing with their opinion as well as valuable experience in their respective fields. Furthermore, the Corridor Forum also represents a chance to receive feedbacks and opinions on the preliminary results of this study, as well as gather suggestions and fine-tune the following activities.

Four stakeholder Corridor Forum have been organised. The first was attended by the Member States, the second was enlarged to include infrastructure managers from seaports, inland ports, inland waterways, and railways. The third forum included also regions and infrastructure managers from the road and airport sectors. The fourth forum was attended by the same stakeholders group as the third.

The wider society group, composed notably by cooperation structures as Cross border Euro regions, Interreg project consortia, CRPM (Conference of Peripheral and Maritime Regions), transnational organisations and other relevant associations, was initially foreseen to take part in the fourth Corridor Forum; in the course of the corridor studies it was decided by the European Commission that direct involvement of society wider group in Corridor Forum would only take place in subsequent developments of corridor studies. Consultation of civil society, user organisations and representative organisations is ensured by the Coordinators outside the formal Forum meetings, possibly when being on mission in the different Member States and/or through other events along the corridor.

Stakeholders' role in terms of data provision through the study can be described as:

	MS	IM	CR	IU
Alignment of the Corridor	X	X		
Literature and Studies	X	X	X	X
Identification of Bottlenecks	X	X		X
Technical Infrastructure Data	X	X		
Network Traffic Data	X	X		
Identification of Projects	X	X	X	
Investments & Funding	X	X		

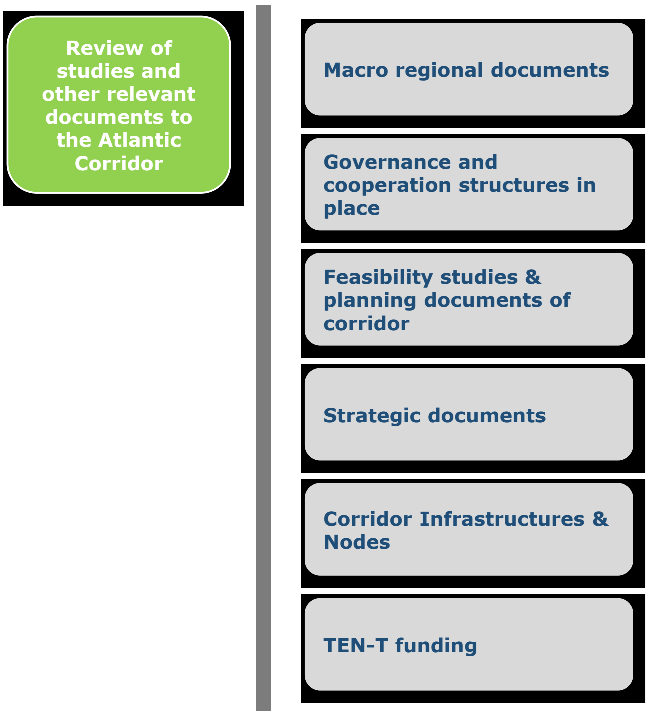
The comprehensive list of stakeholders in the corridor is included in Annex 3.

3. Review of Studies

A substantial number of studies and documents have been reviewed and are compiled in annex. The primary goal of reviewing is to provide a complete picture at corridor level as basis for the Corridor work plan, notably:

- Policies and strategies
- Macroeconomic indicators
- Bottlenecks
- Technological factors
- Technical oriented factors
- Planned investments and measures

Documents were reviewed and structured along six main categories as follows:



3.1. Overview of Literature review

Atlantic Corridor, as like the other CNC has a history which represents its strong backbone for future action; a set of many studies and projects, Priority Projects, signed MoUs, territorial cooperation structures were established and promoted over the years. Some of the relevant initiatives supporting the Atlantic Corridor development are highlighted in Figure 2.

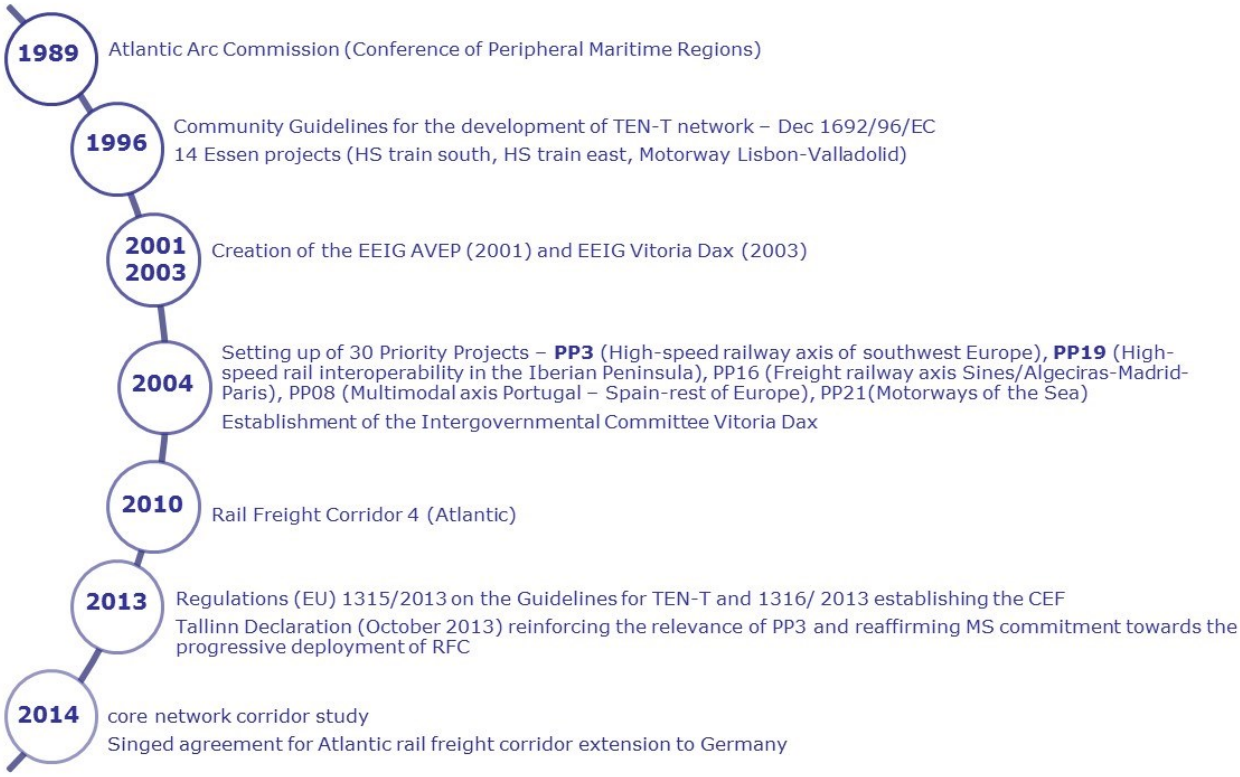


Figure 2: Relevant milestones for the Atlantic Corridor

The following studies stand out as reference for the current work:

- The cross border surveys conducted by the Cross border transport observatories France – Spain and Spain-Portugal, providing freight and passenger flows for 2010. Of particular relevance is the 2010 TRANSIT survey including OD flows at NUT3 level to/from Iberian Peninsula crossing the Irún –Hendaye border

- Rail Freight Corridor 4 reports, in particular the "Transport Market Study, 2013" and "Implementation Plan, 2015"
  These reports provide both demand and supply information on three of the four corridor countries, plus a (less detailed) analysis for the (planned, now actual) extension to Germany. On the supply side, there is a large amount of technical characteristics of infrastructure, analysis of bottlenecks and missing links as well as a detailed list on implementation measures and planned investments, which were up to a large extent reverted in the corridor work plan.
  On the demand side, total demand (tonnes exchanged between countries) along the corridor area have been estimated to the horizon 2030. The macroeconomic assumptions were supported in a detailed analysis and modelling work.

  Although corridor alignments follow a similar path, RFC4 includes sections and alternative itineraries which are not part of the core network corridor. The documents also describe in good detail the rail-rail and rail-road terminals facilities; however most of them do not integrate the CNC, and as such they are not reflected in the CNC infrastructures. Additionally it is worth to highlight that while covering the same geographical area, the elaboration of the core network corridor study and the RFC4 Implementation Plan are based on different European regulations (Regulation (EU) No 913/2010 for RFC4 and Regulations (EU) No 1315/2013 and (EU) No 1316/2013) for CNC studies and thus have different methodologies.

- In addition to RFC4 market study, other studies as the Rolling Motorway, West-MoS, etc. include demand forecast at short, medium and long term. Those forecast are mainly oriented towards freight.

- The Study of the passenger transport on the Atlantic Corridor in 2020 and 2030 (EEIG Vitoria-DAX, 2013) stands as reference for passengers, updating the previous study from 2009, which can be considered as outdated. As from that study, rail passenger flows (domestic and international traffics) that could be affected by Vitoria Dax rail service in the Atlantic by 2030 are estimated at 42,5, million value that can increase to 43,6 once the new service between Bordeaux and Spain is available.

- Platina II which has developed information packs specifically for the corridor studies, also containing further literature reviews is particularly relevant for the analysis of the Seine IWW in the corridor. Together the information presented by Platina, provides the state of the art on inland navigation together with detailed information on existing bottlenecks

- The Strategic Transport Investment and Planning Documents with the main investments in each of the corridor countries: those documents were of utmost relevance and constitute the backbone for the elaboration of projects and investments as well as (when available) for the assessment of forecasted demand.

- European studies with high level economic analysis and forecasting, containing access to transport data, and modelling tools: a key study used in this report is the ETISplus project (FP7), which provides multimodal flow data and network data according to a uniform structure for all European countries, (dated referred to 2010). Another relevant basis is provided in the ITREN project and the EU reference scenario 2013 - EU Energy, Transport and GHG Emissions Trends to 2050: Reference Scenario 2013.

- Some of the reviewed studies could be classified as outdated (but an integral part of the corridor history) and in general they were already object of revisions and updates, that is the cases of:
    - "Study of the passengers markets and traffic of the Atlantic Corridor in 2020 (EEIG Vitoria-DAX, 2009)", updated by "Study of the passenger transport on the Atlantic Corridor in 2020 and 2030 (EEIG Vitoria-DAX, 2013)".
    - "Study of the freight markets and traffic in the Atlantic Corridor in 2020 (EEIG Vitoria-DAX, 2010)", updated by "Study of the freight traffic and market on the short, medium and long term at the European Rail Freight Corridor nº4 (RFC4, 2013)"
    - "Trans-Pyrenean freight transport flows (July 2008)", updated by "Freight transport flows across the Pyrenees (EEIG TGC Pyrenees 2013)"
- Others, while providing interesting results, namely the reviews of the High Speed passenger lines Portugal-Spain, are outdated, given the cancel of High Speed Program in Portugal, for the near future.

3.2. Main Conclusions from literature review

The literature review has identified a large number of documents relevant for the corridor analysis. However, since the corridor is a new entity as a European multimodal corridor for both passenger and freight transport, there are no studies which address its full scope. The most complete overview is given by the RFC4, however just focused on freight. In general, most of the studies were oriented for freight transport and less to passengers.

RFC4 market analysis highlight that in the base year of 2010, 298 million tonnes of international traffic are accounted, split as: road (55%), maritime transport (41%) and Rail traffic (4%). By

2030, the RFC4 study estimated that total corridor volumes would rise to 475 million tonnes, with road (55%), sea (41%) and rail (4%). Thus all modes of transport are expected to grow at similar levels.

Traffic forecast, reverting the infrastructure planned measures, shows a significant growth of rail traffic between 2010 and 2020, particularly regarding cross-border flows, which is justified by the combined effect of the adaptation to the UIC gauge of the entire line that stretches from the French border to Valladolid and the opening of the first Atlantic service of rail motorway. The rail mode share (including the flow of Atlantic motorway) is estimated to reach 11.2% (against 6.6% in 2010) and 13,4% in 2030.

Main analysis for passengers is presented in the EEIG Vitoria-DAX study “Market analysis for passengers’ railway traffic in Atlantic Corridor in 2020”. One of the most important conclusions of this study was the estimation of the passenger 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.

Although almost all studies point to the expected considerable growth for rail traffic through the Pyrenees in result of the conversion to UIC gauge in Portugal and Spain, it should be acknowledge that despite that growth, the share of rail would remain globally at a modest level in those countries.

Promotion of Motorways of the Sea was object of detailed analysis in the West MoS project, with market research showing that in 2020 it would be possible to achieve nearly 28 million tons.

The report on the mission to reconfigure the Canal Seine-Nord Europe, Seine-Escaut network, important for the Seine inland waterway and French inland ports in the region, establishing a set of actions on the canal to improve competitiveness of industry and contribute to regional sustainable development , notably:

- 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.

Finally it is worth to refer the Annual Reports by the Coordinator and Annual Progress Reports on implementation of Priority Projects, notably:

- PP 3 with its two branches: the Atlantic branch linking Madrid-Valladolid - Burgos-Vitoria-Bilbao/San Sebastian-Dax-Bordeaux-Tours (Paris) and the Iberian branch linking Madrid-Lisboa-Porto
- PP 8 (Multimodal axis Portugal – Spain-rest of Europe),
- PP 16 (Freight railway axis Sines/Algeciras-Madrid-Paris),
- PP 19 (High-speed rail interoperability in the Iberian Peninsula)
- PP 21 (Motorways of the Sea)

4. Elements of the Work Plan

Atlantic corridor (a diagonal corridor from Europe’s South-Western Regions towards the centre of the EU) links the Iberian Peninsula ports of Algeciras, Sines, Lisboa, Leixões (Porto) and Bilbao through western France to Paris and Normandy and further east to Strasbourg and Mannheim. It covers rail, road, airports, ports, RRT's and the River Seine inland waterway.

With a priority attention given to high speed rail lines and parallel conventional ones, the Corridor will provide for the continuity of the rail network between the Portugal, Spain, France and Germany. The Atlantic Corridor has a relevant maritime dimension since it is linked to the crossroad of global maritime routes (via the Panama canal and Straits of Gibraltar) notably toward North and South America, Neighbourhood countries and Africa; it is also endowed with high potential for deploying Motorways of the Sea and Short Sea Shipping as an alternative route to the inland backbone along the Atlantic coast.

One of corridor’s main objective, together with enhancing modal integration and maritime connections, is to enhance railway interoperability by a track gauge change to UIC standard on the Iberian Peninsula.

This Core Network Corridor (CNC) is connected with four other CNCs, creating the potential for generating additional network effects, one of the priorities within TEN-T. Important connections to the wider network include:

- A shared section between Algeciras – Madrid with Mediterranean Corridor (MED)
- Connections in Paris and a shared section between Metz and Strasbourg with North Sea–Med Corridor (NSMED)
- Connections in Mannheim with Rhine–Danube (RDA) and Rhine-Alpine (RALP) Corridors

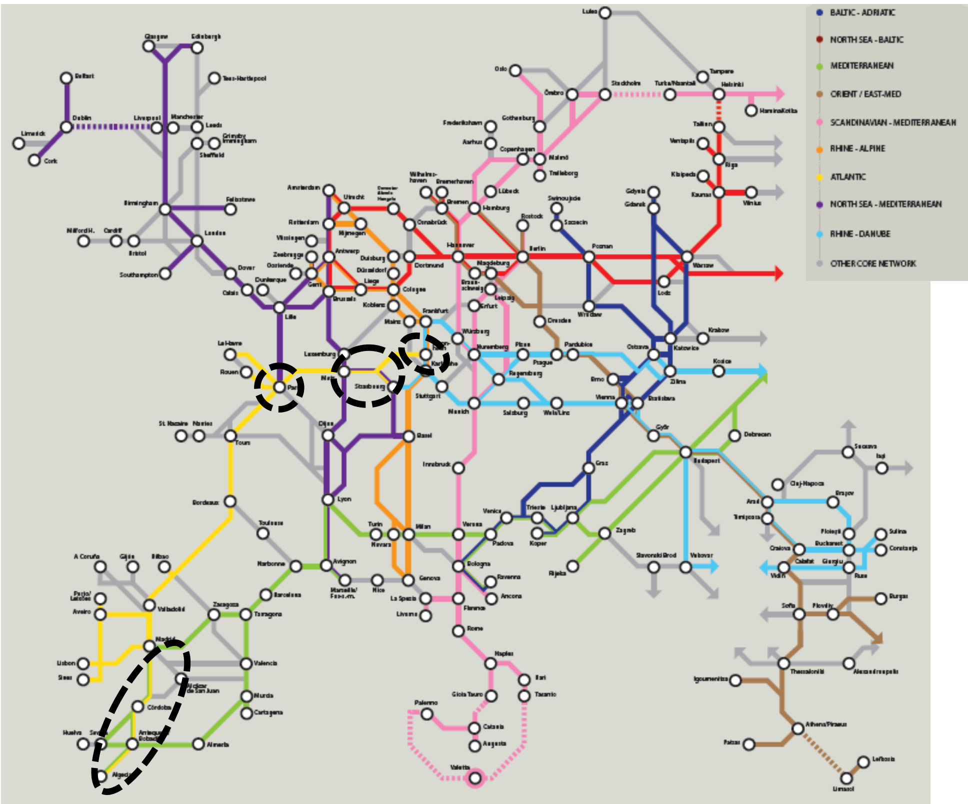


Figure 3: Atlantic Corridor alignment and connection /common sections with other corridors

As in annex of the legal text, the Atlantic Corridor is defined as shown below:

- Algeciras – Bobadilla – Madrid
- Sines / Lisboa – Madrid – Valladolid
- Lisboa – Aveiro – Leixões/Porto
- Aveiro – Valladolid – Vitoria – Bergara – Bilbao / Bordeaux – Paris – Le Havre / Metz – Mannheim / Strasbourg

It is noted that the maps defining the core and comprehensive networks (Annex 1, Regulation (EU) 1315/2013) do not show precise alignments of core network corridors which are instead indicated as sequences of cities.

One objective of current corridor studies was to determine the parameters of the infrastructures belonging to the corridor, and, in exceptional cases, to clarify:

- the alignments belonging to the Corridor among alternatives within the Core network,
- last mile components
- actual routes of flows through important urban nodes

This will allow assessing the compliance of the current infrastructure with the defined standards based upon the TEN-T Regulation (Regulation (EU) 1315/2013)

Table 2: Corridor nodes per country (Regulation (EU) 1315/2013)

Country	Node	Urban	Airport	Seaport	Inland port	RRT	Shared with
Germany	Mannheim, Ludwigshafen	x			x	x	RALP RDA
France	Bordeaux	x	x	x		x	
	Le Havre			x	x	x	
	Metz				x		NSM
	Paris	x	x (CDG /Orly)		x	x	NSM
	Rouen			x	x		
	Strasbourg				x	x	NSM RALP RDA
Spain	Bilbao[6]	x	x	x		x	
	Valladolid					x (planned)	
	Madrid	x	x			x	MED
	Alcázar de San Juan					x (planned)	MED
	Córdoba					x	MED
	Antequera					x (planned)	MED
	Algeciras			x			MED
Portugal	Lisboa	x	x	x			
	Porto (Leixões)	x	x	x	x[7]		
	Sines			x		x (ZILS)	
	Poceirão					x (planned)	

[6] In future revisions of Regulation, the consideration of core and comprehensive status of the existing and planned rail-road terminals in the Basque Country (such as Jundiz terminal) could be object of revision.
[7] The port of Leixões is a maritime port with port authority with jurisdiction on the inland port (Douro) and mouth of Douro river (core IWW).

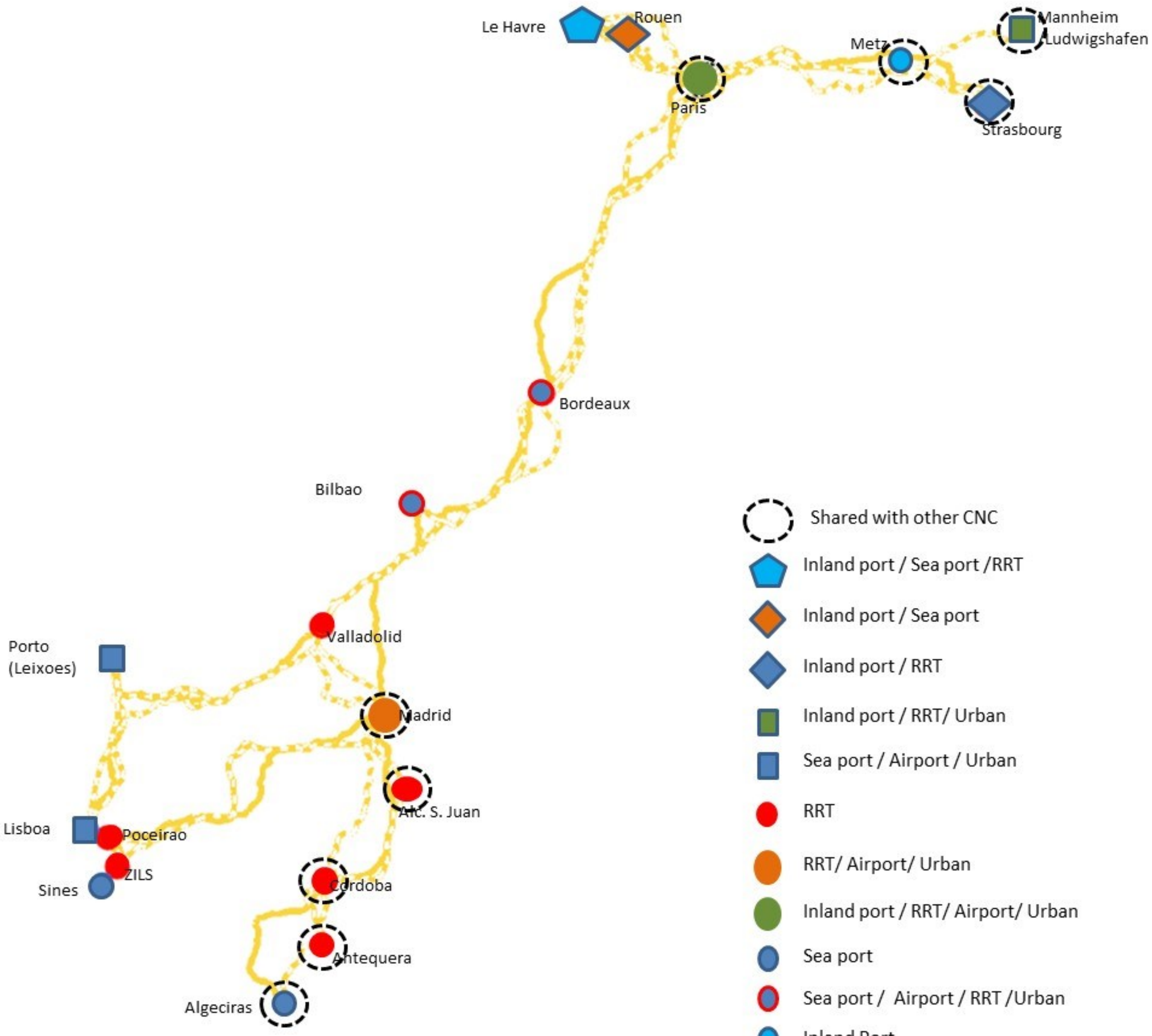


Figure 4: Atlantic core corridor nodes

Figure 5 and Figure 6 highlight the main sections (designations as in TENtec) integrating the core rail and road network.

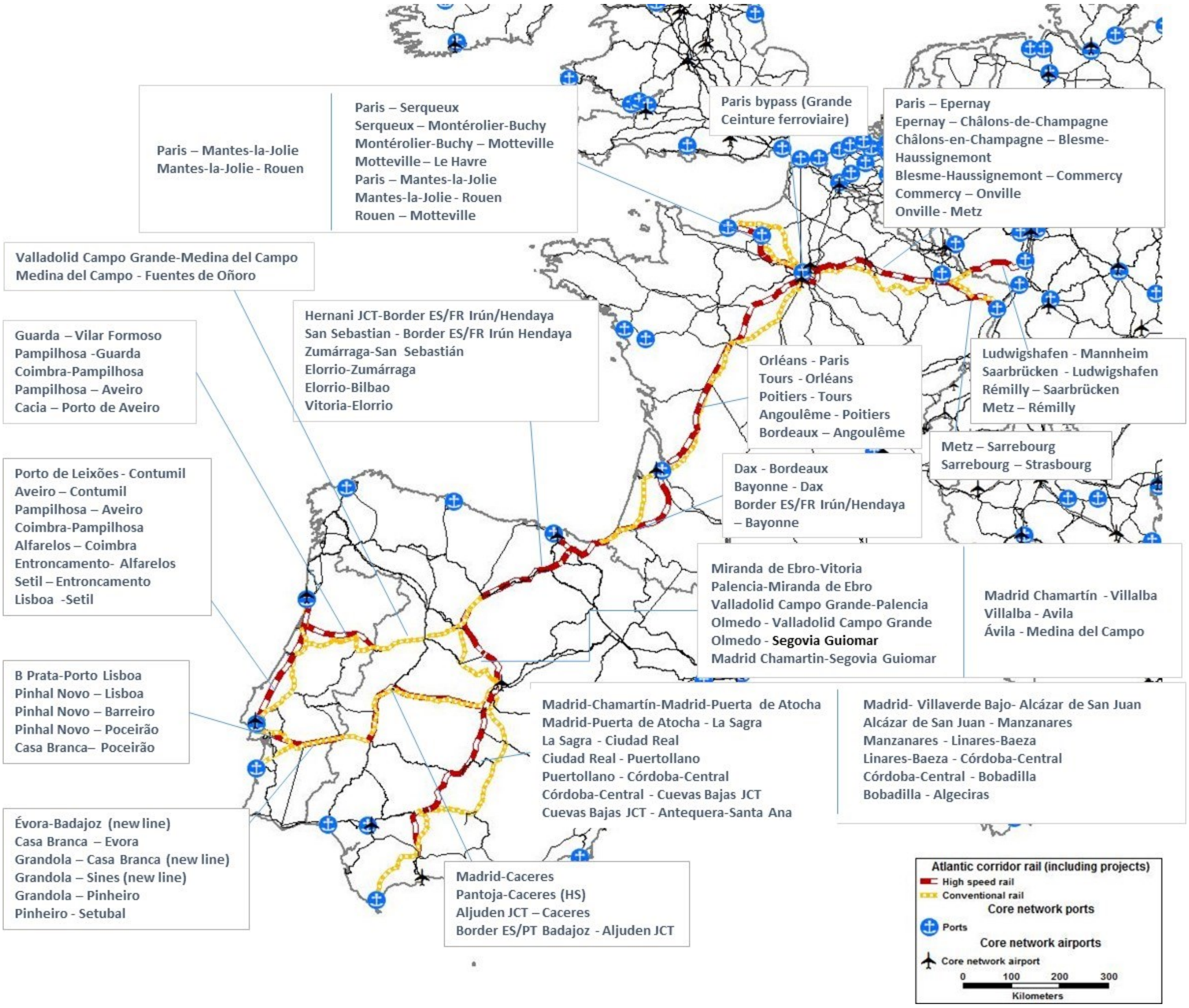


Figure 5: Atlantic core rail network sections

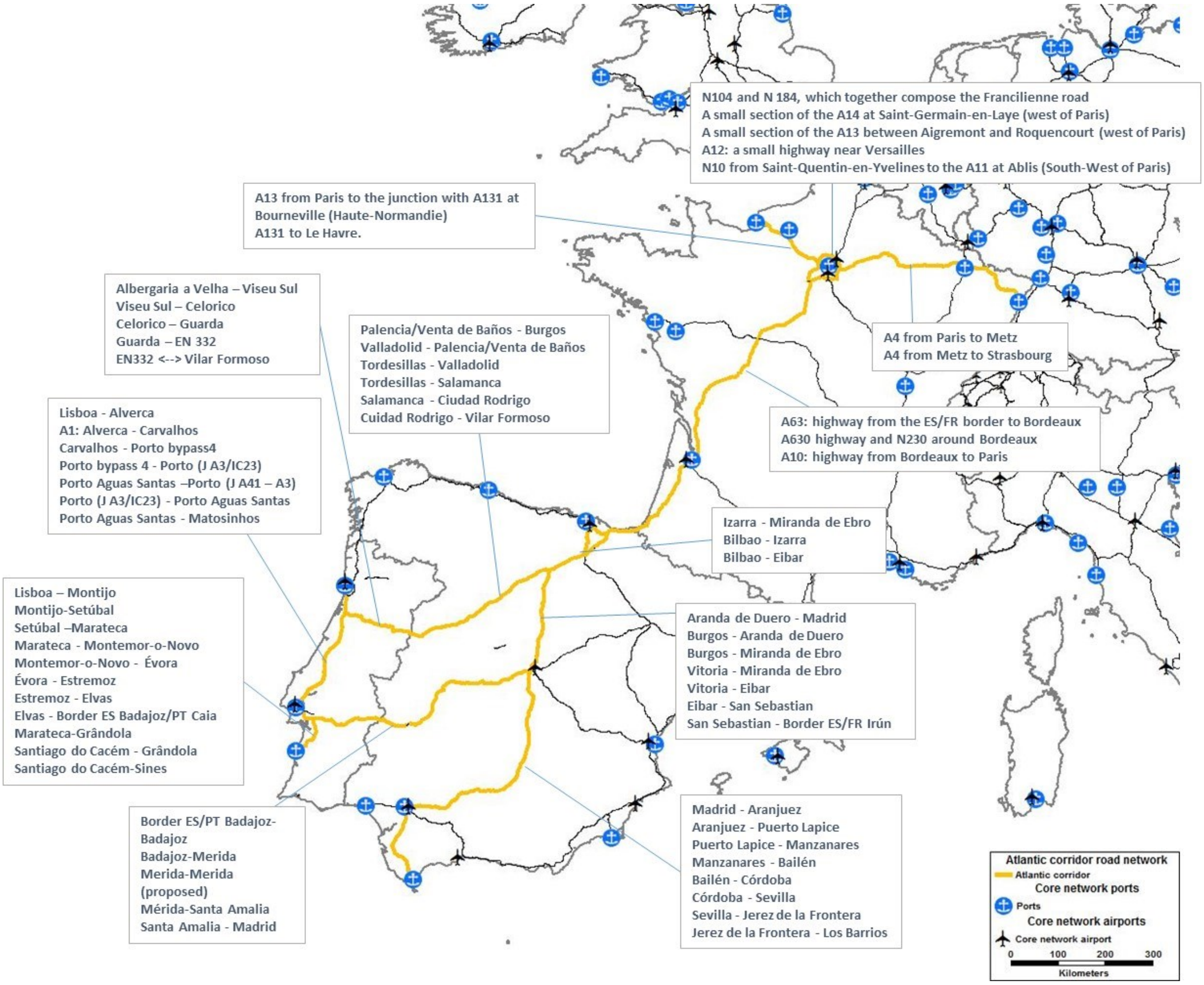


Figure 6: Atlantic core road network sections

The Seine River, comprising the sections Le Havre – Tancarville - Conflans-Sainte-Honorine (287 Km) is the only inland waterway integrating the Core Network Corridor.

In the geographical area of the Atlantic there is also a core inland waterway in the Douro River (Portugal and cross border with Spain) but it is not included in the Core Network Corridor.

Figure 7: Corridors' IWW in the Ile-de-France and Haute-Normandy regions

4.1. Description of the characteristics of the corridor

4.1.1. Technical Parameters

Regulation (EU) 1315/2013 provides the technical requirements for the core network infrastructure. These are summarised in Table 3.

Table 3: TEN-T technical parameters requirements (Regulation (EU) 1315/2013)

Rail	Inland Waterways
Electrification Axle Load: 22.5t Line speed: Freight: 100 km/h Train Length: 740m ERTMS Track Gauge: 1435mm	Class: CEMT IV (1000-1500t vessel) Length: 80/85m Beam: 9.5m Draught: 2.5m Height: 5.25/7.00m
Road	**Ports**
Express road or Motorway Parking areas every 100km Availability of clean fuels Interoperable tolling	Rail connection Waterway connection – where possible Availability of clean fuels Indication and promotion of MOS connections
Airports	**Rail-Road Terminals**
Availability of clean fuels Connection to rail network (heavy or core) Connection to road network	Indication of capacity

Source: DG-Move, working paper, 26-02-2014

Data sources

For roads, data required for the 14 parameters was collect from previous studies, IM reports and discussed with infrastructure managers. In Portugal, data was collected and validated with EP, in Spain they were collected from official maps of roads and validated by Ministerio de Fomento and in France data was collected from Sétra. There is no core network section in the corridor for Germany.

For railways, data collection of the required 24 parameters was mainly based on the network statements and consultation with the infrastructure managers. Traffic data is limited for both passenger flows and freight flows.

For airports, the main sources for connections with rail were the respective infrastructure managers and IM reports and websites. For traffic demand, main source was the IM annual reports and direct consultation.

For ports, data was collected from previous studies, ports annual reports and websites, ESPO and near the port authority managers.

For road rail terminals (RRTs) data is quite fragmented. The main sources were the AGORA Intermodal Database and terminal operator websites for traffic flows and network capacity.

4.1.2. Compliance of Infrastructure with TEN-T standards

The assessment of compliance below presented refers to the status of infrastructure as of January 2014. This means that planned core network sections which are not yet in operation are not included in this analysis. Such situation is particularly noticed for the rail infrastructure where along the corridor, several sections are not yet constructed and/or in operation and consequently its extension is not taken into account in the calculation of accomplishment criteria.

Road network

Road parameters are very much align with the requirements in areas such as comfort, safety and sustainability issues, as well as the existence of interoperable tolling systems.

Table 4: Road compliance

		Proportion (km %) of links reaching standard				
		DE	**FR**	**ES**	**PT**	**Corridor**
Length of all sections	km	No section belonging to CNC	1691	2043	801	4535
Express Road or Motorway	Express or Motorway		100%	99,8%	99,7%	99,8%
Sufficient Parking Areas	>=1 area / 100 km		100%	~ 61%	~ 100%	~ 87%
Availability of clean fuels	LPG		100%	100%	100%	100%
	Electric		0%	10%	44%	12%
	Hydrogen		0%	0%	0%	0%
Use of tolling system or other traffic management	Toll road km		78%	20%	88%	53%
Sections	Nr of sections		68	38	33	139

Road Class

Almost 100% of the road sections in Spain are motorways, with just about 5 km not fulfilling this criteria, but its upgrade is in progress.

In Portugal, just about 3km in the border of Vilar Formoso don't comply with road class criteria. This section is expected to be upgraded in short term, with a new alignment bypassing Vilar Formoso village.

In France, all core sections are either motorways or express roads.

Parking Areas

Due to EC regulation 561/2006 truck drivers need rest stops at least every 4.5 hours and should adhere to strict limitations. Thus having available truck parking on the relevant road sections with one rest area at least every 100 km is essential. Current information about available parking areas on the corridor can be accessed via: http://www.iru.org/transpark-app. This web service offers an overview on location and amenities of all accessible parking areas.

While the sum of parking spots along the corridor is ensured, its recording as a safe parking area and respective guidance[8] and reservation system[9] via Intelligent Transport systems (ITS) as addressed in the ITS Action Plan and the ITS Directive 2010/40/EU are not yet fully accomplished at corridor level.

In particular, it is worth to refer:

(1) In Spain, according to the IRU (International Road Transport Union), there are 11 parking areas along the road network of Atlantic Corridor. These 11 parking areas allow the coverage of the Spanish road Network of the Corridor with a parking area every 100 km or less, except in 3 sections:

- Madrid - Burgos (210 km)
- Valladolid - Ciudad Rodrigo (166 km)
- Madrid –Mérida - Badajoz ES/PT Border (401 Km)

(2) In Portugal, according to the IRU (International Road Transport Union), there are only 2 safe parking areas along the core road network in Portugal. Portuguese motorway network is provided with service areas that mostly comprise rest areas with a maximum spacing of 50 km. These service areas have the capacity to accommodate heavy vehicles and have the basic services to serve long distance drivers, although they are not closed or with specific security zones. Parking areas don't comply with ITS Directive in the sense that it is not possible to book it. As from the discussions with IM, up to now such type of investment was not identified as a priority by the national road concessionaires. This results largely from the peripheral country location and low demand while the major advantages of booking systems are felt in the central Europe where there is a high demand.

The importance for guidance, safe and secure parking was recently addressed in key EC funded projects:

- Study for the ITS Action Plan priority actions e and f: An impact assessment of costs and benefits of truck parking was performed and technical solutions were evaluated.
- SETPOS: An EC pilot project set to establish common truck parking standards, support construction and upgrading of safe and secure parking facilities and pursue further

[8] Truck Parking information system - Specifications adopted on 15 May 2013 (delegated Regulation EU - 885/2013)
[9] Truck Parking reservation system - No need for specifications currently (no business case)

implementation of parking ICT, reservation and guiding systems. It finished in 2009 with the production of a best practice handbook.
- LABEL: An EC funded project between 2008 and 2010 that developed a labelling scheme for truck parking areas.

Atlantic Corridor although multimodal has no road section in Germany. The A6 federal highway between Metz (FR) and Ludwigshafen/Mannheim (DE) is one of the biggest in Southwest Germany, especially for transit transport and is also of very high importance for the connection of the Rhine/Neckar area with Luxemburg and France. Planned parking areas for trucks along the A6 in Germany include:

- Am Hockenheimring W 2019/20
- Homburg-Saar S 2017/18
- Goldene Bremm N 2017/19
- Goldene Bremm S 2017/19

Clean Fuels Availability

Along all the core road network there is availability of LPG.

Availability of electric charging varies against the countries with Spain covering approximately 10% of the core road network and in Portugal 44%. However, in urban nodes as well as along main cities crossed by the corridor, electric charging is available.

Other alternative fuels, such as hydrogen, are presently null along all the core road network.

For LNG, the situation is diverse:

- In Spain, a LNG terminal for trucks is available at the Port of Bilbao
- In Portugal, a new TEN-T study is starting which aims to set up a national policy framework for LNG for road transport. This will contribute to uptake LNG as fuel alternative for road freight transport along corridor
- In France, LNG Truck Loading Service is available at Montoir Terminal (not along corridor)

Interoperability of Road Tolling systems

Regulation 1315/2013 sets up requirements for interoperability of the electronic toll collections systems, i.e. the Regulation does not impose obligation to Member States to introduce payment for using the road infrastructure. It calls if electronic fee collection system/s are implemented these to be in line with relevant standards, so to provide for interoperability. Directive 2011/76/EU sets a common framework for member states in setting up distance-related tolls and time-based user charges for heavy goods vehicles (HGV) above 3.5 tonnes for the use of certain infrastructure.

In Portugal 88% of core network is tolled and in France tolled roads represent about 80% of all core network. In Spain tolled roads represent about 20% of the core network.

There is a partial interoperability of road tolling systems: Portuguese tolls are fully interoperable with Spanish VIA-T OBUs. Spanish tolls interoperability with Portuguese OBUs (which already use EN15509-EFC) is technically functional, but is still being commercially implemented (a pilot is in progress). Spanish VIA-T devices are also accepted in France into the A-63 and A-64 motorways: Main Spain/France cross-border roads of the Basque Country, for vehicles of classes 1, 2 and 5 French (light vehicles, intermediate and motorcycles).

Interoperable tolling systems is a major component of the EASYWAY project on the road ITS, progressive deployment is expected. Several ongoing (or initiating) projects are relevant in the context of this deployment. For the Atlantic corridor, the following projects are relevant:

- Atlantic Arc, focused on Traffic Management Services and oriented towards address congestion and enhance levels of service
- MedTIS, on Traffic Information Services and Travel Time Service, particularly oriented to coordinated cross-border road operations and enhanced freight traffic management
- EIP, European ITS platform, focused on Policy level cooperation, Harmonisation & Interoperability and Monitoring & Evaluation
- Also worth to refer is the SCOOP@F project on cooperative Systems (C-ITS) with multiple applications (Traffic / Emergency management, Traffic information and Safety in construction zones) which deploys 5 test sites in France, including the corridor Paris-Strasbourg.

Rail network

Rail parameters establish several infrastructure related parameters (gauge, electrification, train length, axle load and line speed) as well as ERTMS in operation. Below the current status for each of the parameters is provided for the core rail network[10].

Although track gradient is not included in the requirements for core rail by 2030, this is a constraint present in the corridor with sections in Portugal with 20-21‰ (i.e. Pampihosa-Guarda) and Spain (i.e. Bobadilla-Algeciras line with 23‰). Reduction of the maximum gradient of some sections in order to improve the performance of freight trains remains a necessity. Equally, several sections of the corridor are single track lines limiting the available capacity, and hindering timetabling. Those single track sections represent a quarter of the freight lines in the corridor (50% in Spain and 30% in Portugal). However, deciding whether these sections of single track represent bottlenecks depends on the existing or expected demand for rail services. Each localised occurrence of high gradients and single lines should be evaluated on a case by case basis, taking into account the costs and benefits of upgrade.

Table 5: Rail compliance

		Proportion (km %) of links reaching standard				
		DE	**FR**	**ES**	**PT**	**Corridor**
Length of all sections	**Km**	149	3017	2551	804	6520
Length of freight lines[11]	Km	149	1661	1917	804	4532
Length of passenger-only lines	Km	0	1355	633	0	1989
Electrification Requirement	Electrified	100%	98%	68%	100%	87%
Track gauge	1435 mm	100%	100%	25%	0%	58%
Line speed (core freight lines)	>= 100 km/h	100%	93%	99%	96%	96%
Axle Load (core freight lines)	22.5 t	100%	100%	100%	100%	100%
Train length (core freight lines)	min. 740 m	100%	100%	0%	71%	57%
ERTMS/signalling system	In Operation?	0%	6%	11%	0%	7%

[10] The alternative freight routes in RFC that run through the comprehensive network are not included in this assessment.
[11] Under freight lines it is considered both only freight and lines combining passenger and freight

Passenger only lines represent 30% of the rail infrastructure lines. Majority (70%) of the infrastructure is mixed traffic with freight-only lines representing nearly 1,5% of the total rail network (96 km).

Important passenger high speed lines are part of the Atlantic corridor:

- Tours-Paris with 215 trains a day on the common section (Paris-Courtalain-St-Pellerin) and 110 trains to Tours)
- Paris-Lorraine (110 trains between Paris and Reims, 95 trains between Reims and Pagny-sur-Moselle (south of Metz) and 55 trains between Pagny-sur-Moselle (south of Metz) and Baudrecourt)
- Madrid-Valladolid (43 trains per day in 2012)
- Madrid-Antequera (45 trains per day in 2012)
- Saarbrücken – Mannheim (10 trains per day).
- the coming extensions to Bordeaux (LGV SEA, work in progress) and Strasbourg (LGV Est phase 2, work in progress) and GPSO to Hendaye in France and Valladolid-Vitoria-Border France (Y Basque) in Spain.

Below the overview of requirement accomplishing in the core network:

Electrification requirement

Globally about 87% of the corridor rail network accomplishes with the electrification criteria. Non electrified sections correspond to:

In France

- the section Gisors - Serqueux, is not electrified and is therefore a major bottleneck for rail access to the ports of Le Havre and Rouen

In Spain,

- the conventional railway Medina del Campo – Fuentes de Oñoro (cross-border Spain/Portugal) currently being upgraded;
- the conventional railway non-electrified section Bobadilla-Algeciras;
- the conventional railway line Madrid-Badajoz (cross border Spain/Portugal).

Notwithstanding, along the corridor different types of voltage coexist, requiring rolling stock with dual voltage, triple voltage or thermal[12]:

- 25 kV AC in Portuguese network and HS lines of Spain and northern France[13];
- 3 kV DC in conventional lines in Spain;
- 1,5 kV DC in conventional lines in the South of France[10]; and,
- 15 kV in Germany.

Track gauge

Globally, requirement criteria for standard 1435mm track gauge is accomplished in 58% of the rail network.

[12] RFC 4

[13] In France, the existing line is electrified at 25 kV between Le Havre/Metz and Paris (614 km) and 1,5kV DC between Paris and Hendaye (804 km)

In France and Germany, 100% of the network is in UIC track gauge. In Spain, standard UIC gauge only in the Madrid – Valladolid and Madrid-Antequera HS lines. The future Pantoja-Extremadura HS line and the Y Basque are also being developed in UIC track gauge.

In Portugal, currently no section with UIC gauge, all network in Iberian gauge.

The existing different track gauges creates a major bottleneck in the Spanish-French border of Irún – Hendaye requiring either axle change or transfer of the load. The crossing of the railway complex Hendaye/Irun is ensured on 2 km by 1 track with an UIC gauge electrified with 1,500V DC and 1 track with an Iberian gauge electrified with 3,000 V DC.

Rail Freight Corridor acknowledges that there are 2 connection techniques for a railroad network with different gauges: on one hand there is an operation area for gauge change which is operated by the company Transfesa[14], in Hendaye, located in the French side of the border; on the other hand an operation area for transfer facilities in Irún (Spanish side).

Besides the physical bottleneck, in terms of operation, the duration of freight transfer at the border of Hendaye/Irun is associated with real-time availability of consignment notes and the capacity of transhipment sites, a capacity limited to the means of production available (including the length of tracks). Concerning non-physical bottlenecks it is also noted that the non-use of some terminals during the weekend, can produce congestion in other points in weekdays.

Line speed

Line speed above 100 km/h for freight lines is accomplished in 96% of the corridor. Existing sections that doesn't accomplish with the criteria are located at:

- Motteville – Montérolier-Buchy
- Some short links in the Paris node
- Bilbao - Puerto de Bilbao
- Contumil - Porto de Leixões
- Lisboa (Braço de Prata) - Porto de Lisboa

Axle load

All core sections in the corridor comply with this criterion, since the Gisors-Serqueux section, North of Paris, was recently renovated to allow 22.5t per axle.

Train length

Train length is a strong limitation for the freight operation in Spain. The maximum freight train length in Spanish Atlantic Corridor sections is 550 m (section Medina del Campo - Fuentes de Oñoro) [15]. Maximum train length is reduced to 400-420m in several stretches, such as Badajoz-Aljucén section (400m[16]).

In Portugal, train length requirement is not fulfilled for the Beira Alta line in the sections Pampilhosa – Guarda – Vilar Formoso, Lisboa (Braço de Prata- Porto de Lisboa and Contumil - Porto de Leixões line.

All core sections in corridor for France and Germany accomplish with this criteria. Despite that all core sections in corridor for Germany accomplish with this criteria, nevertheless timetable-related /operational restrictions may have influence on the possible train length.

[14] TRANSFESA is 77% shared by Deutsche Bahn AG
[15] 550 m is the "basic length" but it is also considered "special length" in Railway Network, which is 600 m for this section
[16] "special length" is 460 m

ERTMS

In general ERTMS implementation in the corridor is very low, with just 7% of the rail network fulfilling the criteria. ERTMS is in operation for Paris-Baudrecourt (LGV Est phase 1), Madrid – Valladolid and Córdoba-Antequera HS lines.

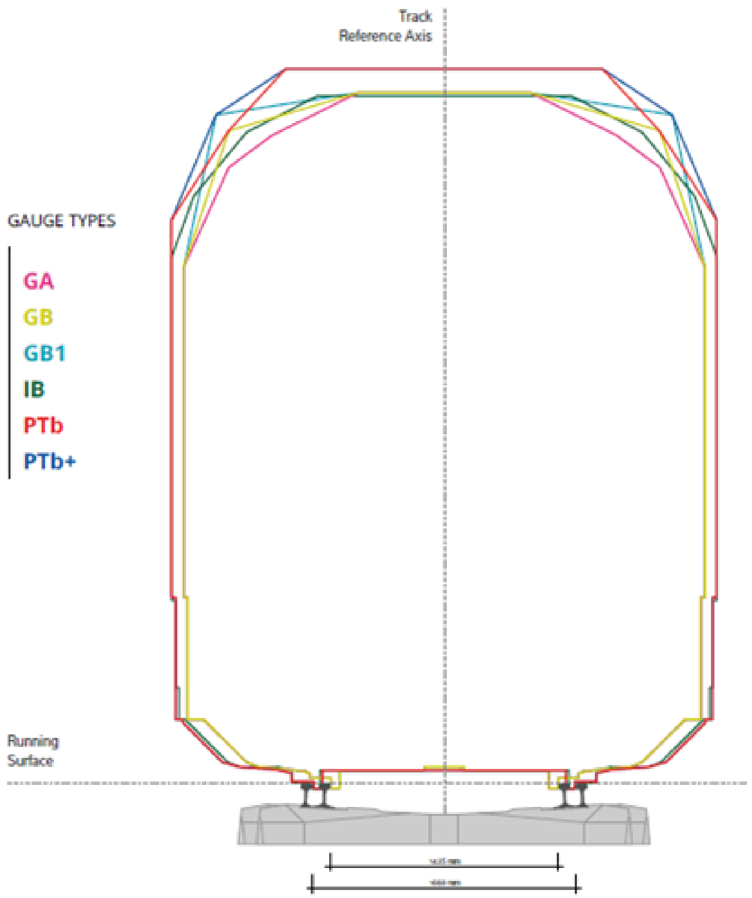
In Germany, the installation of ETCS Level 2 Baseline 3 between Saarbrucken border - km 5,483 (Strecke 3231) and Limburgerhof - km 99,455 (Strecke 3280) is planned until 12/2018 (according to the ASR 2013).

Load gauge[17]

Loading gauges limit the size of wagons and containers that could be conveyed on the railway sections.

Along the corridor, different load gauges coexist, acting as a constraint towards harmonised rail network and impacting on rail freight performance:

- PTb+ in Portugal[18],
- Type A in Spanish freight lines,
- Three different load gauge types (A, B, B+) along the corridor freight lines in France
- A in the corridor German sections



Source: Rail Freight Corridor

[17] 3 international gauges agreed by UIC (A – B – C and B+)
[18] Comparison should be done against UIC standard, however as highlighted in the Technical Specifications for Interoperability, units designed to operate on the Portuguese network shall remain within the kinematic gauges PTb, PTb+, or PTc, as defined in annex I of EN 15273-2:2009

Single Track

Several corridor sections are single track, particularly in the Iberian Peninsula. While it is acknowledge that cases of high efficiency in single track sections[19] could be identified, in general single track line, especially when combined with other limiting factors (i.e. electrification, train length, gradient) can represent a bottleneck.

In the corridor, the following sections (some in cross-border sections) are single track:

- Motteville <--> Estouteville-Ecalles
- Irún<--> Border ES/FR Irun/Hendaye (TENtec section San Sebastian – Border)
- Santa Cruz de Mudela <--> Vadollano (TENtec section Manzanares <--> Linares-Baeza)
- Córdoba - Central <--> Linares-Baeza
- Cordoba (Central) <--> Bobadilla
- Algeciras <--> Bobadilla
- Border ES/PT Badajoz <--> Aljucen JCT
- Aljucen JCT <--> Cáceres
- Humanes-Cáceres (TENtec section Madrid-Puerta de Atocha <--> Cáceres)
- Medina del Campo <--> Fuentes de Oñoro
- Casa Branca <--> Évora
- Poceirão <--> Casa Branca
- Guarda <--> Border ES/PT Vilar Formoso
- Pampilhosa <--> Guarda
- Contumil <--> Porto de Leixões
- Poceirão <--> Bif. Agualva JCT
- Aguas de Moura <--> Pinheiro

As previously acknowledge, each of these cases has to be assessed on a case basis, notably if existing or future expected demand is above that of the single-track section in question, justifying as such a direct investment (see work plan).

Gradients

As previously referred, some corridor sections show values for inclination above the 20 ‰, coexisting with other limiting factors, namely:

- Pampilhosa <--> Guarda (single line with limited train length)
- Algeciras <--> Bobadilla (non-electrified, single line with limited train length)
- Madrid-Puerta de Atocha <--> Cáceres (non-electrified, single line with limited train length)

Inland Waterways

As highlighted previous, the only core IWW network in the corridor is the Seine River, comprising the sections Le Havre – Tancarville - Conflans-Sainte-Honorine. This corresponds to 287 Km of inland waterway in the corridor.

The Tancarville canal (Le Havre-Tancarville) is class Vb whereas the Seine is class VII up to Rouen and class Vb between Rouen and Paris. The Seine links the 3 HAROPA ports (Le Havre,

[19] i.e. the Lötschberg tunnel alpine rail crossing, currently partly single track and still carrying more than 100 trains per day

Rouen and Paris). The Limit between the Atlantic corridor and the North Sea Mediterranean corridor is set at Conflans-Sainte-Honorine at the confluence with the river Oise and the Seine is defined as core network up the Nogent-sur-Seine.

Table 6: IWW compliance

		Proportion (km %) of links reaching standard			
		DE	**FR**	**ES**	**PT**
Length of all sections	km		287,0		
Length of vessels and barges	from 80-85m		100%		
Maximum beam/width	from 9.5m		100%		
Maximum draught allowed	from 2.5m		100%		
Tonnage	from 1000-1500t		100%		
Minimum height under bridges	from 5.25/7m		100%		
Availability of alternative fuels in inland ports	Availability		0% (pilots)		
Class	CEMT IV (1000-1500t vessel)		100%		

There are no identified problems of low or high water on the corridor. In 2013 locks on the downstream Seine between Paris and Tancarville were opened 99.7% of the time.

Despite the accomplishment of the TEN-T criteria, important bottlenecks exist, namely in the access to ports (i.e. for the port of Rouen, ship navigation on the Seine from the sea to the port of Rouen is constrained by the river depth; for Le Havre (see below IWW bottlenecks).

HAROPA (ports of Le Havre, Rouen and Paris) is planning the development of alternative fuels facilities by private operators for the 2016-2020 timeframe.

Seaports

The Atlantic corridor has a relevant maritime dimension. Corridor seaports fulfil an important role as gateway for international trade with a large potential for development of maritime traffics with Asia, America and Africa and they are increasingly becoming multimodal hubs for inland transport, as well as logistical platforms.

Seaports are required to offer rail connections by 2030, and if relevant, waterway connections. In addition they should offer clean fuels, and promote Motorways of the Sea (MoS). The Atlantic corridor has a high potential for the deployment of Motorways of the Sea, via the Atlantic Arc (serving UK) to the North Sea and the Irish Sea (the so called MoS of Western Europe). Equally, the neighbourhood of Northern Africa from Algeciras port should be acknowledge.

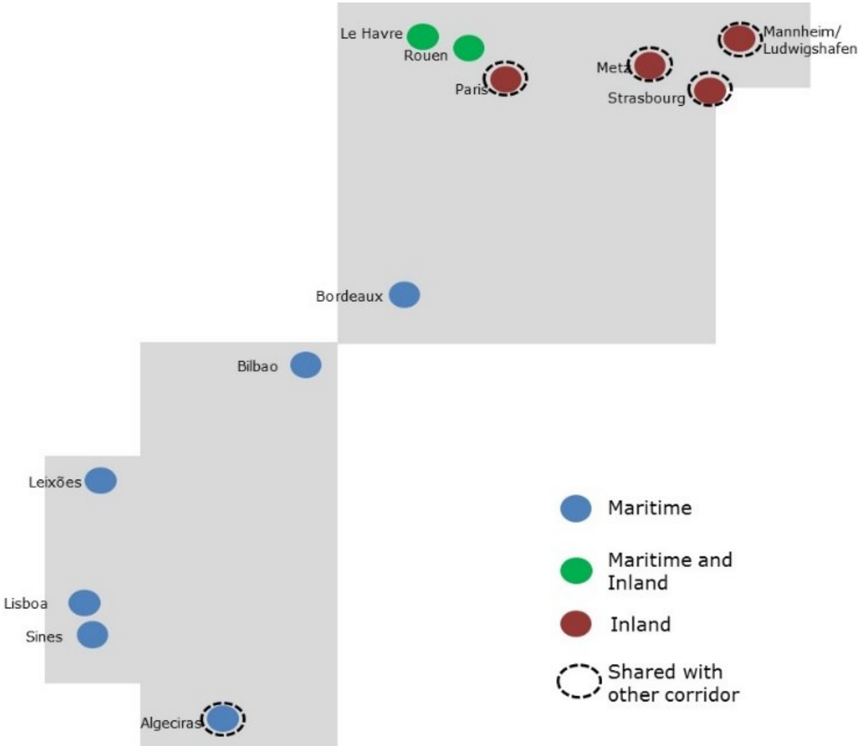


Figure 8: Atlantic core ports

Table 7: List of core corridor ports

Country	Port	Type
DE	Ludwigshafen	Inland
	Mannheim	Inland
FR	Bordeaux	Maritime
	Le Havre	Maritime, Inland
	Paris	Inland
	Metz	Inland
	Rouen	Maritime, Inland
	Strasbourg	Inland
ES	Bilbao	Maritime
	Algeciras	Maritime
PT	Leixões (Douro)	Maritime, Inland
	Lisboa	Maritime
	Sines	Maritime

Regardless the fact that present assessment of compliance criteria with Regulation is only performed for the core corridor ports (i.e. the ones that need to fulfil criteria by 2030), it is worth to highlight the relevance of other comprehensive and core network ports as logistic nodes complementing /feeding the corridor that justifies the consideration of respective projects in the scope of Atlantic Corridor work plan, as in annex 1.

For further details, an annex with the Atlantic Maritime Ports is provided.

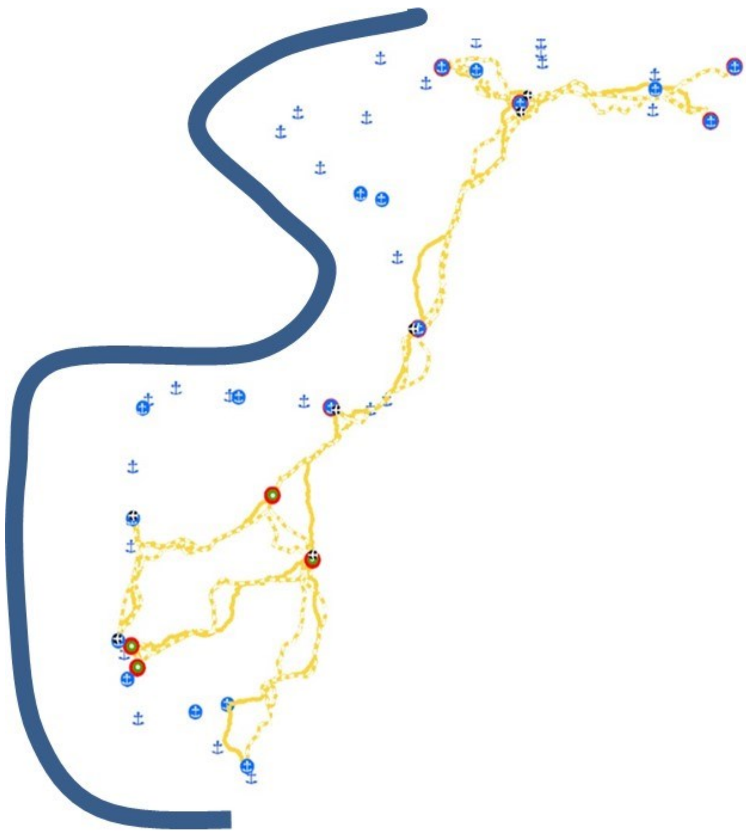


Figure 9: Continuous maritime front from Algeciras to Le Havre

Table 8: Seaports compliance

		Number of Core Seaports Reaching Standard				
		DE	**FR**	**ES**	**PT**	**Corridor**
Total Number	No.	No seaport in CNC	3	2	3	8
Rail Connection	Yes/No		3	2	3	8
IWT Connection	Yes/No		3	-	1	4
	Bordeaux		*Vb*	-	-	-
	Le Havre		*Vb*	-	-	-
	Rouen		*Vb*	-	-	-
	Leixões / Douro		-		IV	-
Clean Fuels	Yes/No		0	1	0	0
Motorways of the Sea	Indication		1	6*	1	8

*includes also SSS regular lines

<u>Connection to other modes</u>

All corridor seaports have rail connection to core rail network, however important bottlenecks are identified:

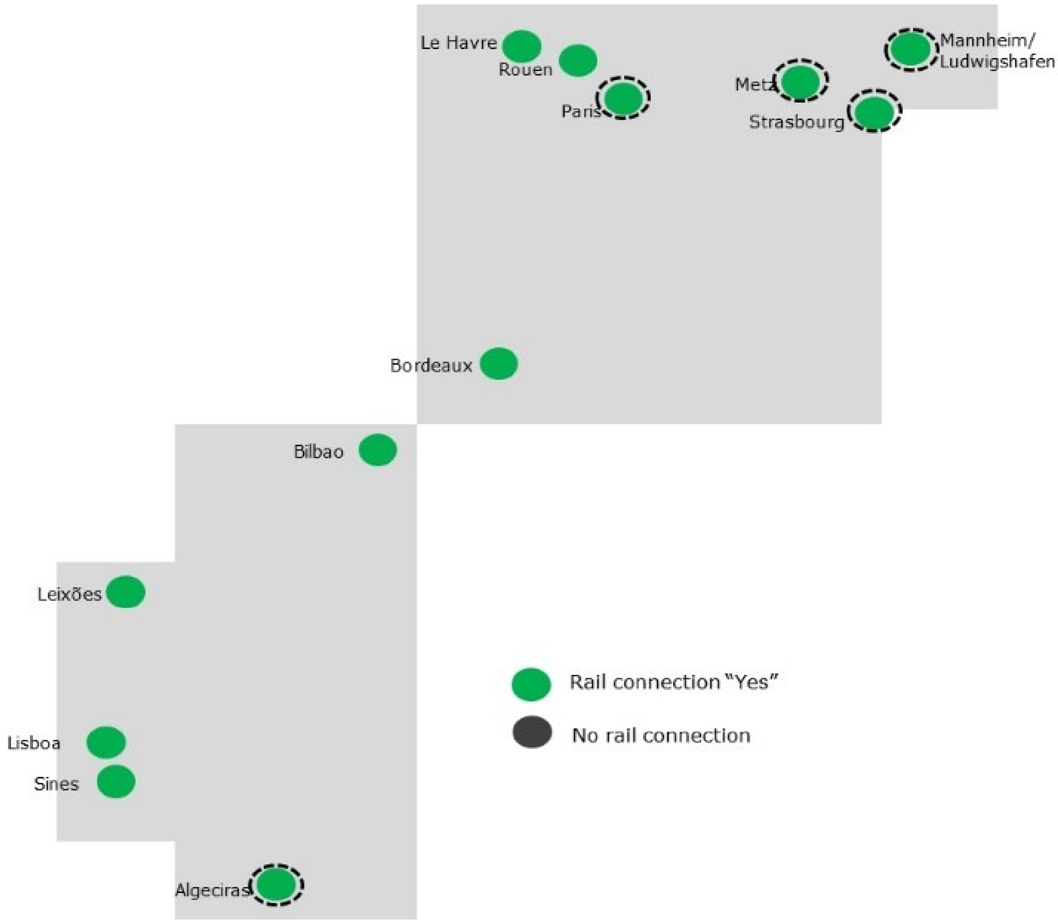


Figure 10: Port connections with other modes - rail

- Rail connection from Algeciras is hindered by the high gradient (23 ‰) present in this section. This is further enhanced by the non-electrification of the single track line Algeciras-Bobadilla.
- The train length (400-500 m train) is the major current limitation in all the Spanish ports as well as in Leixões (also single track) and Lisbon.
- The missing link Évora / Caia (border) forces most of the freight trains from Sines- Lisboa - Setubal ports to a long detour to reach Spain and further north.
- Rail access from port of Sines is still done through the comprehensive sections Sines - Ermidas – Grandola, in a single track line and 20 ‰ gradient as the new rail line (Sines-Grandola) is still to be constructed.
- Rail access to Le Havre and Rouen is hindered by heavy passenger train traffic on the Paris-Normandy line between Paris and Mantes-la-Jolie - Paris-Serqueux line is to become the main rail access to the ports of Normandy but it requires the Gisors-Serqueux link to be upgraded and electrified.
- All rail connections to Iberian ports are in Iberian gauge.
- None of the corridor freight lines to ports is equipped with ERTMS.

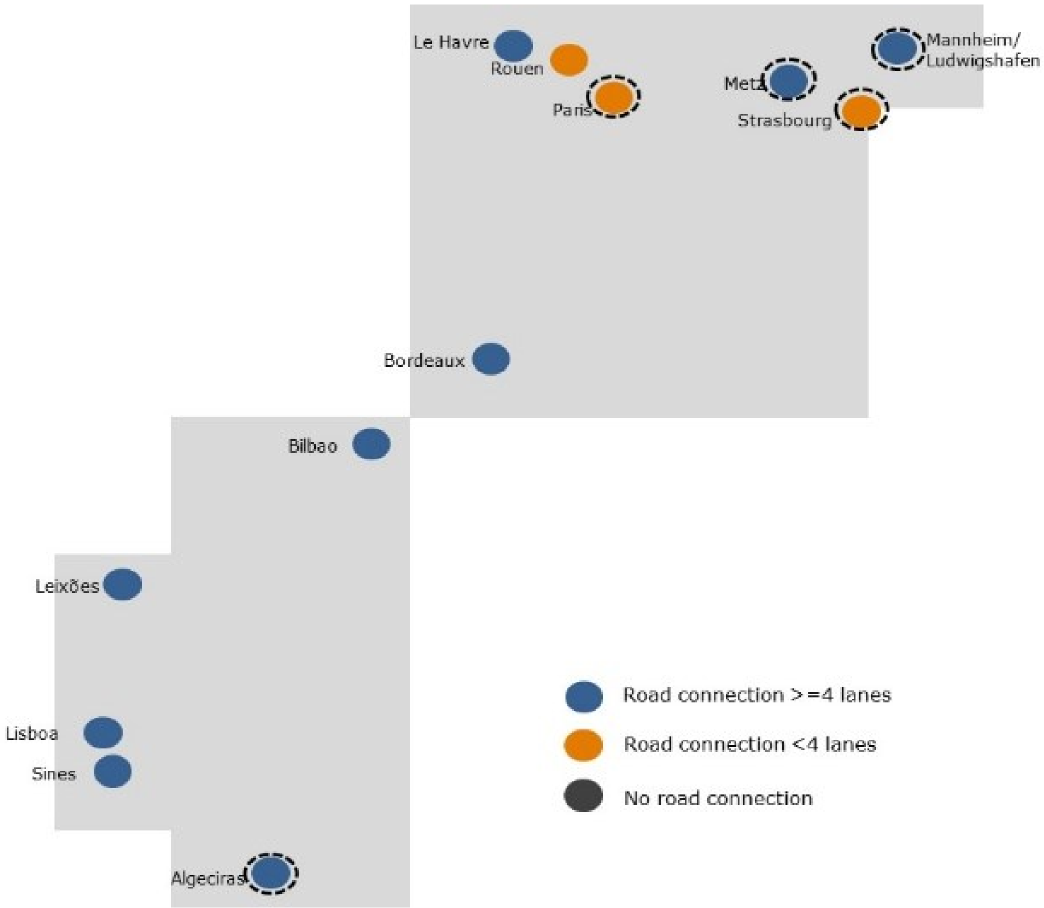


Figure 11: Port connections with other modes - road

All ports have good road connections to core network. Some improvements and upgrades in road connections are noticed in Algecira port (North, South, Tarifa and Campamento road accesses) with specific projects addressing those needs.

Also Bonneuil-sur-Marne (the second most important port of the Paris area and an important tri-modal platform) last mile road connection is carried through urban areas. The extension of road N406 to the port will provide it with direct access to the main road network.

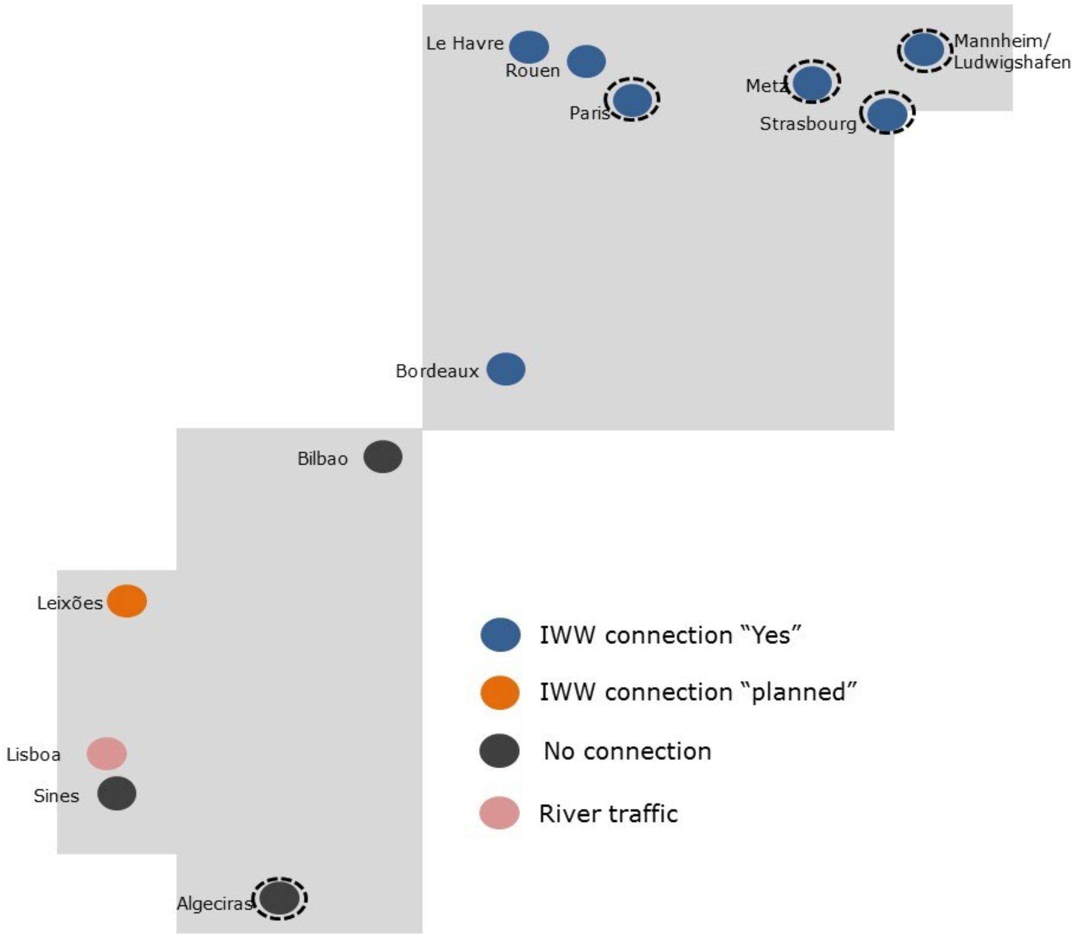


Figure 12: Port connections with other modes – inland waterways

All French ports have an inland waterway connection, class Vb. The port of Leixões also have inland connection (class IV), however, this connection mainly in what regards to cargo is not exploited to its potential, namely due to existing navigation bottlenecks along the Douro River (core IWW).

In the port of Lisbon some limited freight is transported through the Tagus River and there are plans to promote River Information System to improve safety and reliability and to promote river traffic as a modal choice.

Motorways of the Sea

Currently MoS is not exploited to full potential (i.e. The Market research of Motorways of the Sea in Spain - WEST-MoS (June 2008) estimated that about 28,6 million tons could be potentially transferred to MoS by 2020) and further studies are planned.

Regardless so, a reasonable number of MoS[20] and SSS regular lines from the Atlantic ports are worth mentioning:

- Gijon – Nantes - Saint-Nazaire (currently suspended)
- Bilbao - Zeebrugge (Belgium),
- Bilbao- Rotterdam;

[20] Some of the MoS operating were not financed by the EU

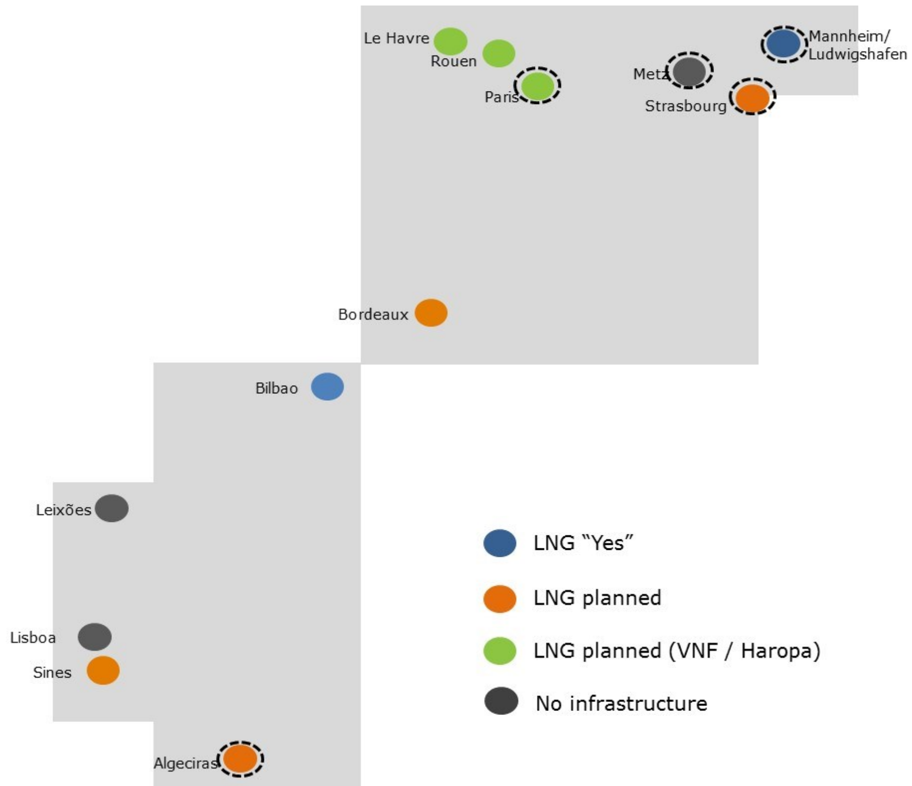
- Bilbao – UK – Ireland – Poland - Baltics
- Leixões – Rotterdam
- Algeciras-Vigo-Nantes-Le Havre (planned to start operation)
- Containers shipping services with four departures per week between Le Havre, Rouen and Paris (inland waterway).
- Santander (MOS project SEAGAS for a corridor Santander-Rostock)

It should not be forgotten that port infrastructure is necessary for boosting the Motorways of the Sea. Also, it is important to foster the regular maritime services of quality, complementary to terrestrial flows of the corridor, and evaluate the possibility of implementation of incentives to demand (on the road) of the Ecobond type. Equally, coordination of corridor efforts for the deployment of MoS with the EU Coordinator for Motorways of the Sea should be further promoted.

<u>Port Logistic Platforms</u>

Most ports have own logistic zones within the port area and connected to main logistic platforms in the corridor (Article 22.1.b). Further details on port logistic areas can be consulted in the annex "Atlantic Maritime Ports".

<u>LNG bunkering facilities</u>



LNG deployment is taking place along the corridor. Analysis of LNG bunkering facilities in the Atlantic have been evaluated in the course of the TEN-T projects COSTA, BUNKER LOGIX (Algeciras), SEAGAS (Santander). In some of corridor ports, pilots are already ongoing (i.e. Algeciras, Bordeaux).

The Port of Bilbao has LNG infrastructure available as well as dedicated berth for loading/unloading LNG and supplying LNG as bunker to vessels and a petrol station for providing bunker to trucks.

The Port of Sines disposes of a LNG terminal, but no bunkering facilities for vessels supplying is in operation.

The Port of Algeciras is participating in the European project "Flexible LNG bunkering value chain in the Spanish Mediterranean Coast: Bunker Logix".

Several ports highlighted planned / ongoing viability studies for availability of ship to shore electricity.

Non-discriminatory access to terminals

Article 22.1.b) highlights that ports should ensure that at least one terminal is open and there is no discriminatory access. All ports accomplish with this criteria.

Reception facilities for waste and cargo residues (Directive 2000/59/EC)

All ports have available some kind of Port Reception Facilities and there is no indication on a lack of fulfilment of this requirement (Article 22.2)

Inland Ports

Table 9: Inland ports compliance

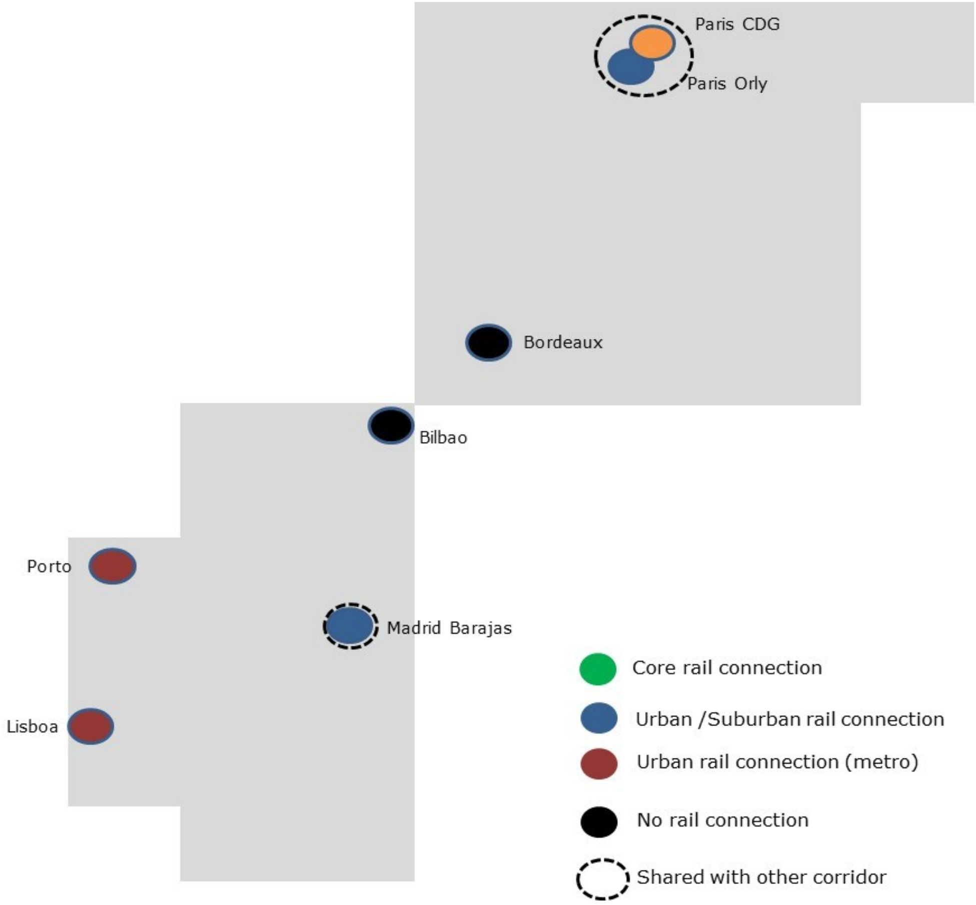
		Number of Core Inland Ports Reaching Standard				
		DE	**FR**	**ES**	**PT**	**Corridor**
Total Number	No.	2	5	-	-	7
Rail Connection	Yes/No	2	5	-	-	2
Clean Fuels	Yes/No	1	0	-	-	1

All corridor inland ports have road and rail connections, as above described.

The ports of Antwerp, Mannheim, Rotterdam, Strasbourg and Switzerland signed a cooperation agreement to introduce LNG as a fuel for inland shipping along the Rhine-Main-Danube corridor. The cooperation includes studies, promotion, knowledge transfer, regulations and bunker infrastructure. The agreements are set up in the framework of the LNG Masterplan for Rhine-Main-Danube, a project in which all five ports are partners. The goal of the LNG Masterplan is to introduce LNG as a fuel for inland shipping along the Rhine-Main-Danube corridor. Through its TEN-T programme, the European Union grants € 40 million subsidies for this project.

The first LNG bunkering in Germany took place in the Port of Mannheim on 13 November 2013. The 110 meter long GREENSTREAM, the first inland going vessel running on LNG, arrived in the port of Mannheim and under the surveillance of the Firefighter Department Mannheim, of the Harbour Police, of the tankers owner from Interstream Barging and of charter Shell the LNG bunkering was successfully done. The Port of Mannheim is part of the LNG Masterplan project, contributing to the development of an LNG supply chain for Rhine-Main-Danube.

Airports



Core airports are required to have connections to both TEN-T road and rail networks by 2050, with links to the high speed rail network where feasible.

At the present, from the larger airports – Paris CDG, Paris Orly and Madrid (Barajas), only the first dispose of connection to the High Speed Rail, together with a suburban train connection to Paris (RER B); Paris Orly is connected to Paris with suburban rail connection: the Orlyval links the airport to the RER B line and Madrid-Barajas airport disposes of suburban rail connection and metro connections.

Lisbon and Porto have metro connections, while no rail connection exists for Bordeaux and Bilbao airports. It should be noticed that Madrid and Lisbon airports are required to have a connection with core rail network by 2050.

Table 10: Airports compliance

		Number of Core Airports Reaching Standard				
Airports		**DE**	**FR**	**ES**	**PT**	**Corridor**
Total Number	No.	No airport in Atlantic CNC	3	2	2	7
Rail Connection	*TEN-T rail*		1	0	0	1
	Suburban Rail		1	1	0	2
	Urban rail		0	1	2	3
Clean Fuels	No.		0	0	0	0

The compliance perspective on alternative fuel availability in the airports by 2030 is rather limited. Even though IATA commits to the development of alternative jet fuels no dedicated roadmap, central feasibility study or dedicated information for the horizon 2030 is available.

Rail road terminals

There are no specific compliance targets set for either road/rail terminals, inland ports, or tri-modal terminals, the criteria being the number and indication of capacity.

In general there is a lack of consistent information available concerning terminal capacity.

Several of the core RRT in the Atlantic Corridor in the Iberian Peninsula are in planning stage and unclearness on its implementation still persists.

Table 11: Rail-Road terminals as per Regulation (EU) 1315/2013

Country	Core RRT	Terminal	Type
DE	Ludwigshafen	Ludwigshafen Kaiserworthhafen	Trimodal
		Ludwigshafen KTL	Rail-road
	Mannheim	Mannheim Muhlauhafen	Trimodal
		Mannheim-Handelshafen	Rail –road
		Mannheim MCT	Trimodal
FR	Bordeaux	Hourcade	Rail –road
	Le Havre	Le Havre port terminals	Rail –road
		Le Havre Terminal Trimodal (under construction)	Trimodal
	Paris	Valenton	Rail-road
		Bonneuil-sur-Marne	Trimodal
		Noisy-le-Sec	Rail-road
		Gennevilliers	Trimodal
	Strasbourg	Strasbourg CT Nord	Trimodal
		Strasbourg CT Sud	Trimodal
ES	Bilbao	Terminals of Port of Bilbao	Trimodal
	Valladolid (planned)	-	Rail road
	Madrid	Puerto Seco de Coslada	Rail road
		Vicálvaro	Rail road
		Abroñigal	Rail road
		Aranjuez	Rail road
	Alcázar de San Juan (planned)	-	Rail road
	Córdoba (operational but to be improved)	Córdoba	Rail road
	Antequera (planned)	-	Rail road
PT	Poceirão (planned)	-	Rail road
	ZILS (Sines)	ZILS (Zona Industrial e Logistica)	Rail-Road

Table 12: Rail-Road terminals compliance

		Number of Core RRT				
Road/Rail Terminals		**DE**	**FR**	**ES**	**PT**	**Corridor**
Total Number	No.	2	4	6	2	14
	in planning	-	-	3	1	5
Indication of Capacity						

The AGORA intermodal database, provides information on storage capacities (in TEU) for some of the corridor RRT:

Terminal	Capacity (in TEU)
Ludwigshafen Kaiserworthhafen	6500
Ludwigshafen KTL	2000
Mannheim Muhlauhafen	2700
Mannheim-Handelshafen	250
Mannheim MCT	880
Strasbourg CT Nord	5000
Strasbourg CT Sud	8800
Madrid Abronigal	8000
Córdoba	350

Sources: AGORA intermodal terminal database[21] , consultants

[21] No intermodal terminal in Portugal identified in the AGORA database

The total RRT capacity in the 3 main RRT located in the Paris area (Valenton, Noisy-le-Sec and Bonneuil-sur-Marne) is estimated by the consultant at 880 000 TEU per year.

The main constraint in Spanish RRT is related with rail infrastructure, namely the lack of rail infrastructure suitable for 740 m freight trains in the Corridor. For instance in Madrid, 750 m trains need to be divided as tracks in terminal have a maximum length of 433 m.

4.1.3. Telematic applications deployment

The Regulation (EU) 1315/2013 establishes that "telematic applications shall be such as to enable traffic management and the exchange of information within and between transport modes for multimodal transport operations and value-added transport-related services, improvements in safety, security and environmental performance, and simplified administrative procedures".

Such applications shall facilitate seamless connections and shall be deployed, where feasible, in order to enable a set of interoperable basic capabilities.

Telematic applications include: ERTMS for rail, RIS for inland waterways, ITS for road, VTMIS and e-Maritime services for maritime transport and SESAR for air transport.

ERTMS

As seen above, there is a slow implementation of ERTMS in the corridor. Despite progress (see table below), up to now only high speed lines are equipped with ERTMS/ETCS in Spain and France, in Portugal no lines are equipped.

MS	Member State	Line	Status	Level of ERTMS (L1,L2)
DE	Germany	SaarbrückenMannheim	Under construction	L2
ES	Spain	Madrid-Lerida (HS)	In Service L1 and L2	L1, L2
ES	Spain	Lerida-Tarragona (HS)	In Service (L1) / Testing (L2)	L1, L2
ES	Spain	Tarragona-Barcelona (HS)	In Service (L1) / Testing (L2)	L1, L2
ES	Spain	Figueres-French Border (Perpignan) (HS)	In Service (L1) / Testing (l2)	L1, L2
ES	Spain	Madrid-Valladolid (HS)	In Service (L1) / Testing (l2)	L1, L2
ES	Spain	Madrid commuter lines (line C4) (CR)	In Service (L1) / Testing (L2)	L1, L2
ES	Spain	La Sagra-Toledo (HS)	In Service (L1) / Testing (L2)	L1, L2
ES	Spain	Cordoba-Malaga (HS)	In Service (L1) / Testing (L2)	L1, L2
ES	Spain	Zaragoza-Huesca (CR)	Testing (L1)	L1
ES	Spain	Madrid -Valencia/Albacete (HS)	In Service (L1) / Testing (L2)	L1, L2
ES	Spain	Getafe-Vallecas (Atocha Bypass) (HS)	In Service (L1) / Testing (L2)	L1, L2
ES	Spain	Barcelona-Figueras (HS)	In Service (L1) / Testing (L2)	L1, L2
ES	Spain	Morrot-Nudo de Mollet (CR)	Testing (L1)	L1
ES	Spain	Orense-Santiago (HS)	In Service (L1) / Testing (L2)	L1, L2
ES	Spain	Morrot-Nudo de Mollet (CR)	In Service (L1)	L1
ES	Spain	Girona-Figueres (CR)	In Service (L1)	L1
ES	Spain	Albacete-Alicante (HS)	In Service (L2)	L2
FR	France	Paris-Meuse-Lorraine (LGV Est)	Testing	L2
FR	France	Luxembourg BorderBaudrecourt	Under Construction	L1
FR	France	Spanish Border (Figueras)-Perpignan	In service	L1
PT	Portugal	0	0	0

Source: SWD(2014) 48 final, on the state of play of the implementation of the ERTMS Deployment Plan, Deployment as of 01/07/13, updated for Spain (Adif)

RIS

In France, the SIF (French for RIS) is mainly being implemented by VNF, infrastructure manager for most of the network. Other waterway infrastructure managers are CNR, on the Rhone, and ports such as the port of Rouen on the Seine downstream from Rouen and Le Havre on the Tancarville canal.

Infrastructure managers offer notices to skippers via e-mail, fax and online portals. Moreover, VNF's project POGO aims at developing a phone application for iOS, Apple operating system, to send real time notices to skippers such as water related messages, fairway and traffic messages.

AIS, is operational on the Seine although only around half of the French fleet is equipped with an AIS transponder. Electronic ship reporting is carried out by VNF but not by other infrastructure managers. A new web application called VELI allows skippers to declare their trips online.

ECDIS mapping is being carried to help navigation on the main waterways. ECDIS for the Seine is scheduled for the end of 2014 (see VNF map below).

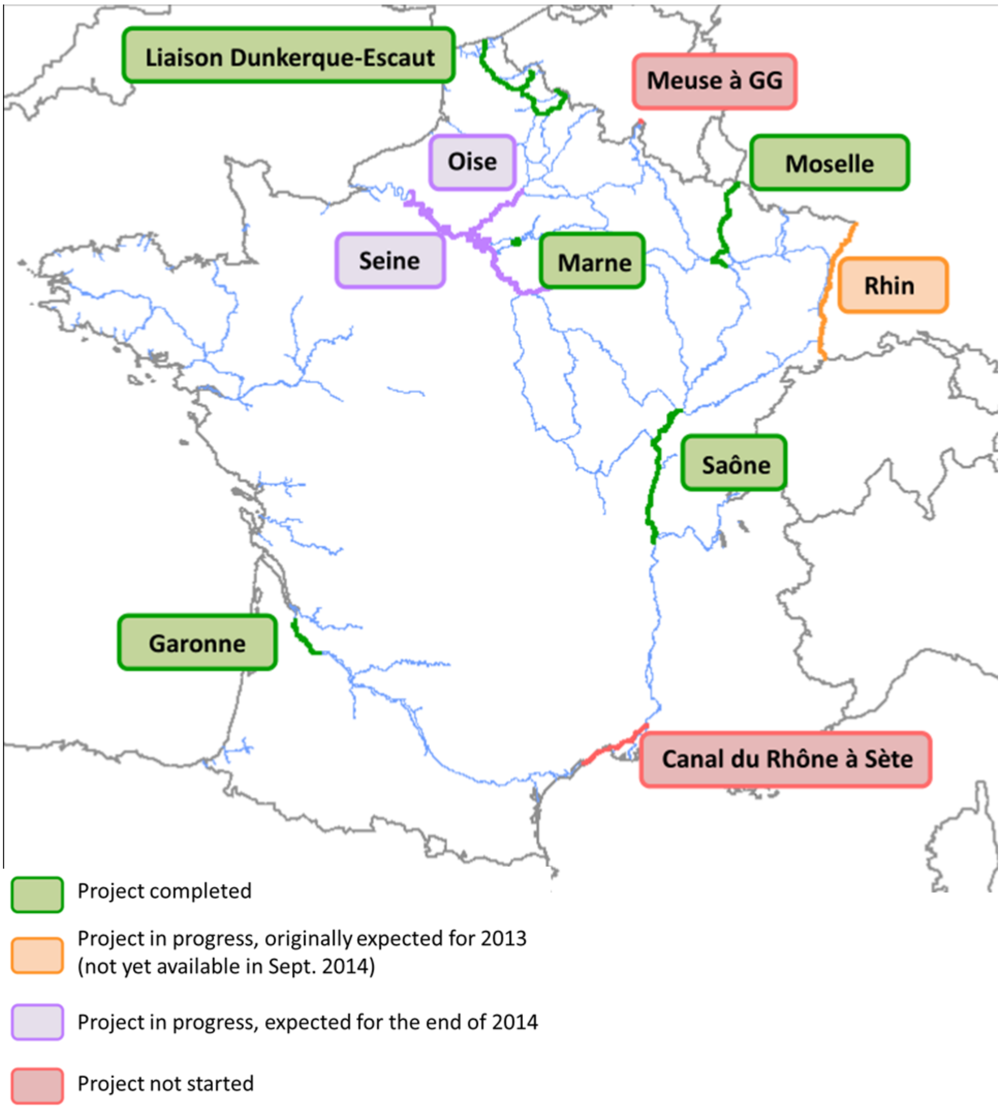


Figure 13: Progress of ECDIS mapping, VNF

VTMIS and e-maritime

The Regulation (EU) 1315/2013, establishes in Article 22 (3) that "Member States shall implement VTMIS and SafeSeaNet as provided for in Directive 2002/59/EC and shall deploy e-

Maritime services, including in particular maritime single- window services, as provided for in Directive 2010/65/EU".

All countries provide VTS for coastal regions and ports linked to national SafeSeaNet systems and those national systems connect with Central SSN system managed by EMSA (Directive 2002/59/EC on VTMIS).

The Directive 2010/65/EU on reporting formalities aims to "simplify and harmonise the administrative procedures applied to maritime transport by making the electronic transmission of information standard by rationalising reporting formalities", establishing that Member States have to set up single window systems (National Single Window – NSW) where reporting formalities of ships entering and departing from ports of the EU are fulfilled in electronic format, no later than 1 June 2015. There are important progresses on Seaports with the deployment of Port Single Windows, and evaluation and pilots ongoing for its integration in the future National Maritime Single Windows (NMSW). All corridor MS are involved in AnnA project - Master Plan for the implementation of Directive 2010/65/EU and approach to the Maritime Single Windows.

4.1.4. Corridor Bottlenecks and Missing Links

Rail bottlenecks, missing links and interoperability issues

The rail network in the corridor is characterised by the presence of strong limitations to its performance, namely:

- **Missing link** between Évora and Caia in the border Portugal-Spain, forcing majority of rail flows to travel via the Vilar Formoso border
- **Different track gauges** in the corridor: Iberian Gauge (1668 mm) and UIC Gauge (1435 mm), and a lack of commonly planned technical solutions for UIC gauge deployment in Portugal and Spain
- Lack of **electrification in cross border sections**: Medina del Campo-Salamanca-Fuentes de Oñoro (currently being upgraded) and Madrid-Badajoz (cross borders Spain/Portugal)
- Lack of **electrification** for the section Bobadilla-Algeciras (conventional railway Madrid – Andalucía), section Gisors – Serqueux (upgrade and electrification planned) and Cacia (Aveiro) – Port of Aveiro.
- **Restrictions to the operation of long freight trains** in the rail network, rail-road terminals and port rail access in the corridor in Iberia peninsula, particularly in Spain but also in Portuguese ports. The need to run shorter freight trains decreases the efficiency of rail and maritime transport and limits their competitiveness against other modes of transport (road).
- Presence of **different types of electrification**: 25 kV AC in Portuguese network, HS lines of Spain and northern France; 3 kV DC in conventional lines in Spain; 1,5 kV DC in conventional lines in the South of France and 15 kV in Germany, requiring rolling stock able to cope with dual voltage
- **Slow implementation of ERTMS**: only high speed lines are equipped in Spain and France and no lines are equipped with ERTMS signalling in Portugal
- Presence of **sections with maximum gradient above 20‰** (i.e. Bobadilla-Algeciras line with 23‰) in single track sections
- Non harmonised loading gauge along corridor, meaning that not all routes permit the same vertical clearance, thus limiting the interoperability of trains carrying intermodal units.

A substantial number of investment projects are addressing these rail bottlenecks and missing links. Plans for the deployment of UIC gauge in Iberia Peninsula are a critical issue in the corridor, together with the necessary solutions for maintaining freight lines in Iberian gauge throughout the Peninsula for longer period.

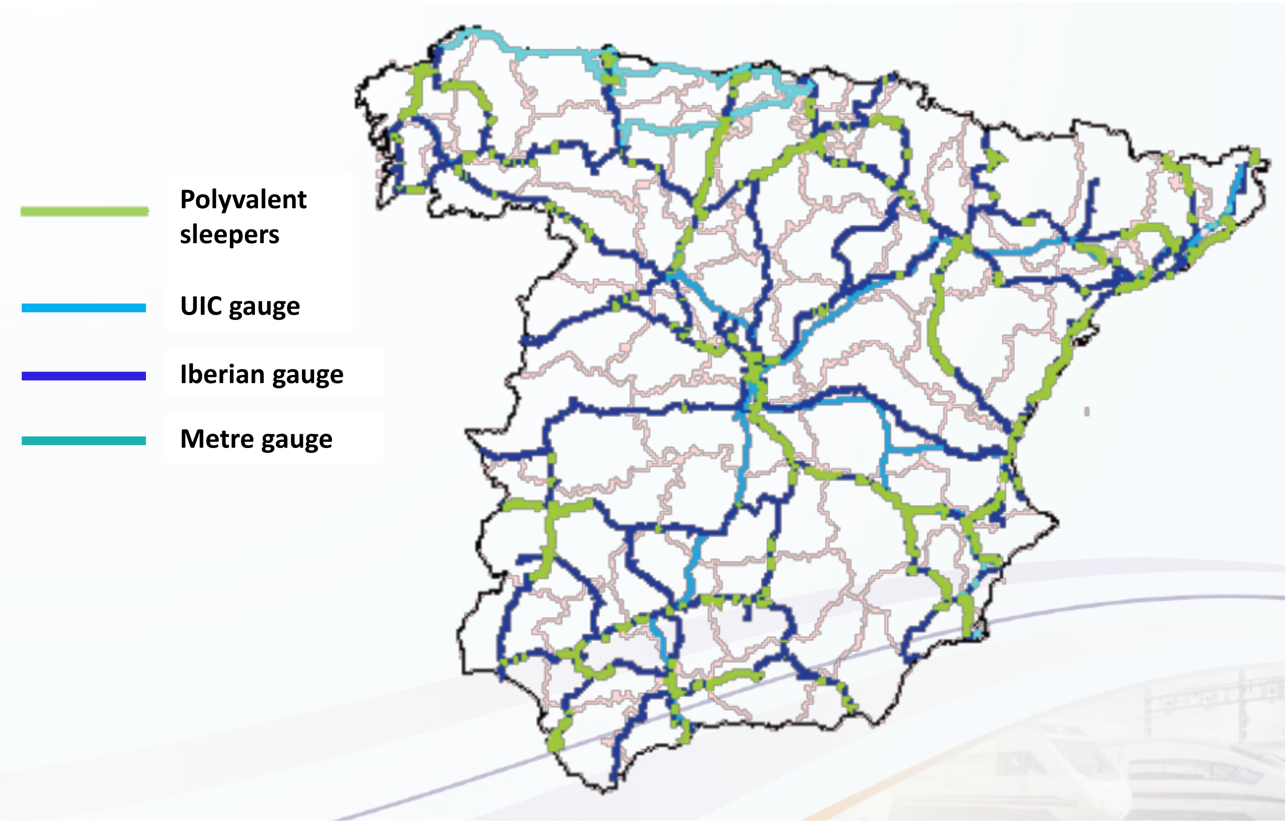
Joint approach for the deployment of UIC is still to be reached: while it may be confirmed below that in both Spain and Portugal, projects for the deployment of UIC gauge are defined, the compatibility of those plans in terms of calendar and technical deployment is still far from being articulated.

A TEN-T project (2013-PT-91039-S) was recently award to Portugal for the definition of technical norms for an infrastructure with 3 rails, which final results are expected to December 2015. The aim of this project is to elaborate a group of technical norms in the field of Catenary, Electromagnetic Compatibility, Signalling and Track. These standards will establish the parameters and rules to support the preparation of detailed design for future construction works of an interoperable railway infrastructure of one track with three rails, to allow both standard and Iberian gauge trains operate on the same route.

On the Spanish side, the Resolution of the Secretary of State for Infrastructures of 16/04/2012 establishes the following guidelines for UIC deployment:

- UIC gauge in all HSL
- Use of polyvalent sleepers when upgrading HSL that already have Iberian traffic
- Use of polyvalent sleepers when upgrading every conventional line

As from the presentation in the 4th Corridor Forum, the installation of polyvalent sleepers is planned /ongoing in the sections below highlighted.



Crossing of Urban nodes

Capacity constraints, particularly in urban areas resulting from a preference clause /high quality international slots/ dedicated crossing routes of rail passenger services to freight services in urban areas. In peak time, most freight trains have to wait several hours until they can cross the main urban areas of the corridor. However, changes in the priority of trains to benefit freight transport need to be balanced with the side effects to commuter rail transport and to the use of public transport on metropolitan areas caused by the possibility of reducing the passenger services frequency or quality standards.

Paris, one of the main urban areas in the corridor, is also a bottleneck for freight trains due to heavy passenger traffic of local and national trains. Capacity issues are located on access routes to this Grande Ceinture Ferroviaire The map below presents the railway network around Paris. Conventional lines on the Atlantic corridor are indicated in yellow. Three branches of the corridor meet at Paris leading to:

- Normandy (Rouen and Le Havre) in the North-West,
- Mannheim and Strasbourg in the East
- Bordeaux and the Iberian Peninsula in the South-West.

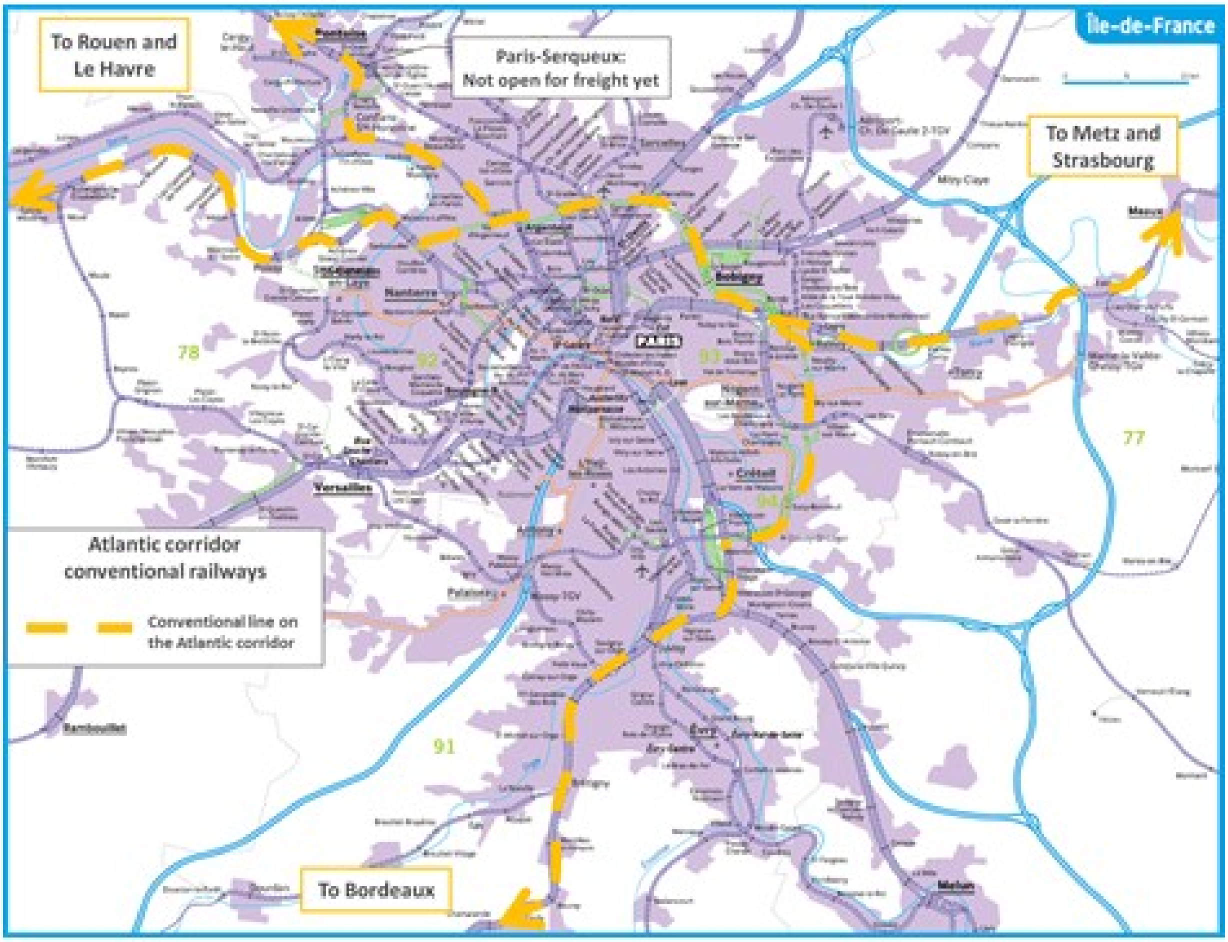


Figure 14: Rail network in the Paris area

The following map show 2009 freight traffic on the railway network, lines with limited capacity for more freight trains are indicated in red. Lines belonging to the corridor cross areas of scarce capacity before junctions with the *Grande Ceinture Ferroviaire*.

On the Paris-Le Havre branch, the current main line along the Seine only allow for a limited freight trains and traffic studies show that capacity allotted to freight should be reduced in the future. The alternative route through Serqueux, a local line with little passenger traffic, was therefore chosen to become the main line between Paris and Normandy. However, the part of this line between Gisors and Serqueux must be upgraded and electrified and a new connection needs to be created at the Serqueux junction.

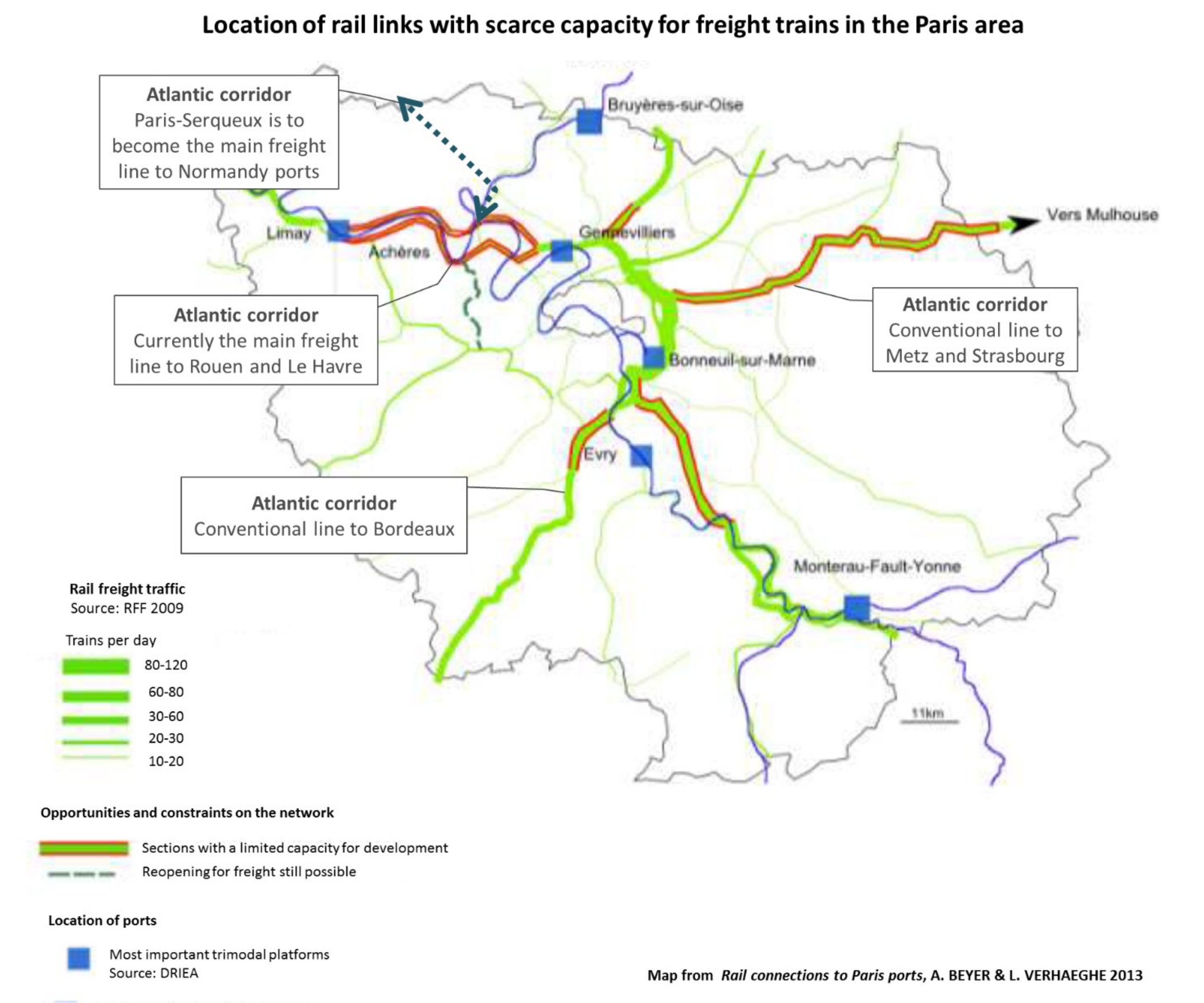


Figure 15: Freight rail traffic and capacity around Paris

In the case of Madrid node, as in Paris, also a shared use of tracks by freight transport and commuter services exists in several lines. Also, there are some exclusive stretches for freight or commuter trains.

Madrid is the second more populated metropolitan area in the Atlantic Corridor and is endowed with extensive commuter services. The railways system is articulated through the following facilities:

- Two passenger stations: Madrid-Chamartín and Madrid-Puerta de Atocha.
- Three freight terminals: Abroñigal, Vicálvaro and Dry Port of Coslada.

The freight is transported along the following lines:

- Conventional Rail Line Madrid-Barcelona (Northeast direction): It is used by commuter and freight trains. There are some problems of capacity for freight trains because of this shared use. There is double track between Hortaleza and San Fernando de Henares and four tracks between San Fernando de Henares and Alcalá de Henares.

- Conventional Line Madrid-Alcázar de San Juan-Córdoba-Algeciras, bound to the South of Spain, with a western branch bound to Extremadura region and Portugal.

- There is a link between these two lines in order to access to Vicálvaro Terminal and the Dry Port of Coslada. This link is composed by a double track for freight trains and a double track for commuter trains

- In the North there is a direct connection between Madrid-Barcelona Line and Madrid-Ávila line (bound to the North and Northwest of Spain) and freight traffic is not allowed to enter in Chamartín Station.

Several actions aimed to solve technical issues in some of the mentioned lines and multimodal terminals of the area will contribute to the improvement of the functioning of freight traffic through the Madrid node. Related to terminals we can point out the project to develop Madrid-Vicalvaro Terminal Multimodal and its logistics development, standard gauge rail connection for Complex of Aranjuez RRT and the standard gauge connection, multimodal and logistics development of Vicalvaro and Abroñigal Terminals. They are all exposed in detail in the Annex1 of this report.

We can particularly highlight the developing works in the line Atocha-Chamartín (new HS tunnel Atocha-Chamartín, UIC gauge tunnel, length 8.2 km). This tunnel will improve the operation model of both stations in Madrid, as they will go from having a terminal configuration to being transit stations. This fact results on the resolution of a physical bottleneck for passenger traffic The current commuter lines that currently go through this tunnel are not expected to be transferred neither to the new UIC tunnel nor the 2nd Tunnel Atocha-Chamartín (that currently hosts other existing commuter lines).

In the following figure the rail network in Madrid area can be appreciated. Special attention must be paid to the number of tracks dedicated to commuter services and to freight transport, depending on the different sections.

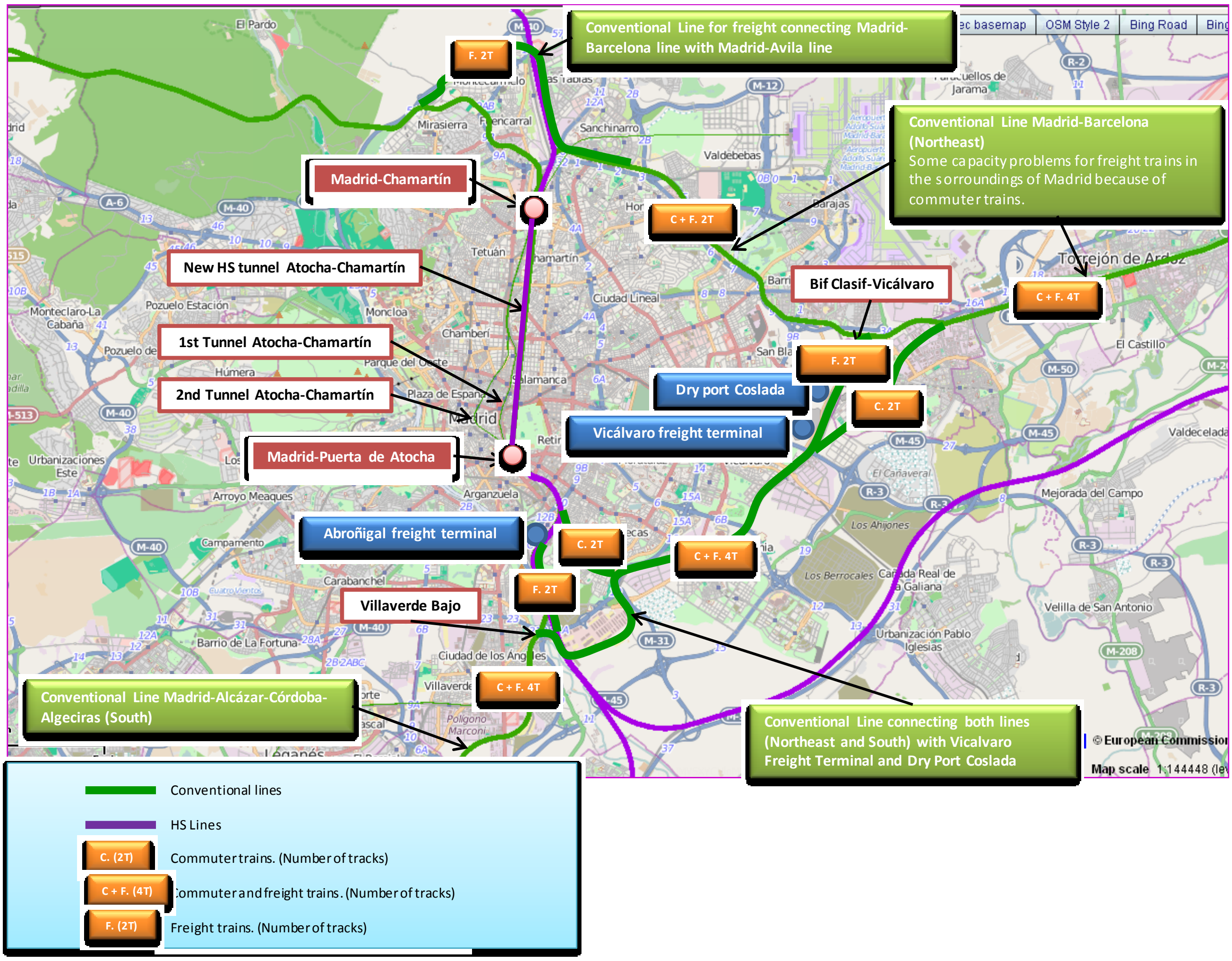


Figure 16: Rail network in the Madrid area

In Lisbon, the line that leaves from the port passes through two level crossing in Alcântara, with 6 conflict points with road traffic.

A study project for the rail grade separation in Alcântara allow increasing the rail traffic capacity in the container terminal of the Port of Lisboa has been object of a EU co-funding (2010-PT-91129-S) but implementation has been hindered. The new rail grade separation will consist in 6.5 km of electrified double track, with a design speed of 80 km/h, for both cargo and passenger trains, enabling also the continuity of the passenger service between the Cascais line and the Cintura line. Additionally, this infrastructure will contribute to improve the fluidity of the road traffic in the Alcântara neighbourhood.

Road bottlenecks, missing links and interoperability issues

The Atlantic Corridor is characterised by the high quality of the existing road network, 99% fulfilling the TEN-T class requirements (motorways or express roads). The exception to this accomplishment is the cross border section PT-ES (few km on each side) that are to be upgraded to motorway. A few barriers or bottlenecks are present.

Only partial interoperability exists for road tolling systems amongst the corridor countries. For example, the Spanish Via-T system can be used in all Portuguese tolls and at the border with

France, but in the reverse situation, the Portuguese Via Verde is only interoperable on selected Spanish roads, none of which are in the core network.

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Most road bottlenecks are identified as last mile connections to corridor nodes; some projects addressing these issues have been identified (i.e. in Algeciras port).The section Los Barrios-Algeciras is an important missing link in the core road network of Atlantic Corridor.

Inland Waterway and inland ports bottlenecks, missing links and interoperability issues

Le Havre is the first French port for containers where a new basin called Port 2000 was opened in 2006. Traffic from Port 2000 is hindered by the lack of a direct waterway link between the basin and the canal of Tancarville North of the port.

Connections from the port to the canal and the Seine can currently either be carried by sea (North and South routes) with specially designed inland waterway vessels which can navigate on the sea over short distances or with the help of a rail shuttle. A multimodal terminal is under work which will also be able to carry goods from Port 2000 to the inland waterway network. Two other projects were studied to enable conventional inland vessels to access Port 2000. A lock could have created a direct link between Port 2000 and the inland port, but this project was deemed to be too costly due to the existing infrastructure and therefore abandoned. The other solution studied consists of a swell protected river path to join the 2 parts of the sea port so that vessels could access the inland waterway network through the François 1er lock. This last solution is considered the more adequate of the 2.

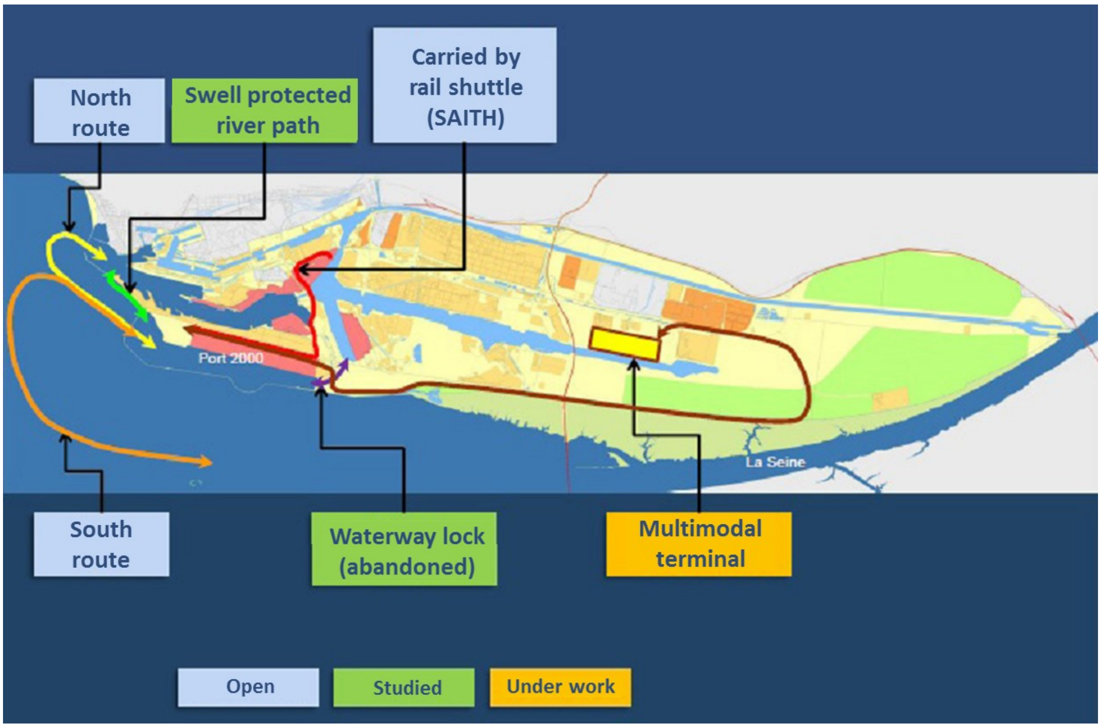


Figure 17: Le Havre, inland waterway access to Port 2000

Moreover, the Tancarville locks, key waterway entrance of the port of Le Havre and thus bottleneck on the Seine, also need to be modernized in order to improve their operational capacity and reliability.

For the port of Rouen, ship navigation on the Seine from the sea to the port of Rouen is constrained by the river depth. A 10 to 11 metres draught is obtained by following tides so as to maximise the draught (10.7 metres for import and 10.3 metres for export in 97% of tides). However, this procedure currently only allows *handysize* ships to access the port of Rouen through the Seine channel. Dredging of the channel is necessary to obtain a draught of 11 to 12 metres and thus open the port of Rouen to larger *handy-max* ships, thus offering 14% to 50% gains in ship tonnage depending on the direction and products carried.

Many structures on the Seine downstream from Paris require modernisation or upgrade to improve reliability on this axis. The following aspects have been identified and were included in the Seine-Escaut project:

- Lengthening of the second lock at Méricourt and of the Amfreville lock;
- Modernising and rehabilitating dams on the downstream Seine including dams of Suresnes, Bougival, Méricourt, Andresy GC, Poses and Port Mort;
- Modernising and rehabilitating locks on the downstream Seine, including locks of Suresnes, Bougival, Méricourt and Notre Dame de la Garenne;
- Improvement of reliability at other locks and dams;
- Rehabilitating of the rail bridge at Maisons Lafitte;
- Raising of the Poses-Amfreville footbridge.

South of Paris, the Seine is characterised by a wide gauge up to Bray-sur-Seine. The 27 km section between Bray-sur-Seine and Nogent-sur-Seine is classified as CEMT II. The Bray-Nogent project aims at upgrading this section of the Seine to CEMT Va. Although this part of the Seine is not located on the corridor, this bottleneck is still a major issue for the Atlantic corridor as it hinders waterway traffic to the ports of Paris, Rouen and Le Havre. The Nogent area generates mostly agricultural products and building material and is increasingly reliant on IWW. Waterway traffic on this part of the Seine has more than tripled between 2001 and 2010 in terms of tonnes-kilometres.

As for the downstream Seine, structures must be modernised or upgraded to improve the system reliability. These project are part of the overall Seine-Escaut project:

- Renovation and modernisation of dams, including reconstruction of the Beaulieu dam and restoration of the Livon weir which holds the channel to the Nogent-sur-Seine nuclear power plant;

- Renovation and/or deepening of the small locks on the high Seine;

- Creating a second lock at Varennes-sur-Seine;

- Improving reliability of other locks and dams;

RIS already used or under development for French waterways France (AIS, ECDIS and NtS for instance) are standardized technology that can be used in all member States.

Bonneuil-sur-Marne is the second most important port of the Paris area and an important tri-modal platform. Its last mile road connection is carried through urban areas. The extension of road N406 to the port will provide it with direct access to the main road network.

Due to tourism, Port of Paris hosts a major passenger activity with 7.63 million passengers in 2012. Cruises on the Seine including at least a night amounted to 50,000 passengers this same year.

In the context of the broader TEN-T network, there are plans within the NSMED corridor to extend the navigable waterway from Paris via the Seine/Oise and Escaut rivers to connect to the Benelux countries. This is expected to substantially increase waterborne freight traffic related to Paris and the River Seine. Co-ordination between the work plans of the Atlantic and NSMED corridors is therefore necessary in this case.

Seaport bottlenecks, missing links and interoperability issues

The connection of seaports with other modes, in particular rail (and inland waterways in France) is critical to guarantee capacity for freight traffic to and from the economic regions along the corridor and promote port competitiveness and strengthen hinterland connections. Combine throughput of core ports in corridor reaches more than 240 million tonnes[22]. Main issues and bottlenecks in the port areas, which need to be overcome for further growth relate to two main issues: capacity and connectivity. Several projects in the corridor work plan are addressing these bottlenecks.

For Rouen and Le Have, 2 bottlenecks described in the previous section on inland waterway are also considered to be sea port bottlenecks:

- Sea access to the port of Rouen takes place on the Seine which needs to be dredged to allow access to larger handy-max ships
- IWW access to Port 2000 at Le Havre is not yet possible, shipment from Port 2000 to the Seine is at the moment carried by land or by sea.

Several ports are operating near capacity, facing the need to expand their facilities and upgrade port infrastructure and maritime accesses to cope with expected growth in demand. The ports sector is showing fairly consistent growth expectations. This goes in line with the necessary upgrade and reinforcement of terminal extensions for logistic and industrial platforms and intermodal terminals. Furthermore most ports also need to adapt facilities and equipment to the new standards required by the use of bigger ships, a trend that will be continued in future due to the Panama Canal widening.

Improvements in land access and last mile connections to ports are needed, with the majority of existing bottlenecks related to rail. Although all ports in the corridor are connected to rail, both in Portugal and Spain the upgrade of rail connections and rail freight terminals to allow 750m trains to access the ports is critical, as well as the electrification of the railway line connecting to the port of Algeciras, which is the largest seaport by volume in the corridor.

Some ports namely Algeciras, Lisboa and Leixões, need to upgrade IT infrastructure (VTS, PCS) to improve port efficiency, competitiveness and quality of service.

On passenger side, the cruise market is continuously increasing and expected to continue growing. Increase the capacity of port terminal areas and improvements in infrastructure and equipment's to cope with that growth is identified in Lisbon and Leixões.

Airports bottlenecks, missing links and interoperability issues

Airport infrastructure on the Corridor is extremely important: air passenger transport is the preferred mode for long distance passenger between corridor countries.

Two major hubs (Madrid-Barajas and Paris CDG) are among the world's busiest airports in number of passengers. In 2012, Roissy CDG rank as the 7th world busiest airport (2nd in the EU)

[22] Considering the other main ports in the corridor, combined throughput is more than 370 million tons

and Madrid-Barajas as 19th (5th in the EU). Roissy CDG is also a major hub for air freight ranking as the 6th worldwide airport.

Connectivity with heavy rail is a weakness: only Paris CDG (Roissy) complies completely with the requirement to be connected to TEN-T rail network. Madrid Barajas and Paris Orly are connected to suburban railway and metro. Lisbon and Porto airports are connected with urban rail (metro) while Bilbao and Bordeaux does not offer any rail connection. By 2050, Madrid and Lisbon airport should be connected to rail.

Presently none of the corridor airports offers clean fuel availability[23] and the compliance perspective on alternative fuel availability in the airports by 2030 is rather limited. In all countries, projects looking to study this issue were identified.

Connectivity of Lisbon airport to logistic platforms is insufficient. Upgrade of air freight terminals is planned.

Traffics in Madrid-Barajas Freight Center, currently connected to road high-capacity network, would be reinforced by future connection of Barajas airport to high speed rail.

Rail Road Terminal bottlenecks, missing links and interoperability issues

Bottlenecks are mainly noticed for intermodal connectivity, both road and rail, the latter being a major source of bottlenecks in Spain (and Portugal) as a consequence of limits on train lengths as previously reported. All RRT terminals in Spain and Portugal are connected with rail in Iberian gauge.

The status of planned rail-road terminals in the Atlantic Corridor is still unclear, namely in respect of timings for their construction and operation, largely brought on by the economic crisis and associated difficulties in getting funds for its developments (either public or private).

There is potential for multimodal services along the corridor and further improvement of multimodal connections, making a seamless transition between modes could further improve this aspect. Together with the infrastructure related measures, a strong emphasis on the deployment of logistic single windows along the corridor, extending the current port single windows towards the hinterland and integrating with e-maritime services and information technologies could have a strong impact.

Beyond infrastructure, operational and administrative barriers between and within transport modes still exist. As acknowledge before, for instance in the Irun/Hendaye border the duration of freight transfer at is limited not only by the means of production available (including the length of tracks) but is also associated with real-time availability of consignment notes and the capacity of transhipment sites.

The simplification of the procedures of reservation of paths and the realization of new tools with benefit from new technologies as foreseen in the RFC4 plans will be a major opportunity to increase efficiency of rail freight. Equally the continuous deployment of Port Single Windows (integrated with customs) and its upgrade into Logistic Single Windows, as well as National Ports Information Systems in the scope of the future implementation of National Maritime Single Windows together with the actions under the Blue Belt package are major enhancements for both rail and maritime and their competitiveness vis a vis the road transport.

[23] Some publications on aviation biofuels report a plan for microalgae based biofuel production project to be established at Madrid-Barajas airport unveiled by Iberia airlines, Spanish airport and air traffic control organisation AENA and AlgaEnergy in 2011

This will progressively reduce the existing barriers to information flows to operators[24] contributing for a smooth, seamless and integrated transport system along the corridor. Several projects are addressing the development of logistic single window solutions.

Cross border sections

There are four corridor cross border sections:

- one between Germany and France (Metz – Saarbrücken);
- one between France-Spain (Irún-Hendaya); and,
- two between Spain and Portugal (Vilar Formoso- Fuentes de Oñoro and Caia – Badajoz).

The current cross border railway infrastructure between Spain and France represent a major bottleneck with the necessary actions to adapt the trains from Iberian and French railway networks (axle change, transfer of the load,…). The future Y Basque and GPSO connection will allow a direct connection to the line Bordeaux – Tours – Paris. The future scenarios for Irun-Hendaye were object of a dedicated study that can be found in annex. On the issue of local passenger transport, the Transfermuga European project conducts multimodal studies to analyse daily mobility cross-border flows in the aim of increasing rail market share for cross-border flows in the Basque Eurocity.

The rail lines crossing the Spanish-Portuguese borders are affected by the lack of electrification in cross border sections in Spain, namely Medina del Campo-Fuentes de Oñoro and Madrid-Badajoz. Electrification of Medina del Campo-Salamanca railway section is on-going and for Salamanca-Fuentes de Oñoro-Vilar Formoso it is planned.

The south cross-border section Évora-Caia in the corridor branch Évora-Mérida is a missing link, with works on-going on the Spanish side only.

On the road side, few barriers or bottlenecks are identified in the cross- border section between ES-FR. Between Spain and Portugal, the motorway upgrades on the last 3 km in the Vilar Formoso border are planned as well as on the Spanish side. Partial interoperability of road tolling systems among countries still exists.

There is no inland waterway cross border section in the corridor. The corridor waterway is internal to France.

Although it is not considered as a cross border section of the Corridor, the neighbourhood of Northern Africa cannot be ignored. The most southerly end of the Atlantic Corridor, and also in common with the Mediterranean Corridor, is the Port of Algeciras, located in the Strait of Gibraltar. It is the natural connection of the European Union with the North of Africa and Morocco in particular.

On the other hand, articulated in this point, the Corridor represents an opportunity for the traffic coming from Asia, the Americas and Africa with destination to Central Europe due to important advantages (environmental, more competitive traffic and lower energy consumption).

[24] A good example can be found in Sines. A pilot from port single window to logistic single window is already implemented with certain rail terminals (currently Bobadela and Entroncamento, in future Badajoz and Poceirão). With this facility, the administrative procedures (train orders, load/unload reports, etc) including customs clearance are accomplished electronically since the train arrives in the RRT terminal. Enlarging this pilot to road operators is planned. Another example is given in the port of Leixões with the integration of road data system in the scope of the port gate process.

4.1.5. Transport Market Study

The Transport Market Study (TMS) intends to analyse the Corridor-related transport and "assess the capacity and traffic flows on the respective parts of the infrastructure"[25], covering the time period from 2010 to 2030. This corresponds to identify the current and prospective transport needs in the Corridor from the demand and supply perspectives. More specifically, the study provides information on how the traffic will evolve, and by which mode. Then, the TMS will assess whether the existing and planned capacity is able to cope with the expected demand growth; this is incorporating the ongoing and planned measures, up to 2030 (i.e. with TEN-T requirements accomplished).

Analysis for Corridor transport activities starts from the overview of its macroeconomic context, identifying the external socio-economic drivers, i.e. variables which affect the Corridor transport activities, such as population, GDP, GAV. This takes into account the time horizon 2010-2030. For the global projections EU reference values and previous studies are used. The horizontal policies which could potentially impact the Corridor transport activities are considered.

The second step focus on the corridor demand providing the context of actual transport activities, focussing on the international freight demand in corridor countries: transported volumes, commodities and modal split. Together with the existing demand structure, existing forecasts are highlighted.

To assess the potential effect of changes at corridor level, a scenario analysis was performed. Scenario development has been conducted for the whole EU allowing to assess the various impacts of EU level measures and its effects on the corridor

The following TMS diagram presents the main tasks of the TMS.

The report presents the status of the Corridor demand. This is an extraction of the catchment area regional Origin-Destination demand (in tonnes and trips) mainly from the ETISplus database. ETISplus is the main harmonised source of information which can provide the scale of the demand reflecting the Corridor-related flows.

The geographical coverage of the TMS, or its catchment area consider 75 NUT3 regions. Corridor counts with a population of 53 million in 2012. In corridor regions it could be observed that population remains relatively stable. According to the EU reference scenario projections, the population of the MS along the corridor will be increased in Spain and France with about 8%, with an annual growth rate of 0,4% per year till 2030, while in Portugal population will increase just below 2% in period, with annual growth rates of 0,1%. In Germany a decrease in the order of 5% is estimated, with annual decrease rate of 0,2%

In terms of total economic activity, the Atlantic corridor regions account in 2012 for approximately 1.580 million euro. According to the EU reference scenario projections, the economic projections are positive for all corridor countries, with higher annual growth rates expected in Spain (2,1%) and France (1,7%).

In what concerns the national transport profile, a strong predominance for road is visible in all countries, but annual growth for rail is visible in all the countries. Seaport tonnage presents also

[25] "Starting the core network corridors" Working document, par. 6.2.1 (Brussels, 26 February 2014)

a positive variation from 2010 to 2012, minus in France. Main growth is observed in the container traffic with annual growths between 9% and 10%, except for France, where only RoRo segment had grown. Together, in 2013 the core ports in corridor account for 278 million tonnes, 6 million passengers, and 5 million TEU, and are motors of economy.

About 96.5 million passenger cross border trips were recorded within corridor countries in 2010. Car represents the predominant mode (57%) followed by air (40%). Just 3% of passenger flows within corridor countries are made in rail, although rail share France-Germany is 7,6%.

The corridor countries exchanged in 2010 nearly 157 million tons of goods. Air freight represents less than 0,1% of the total tons exchanged. Goods exchanged via inland waterways refer only to Germany and France. Those flows represent almost 6% of the total flows between corridor countries, however flows DE-FR are quite representative (~14%). Rail share on the corridor as a whole is less than 5% of the flows. With almost 75% share, road is the predominant mode within corridor countries. Sea flows represent about 15% of the total flows within the corridor countries.

The analysis conducted shows that seaports are actively developing facilities and programmes to enhance capacity and to develop multimodal hinterland networks. Port forecasts within the corridor typically indicate expectations of throughput increasing in the order of 30% to 90%. The success of these will largely depend on solving bottlenecks and missing links, particularly on the rail infrastructure as well as on developing multimodal platforms.

Although headline activity indicators such as population and economic growth show modest levels for the EU as a whole, corridor countries show an expected moderate growth in Portugal, however above EU average for Spain and France.

In order to assess the potential effect of changes, a scenario analysis was performed. This reflects a top-down analysis using trade data to estimate cross-border flows, and transport data to estimate the flows per mode.

Network modelling considered the baseline case (i.e. forecast using GDP/GVA for 2030 and 2050 using socio-economic assumptions from the 2013 EU reference Scenario) and a "policy scenario" considering a set of inputs (European infrastructure related) as additional to baseline case. Additional assumptions, as for instance related to the widening of the Panama Canal are not considered in the current exercise:

1. Network

- Missing link Évora-Caia completed

2. Seamless interoperable railway

- All core network electrified
- All core network with UIC gauge
- All core network with 22.5 tonnes per axle
- All core network allowing 740m trains
- All core network with ERTMS, double track
- Interoperability improvements, reducing border crossing times

3. Road tolling

4. Single Window for maritime transport

5. LNG fuel for ships

The scenario development has been conducted for the whole EU network (i.e. not only for Atlantic) making it possible to assess the various impacts of EU level measures and their effects on the corridor according to five model runs: 2010, 2030 baseline, 2030 policy scenario, 2050 baseline and 2050 policy scenario. Policy assumptions were based on expected investments in the Atlantic, Med, NSMed and Rhine-Alpine corridors.

In the following table the different measures are presented:

Table 13: Policy scenario measures

Scenario measures	Modelling assumptions
Network	No discontinuity in network
Missing link Évora-Caia completed	
Seamless interoperable railway (all EU network)	Improvement in rail efficiency & reliability (cost reduction per km and reduction of border crossing times)
Electrification	Identify newly electrified links
UIC gauge	Identify new UIC gauge links
740 m trains	Rail cost reduction
ERTMS	Supply side measure – additional paths, but no change in costs
Single /double track	Supply side measure – additional paths, but no change in costs
22,5 tonnes	No additional effect
Road measures (all EU network)	Increasing of operating costs and time
Tolling	Increase in road costs per km on core network links
Water measures (all EU network)	Various effects
Single window for maritime transport	Fixed cost reduction per ship arrival
LNG fuel for ships	Variable cost increase per tonne-km for maritime transport
Seine-Escaut CEMT V connection (NSM measure, impacting on network)	Reduction in costs for IWT in France

Three model runs were conducted: 2010, 2050 baseline and 2050 with policy scenario. Results are presented in tonnes.km measuring the difference in transport performance for the whole country and for the Corridor sections, including domestic, import/export and transit flows.

Modal Shares – Corridor Countries

Tables show million tonne-kms in baseline and policy scenario, on one side at the national level, and on the right hand side, for only the corridor links.

National Level (modelled)

	Baseline				Policy scenario			
Road MTkm	**2010**	**2030**	**2050**	**Avg YoY %**	**2010**	**2030**	**2050**	**Avg YoY %**
PT	16 759	23 481	27 930	1,3%	16 759	23 166	27 574	1,3%
ES	153 487	217 436	249 470	1,2%	153 487	214 711	246 487	1,2%
FR	237 272	324 229	385 818	1,2%	237 272	314 247	374 166	1,1%
DE	307 094	401 847	456 333	1,0%	307 094	391 186	443 709	0,9%
	714 611	**966 994**	**1 119 551**	1,1%	**714 611**	**943 309**	**1 091 936**	1,1%
Rail MTkm	**2010**	**2030**	**2050**	**Avg YoY %**	**2010**	**2030**	**2050**	**Avg YoY %**
PT	1 893	2 746	3 023	1,2%	1 893	3 447	3 801	1,8%
ES	8 380	11 688	13 130	1,1%	8 380	14 988	16 708	1,7%
FR	36 404	53 367	61 495	1,3%	36 404	63 336	73 116	1,8%
DE	124 612	187 610	205 810	1,3%	124 612	205 867	226 755	1,5%
	171 289	**255 411**	**283 457**	1,3%	**171 289**	**287 639**	**320 379**	1,6%
IWT MTkm	**2010**	**2030**	**2050**	**Avg YoY %**	**2010**	**2030**	**2050**	**Avg YoY %**
PT								
ES								
FR	8 203	12 525	14 422	1,4%	8 203	13 926	16 056	1,7%
DE	59 744	79 919	89 049	1,0%	59 744	81 244	90 799	1,1%
	67 947	**92 444**	**103 471**	1,1%	**67 947**	**95 170**	**106 855**	1,1%

Corridor Links

	Baseline				Policy scenario			
Road MTkm	**2010**	**2030**	**2050**	**Avg YoY %**	**2010**	**2030**	**2050**	**Avg YoY %**
PT	10 212	14 613	17 512	1,4%	10 212	14 435	17 311	1,3%
ES	24 449	35 847	42 214	1,4%	24 449	35 348	41 667	1,3%
FR	34 720	49 084	58 840	1,3%	34 720	47 653	57 163	1,3%
DE								
	69 382	**99 544**	**118 566**	1,3%	**69 382**	**97 436**	**116 141**	1,3%
Rail MTkm	**2010**	**2030**	**2050**	**Avg YoY %**	**2010**	**2030**	**2050**	**Avg YoY %**
PT	1 420	2 052	2 123	1,0%	1 420	2 318	2 555	1,5%
ES	3 035	4 221	4 852	1,2%	3 035	5 106	5 827	1,6%
FR	6 303	9 293	10 727	1,3%	6 303	11 161	12 906	1,8%
DE	528	619	644	0,5%	528	650	679	0,6%
	11 284	**16 185**	**18 346**	1,2%	**11 284**	**19 235**	**21 966**	1,7%
IWT MTkm	**2010**	**2030**	**2050**	**Avg YoY %**	**2010**	**2030**	**2050**	**Avg YoY %**
PT								
ES								
FR	2 436	4 248	4 877	1,8%	2 436	4 475	5 146	1,9%
DE								
	2 436	**4 248**	**4 877**	1,8%	**2 436**	**4 475**	**5 146**	1,9%

The study uses tonne-km indicators to show the changes in the modal shares among the scenarios and market segments.

In the baseline scenario, road shows the highest growth trend, followed by inland waterways (only France and Germany) and a slightly lower growth for rail. Thus, under baseline assumptions rail is losing freight market share, mainly due to the mix of commodities, favouring those that tend to use road transport. This is consistent with reviews done where road maintains highest growth rates. This trend is even more visible in the corridor links than at national level.

When considering the impact of the different policy measures, rail then shows faster growth rates than road, growing more or less at same average as inland waterways, which are also being boosted by investments in France. Rail gains are mainly due to the implementation of infrastructure measures addressing the most critical missing links and bottlenecks (electrification, UIC gauge, etc.) and also to the expected decrease in travel costs and times, which make rail a more attractive option for hinterland transport. The growth in rail tonne-km at national level is similar to the rates estimated for corridor links.

The total demand (all modes combined) is expected to become larger in the policy scenario, compared to baseline.

Overall at national level, road is expected to grow by 57% (Index = 157) by 2050 under the baseline scenario and 53% in the policy scenario. For rail expected growth is 65% in the baseline and 87% in policy scenario, while in IWT is 52% in baseline and 57% in policy. Such a pattern is even more visible for the corridor links with road expected to grow 71% in baseline, 67% in policy and rail: 63% in baseline, 95% in policy.

Growth rates overall are shown as indices (base year 2010 = 100) below:

	National Level				
Road BTkm	**2010**	**2030**	**2030S**	**2050**	**2050S**
PT	100	140	138	167	165
ES	100	142	140	163	161
FR	100	137	132	163	158
DE	100	131	127	149	144
TOTAL	100	135	132	157	153

	Corridor Links Only				
Road BTkm	**2010**	**2030**	**2030S**	**2050**	**2050S**
PT	100	143	141	171	170
ES	100	147	145	173	170
FR	100	141	137	169	165
DE					
TOTAL	100	143	140	171	167

Rail BTkm	**2010**	**2030**	**2030S**	**2050**	**2050S**
PT	100	145	182	160	201
ES	100	139	179	157	199
FR	100	147	174	169	201
DE	100	151	165	165	182
TOTAL	100	149	168	165	187

Rail BTkm	**2010**	**2030**	**2030S**	**2050**	**2050S**
PT	100	145	163	150	180
ES	100	139	168	160	192
FR	100	147	177	170	205
DE					
TOTAL	100	143	170	163	195

IWT BTkm	**2010**	**2030**	**2030S**	**2050**	**2050S**
PT					
ES					
FR	100	153	170	176	196
DE	100	134	136	149	152
TOTAL	100	136	140	152	157

IWT BTkm	**2010**	**2030**	**2030S**	**2050**	**2050S**
PT					
ES					
FR	100	174	184	200	211
DE					
TOTAL	100	174	184	200	211

Summary of Forecasts

Based on the above tables, with the corridor defined in terms of tonnages from selected O/D combinations, the shares of cross-border traffic per mode are as follows. This way it is possible to see the role played by maritime transport for those short-sea flows where there is competition between land and sea modes.

The first table (below) shows the shares by mode for the cross-border O/Ds. The second includes the (larger) volumes of domestic traffic. Both tables exclude any flows with origins or destinations outside the range of countries selected. Those are mainly flows to or from Eastern Europe, Scandinavia, the Eastern Mediterranean, North Africa, and deep sea locations.

Table 14: Modal Share, according to cross-border tonnage (000s)

	2010	2010 Share	2050 (Scenario)	2050 Share
Rail	19 805	4.9%	41 048	6.0%
Road	233 004	57.9%	400 895	59.0%
IWT	28 306	7.0%	43 273	6.4%
Sea	121 334	30.1%	194 286	28.6%
Total	402 450	100.0%	679 502	100.0%

Table 15: Modal share, according to cross-border and domestic tonnage (000s)

	2010	2010 Share	2050 (Scenario)	2050 Share
Rail	108,040	2.6%	210,272	3.6%
Road	3,862,939	92.3%	5,265,954	90.3%
IWT	60,775	1.5%	102,292	1.8%
Sea	153,698	3.7%	251,516	4.3%
Total	4,185,453	100.0%	5,830,033	100.0%

4.2. Overall Corridor Objectives

The TEN-T regulation contains both high-level strategic objectives for the TEN-T network as a whole, as well as specific infrastructure-related requirements. This means that, by one hand, measures should address functional objectives such as cohesion and sustainability, but on the other hand there are specific requirements for the physical capabilities of the corridor infrastructure that need to be accomplished. For each Corridor specific goals were established.

In the following, TEN-T qualitative requirements and Corridor goals are presented.

4.2.1. TEN-T objectives

The global objective state that "trans-European transport network shall strengthen the social, economic and territorial cohesion of the Union and contribute to the creation of a single European transport area". In brief, four main objectives are expressed:

1. Territorial and structural cohesion
   The Core network must enhance accessibility and connectivity of all regions of the Union, by implementing a reduction of infrastructure quality gaps between Member States and by providing a balanced coverage for all European regions reflecting their specific situations. The creation of new segments and the modernisation of restricting links in the existing network are then needed to reach this objective. Interconnections between transport infrastructure for long-distance traffic and regional or local traffic for both passenger and freight traffic, must be created or improved. Network effect with other corridors should be considered.

2. Efficiency between different networks
   The removal of bottlenecks or obstacles, the capacity improvement of saturated segments and the bridging of missing links within Member States' territories and between them is a priority for the European Union. The efficiency must be enhanced through easy

interconnection and interoperability between national transport networks (concerning particularly the opening of national rail markets, especially for freight), the removal of existing localised bottlenecks on the infrastructure, as well as the alignment of it to suitable technical standards for freight (e.g. 750m allowed length for trains) and through the optimal integration of intermodality between all transport mode for passengers, as for logistic chains. The development of the capacity of multimodal platforms and deployment of information systems is fundamental to undertake this last point. Measures must be accompanied by the promotion of economically efficient and high-quality transport, by an efficient use of the potential of the new and existing infrastructure, by a rationalisation of the energy and resource's use, and by a cost-efficient application of innovative technological and operational concepts.

Tools enabling to improve traffic management, administrative procedures and information systems (i.e. ITS, SESAR, ERTMS, VTMIS and e-maritime services, RIS) and its full deployment should be achieved. Their use leads to a relevant and intelligent management of the different networks by operators contributing to an optimisation of traffic flows.

3. Transport sustainability
Different transport modes must be developed on a long term purpose through criteria of sustainability and economic efficiency. They must also bring a contribution to the reduction of GHG emissions, to the use of low-carbon and clean transport, to develop sustainable propulsion systems, to improve the fuel security, to reduce external costs (especially traffic incidents and accidents) and to protect the environment. This should consider policies based on the application of "user pays" and "polluter pays" principles involving a fair and reliable means of financing the management, maintenance and future investments of the networks.

   Long distance transport must be sustainably developed, and particularly general public transports for passengers and sea/rail/ inland waterways for freight. Motorways of the sea and Short-Sea-Shipping shall be promoted by the Union.

4. Increasing the benefits for the users
The European transport network must respond to the mobility and transport needs of its users, ensuring safe, secure and high quality transport services. Quality, efficiency and sustainability criteria should be included in infrastructure requirements and respective monitoring procedures. Safety and security should take into account service disruptions or critical events. With an increase use and adoption of IT based solutions, cyber security shall also be considered. Accessibility for elderly people, persons of reduced mobility and disabled passengers must also be taken into account.

4.2.2. Corridor Specific Objectives

The transformation of the European transport system in a coherent network requires a combination of initiatives at all levels and for each transport mode. Stated Transport White Paper objectives, TEN-T objectives and requirements from Regulation (EU) 1315/2013 need to be applied to the context of the Atlantic Corridor, and should be the basis for defining and prioritising measures and projects.

Specifications for the study **express overall goals for the Atlantic Corridor** as follows:

- Contribute to efficient logistics and modal integration, exploiting its multimodal dimension in order to foster a shift of traffic from the congested air and road transport to rail and maritime;
- Fully exploit and enhance its maritime dimension, including the deployment of MoS and Short Sea Shipping along the Atlantic Coast and considering external trade;
- Address the missing links and lack of interoperability (notably rail gauge and ERTMS);
- Enhance and continue the progress in terms of road tolling interoperability;

The following picture aims to establish the relation between the TEN-T objectives (enablers) with drivers and corridor objectives:

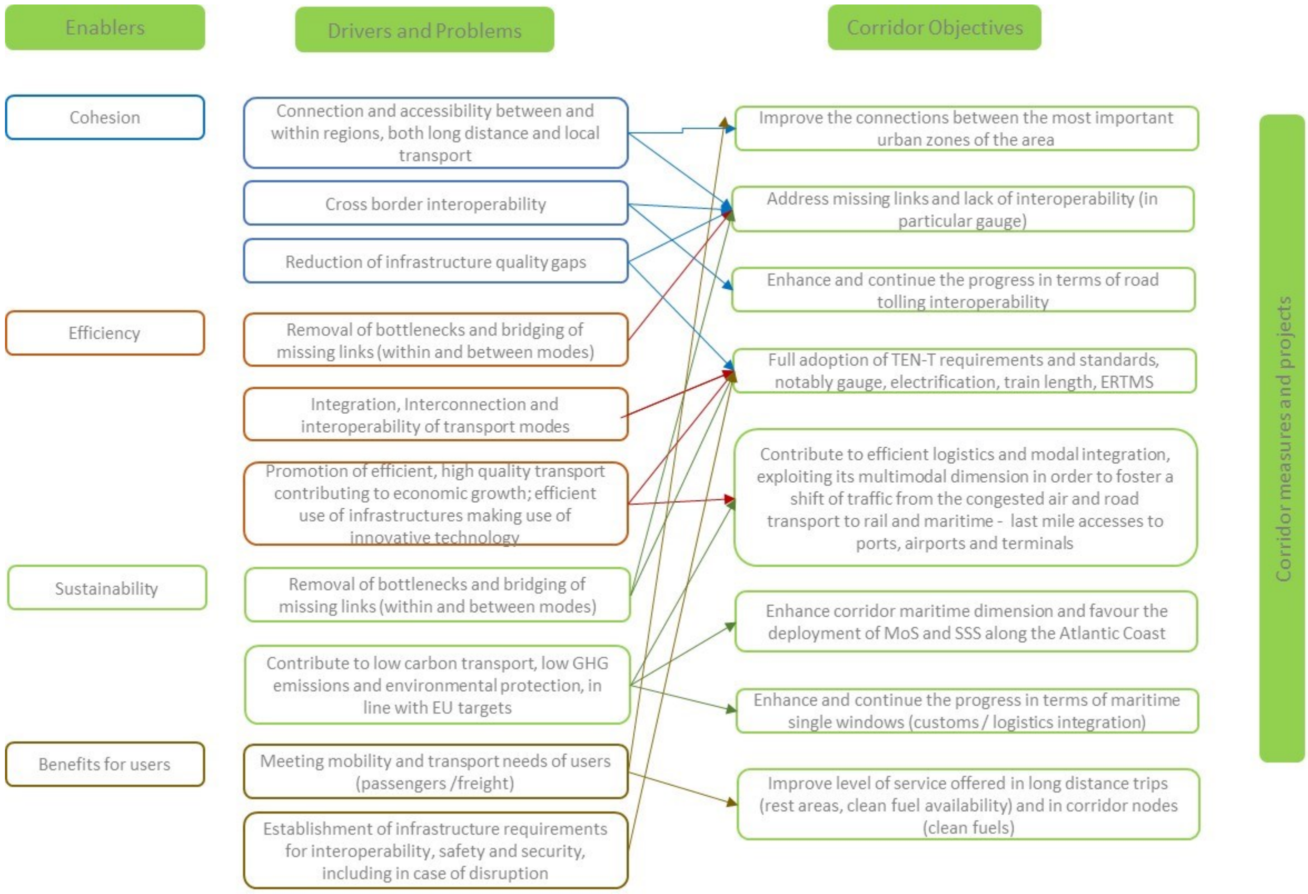


Figure 18: Corridor Objectives

4.2.3. Key performance Indicators

Measuring the corridor performance is a pre requirement to increase its efficiency. As such defining a set of Key Performance Indicators (KPI) measuring progress is critical. KPI should be defined addressing the TEN-T objectives and further specified against the specific objectives present in the corridor and have to be measurable and based on existing statistics. As far as possible common indicators with those established by the RFC should be defined.

In previous version of the report a set of KPI were proposed. KPI definition for all nine corridors is being discussed by the EC. As such it is opt to present, at this stage, only the key performance indicators as established in the Regulation (EU) 1315/2013 for the core network, leaving extended KPI for later evaluation.

Table 16: Key Performance Indicators in Atlantic Corridor

Mode	KPI (TEN-T requirements)	2014	2030	2050
Road	Express Road or Motorway	100%	100%	
	Sufficient Parking Areas	87%	100%	
	Availability of clean fuels			
	LPG	100%	100%	
	Electric	12%	100%	
	LNG	12%	100%	
	Hydrogen	0%		
	Interoperable tolling system	40%	100%	
Rail	Electrification Requirement	87%	100%	
	UIC Track gauge	58%	100%	
	line speed > 100 km/h (core freight lines)	96%	100%	
	Axle Load 22,5 t (core freight lines)	100%	100%	
	Train length > 740 m (core freight lines)	57%	100%	
	ERTMS/signalling system	7%	100%	
IWW	Length of vessels and barges - from 80-85m	100%	100%	
	Maximum beam/width - from 9.5m	100%	100%	
	Maximum draught allowed - from 2.5m	100%	100%	
	Tonnage - from 1000-1500t	100%	100%	
	Minimum height under bridges - from 5.25/7m	100%	100%	
	Class - CEMT IV (1000-1500t vessel)	100%	100%	
	RIS implementation	75%	100%	
Seaports	Rail Connection	100%	100%	
	IWT Connection (class IV)	100%	100%	
	Clean Fuels	13%	100%	
	Promoting MoS / regular SSS	8		
Inland Ports	Rail Connection	100%	100%	
	IWT Connection (class IV)	100%	100%	
	Clean Fuels	17%	100%	
Airports	Rail Connection (core network)	33%		100%
	Clean Fuels	0%	100%	
RRT	In operation	64%	100%	
	Multimodal transhipment capacity	N/A		

Table 17: Additional Key Performance Indicators

Indicator	KPI
Use of infrastructure	Nr of passengers, ton, TEU, vehicles
	Annual number of prearranged freight paths /freight path.km (RFC4)
	Annual number of paths reserved and not used (RFC4)
	Utilisation rates (flows vs capacity)
Intermodal performance	Modal split
	Border time (waiting times in borders)
	Share of rail transport to/from ports
Maritime dimension	Time for goods clearance
	Turnaround time
	Time waiting for cargo transfer
Sustainability	GHG emissions / Pollutant
	Modal share of rail , sea and IWW
	Safety (nr of accidents in CNC)

Indicator	KPI
Cohesion	Long distance flows /short distance
	Cross border flows (passengers and freight)
	Urban nodes connection to rail

4.3. Implementation

4.3.1. Introduction

Implementation plan refers to a set of identified projects in relation to identified problems, which were discussed between the consultants and the Member States. It should however be underlined that some MS will refine and work the present list of measures/projects after Corridor Forum as a result of the discussion on the work plan.

Implementation plan should include references to:

- Deployment of interoperable traffic management systems (ERTMS, VTMIS, e-maritime services, ITS, RIS and SESAR, focusing in particular ERTMS and RIS)
- Plans for the removal of physical, technical, operational and administrative barriers between and within transport modes and for the enhancement of efficient multimodal transport and services
- Other elements as referred to in Art 47 paragraph 1, namely measures to improve the administrative and technical capacity to conceive, plan, design, procure, implement and monitor projects of common interest, impacts of climate change on the infrastructure and, where appropriate, proposed measures to enhance resilience to climate change as well as measures to be taken in order to mitigate greenhouse gas emissions, noise and, as appropriate, other negative environmental impacts

In the process for developing the implementation plan, which essentially consist of a list of projects, elements from the previous progress reports, the critical issues, the compliance issues, the market developments and the set of specific objectives are bring together. Critical issues and compliance issues define the problem set, market developments provide context and direction, and the objectives have been formulated to ensure that TEN-T general objectives of cohesion, efficiency, sustainability and user benefits have been covered.

Identified projects address the following main type of measures, as follows:

- Measures addressing corridor missing links
- Measures addressing bottlenecks (i.e. gauge, electrification, capacity, train length, ERTMS, RIS, ITS tolling)
- Measures addressing last mile connectivity
- Measures addressing efficiency (i.e. IT infrastructures)
- Measures addressing sustainability (i.e. clean fuels, noise, safety, environmental impacts, GHG)
- Measures addressing multimodality (i.e. MoS, RRT, ports-road, ports-rail, ports-IWW, etc.)

Several projects address more than one type of measure (i.e. bottlenecks and missing links), being this particularly noticed in the Spanish and Portuguese cases largely resulting from interventions on track gauge.

The coordination between the strategic plans of the Member States involved in the Atlantic Corridor is of strategic relevance. While it could be observed below that in both Spain and

Portugal, projects for the deployment of UIC gauge are defined, the compatibility in terms of calendar and technical solutions is far from being articulated. It is thus suggested that a dedicated project supporting the definition of a shared planning on the UIC deployment in Iberian Peninsula should be promoted.

This should become a priority project for rail IM and would aim to evaluate the possible options for the migration of each technical system to harmonized systems, establishing as well as concerted deadlines for its implementation. Such project should have a clear mandate and a regular joint reporting on progress to MS and European Coordinator.

An annex containing standard information per project, namely investment required and the envisaged sources of finance is included.

4.3.2. List of measures

The aim of the work plan is to indicate projects of common interest demonstrating European value added; these are typically the cross-border projects, tackling critical issues such as bottlenecks, missing links, and lack of interoperability. To a large extent, those correspond to the CEF pre identified projects.

In addition to the broader discussions with Member States, Corridor Forum and Working Group stakeholders towards the finalisation of a list of measures to be included in the work plan, it should be acknowledged that the large majority of identified measures and projects herewith presented, were the subject of extended analysis and evaluation prior to the realisation of current study and included in the national master transport investment plans.

Overall, 265 projects were identified:

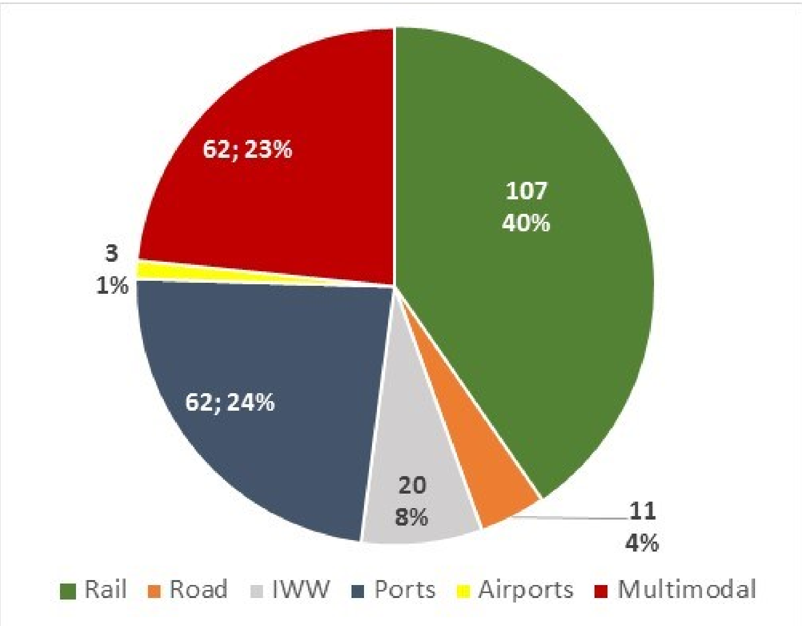


Figure 19: Projects per mode

About 40% of the projects address rail infrastructure, notably in view of the elimination of bottlenecks and missing links, a critical issue for the Atlantic corridor. Some 23% focused on Ports, both inland and maritime, up to large extent related to capacity bottlenecks and increased efficiency.

Multimodal projects, i.e. involving two or more modes, including ports-rail/road, ports /IWW, RRT, count for 24% of the total projects in the corridor. About 20 projects (8% of total) are projects addressing bottlenecks in core inland waterways: Seine as corridor inland waterway and Douro, also a core inland waterway feeding the corridor.

Pure road projects target essentially completion of missing links, notably in last mile, representing about 4% of the projects. Additionally to missing links, road projects target measures in view of accomplishing TEN-T requirements as availability of clean fuels, safe parking areas and tolling interoperability.

Globally, the investments for the corridor totals 50 to 65 thousand MEUR (low and high cost scenarios), of which 35 thousand MEUR are directly related with critical issues discussed along the study and summarised in the next pages. Some projects still do not have a clear cost estimation (i.e. those targeting clean fuels, parking areas). Equally, projects resulting from the list of actions in RFC4 and described in the respective implementation plan for short (2020), medium (2030) and long term (2050) are presented with a cost variation, i.e. the minimum and maximum amounts are identified but at the current stage the infrastructure managers are not ready to provide more precise cost estimates.

With 40% of the measures, the costs for rail infrastructure investments represent nearly 90% of the total investment plans. Investment in ports is roughly 3,5 thousand MEUR (5 to 7% of total investments) and in multimodal projects about 2,5 thousand MEUR.

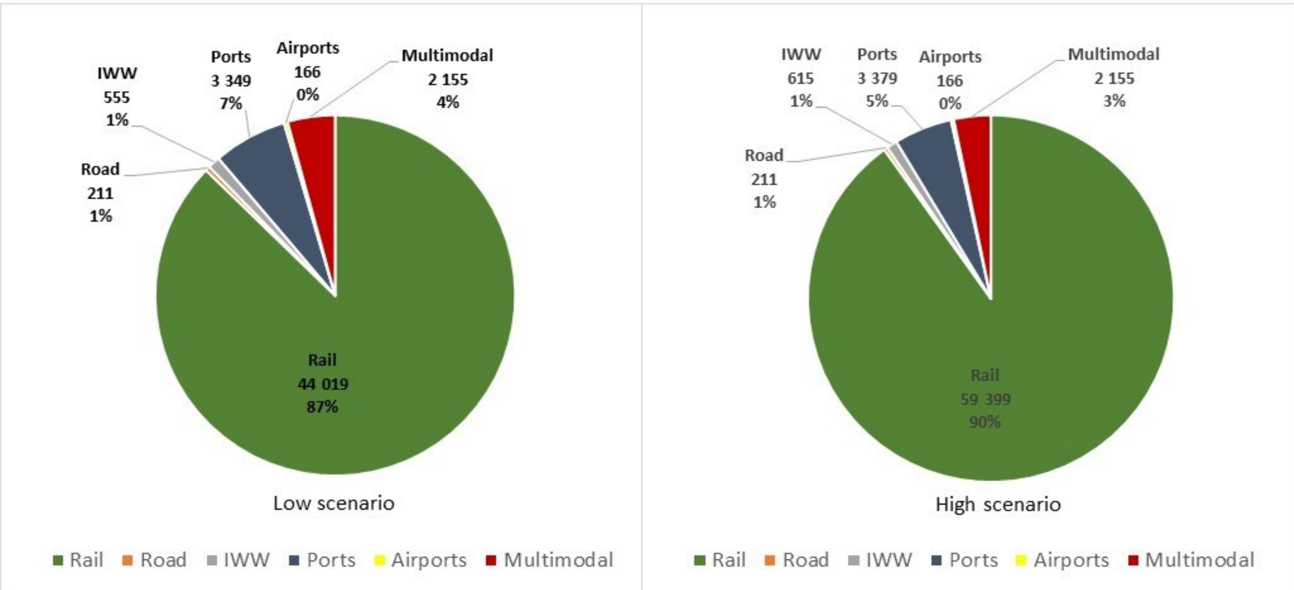


Table 18 below highlights the allocation per country and mode while Table 19 depicts the cost associated to those investments.

Table 18: Planned measures per country and mode

	DE	FR	ES	PT	Total
Rail	6	46	38	17	**107**
Road	2	0	3	6	**11**
IWW	0	18	0	2	**20**
Ports	1	14	5	42	**62**
Airports	0	0	1	2	**3**
Multimodal	1	27	27	7	**62**
Total	**10**	**105**	**74**	**76**	**265**

Table 19: Planned cost (in MEUR) of measures per country and mode

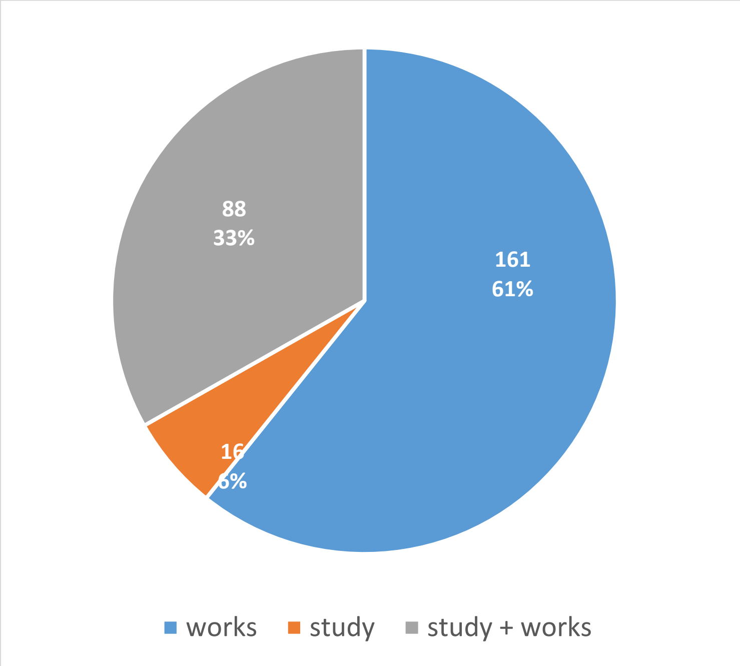
MEUR	DE	FR	ES	PT
Rail	680	33 132 to 39 962	7 608 to 13 458	2599 to 5299
Road	121		29	61
IWW		481-541		74
Ports		484	1 080	1787 to 1817
Airports			4	162
Multimodal		1057	977	139
Total (MEUR)	**801**	**35 154 to 42 044**	**9 680 to 15 530**	**4 823 to 7 553**

Table 20: Planned measures included in Pre-identified CEF calls

	DE	FR	ES	PT	Total
Rail	1	7	18	3	**29**
Road	-	-	-	-	**-**
IWW	-	9	-	-	**9**
Ports	-	2	-	-	**2**
Airports	-	-	-	-	**-**
Multimodal	-	3	4*	2*	**9**
Total	**1**	**21**	**22**	**5**	**49**

* Horizontal

Most of the measures planned refer to works (61%) and 34% comprise both studies and works.



In the following tables, the investment measures are split in terms of timing (implementation before and after 2020) and costs. Four categories are defined:

A. Costs defined and implementation before 2020
B. Implementation before 2020 with cost uncertainty
C. Implementation until 2030
D. Implementation after 2030

Table 21: Measures split in terms of implementation horizon

	DE	FR	ES	PT	Total
A	3	71	33	58	**165**
B	4	10	1	0	**15**
C	3	20	40	15	**78**
D	0	4	0	3	**7**
Total	**10**	**105**	**74**	**76**	**265**
A+ B	70%	79%	46%	76%	68%

Measures to be implemented before 2020 represent nearly 70% of total planned investments and reflect the substantial investment that is necessary to address the most critical issues hindering the corridor deployment, namely the completion of missing links (rail and road), major bottlenecks and interoperability, notably in terms of track gauge, electrification, train length, ERTMS as well as to address bottlenecks on ports (maritime and inland) capacity and connectivity.

An overall repartition of investment cost per mode and country is summarised below:

Table 22: Measures per country and mode to be implemented before 2020

	DE	FR	ES	PT	Total	Total MEUR)
Rail	3	29	15	3	**50**	**21 762**
Road	2	0	1	4	**7**	**211**
IWW	0	15	0	2	**17**	**318**
Ports	1	14	2	40	**57**	**2 289**
Airports	0	0	1	2	**3**	**166**
Multimodal	1	22	15	7	**45**	**1 415**
Total (nr)	**7**	**80**	**34**	**58**	**179**	**26 162**
Total MEUR)	**801**	**16 881**	**4 022**	**4 458**	**26 162**	

Includes the 15 projects for which there is no cost clearly defined but which implementation is planned before 2020 (category B above)

Measures per country and mode addressing critical issues to be implemented by 2020

	DE	FR	ES	PT	Total
Rail	634	10 381	3 136,5	2 249	**16 400,5**
Road			26	12	**38**
IWW		107		74	**181**
Ports		30		453,5	**483,5**
Airports					**0**
Multimodal		1 376	329,3	18	**1 723,3**
Total (nr)	**634**	**11894**	**3491,8**	**2 806,5**	**18 826,3**

Not all critical issues identified are addressed within the 2020 horizon (i.e. some investments in critical issues are expected to be concluded until 2030[26]), but to a large extent the implementation of planned measures is covering and contribute to the Corridor objectives, addressing notably the rail missing links (Évora-Caia), improvement of rail and sea connection to ports as well as bottlenecks in rail, ports and inland waterways.

The following figures present the critical issues above discussed, highlighting the projects that are directly answering to those bottlenecks and missing links.

[26] i.e. UIC track gauge in cross border section Medina del Campo - Fuentes de Oñoro, connection to ports Leixões/Lisboa in UIC track gauge

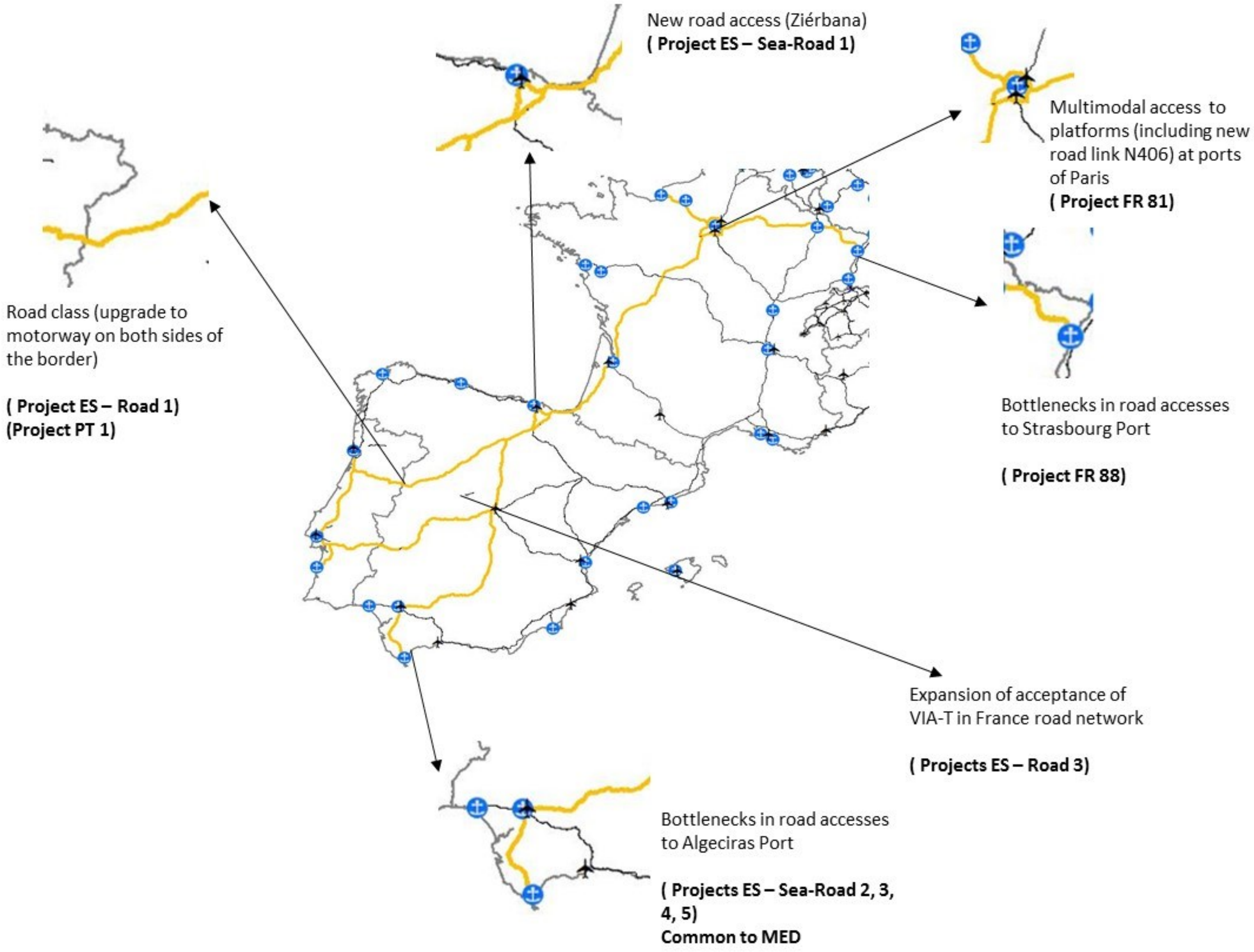


Figure 20: Projects addressing corridor critical issues (road)

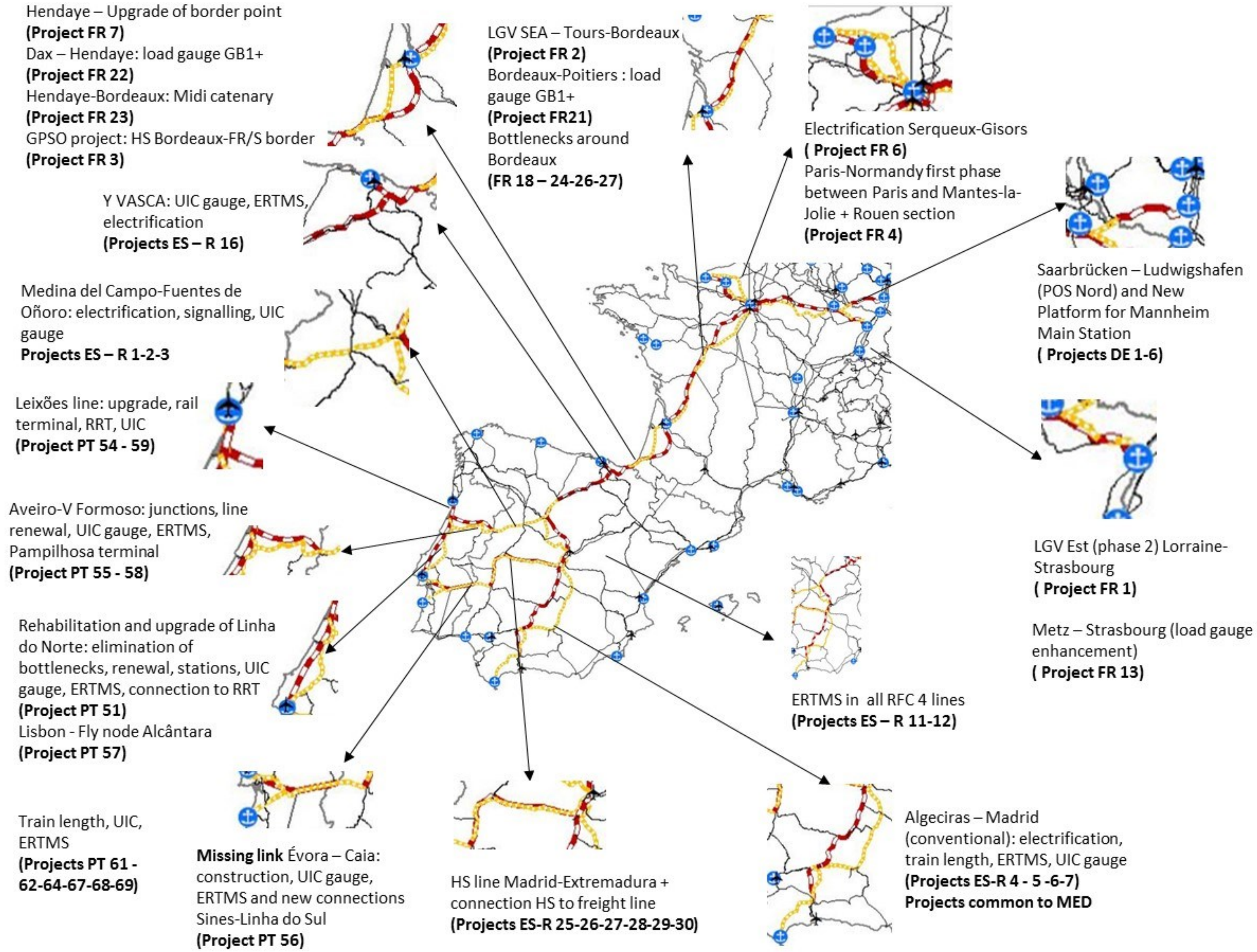


Figure 21: Projects addressing corridor critical issues (rail)

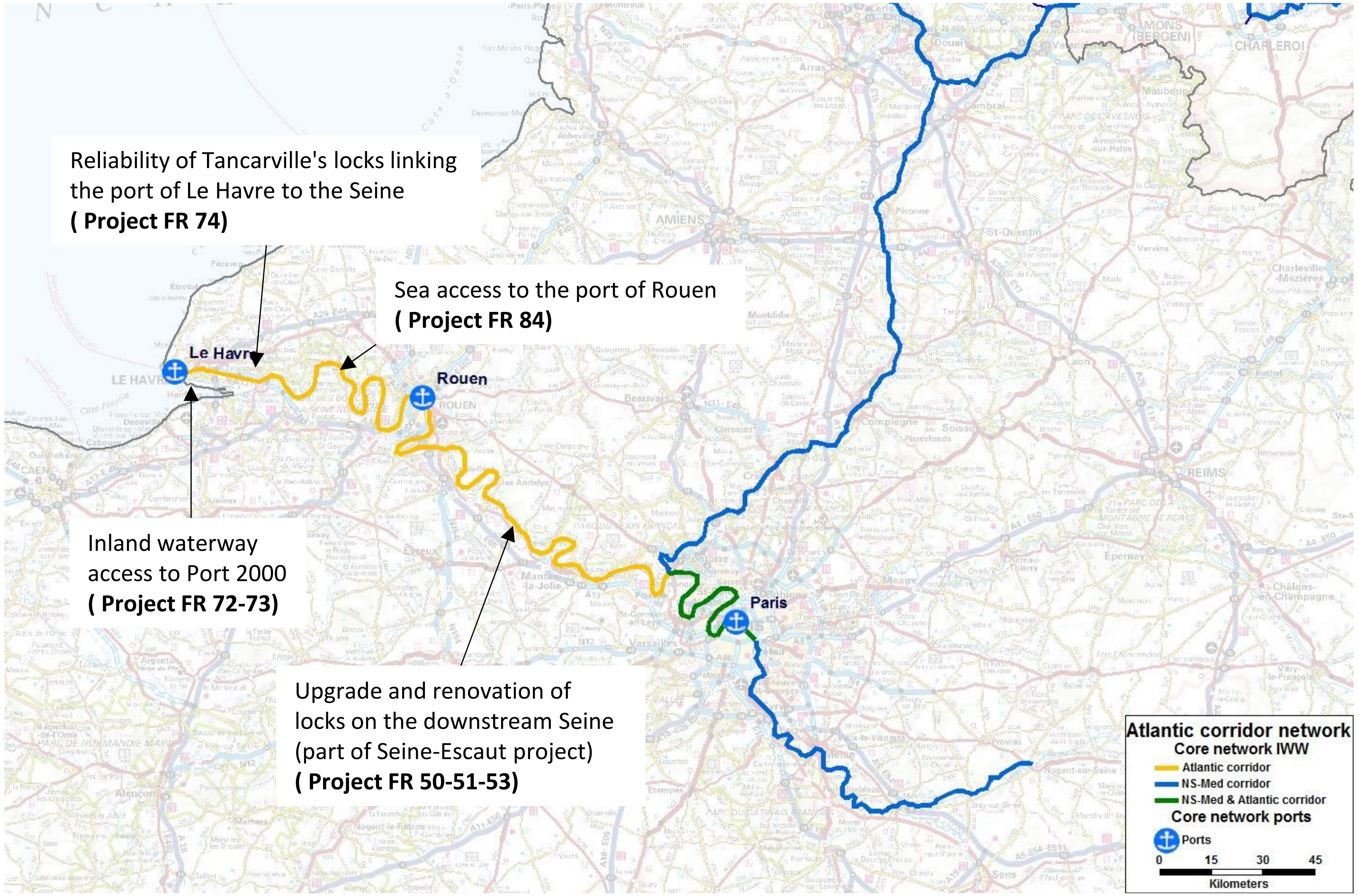


Figure 22: Projects addressing corridor critical issues (Inland waterways)

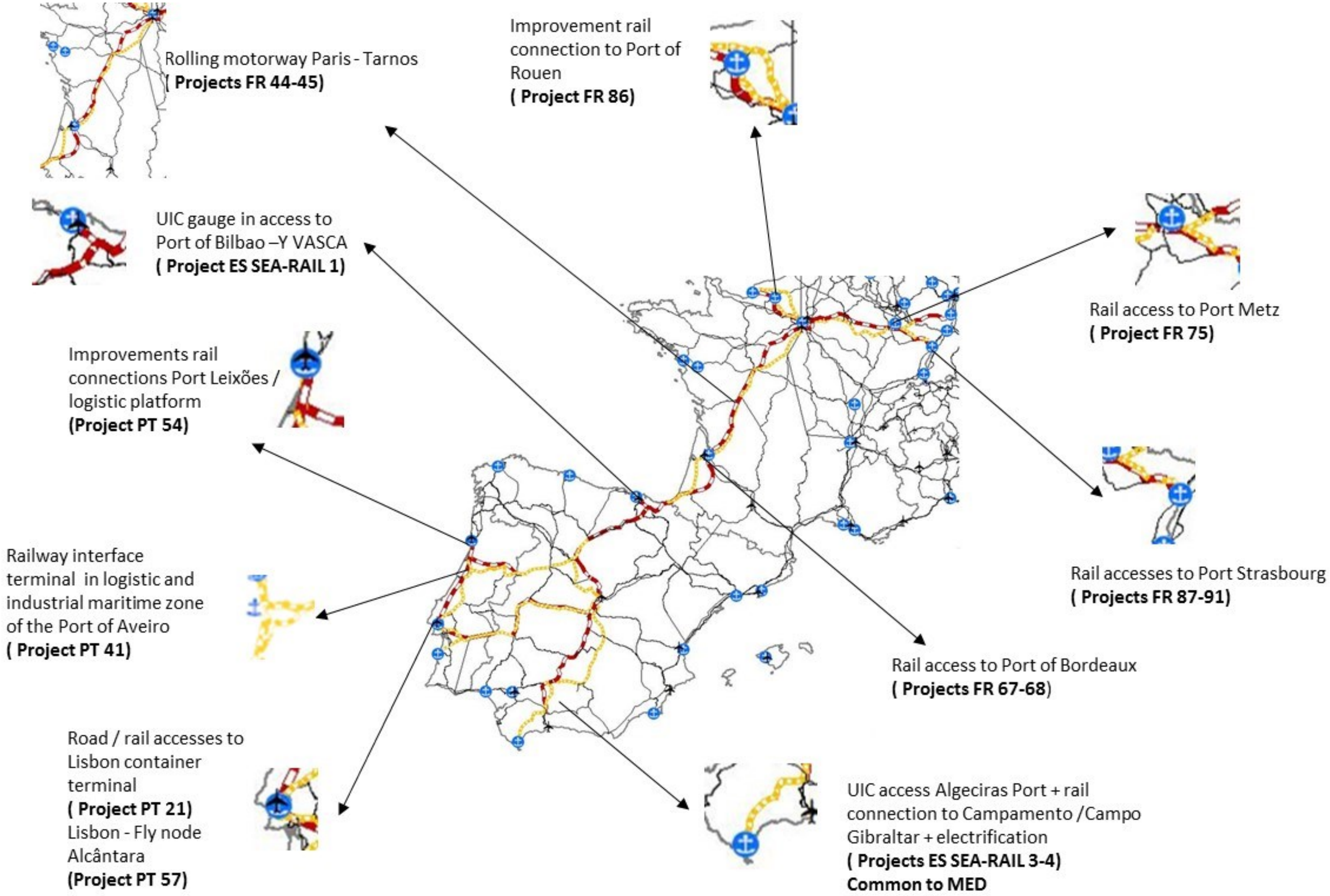


Figure 23: Projects addressing corridor critical issues (rail connections to ports – maritime and inland)

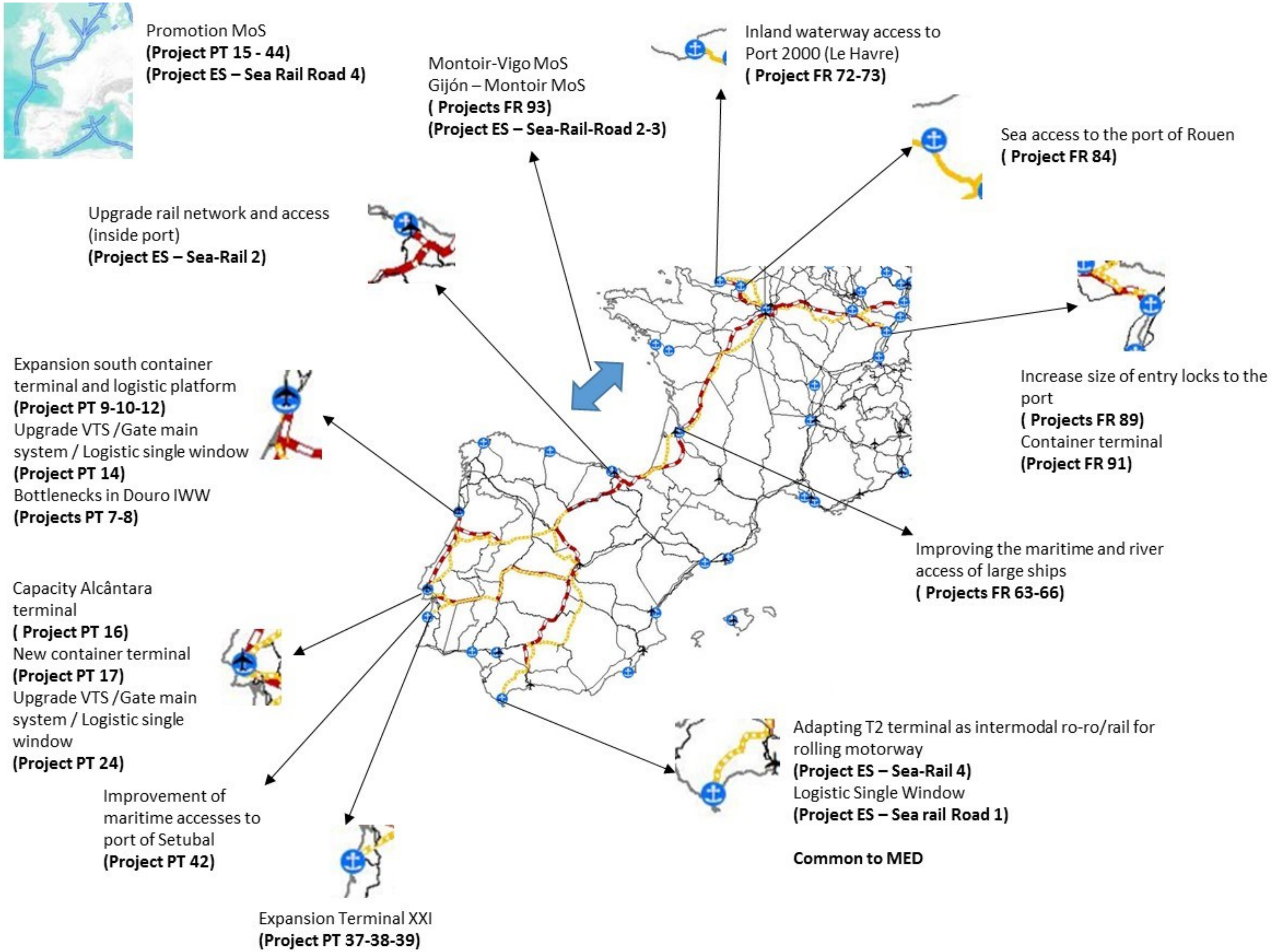


Figure 24: Projects addressing corridor critical issues (ports – maritime and inland)

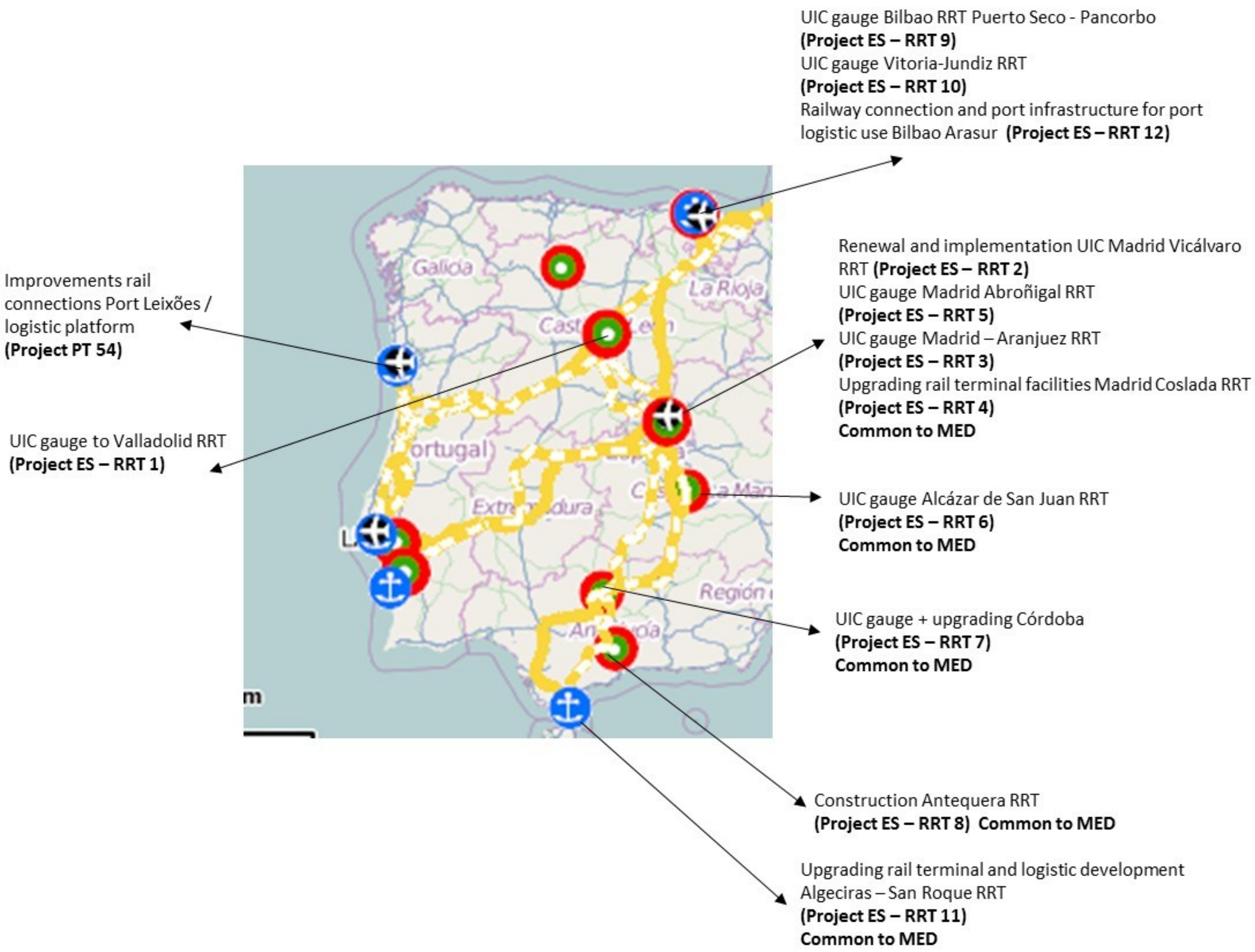


Figure 25: Projects addressing corridor critical issues (Rail Road Terminals)

In summary,

- In Germany, 10 projects were identified along rail, inland ports and road. Cost estimate is only available for two rail projects and one of the road projects, totalling an approximate budget of 801 million euro. From these, 634 MEUR refer to a critical issue (Saarbrucken-Mannhein). Funding will derive mainly from National Budgets and DB-Netz, with a TEN-T co-financing for approximately 18 million for the works in Saarbrücken – Ludwigshafen (pre identified CEF project). For Inland Ports, no cost was provided, however being expectable that they could obtain a CEF grant. Seven out of the 10 projects are expected to be implemented until 2020.

- In France, 103 projects were identified totalling a cost between 35 and 41 thousand MEUR. Of those costs, 20 to 23 thousand MEUR are targeting critical issues above highlighted along the different modes (i.e. interventions on the Seine, railways, port connectivity with rail, road and IWW). Mix of solutions of funding involving the private initiative, European grants and public funding is noticed. 80 out of the 103 projects are planned till 2020 with a total investment of 16 881 million euro (nine projects without cost estimate)

- In Spain, a consistent number of projects (74) is identified, addressing particularly the physical bottlenecks along railways and ports, i.e. the main critical issues identified. Fourteen of the projects are addressing rail road terminals, including rail accesses. Projects in Spain totals 10 to 17 thousand MEUR, of which 6 to 8 thousand MEUR answer to critical issues. Proposed financing sources for Spain mainly derive from National / Regional and EU budget. 34 of the projects are planned to be implemented until 2020. Remaining projects are planned to start still before 2020 but implementation will last until 2030.

- In Portugal, 76 projects were identified. Projects mainly address solving of missing links and bottlenecks along corridor infrastructure, with a quite good number of projects addressing efficiency, sustainability and multimodality. Investment for Portugal totals 5 to 7 thousand MEUR, of which 3 to 5 thousand MEUR refer to critical issues identified. Addressing the missing link and critical bottlenecks in rail infrastructure (to be done until 2020) is estimated at 2 300 million, of which 921 million directly linked to the construction of missing link Évora-Caia (PT-ES border). Mix of solutions of funding involving the private initiative, European grants and public funding, particularly in what refers rail infrastructure. Investments in ports already foreseen a substantial contribution of private sector and all investments in airports are to be funded by private sources. Projects addressing multimodality, include the expectation of EU funding either from Cohesion or H2020. 58 out of the 76 projects are expected to be implemented in the horizon 2020.

Below the different measures are briefly presented, organised on a country basis.

Measures addressing bottlenecks

In Germany,

Rail	▪ In the German sections of the corridor, namely Saarbruecken Hbf <--> Kaiserslautern Hbf and Mannheim Hbf <--> Ludwigshafen Hbf there is a full utilization of capacity (85 - 110 %). Specific projects include the Upgrading of the existing railway line to establish a high-speed rail connection between Paris / Eastern France and South West Germany. Realisation in different stages, commissioning expected for 2018 (Go Live POS Nord: 12/2018)

Inland Port	▪	Expansion of existing trimodal container terminal in Ludwigshafen to increase capacity. This includes as well, check-in buildings, clearance and sound barriers
Road	▪	6-line-upgrade in the A6 Juction Kaiserslautern West – Kaisers-lautern Ost: corridor programme 2 to increase road safety by removing of bottlenecks on cross-border sections of federal highways

In France,

Rail

- New rail line: first phase between Paris and Mantes-la-Jolie and Rouen section
- Electrification and line and Serqueux junction upgrade
- Rail complex (or facility) Hendaye-Irun
- Upgrade of the Hendaye border point
- IPCS (Permanent counterflow installations) deployment on links with scarce capacity : Toury-Cercottes, Bordeaux-Dax, Meaux-Château-Thierry, Val d'Argenteuil-Conflans Ste Honorine, Gaillon-Val-Reuil, Motteville - Le Havre and Dormans – Epernay
- Upgrade to 4 tracks North of Bordeaux
- Rail node upgrade at St-Pierre-des-Corps
- Metz node upgrade
- Line upgrade to GB1+ loading gauge: Paris-Poitiers, Dax-Hendaye and Poitiers-Niort-Saintes
- Replacing of the Midi catenary between Hendaye and Bordeaux
- Redistribution of the Automatic colour-light block south of Bordeaux
- Redesigning of the tracks plan south of the Bordeaux Saint Jean station
- Modification of the fork at Joué-les-Tours
- Renewal of the Automatic colour-light block between Brétigny and Les Aubrais
- RER C modernisation: Redesigning of the tracks plan at Brétigny and redistribution of the Automatic colour-light block between Juvisy and Brétigny (RER C modernisation)[27]
- Redesigning of the tracks plan at Mantes-la-Jolie and Lagny station (EOLE project on RER E)[27]
- Modernisation of signalling systems at Rouen Rive Droite (right bank of the Seine)
- Redistribution of signalling blocs between Boissy l'Aillery and Gisors
- Metz node upgrade
- Strasbourg node upgrade : 4th track between Strasbourg and Vendenheim and Strasbourg station upgrade)
- IPCS (permanent counterflow installations) deployment between Forbach and Béning
- IPCS (permanent counterflow installations) deployment between Baudrecourt and Rémilly
- Loading gauge enhancement between Metz and Strasbourg

[27] Local passenger train projects on RER C and RER E are designed to increase capacity on key bottlenecks of the Paris network for both passenger and freight trains. Whereas it is currently almost impossible for freight trains to run on these links during peak hours, completion of these projects will allow more capacity to freight trains, including international trains circulating on RFC4 paths, during peak and off-peak hours. These projects are therefore included on both the RFC4 workplan and the Atlantic CNC's implementation list.

- LGV Est (East high speed rail line) phase 2 is to open in 2016, completing the French HS rail network with a new link between Lorraine and Strasbourg
- LGV SEA (South-East Atlantic high speed rail line) between Tours and Bordeaux scheduled for 2017 will cut travel time between Paris and the French South-West and is an important step towards a HS line linking Paris to the Iberian Peninsula
- GPSO (Grand Projet du Sud-Ouest) high speed rail line project will eventually extend the French HS rail network to Toulouse and the French-Spanish border
- Paris-Normandy new line will link Le Havre and Rouen to the Paris area
- Linking the Lauterbourg area to the Lauterbourg rail station will offer a rail access to the Lauterbourg terminal (port of Strasbourg)

IWW

- Dowstream Seine:
  - Raising of the Poses-Amfreville footbridge (Seine-Scheld inland waterway)
  - Modernising and rehabilitating locks on the downstream Seine, including locks of Suresnes, Bougival, Méricourt and Notre Dame de la Garenne (Seine-Scheld inland waterway)
  - Lengthening of the second lock at Méricourt and of the Amfreville lock (Seine-Scheld inland waterway)
  - Improvement of reliability at other locks and dams (Seine-Scheld inland waterway)
  - Implementing remote control of locks on the downstream Seine
  - Reliability of Tancarville's locks linking the port of Le Havre to the Seine

- Upper Seine:
  - Upgrade of the upper Seine between Bray-sur-Seine and Nogent-sur-Seine (Seine-Scheld inland waterway)
  - Renovation and/or deepening of the small locks on the high Seine (Seine-Scheld inland waterway)
  - Improving reliability of other locks and dams (Seine-Scheld inland waterway)
  - Creating a second lock at Varennes-sur-Seine (Seine-Scheld inland waterway)
  - Implementing remote control of locks on the upstream Seine (Seine-Scheld inland waterway)

- Port of Strasbourg: increasing the size of entry locks to the port
- River access to Port 2000 at Le Havre
- Improvement of maritime access to the Port of Rouen on the Seine

Sea Port

- Port of Le Havre:
  - Third phase of "Port 2000" container terminal
  - Quay extension ("Asie")
- Port of Bordeaux:
  - PEEPOS green terminal and TCSO (Countainer Terminal of the Grand Sud-Ouest)
  - Upgrading rail line between Agen and Auch to increase modal shift to rail for grain exports
- Port of Rouen:
  - Improvement of maritime access to the Port of Rouen on the Seine
  - Improving railway access to the port industrial area at Ambes

In Spain,

Rail	▪ Electrification, signalling, implementation of UIC gauge along the Medina del Campo - Fuentes de Oñoro sections ▪ Upgrading of conventional rail line Madrid-Alcázar-Córdoba-Algeciras: Castillejo-Villasequilla + Alcázar-Santa Cruz de Mudela + Santa Cruz de Mudela-Algeciras (MED), including the electrification Bobadilla-Algeciras, enlargement to 740 m train length, implementation of UIC track gauge and other interventions ▪ Enlargement of maximum freight train length to 740 m in all corridor freight lines ▪ Implementation of UIC gauge and ERTMS + Electrification in passenger HS line Burgos – Vitoria ▪ Implementation of UIC gauge, renewals and tunnels along the Conventional rail line Burgos-Vitoria ▪ Several measures including UIC gauge, ERTMS, electrification as well as superstructure + energy + safety systems + access to cities along the Y Basque sections ▪ Implementation of UIC gauge in Vitoria-Alsasua-Astigarraga conventional line. ▪ Upgrade of Valladolid-Venta de Baños-Burgos line. ▪ Implementation of UIC gauge in El Escorial-Ávila-Medina del Campo-Valladolid-Burgos line. ▪ New sections, platform, track and systems in HS line Madrid-Extremadura and connection of this HS line with freight conventional line from Madrid. ▪ Passenger connections in Madrid (Atocha-Chamartín) and Sevilla-Málaga/Granada. ▪ Implementation of UIC gauge in Pitis - Villalba – El Escorial commuter line. ▪ Rail bypass and a railway track for freight along Madrid-Algeciras. This projects benefit both Atlantic and MED corridors.
Road	▪ Upgrading conventional road (N-620) into motorway (A-62) in the Spanish-Portuguese border Fuentes de Oñoro
Airport	▪ Enlargement of platform for airplanes in Madrid airport to enable the construction of new freight terminals and maintenance warehouses
Sea Port	▪ New port infrastructure and upgrading of Bilbao and Algeciras ports.
Sea Rail	▪ Rail electrified access to Algeciras and new rail connection to Campamento / Campo Gibraltar (common to MED) and Bilbao ports in UIC track gauge and allowing 740 m train are critical.

In Portugal, the large majority of projects aim to solve bottlenecks along all the modes, and especially addressing capacity (seaports) and physical bottlenecks (rail, notably gauge):

Rail	▪ Rehabilitation and upgrade of North line along several sections, including terminals and logistic platforms and electrification of Aveiro-Porto de Aveiro section (TEN-T compliance) ▪ Improvements in rail terminal and connection to Logistics Platform (Gatões /Guifões) of Leixões ▪ Elimination of constraints and bottlenecks in the South line, connected to Port of Setubal (Porto Setúbal+Praias do Sado, Terminal de Termitrena) ▪ Rehabilitation /Upgrade of Aveiro-Vilar Formoso, including gauge,train length, electrification Cacia-Aveiro Port, construction of the junctions with the North lines (Pampilhosa[28]) and respective terminal ▪ In the medium term (2030), UIC Gauge (dual gauge), stations layout for train length and connections to Logistic Platforms along all the core network sections not intervened till 2020 ▪ In the long term (2050), full deployment of ERTMS and UIC gauge in remaining international network. New lines Lisboa-Aveiro and Lisboa-Évora (Madrid ▪ Additionally to the construction of corridor missing link - Évora-Caia (border), project comprises a new line between Sines port and the South line, upgrades and interventions in stations. ERTMS and GSM-R will be implemented along all the itinerary.
Sea Port	▪ Expansion of South Container Terminal of the Port of Leixões (increase port operations and supply capacity of parking for the largest growth cargo in port (containers), which facilities are operating close to its capacity, as well as for increasing rail and maritime intermodality) and New Container Terminal of the Port of Leixões with depths of -14, needed to reinforce the port competitiveness. The development of Leixões logistics platform necessary to improve connectivity in the hinterland. ▪ In Lisbon, projects comprise the enlargement current terminal capacity (already above 80%) through the reinforcement of equipment's and dredges. The construction of a new terminal in the south bank is planned ▪ In Sines, the expansion of container terminal (Terminal XXI) capacity and the extension of maritime infrastructure protection, comprising 3 individual projects: Terminal XXI capacity expansion, the extension of maritime infrastructure protection and stabilization of rotation's basin ▪ As major corridor feeders, increasing the capacity and solve current bottlenecks in the ports of Aveiro and Setubal are identified as critical. Those include the construction of a logistical and industrial maritime zone in Aveiro Port (ZALI), involving the improvement of maritime infrastructures and its technical infrastructure. In Setúbal Port the expansion of the Ro-Ro Terminal, quay advance on the multipurpose terminal as well as improvements in the maritime accesses (currently developing the environmental studies) ▪ Improvements and upgrade of passenger terminal areas in Leixões and Lisboa cruise terminals ▪ Development of Leixões Logistic Platform and RRT (in site 2)
Road	▪ Upgrade to motorway the cross-border PT/ES (Vilar Formoso) section (last 3 km till the border) ▪ Upgrade of sections in IC33 Santiago do Cacém - Grândola by converting some grade junctions into split level junctions and by localized cross-section adjustment, in order to minimize constrains and enhance heavy and light vehicles coexisting

[28] Plans highlight the use of Pampilhosa terminal for assembling of trains

	▪ Construction of a new interchange at the core road A1 with IC9 (Fátima / Leiria) promoting the connection of this area to the CNC
IWW	▪ Geometrical correction and safety of Douro river channel and several interventions in locks in order to solve technical, logistic and functional obsolescence
Airports	▪ Several projects to upgrade and increase capacity and security in Lisbon and Porto airports, are partially in course or planned till 2020

Measures addressing efficiency

In France

Rail	▪ Replacing of the Midi catenary between Hendaye and Bordeaux ▪ Reinforcement of electric supply in Metz and Strasbourg ▪ ERTMS deployment on the Longuyon- Basel line

IWW	▪ Dowstream Seine:
	  ▪ Modernising and rehabilitating locks on the downstream Seine, including locks of Suresnes, Bougival, Méricourt and Notre Dame de la Garenne (Seine-Scheld inland waterway)
	  ▪ Improvement of reliability at other locks and dams (Seine-Scheld inland waterway)
	  ▪ Implementing remote control of locks on the downstream Seine
	  ▪ Services to users (Seine-Scheld inland waterway),
	  ▪ Lengthening of the second lock at Méricourt and of the Amfreville lock (Seine-Scheld inland waterway)
	▪ Upper Seine:
	  ▪ Improving reliability of other locks and dams (Seine-Scheld inland waterway)
	  ▪ Services to users: turning basin and waiting areas (Seine-Scheld inland waterway)
	  ▪ Creating a second lock at Varennes-sur-Seine (Seine-Scheld inland waterway)
	  ▪ Implementing remote control of locks on the upstream Seine (Seine-Scheld inland waterway)
	  ▪ Renovation and/or deepening of the small locks on the high Seine (Seine-Scheld inland waterway)
	▪ Port of Le Havre: Reliability of Tancarville's locks
	▪ Port of Strasbourg:
	  ▪ New terminal for empty containers to be shared with Kehl port
	  ▪ Development of a common and unique information system (Port Community System) to optimize the use of all existing tools with a slot booking system for loading and unloading
	▪ Port of Bordeaux: Improving accommodation of large vessels

In Spain

Seaport	▪ Upgrade of IT infrastructure (PCS, VTMS, etc.) in the Port of Algeciras to improve technological performance and port efficiency

	▪ Upgrading the Port Information System to a Logistic Information System for the integrated management of information for ship, rail, truck and logistics zones in the Port of Bilbao ▪ Integrated management of information from ports to the hinterland (Logistic Single Window)
Road	▪ Deployment of road ITS interoperability, in view of acceptance of Spanish VIA-T along all the France road network

In Portugal,

Seaport	▪ In Leixões and Lisbon, the upgrade of VTS and Main Gate System as the actual VTS implemented in 1999 and 2000 contain some hardware and software components with technological obsolescence and it is required to process the complete replacement of actual VTS system in order to assure the high levels of safety and efficiency of maritime vessel traffic ▪ Development of Portuguese Ports Information System, aiming for the evolution of management and operational information systems for all Portuguese Ports, answering to reporting facilities directive as well strengthen the integrated management of information to ship, rail, truck and logistic zones, from ports to the hinterland (Logistics Single Window), namely taking in account the developments either of the port of Sines LSW solution either of the communication and organization strategies of transport solutions being conceived in the projects AnNA, MIELE and WIDERMOS.

Measures addressing sustainability (clean fuels, noise, safety)

In Germany

Road	▪ Actions to reduce rail freight noise on the core network corridor Atlantic - Saarbrücken – Ludwigshafen – Mannheim. Germany has established a national programme to reduce rail freight noise. The annual amount for planning and works nationwide is 120 Mio. €. ▪ Corridor programme to provide safe and secure rest areas on motorways Saarbrücken – Mannheim

Germany has established programmes for different road measures on the corridors to keep the management flexible. On Atlantic corridor there are only few projects planned. Currently there is no planning for PPP projects or ITS on road (for which programmes on other corridors is available).

In France

IWW	Dowstream Seine: ▪ Restoring the environmental continuity with the construction of fish passes (Seine-Scheld inland waterway) ▪ Restoring the environmental continuity with the construction of fish passes (Seine-Scheld inland waterway)

- Rehabilitating of the rail bridge at Maisons Lafitte (Seine-Scheld inland waterway network
- Modernising and rehabilitating dams on the downstream Seine, including dams of Suresnes, Bougival, Méricourt and Notre Dame de la Garenne (Seine-Scheld inland waterway
- Improvement of reliability at other locks and dams (Seine-Scheld inland waterway)

Upper Seine:

- Renovation and modernisation of dams, including reconstruction of the Beaulieu dam and restoration of the Livon weir which holds the channel to the Nogent-sur-Seine nuclear power plant (Seine-Scheld inland waterway)
- Restoring the environmental continuity with the construction of fish passes including at Port à l'Anglais, Ablon/Vigneux, Evry, Marolles, seuil du Livon and Conflans/Seine (Seine-Scheld inland waterway)
- Improvement of reliability at other locks and dams (Seine-Scheld inland waterway)

- HAROPA ports (Le Havre, Rouen and Paris): Alternative fuels facilities (bunkering/storage facilities)

Seaport

- Port of Bordeaux: PEEPOS (Port à Energie et à Economie POSitives) green transport : development of alternative fuel facilities (LNG/NGV/electricity) for ship bunkering and road transport
- Port of Rouen: Creation of multimodal platform at Grand Quevilly - 2025

In Spain

Road

- Upgrading parking areas to TEN-T requirements

Seaport

- Disposal of clean fuel stations and LNG supply facilities in Corridor Ports

In Portugal

Road

- Adaptation of parking areas to accomplish with ITS booking requirement and availability of clean fuels stations along core network

Seaport

- Improving the environmental performance of the Port of Leixões and develop its environmental certification process: Within the 2020 EU targets in terms of climate change/energy, the port recognize the need to intensify the quality of the environmental operational conditions and to define the measures/actions to contribute for the reduction of the greenhouse gas emissions, the increase of energy consumption produced from renewable resources and the increase of the energy efficiency.
- Port of Lisbon terminals are dispersed over the south and north banks of Tagus river and there is a need to improve navigation and environmental conditions (decontamination) in the estuary of Tejo and Alhandra (Cimpor), as well to improve environmental performance and to implement a quality management system

- Portuguese Ports On Shore Power Supply : development of a feasibility study of shore connected electricity supply to vessels in the Portuguese ports, including vessels and shore investment needs, operational cost estimation, technical requirements, power capacities, electricity costs evaluation, viability analysis, legal frameworks, case studies in European ports.
- As follow up of COSTA project, and in view of LNG supply capacities, a Master Plan for LNG (studies + pilots) is necessary

Airports

- In the Porto airport, sound barriers
- Disposal of clean fuel stations in Lisbon and Porto airports

Measures addressing multimodality (MoS, RRT, sea-road, sea-rail)

Germany

Inland Port

- In the inland port of Ludwigshafen, Verkehrsanbindung Kaiserwörthhafen, a second entry to the port of Kaiserwörth to improve safety, development of new areas in and around the port area, redirecting HGV traffic, direct access to road B44 was identified (EFIP / Platina)

France

Rail-Road

- Line upgrade to GB1+ loading gauge: Paris-Poitiers, Dax-Hendaye and Poitiers-Niort-Saintes
- Construction of freight garage at Morcenx and Ychoux (link to the Atlantic motorway) and at Beaugency
- Tangentielle Légère Nord (light rail project on the Grande Ceinture ferroviaire)
- Tarnos-Dourges rolling motorway, including work for the Tarnos and Dourges terminals
- Tarnos-Paris rolling motorway, with a potential extension to Jundiz in Spain
- Loading gauge enhancement between Metz and Strasbourg

Access to ports and container terminals

- HAROPA ports:
  - Gisors-Serqueux: electrification and Serqueux junction upgrade (rail access to ports of Le Havre and Rouen)
  - River access to Port 2000 at Le Havre
  - Reliability of Tancarville's locks linking the port of Le Havre to the Seine
  - Paris Seine Métropole phase 1 (western part). Development of aggregate products platform.
  - Paris Seine Métropole phase 2 (eastern part). Development of multimodal platform
  - City port of Triel-sur-Seine (Port of Paris)
  - Extension of the Limay multimodal terminal
  - Multimodal access to platforms (including new road link N406)
  - Ceation of 2 river terminals (Alizay- Seine-Sud) at the port of Rouen
  - Improvement of rail connection to the port of Rouen
  - Development of multimodal urban logistic Centers (Beaugrenelle, La Chapelle International, etc.) inside Paris

- Development of multimodal urban logistic Centers in Paris area (Vigneux, Vitry-sur-Seine, etc.)
- Bordeaux
  - PEEPOS (Port à Energie et à Economie POSitives) green terminal and TCSO (Countainer Terminal of the Grand Sud-Ouest) – converge all container activity on a single location
  - Upgrading rail line between Agen and Auch to increase modal shift to rail for grain exports
  - Improving railway access to the port industrial area at Ambes
- Port of Metz:
  - Extension of the siding to improve rail access to the port area
  - Extension of the container terminal inside the port (2nd phase of the multimodal and multisite platform development in Lorraine)
- Port of Strasbourg:
  - Upgrading rail access to the port to the port of Strasbourg
  - Upgrading signalling and points equipment
  - Improving rail access to the northern combined transport terminal
  - North road access to the port
  - Increasing the size of entry locks to the port
  - Linking the Lauterbourg area to the Lauterbourg rail station
  - Development of the Lauterbourg container terminal
  - Study and work on a new terminal for empty containers to be shared with Kehl port
  - Development of a container terminal
- Port of Nantes-Saint-Nazaire (core network, feeder of the Atlantic corridor)
  - Nazaire Atlantic centre for container operations: development of a container terminal of European size on the Montoir-de-Bretagne site
  - Connections and related infrastructures in port: development of multimodal links (maritime/road/waterway/rail) at Nantes, Saint-Nazaire, Montoir and Le Carnet to increase modal shift on the TEN-T network
- Port of La Rochelle (comprehensive network, feeder of the Atlantic corridor)
  - Development of the port terminal at Chef de Baie
  - Upgrade of the port's rail network
  - Development of the la Repentie earth platform
- Port of Bayonne (comprehensive network, feeder of the Atlantic corridor)
  - Promote sea/rail connections by the setting up and the development of a local freight operator
  - Development of the Castel terminal at Blancpignon
  - Saint Bernard terminal upgrade/extension

Sea/road:

- Montoir-Vigo motorway of the sea

Urban logistics

- Port of Paris:
  - Development of multimodal urban logistic Centers (Beaugrenelle, La Chapelle International, etc.) inside Paris
  - Development of multimodal urban logistic Centers in Paris area (Vigneux, Vitry-sur-Seine, etc.)

Spain

Access to ports	▪ In Bilbao port, to enhance connectivity and multimodality, there is the need to upgrade rail network (inside the port), to create new section for freight transport (variante sur ferroviaria) and new road access (Ziérbana). ▪ In Algeciras port, additionally to the upgrade of rail (electrification, etc. above mentioned), to increase connectivity new rail terminals (inside the port) need to be established, in particular, Campamento rail terminal and adapting T-2 terminal as intermodal terminal ro-ro / rail to provide services to the rolling motorways. Also, improvements and upgrades of road connections are needed (North, South, Campamento and Tarifa road accesses). These projects will benefit both Atlantic and MED corridor
Rail Road	▪ UIC gauge rail connection to the different RRT (Bilbao Puerto Seco–Pancorbo, Vitoria-Jundiz RRT, Bilbao Arasur Logistic terminal, Valladolid RRT, Madrid-Vicálvaro RRT, Madrid-Abroñigal RRT, Madrid- Aranjuez RRT, Madrid-Coslada RRT, Salamanca RRT, Badajoz RRT, Alcázar de San Juan RRT, Córdoba RRT, Antequera RRT and Algeciras-San Roque RRT). These projects will benefit both Atlantic and MED corridor, with the exception of the first three RRT only in Atlantic corridor
Sea/road/rail:	▪ Gijón – Montoir and Vigo - Montoir Motorways of the sea ▪ Implementation and upgrading of other Motorways of the Sea in the Atlantic Corridor and promotion of sea-based freight transport services

Portugal

Access to ports and logistic activities	▪ Based on the recently implemented Ro-Ro service between Leixões and Rotterdam with the maritime transport operator COBELFRET, which has been successfully growing, Leixões intend to develop studies and works that will facilitate and potentiate the development of this service as well as identify the port sectors where this service might be developed combined with the port's other challenges, namely the growing demand in containerised cargo and handling ore from Moncorvo mines through the river Douro inland waterway, with the connection of Douro River and Leixões Port ▪ Road and Rail Accessibilities to the New Lisbon Container Terminal ▪ Economic Studies, Technical Project and Environmental Studies and works for the Setubal Roro terminal expansion for the motorways of the sea (MOS Terminal) ▪ Implementation of an extended gateway model for the port of Lisbon in articulation with second line terminals in the hinterland, as well as the development of a RIS for Tejo River IWW infrastructure ▪ Construction of an interface rail terminal in Logistic and Industrial Maritime Zone of Aveiro Port, allowing the development of SSS/MoS, mostly thought its Container and Ro-Ro Terminal.

Additionally two projects promoted by the Portuguese Port Association and involving Portuguese ports and Spanish platforms (Salamanca and Badajoz) aiming to increase the competitiveness of multimodal transport within the Atlantic Corridor were referred. More precisely those projects involve the corridor sections Leixões-Aveiro-Salamanca-Valladolid and Lisbon/Setúbal/Sines-

Badajoz through a combined offer of maritime infrastructures and added-value logistics services provided by the Portuguese ports and cross-border platforms in Spain. Project aims the development and the promotion of combined logistics solutions studies and of a Logistic Single Window.

Measures for the enhancement of efficient multimodal transport and services, including administrative and technical capacity

A brief overview of policy measures in terms of transport policy related to modal shift aiming to contribute for the enhancement of infrastructures is briefly present. Its consideration in the context of the implementation plan is important for the achievement of the main corridor objectives.

Germany

Freight Transport and Logistics 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 action plan comprises a set of infrastructure related measures but also several soft measures, as:

- Optimize road works management on federal motorways through the adoption of a management scheme and dissemination of information on works. By means of contractual arrangements, e.g. bonus / penalty schemes, it will be possible to reduce the duration of roadwork.
- Improve safety in the road haulage sector by stepping up enforcement of social legislation
- Promote basic and further training in the logistics sector
- Evaluate the working conditions in the freight transport and logistics sector
- Improve seafarers�went working and living conditions

In Germany the „Entwicklungskonzept 2025 für den Kombinierten Verkehr (KV)" (Development concept 2025 for the intermodal transport in Germany) highlights the future capacity needs in special areas (not of single terminals) and suggests financial support of the infrastructure construction.

According to the Development Concept 2025 the growth of the intermodal market volume requires an increase of handling capacities in several areas while leaving the decision of the exact terminal location and improvement measure to the private sector.

France

- Tax reduction for combined vehicles (taxe à l'essieu): in force since 1998, this measure assesses that vehicles used in combined transport road/rail, and subject to the "taxe à l'essieu" may ask for a toll reduction; in this respect they can obtain a 75% toll reduction
- Aids to combined transportation (2008-2012, 2013-2014): the objective of this scheme is to foster the combined transportation as a viable alternative to the carriage of goods by roads; in this respect, the purpose is to achieve a balance, in terms of final prices, between road and rail transportation services. From 2013, the aid has been reduced from 15 € to 10 € per handling.
- Special tax for trucks and semitrailers ("taxe a l'essieu"): it was introduced in 1986 with the aim of ensuring a contribution from heavy vehicles to extra-damages caused to roads infrastructures.
- Transit toll for heavy vehicles: following a law of 2009, a toll system on main non-motorway roads was to be operational in December 2013: all vehicles weighing more than 3.5 tons are paying a toll in relation to the emission levels (euro class), the

geographical area (a distinction is made for rural areas) and last but not least, the congestion rate. The French government estimated a tax income of about 1,2 billion euros / year, which will serve the purpose of funding several intermodal transportation policies. Due to strong protests, particularly in Brittany, the government has revised the system, limiting the number and length of roads that would be submitted to this toll. Expected income is now estimated at 0.5 billion / year and other sources of transport infrastructure financing are to be found.

- Aids for road to sea modal shifting: This scheme is designed to accelerate the launch of new "short sea shipping" routes between two or more French ports or, otherwise, an origin/destination linkage between France and another country belonging to EU area.
- Incentives to firms for an efficient use of transportation services (environmental friendly): Objective of the measure is to protect the environment by creating an incentive for firms and individual users, to use more efficient and less polluting transport vehicles. The scheme is scheduled for the period from 1 Janua1y 2009 to 31 December 2014 and provides direct subsidies in the transport of goods and passengers. The total amount of the fund is 30 million euros.

Spain

- Royal Decree 22/2012 on Liberalization of the rail passenger market fostering a better service and cost reduction by means of market competition between different railway undertakings (from July 2013).
- Port taxes reduction for freight using rail transport from/to the port area. In force by law since 2003 (25% reduction on the freight tax) and recently upgraded up to 50%.
- Improvements in rail-port operation efficiency by mandatory agreements between ADIF and each PA to enhance coordination of rail traffic. Since 2005 Port Authorities assume the role of railway infrastructure administrator of the rail network within the port, aiming for a better coordination between port and rail operations.
- Royal Decree 2/2011 to improve rail-sea intermodal transportation
- In force by law since 2010, port taxes reduction for freight using motorways of the sea and short sea shipping services, especially for ro-ro cargo contributing to SSS traffic grows at a 12% annual since 2010.
- Law 9/2013 on a legislative reform aiming at reducing administrative burdens, which cause efficiency limitations. Allows line arrangements with national or regional transport authorities, establishing a one stop shop global license instead of several different administrative procedures.
- Royal Decree-Law 8/2014, of 4th July, of approval of urgent measures for growth, competitiveness and efficiency. It includes, among other measures, the creation of a financial fund for land accessibility to ports and the extension of port concession terms to 50 years.

Portugal

A new governance model is in preparation for the Portuguese maritime port sector, aiming to develop an effective national commercial ports policy, duly coordinated to maximize the ports aggregate potential, including optimizing the available capacity and rationalizing port costs, allowing the reduction of tariffs, stimulating competitiveness of ports and a greater attractiveness potential to investors. The main policy measures are associated with port labour, reduction of port costs, matters of centralized decision, the intervention of the transport regulator, the new guidelines for port concessions and a new port tariffs model. In the context of these measures the legal framework governing port labour was revised making it more flexible, bringing the legal framework closer to the provisions of the Labour Code. As well the Port Authorities tariffs regarding to the cargo component were eliminated. Also, work is presently in progress in the scope of renegotiation of port concessions regarding public service cargo handling.

- Enlargement of the Port Single Windows: harmonize the implementation of the Port Single Window (JUP) at the national ports, ensuring its integration into the Maritime single window (MSW) concept. At the same time it should be verified its extension or its articulation with the remaining logistic network in order to enable the Logistic single window concept, promoting the administrative procedures simplifications and the law revisions at the Captaincies.
- Merge of EP (road) and REFER (rail), with the aim of creating a single infrastructures management company at the transports sector in Portugal. The combination between the manager of the rail networks and the road network would contribute to a new approach which is based in an overall and integrated vision of the road and rail infrastructures. This merge will enable beforehand, a reduction of the operational charges, due to the existent important synergies at operational level. The coordinating and planning roles attribution to a single entity will contribute to improve the transport network organization and it will improve the resources allocation. Regarding this process it should be clarified and stabilized the multiannual contract-program relationship.
- Open access to the Freight rail terminals as essential condition to the free and efficient market operation regarding the freight rail transport, by the transference of rail freight terminals under the management of CP Cargo for the infrastructure manager (REFER). This will ensure
    - The equity of access to all operators.
    - Raising the length of the freight trains.
    - Creating the conditions to a higher generalization for the implementation of the Single Agent regime for the rail driver system.
    - Simplifying the rail access regulatory system.
    - Reducing the utilization infrastructure tariff for the freight trains
- Revision of current limitations in maximum cargo loads in rail infrastructure in order to improve the companies' competitiveness, the results and the reduction of costs for clients.
- Evaluation of the rail infrastructure tax model to study most suitable charges model to be applied to the rail infrastructure

4.3.3. Deployment plans for traffic management systems

ERTMS

In January 2012, the European Commission adopted Decision 2012/88/EU on technical specifications for control-command and signalling subsystems[29]. Amongst other items, this Decision also contains requirements about timelines for ERTMS implementation of six European corridors (ERTMS corridors A-F). The Atlantic Corridor is not integrated in those six ERTMS corridors, however the ERTMS Deployment Plan establishes that in 2020, ERTMS should be in operation along almost all the corridor lines, with the exception of the branches Lisboa/ Leixões and from Aveiro/Valladolid.

The overall assessment of ERTMS implementation in the EU shows that face to current status achieved, the existing deployment plan is not realistic and a proposal for an adjusted plan will be proposed by the ERTMS coordinator, as highlighted during the fourth Corridor Forum.

Main objective of ERTMS work plan, as established by its Coordinator is to provide the state of play of ERTMS implementation along the nine Core Network Corridors (CNC) and define the way of its acceleration, being developed in consultation and close cooperation with the Corridor Coordinators.

[29] Decisions 2012/88/EU: „Commission Decision of 25 January 2012 on the technical specification for interoperability relating to the control-command and signalling subsystems of the trans-European rail system (

Work plan is expected to be centred in two main pillars which will contribute to go "faster" in the implementation:

- Breakthrough program (2015-2016) – it is focused on showing quick wins (e.g. freight length), tangible results to the stakeholders and give more certainty, credibility and support to ERTMS. It will also focus on deployment along all CNC's and the equipment of the locomotives-not on designing (i.e. an agreement on the OBU was agreed recently with rail operators at EU level)

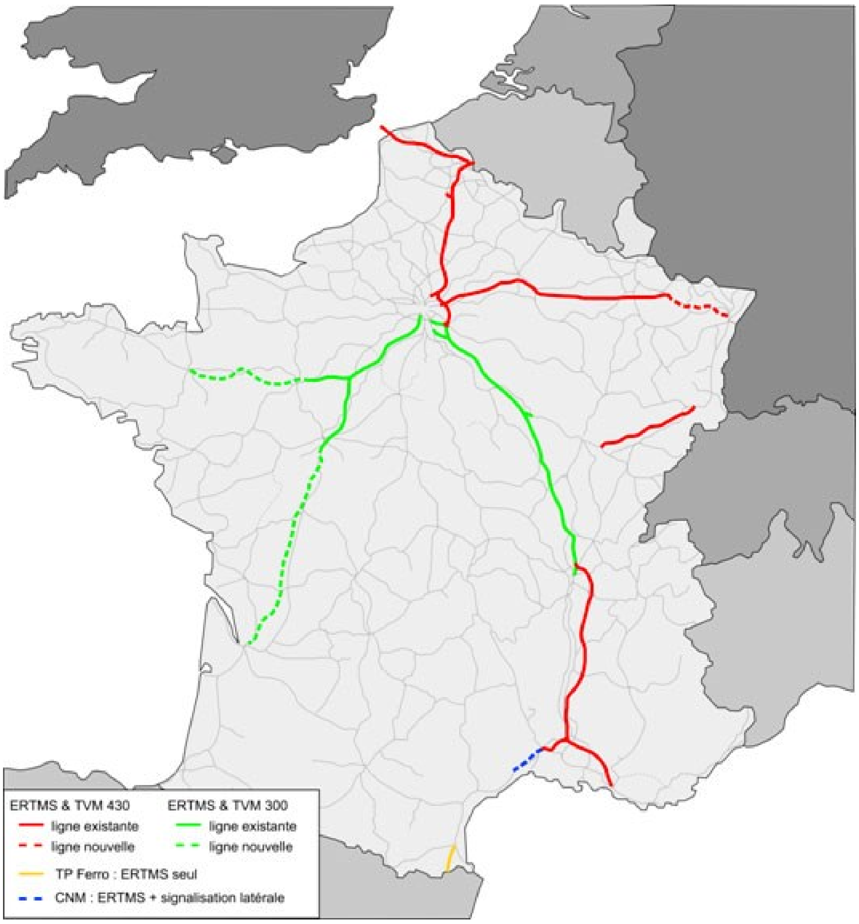
and

- Proposal for a realistic ERTMS Deployment Plan (end 2015). The adjusted plan will be based on data collected by the contractors for CNC studies and existing information, notably the RFC implementation plans, notifications, bilateral discussions etc.. The proposal foresees that by the beginning of 2015, bi-and tri lateral meetings with Member States, with an attention to cross-border sections (i.e. 12-15 cross border sections represent nearly 85% of the problem) will start. The support of a Deployment Manager Team over 2015 and the realisation of an Impact Assessment is planned to be carried out.

<u>ERTMS deployment plans in Atlantic</u>

In the **German** sections of the corridor, ERTMS will be completed after the end of works. The installation of ETCS is planned between Saarbrücken Border (km 5,483 - Line 3231) and Limburgerhof (km 99,455 Line 3280) until 12/2018 (according to the ASR 2013).

In **France**, the only part of the French rail network currently equipped with ERTMS 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.



Source: RFF

Figure 26 - ERTMS deployment on high speed network in France

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 on the conventional network are not obsolete yet (although with relevant exceptions as the line Dax – Hendaye) 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 taking into account system obsolescence. On a parallel process, the full deployment of GSM-R is taking place

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.

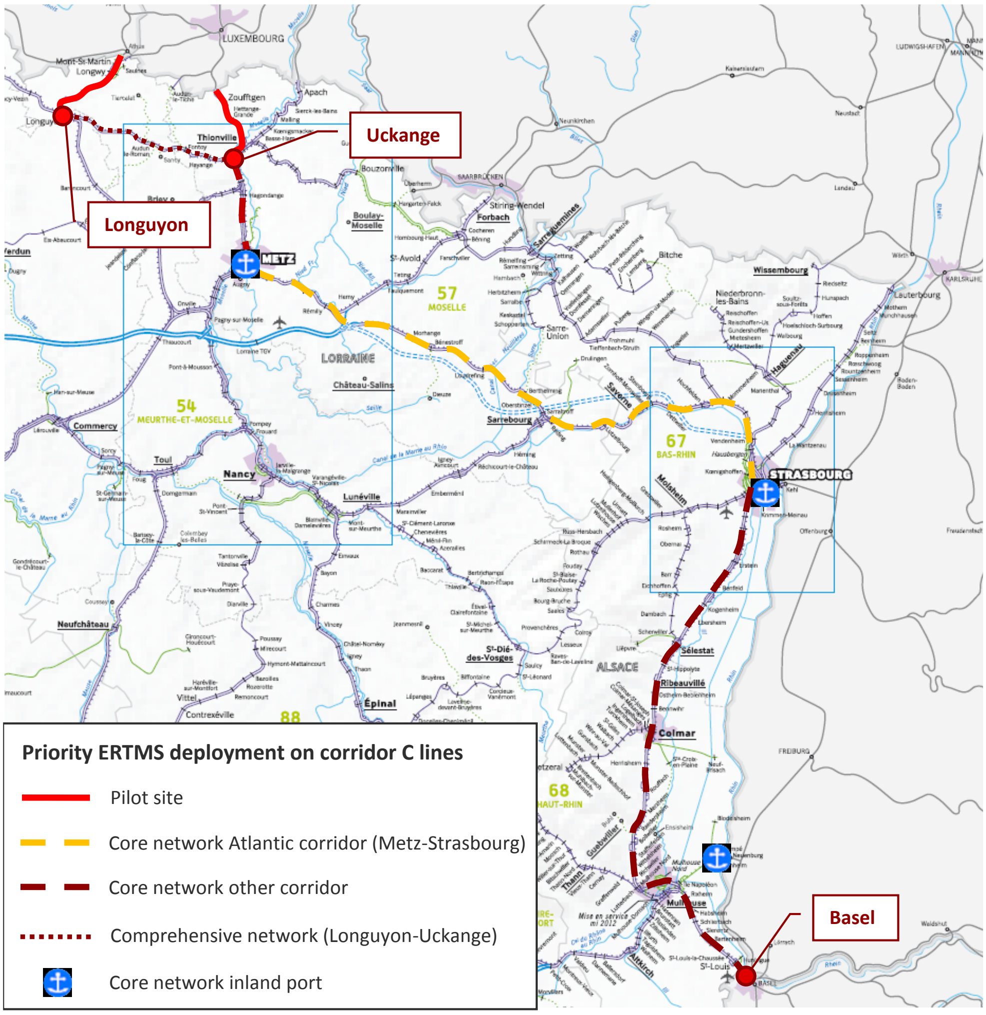


Figure 27: First ERTMS deployment on Conventional Lines in France

In **Spain**, the upgrade of Spanish high speed lines and trains to ERTMS 2.3.0.d is the object of a TEN-T funded project (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.

In **Portugal,** a plan for the deployment of ERTMS is under preparation by a working group involving REFER, rail operators and IMT. It is expected that some preliminary results could be obtained for the subsequent revision of this work program. All rail infrastructure interventions planned, either upgrade or new construction, are foreseen to be implemented answering to TEN-T requirements including ERTMS. The mentioned plan will assess the requirements and needs and will define a roadmap for implementation and operation.

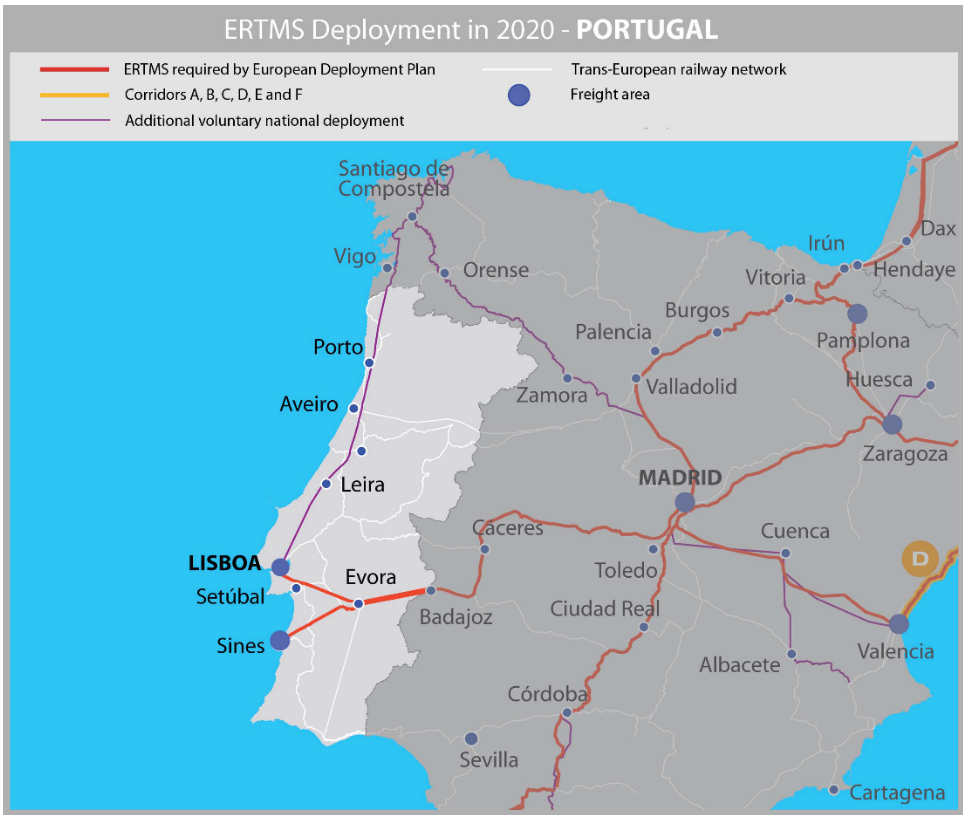


Figure 28: National Implementation Plan (2010)

The RFC4 implementation plan highlights that ERTMS deployments are planned on a medium term. This results from the recognition that due to different infrastructures parameters between France, Spain and Portugal in relation with geographical constraints, at short and medium term, and according to RFC4 planning, the priority should be given to investments solving bottlenecks and missing links (electrification, UIC gauge, length of train extended to 750m, gradient/number of locomotives, common train information system, etc.) while ERTMS deployment is planned afterwards.

RIS

RIS deployment plans have been described in chapter 4.1.3

The RIS Directive has been transposed in the French legislative framework by the federal government by Decree of 22 February 2008 and Order of 18 March 2008. The French government is responsible for the registration of vessels and mandates Voies Navigables France (VNF) to assure the coordination of the implementation of RIS in France. VNF has to make sure that the French RIS systems are interoperable. VNF is in charge of RIS data exchange with other Member States.

Vessel tracking and tracing systems (Automated Identification System (AIS)) in Seine from Rouen to Nogent sur Seine: is 100% operational.

Below the summary of RIS implementation in France.

Summary technical implementation of RIS elements in France

		VNF			French ports	
		Implemented?	When?		Implemented?	When?
Notices to skippers	Fairway & Traffic Messages (FTM)	Yes			Yes	
	Water Related Message (WRM)	Yes			Some	
	Ice Message (ICEM)	No	Unknown		No	Unknown
	Weather Related Message (WERM)	Yes			No	
	Method of diffusion	E-mail, fax, online portal			E-mail, fax, online portal	
AIS	AIS infrastructure	Most of their area	2013		Most of the ports	2013
	On-board equipment	+/- 50%	2013-2014			
	Exchange	Not national or international	National: 2013-2014			
Electronic Reporting	ERINOT, ERIRSP	Yes			No	
	BERMAN and PAXLISTS	No	Unknown		No	Unknown
	Exchange	No, work in progress for national exchange	2013		No, work in progress national exchange	2013
ENC	Coverage	Almost	2013		Almost	
	Provision free of charge	Yes			Yes	
Hull database	Exchange with European Hull database	No	2013		No	Unknown
	Vessels have an ENI	Some	2013-2014		Some	2013-2014
RIS index	Correct use	No	2014 or later		No	2014 or later
	Synchronization with ERDMS	No	Unknown		No	Unknown
Traffic Management		Yes			Yes	
On board equipment	AIS equipment	+/- 50%	2013-2014			
	ERI	Low	2013 or later			

Source: Panteia, RIS implementation survey and policy evaluation: Country Reports

It can be observed that in Portugal, RIS is expected to be implemented in Douro River (core IWW, class IV). There are also plans to implement RIS in Tagus River (not mandatory) in order to increase safety and efficiency in the river traffic.

Road ITS

Intelligent Transport Systems (ITS) are an enabler to achieve better efficiency of the road network and enhance road safety, offering opportunity to foster the integration of European transport system - multimodal, sustainable and accessible, for both passengers and freight. ITS represents thus an important component of road network development from the outset and through its operation and long term maintenance.

Despite the past efforts towards the harmonised deployment of ITS across Europe[30], some challenges remain to be tackled, in particular, access to and sharing of transport data, technical and organisational interoperability, multilevel collaboration, liability issues.

More concretely, the completion and upgrade of interoperable and continuous ITS core services for real-time traffic and travel information, seamless multimodal travel information and planning, coupled with optimized traffic management for freight and passengers (including tolling and enforcement where relevant), well-functioning urban-interurban interfaces and successful integration of passengers and logistics hubs, will enhance the level of services to travelers and professionals, and optimize the performance of the pan-European corridors, with subsequent improvements for the whole TEN-T.

As from November 2014, the status of implementation of Priority actions under ITS Directive is the following:

- EU-wide eCall
  - Specifications adopted on 26 Nov. 2012 (delegated Regulation EU - 305/2013)
  - Adoption of 2 proposals on 13 June 2013
  - Regulation on type approval requirements
  - Decision on the deployment of the interoperable EU-wide eCall

- Road safety related minimum universal traffic information
  - Specifications adopted on 15 May 2013 (delegated Regulation EU - 886/2013)

- Truck Parking information system
  - Specifications adopted on 15 May 2013 (delegated Regulation EU - 885/2013)

- Truck Parking reservation system
  - No need for specifications currently (no business case)

- EU-wide real-time traffic information
  - Adoption of Specifications end 2014 (including 2 years transitional period)

- EU-wide multimodal travel information
  - A "Roadmap towards delivering EU-wide multimodal travel information, planning and ticketing services" published on 16 June 2014 presenting a package of measures
    - Initiative on access to multimodal travel and traffic data (to be presented in Q1 2015)
    - Specifications on EU-wide multimodal travel information (for adoption foreseen by end 2015)

- Co-operative systems / "connected mobility"
  - Development of a shared vision and roadmap for the deployment of C-ITS in the EU (EC Communication foreseen by end 2015)
    - Establishment of a stakeholder platform (public-private engagement) & a work programme
    - International cooperation

According to the ITS Directive, Article 17(2) of Directive 2010/40/EU, Members States should report in 2012 the national activities and projects relating to Intelligent Transport Systems (ITS)

[30] http://www.easyway-its.eu/

planned for the coming 5 years. All the corridor countries had present the respective report and action plans. Those are available from DG MOVE

http://ec.europa.eu/transport/themes/its/road/action_plan/its_national_reports_en.htm

5. Annex 1-List of Projects

5.1. Germany

ID	Transport mode	Location	Studies or work	Description of project	Project promoter	Timing	Costs (in MEUR)	Financing sources	Critical Issue	CEF pre-identified project
DE 1	Rail	Saarbrücken – Ludwigshafen	Works	Upgrading of the existing railway line to establish a high-speed rail connection between Paris / Eastern France and South West Germany. Realisation in different stages, commissioning expected for 2018	DB Netz AG	1998-2018	634	National Budget, TEN-T Co-financing appr. 18 Mio.	X	X
DE 2	Rail	Saarbrücken – Ludwigshafen – Mannheim	Works and planning	Improvement of interoperability, supporting the implementation of Rail Freight Corridors: upgrade of sidings for 740 m trains	DB Netz AG	Open	Open		X	
DE 3	Rail	Saarbrücken – Ludwigshafen – Mannheim	Works and planning	Removal of bottlenecks on the railway network: upgrade of bridges on the Atlantic Corridor	DB Netz AG	Open	Open			
DE 4	Rail	Saarbrücken – Ludwigshafen – Mannheim	Works and planning	Promoting sustainability, operation, management and the efficiency of the Atlantic corridor: new construction of electronic interlocking systems	DB Netz AG	Open	Open			
DE 5	Rail	Saarbrücken – Ludwigshafen – Mannheim (9 sections)	Works and planning	Actions to reduce rail freight noise on the core network corridor Atlantic	DB Netz AG	2014-2020	Depends on available budget	National Budget		
DE 6	Rail	Mannheim	Works	New Station Platform for Mannheim Main Station	DB Netz AG	2014-2017	45,5	National Budget		

ID	Transport mode	Location	Studies or work	Description of project	Project promoter	Timing	Costs (in MEUR)	Financing sources	Critical Issue	CEF pre-identified project
DE 7	Inland Port	Ludwigshafen	Works	Containerterminal Kaiserwörthhafen Expand the existing trimodal container terminal, around 27'000 square metres extension of the port area, an additional gantry crane, 400 metres lengthening of the crane track, 200 metres bulkhead extension, check-in buildings, clearance, transformer, reefer supply point, sound barrier, etc.		2015	N/A	CEF grant TBD		
DE 8	Inland Port	Ludwigshafen	Works	Verkehrsanbindung Kaiserwörthhafen Second entry to the port of Kaiserwörth to improve safety, development of new areas in and around the port area, redirecting HGV traffic, direct access to road B44.		2016	N/A	CEF grant TBD		
DE 9	Road	Saarbrücken – Mannheim	Works	Corridor Programme 1 to provide safe and secure rest areas on motorways of the TEN core network corridor Atlantic	Order Administration Rheinland-Pfalz, Baden-Württemberg and Saarland directed by Fed. Gov.	2017-2020	Depends on available budget	National Budget		
DE 10	Road	A6 Junction Kaiserslautern West – Kaisers-lautern Ost	Works	Corridor Programme 2 to increase road safety by removing of bottlenecks on cross-border sections of federal highways; 6-line-upgrade	Order Administration	2011-2018	121	National Budget		

Note: In general, for each infrastructure investment in new and upgrade of existing railway infrastructure via the so called Bedarfsplan ETCS will be an integral part of it.

5.2. France

ID	Transport mode	Location	Studies or work	Description of project	Project promoter	Timing	Costs (in MEUR)	Financing sources	Critical issue	CEF pre-identified section
FR 1	Rail	Lorraine-Strasbourg	Work in progress	LGV Est (East high speed rail line) phase 2	RFF	2016	2010	RFF = 532 million French State = 680 million Luxembourg = 40 million EU = 118 million Local authorities = 640 million	X	X
FR 2	Rail	Tours-Bordeaux	Work in progress	LGV SEA (South-East Atlantic high speed rail line	RFF	2017	7800	PPP: - RFF = 1 billion - French State, EU and local authorities = 3 billion - LISEA (private) = 3.8 billion	X	X

ID	Transport mode	Location	Studies or work	Description of project	Project promoter	Timing	Costs (in MEUR)	Financing sources	Critical issue	CEF pre-identified section
FR 3	Rail	Bordeaux-Toulouse	Study and Work	GPSO high speed rail line project	RFF	2024 to Toulouse (not in ATL) 2027 to Dax 2032 to the French-Spanish border	High speed rail line : 8'307 million Aménagements ferroviaires au sud de Bordeaux : 613 million Aménagements ferroviaires au nord de Toulouse : 566 million (conditions économiques d'août 2013)	RFF, French State, EU, regions, local authorities	X	X (other sections of core network)
FR 4	Rail	Paris-Normandy	Study and Work	New rail line : first phase between Paris and Mantes-la-Jolie + Rouen section	RFF	First priority in Mobility 21 report (before 2030)	low: 4'200 million high: 4'700 million (CE 2012)	RFF, French State, EU, local authorities	X	X
FR 5	Rail	Paris-Normandy	Study and Work	New rail line : continuation of the project	RFF	Second priority in Mobility 21 report (after 2030)	low: 7'300 million high: 7'800 million (CE 2012)	RFF, French State, EU, local authorities		X
FR 6	Rail	Serqueux-Gisors	Work	Electrification and Serqueux junction upgrade	RFF	2015-2019	300	EU funding 30%	X	X
FR 7	Rail	Hendaye	Study and Work	Rail complex (or facility) Hendaye-Irun	RFF	Engagement des travaux	40	CPER Aquitaine 2014 - 2020, EU	X	

ID	Transport mode	Location	Studies or work	Description of project	Project promoter	Timing	Costs (in MEUR)	Financing sources	Critical issue	CEF pre-identified section
						prévu d'ici 2020				
FR 8	Rail	Bettembourg-Basel	Study and Work	ERTMS deployment on the Longuyon- Basel line (common stretch with the NSMED between Bettenbourg-Strasbourg)	RFF	2015-2018	181 million (excluding the4M€ related to the Swiss part of the line)	EU funding	X	
FR 9	Rail	Metz-Réding	Study and Work	IPCS (permanent counterflow installations) deployment between Forbach and Béning	RFF	2020	10			
FR 10	Rail	Metz	Study and Work	Metz node upgrade	RFF	First priority in Mobility 21 report (before 2030) Work to begin before 2020	40	State - Lorraine Region Plan Contract for 2015-2020 (CPER), EU		
FR 11	Rail	Metz	Study and Work	Reinforcement of electric supply in Metz	RFF	2020	20	State - Lorraine Region Plan Contract for 2015-2020 (CPER), EU		
FR 12	Rail	Metz-Réding	Study and Work	IPCS (permanent counterflow installations)	RFF	2020	10			

ID	Transport mode	Location	Studies or work	Description of project	Project promoter	Timing	Costs (in MEUR)	Financing sources	Critical issue	CEF pre-identified section
				deployment between Baudrecourt and Rémilly						
FR 13	Rail	Metz - Strasbourg	Study and Work	Loading gauge enhancement	RFF		A first cost estimation will be known by the end of 2015	EU funding	X	
FR 14	Rail	Strasbourg	Study and Work	Strasbourg node upgrade (4th track between Strasbourg and Vendenheim)	RFF	First priority in Mobility 21 report (before 2030) Work to begin before 2020	120	State - Alsace Region Plan Contract for 2015-2020 (CPER), EU		
FR 15	Rail	Strasbourg	Study	Strasbourg node upgrade (Strasbourg station upgrade)	RFF	2025		State - Alsace Region Plan Contract for 2015-2020 (CPER), EU		
FR 16	Rail	Strasbourg	Study and Work	Reinforcement of electric supply in Strasbourg	RFF	2020	30	State - Alsace Region Plan Contract for 2015-2020 (CPER), EU		
FR 17	Rail	Toury-Cercottes	Study and Work	IPCS (Permanent counterflow installations)	RFF	Engagement des travaux prévu d'ici 2020	25	CPER Centre 2014 - 2020, EU		

ID	Transport mode	Location	Studies or work	Description of project	Project promoter	Timing	Costs (in MEUR)	Financing sources	Critical issue	CEF pre-identified section
FR 18	Rail	Bordeaux-Dax	Study and Work	IPCS (Permanent counterflow installations)	RFF	Engagement des travaux prévu d'ici 2020 pour une 1ère phase Morcenx Dax & Gazinet - Lamothe	170	State + Regions - CPER Aquitaine 2014 - 2020, EU	X	
FR 19	Rail	Meaux-Château-Thierry	Study and Work	IPCS (Permanent counterflow installations)	RFF	Etudes d'ici 2020 Travaux to partir de 2020	70	EU funding		
FR 20	Rail	Tours	Study and Work	Rail node upgrade at St-Pierre-des-Corps	RFF	Engagement des travaux prévu d'ici 2020 pour une 1ère phase	200	CPER Centre 2014 - 2020, EU		
FR 21	Rail	Bordeaux-Poitiers	Work	Line upgrade to GB1+ loading gauge for the Atlantic corridor	RFF	middle term (before 2030)	From 50 to 500 million €2013	RFF, French State, EU, local authorities	X	
FR 22	Rail	Dax-Hendaye	Work	Line upgrade to GB1+ loading gauge for the Atlantic corridor	RFF	short term (before 2020)	< 50 million €2013	RFF, French State, EU, local authorities	X	

ID	Transport mode	Location	Studies or work	Description of project	Project promoter	Timing	Costs (in MEUR)	Financing sources	Critical issue	CEF pre-identified section
FR 23	Rail	Hendaye - Bordeaux	Work	Replacing of the Midi catenary between Hendaye and Bordeaux	RFF	Middle term	From 50 to 500 million €2013	RFF, French State, EU, local authorities	X	
FR 24	Rail	South of Bordeaux	Work	Redistribution of the Automatic colour-light block south of Bordeaux	RFF	Short term	< 50 million €2013	RFF, French State, EU, local authorities	X	
FR 25	Rail	Morcenx and Ychoux	Work	Construction of freight garage at Morcenx and Ychoux (link to the Atlantic motorway)	RFF	Short term	< 50 million €2013	RFF, French State, EU, local authorities		
FR 26	Rail	South of the Bordeaux Saint Jean station	Work	Redesigning of the tracks plan south of the Bordeaux Saint Jean station	RFF	Middle term	< 50 million €2013	RFF, French State, EU, local authorities		
FR 27	Rail	North of Bordeaux	Work	Upgrade to 4 tracks	RFF	Short term	From 50 to 500 million €2013	RFF, French State, EU, local authorities		
FR 28	Rail	Beaugency	Work	Construction of a freight garage at Beaugency	RFF	Short term	< 50 million €2013	RFF, French State, EU, local authorities		
FR 29	Rail	Joué-les-Tours	Work	Modification of the fork at Joué-les-Tours	RFF	Short term	-	RFF, French State, EU, local authorities		
FR 30	Rail	Brétigny and Les Aubrais	Work	Renewal of the Automatic colour-light block between Brétigny and Les Aubrais	RFF	Short term	From 50 to 500 million €2013	RFF, French State, EU, local authorities		

ID	Transport mode	Location	Studies or work	Description of project	Project promoter	Timing	Costs (in MEUR)	Financing sources	Critical issue	CEF pre-identified section
FR 31	Rail	Brétigny	Work	Redesigning of the tracks plan at Brétigny (RER C modernisation)	RFF	Short term	From 50 to 500 million €2013	RFF, French State, EU, local authorities		
FR 32	Rail	Juvisy and Brétigny	Work	Redistribution of the Automatic colour-light block between Juvisy and Brétigny (RER C modernisation)	RFF	Short term	From 50 to 500 million €2013	RFF, French State, EU, local authorities		
FR 33	Rail	North of Paris	Work	Tangentielle Légère Nord (light rail project on the Grande Ceinture ferroviaire) - Phase 1	RFF	Short term	From 50 to 500 million €2013	RFF, French State, EU, local authorities		
FR 34	Rail	North of Paris	Work	Tangentielle Légère Nord (light rail project on the Grande Ceinture ferroviaire) - Phase 2	RFF	Middle term	From 50 to 500 million €2013	RFF, French State, EU, local authorities		
FR 35	Rail	Mantes-la-Jolie	Work	Redesigning of the tracks plan at Mantes-la-Jolie (EOLE project on RER E)	RFF	Short term	From 50 to 500 million €2013	RFF, French State, EU, local authorities		
FR 36	Rail	al d'Argenteuil to Conflans Ste Honorine	Work	Deploying IPCS (Permanent counterflow installations) from Val d'Argenteuil to Conflans Ste Honorine	RFF	Middle term	From 50 to 500 million €2013	RFF, French State, EU, local authorities		
FR 37	Rail	Gaillon-Val to Reuil	Work	Deploying IPCS (Permanent counterflow installations) from Gaillon-Val to Reuil	RFF	Short term	< 50 million €2013	RFF, French State, EU, local authorities		
FR 38	Rail	Motteville - Le Havre	Work	Deploying IPCS (Permanent counterflow installations) from Motteville to Le Havre	RFF	Short term	From 50 to 500 million €2013	RFF, French State, EU, local authorities		X

ID	Transport mode	Location	Studies or work	Description of project	Project promoter	Timing	Costs (in MEUR)	Financing sources	Critical issue	CEF pre-identified section
FR 39	Rail	Rouen	Work	Modernisation of signalling systems at Rouen Rive Droite (right bank of the Seine)	RFF	Short term	< 50 million €2013	RFF, French State, EU, local authorities		
FR 40	Rail	Dormans - Epernay	Work	Deploying IPCS (Permanent counterflow installations) from Dormans to Epernay	RFF	Middle term	< 50 million €2013	RFF, French State, EU, local authorities		
FR 41	Rail	Lagny	Work	Redesigning of the tracks plan at Lagny station (EOLE project on RER E)	RFF	Middle term	< 50 million €2013	RFF, French State, EU, local authorities		
FR 42	Rail	Boissy l'Aillery and Gisors	Work	Redistribution of signalling blocs between Boissy l'Aillery and Gisors	RFF	Middle term	< 50 million €2013	RFF, French State, EU, local authorities		
FR 43	Rail	Poitiers - Niort - Saintes	Work	Upgrade to GB1 loading gauge and capacity development (linked to the Atlantic motorway project)	RFF	Short term	From 50 to 500 million €2013	RFF, French State, EU, local authorities		
FR 44	Rail/Road	Tarnos-Dourges	Study and Work	Tarnos-Dourges rolling motorway, including work for the Tarnos and Dourges terminals	VIIA	2016	288	VIIA, French State, RFF, regions and EU	X	
FR 45	Rail/Road	Paris-Tarnos	Study	Paris-Tarnos rolling motorway	VIIA				X	
FR 46	IWW	Downstream Seine	Study and Work	Raising of the Poses-Amfreville footbridge (Seine-Scheld inland waterway)	VNF	2014-2020	0.8	Under study: VNF, regions, EU funding (40%)		X
FR 47	IWW	Downstream Seine	Study and Work	Services to users (Seine-Scheld inland waterway)	VNF	2014-2020	5.8	Under study: VNF, regions,		X

ID	Transport mode	Location	Studies or work	Description of project	Project promoter	Timing	Costs (in MEUR)	Financing sources	Critical issue	CEF pre-identified section
								EU funding (40%)		
FR 48	IWW	Downstream Seine	Study and Work	Implementing remote control of locks on the downstream Seine	VNF	2014-2020	8	Under study: VNF, regions, EU funding (40%)		X
FR 49	IWW	Downstream Seine	Study and Work	Restoring the environmental continuity with the construction of fish passes (Seine-Scheld inland waterway)	VNF	2014-2022	11	Under study: VNF, regions, EU funding (40%), agences de l'eau		X
FR 50	IWW	Downstream Seine	Study and Work	Modernising and rehabilitating locks on the downstream Seine, including locks of Suresnes, Bougival, Méricourt and Notre Dame de la Garenne (Seine-Scheld inland waterway)	VNF	2014 to 2025	28	Under study: VNF, regions, EU funding (40%)		X
FR 51	IWW	Downstream Seine	Study and Work	Lengthening of the second lock at Méricourt and of the Amfreville lock (Seine-Scheld inland waterway)	VNF	Before 2030	39	Under study: VNF, regions, EU funding (40%)		X
FR 52	IWW	Downstream Seine	Study and Work	Modernising and rehabilitating dams on the downstream Seine including dams of Suresnes, Bougival, Méricourt, Andresy GC, Poses and Port Mort (Seine-Scheld inland waterway)	VNF	2014 to 2025	52	Under study: VNF, regions, EU funding (40%)		X

ID	Transport mode	Location	Studies or work	Description of project	Project promoter	Timing	Costs (in MEUR)	Financing sources	Critical issue	CEF pre-identified section
FR 53	IWW	Downstream Seine	Study and Work	Improvment of reliability at other locks and dams (Seine-Scheld inland waterway)	VNF	2014-2020	8	Under study: VNF, regions, EU funding (40%)		X
FR 54	IWW	Downstream Seine	Study and Work	Rehabilitating of the rail bridge at Maisons Lafitte (Seine-Scheld inland waterway)	VNF	2014-2022	2.5	Under study: VNF, regions, EU funding (40%)		X
FR 55	IWW	Upstream Seine	Study and Work	Upgrade of the upper Seine between Bray-sur-Seine and Nogent-sur-Seine (Seine-Scheld inland waterway)	VNF	Before 2030	225	Ongoing study : French State, VNF, Regions Île-de-France and Champagne Ardennes, other local authorities, EU funding		
FR 56	IWW	Upstream Seine	Study and Work	Renovation and modernisation of dams, including reconstruction of the Beaulieu dam and restoration of the Livon weir which holds the channel to the Nogent-sur-Seine nuclear power plant (Seine-Scheld inland waterway)	VNF	2014 - 2025	18	Under study: VNF, regions, EU funding (40%)		
FR 57	IWW	Upstream Seine	Study and Work	Renovation and/or deepening of the small locks on the high Seine (Seine-Scheld inland waterway)	VNF	2014 - 2025	21 to 81	Under study: VNF, regions, EU funding (40%)		

ID	Transport mode	Location	Studies or work	Description of project	Project promoter	Timing	Costs (in MEUR)	Financing sources	Critical issue	CEF pre-identified section
FR 58	IWW	Upstream Seine	Study and Work	Creating a second lock at Varennes-sur-Seine (Seine-Scheld inland waterway)	VNF	Before 2030	33	Under study: VNF, regions, EU funding (40%)		
FR 59	IWW	Upstream Seine	Study and Work	Restoring the environmental continuity with the construction of fish passes including at Port à l'Anglais, Ablon/Vigneux, Evry, Marolles, seuil du Livon and Conflans/Seine (Seine-Scheld inland waterway)	VNF	2014-2025	13	Under study: VNF, regions, EU funding (40%), water agencies		
FR 60	IWW	Upstream Seine	Study and Work	Improving reliability of other locks and dams (Seine-Scheld inland waterway)	VNF	2014 - 2020	8	Under study: VNF, regions, EU funding (40%)		
FR 61	IWW	Upstream Seine	Study and Work	Services to users: turning basin and waiting areas (Seine-Scheld inland waterway)	VNF	2014-2020	6.7	Under study: VNF, regions, EU funding (40%)		
FR 62	IWW	Upstream Seine	Study and Work	Implementing remote control of locks on the upstream Seine (Seine-Scheld inland waterway)	VNF	2016 petite Seine 2020 - 2022 haute seine	10	Under study: VNF, regions, EU funding (40%)		
FR 63	Sea	Port of Bordeaux	Study and Work	Improving the maritime and river access of large ships	Port of Bordeaux	2015-2020	30	Port of Bordeaux, EU funding: 13.4	X	

ID	Transport mode	Location	Studies or work	Description of project	Project promoter	Timing	Costs (in MEUR)	Financing sources	Critical issue	CEF pre-identified section
FR 64	Sea	Port of Bordeaux	Study and Work	PEEPOS green transport : development of amternative fuel facilities (LNG/NGV/electricity) for ship bunkering and road transport	Port of Bordeaux	2015-2020	36	Port of Bordeaux, EU funding: 12		
FR 65	Sea	Port of Bordeaux	Study and Work	PEEPOS green terminal / TCSO (Countainer Terminal of the Grand Sud-Ouest)	Port of Bordeaux	2016-2018	3	Port of Bordeaux, EU funding: 1		
FR 66	Sea	Port of Bordeaux	Work	TCSO (Countainer Terminal of the Grand Sud-Ouest)	Port of Bordeaux and terminal operator	2015-2018	25	Port of Bordeaux, EU funding: 1.8		
FR 67	Sea/rail	Port of Bordeaux	Work	Upgrading rail line between Agen and Auch to increase modal shift to rail for grain exports	Port of Bordeaux	2016-2019	15			
FR 68	Sea/rail	Port of Bordeaux	Work	Improving railway access to the port industrial area at Ambes	Port of Bordeaux	2016-2019	35			
FR 69	Sea/Inland port	HAROPA ports	Work	Alternative fuels facilities (bunkering/storage facilities)	Private operators	2016-2020	to be determined	EU funding 20%		
FR 70	Sea	Port of Le Havre	Work	Quay extension ("Asie")	Port of Le Havre	2015-2019	50	EU funding 20%		X
FR 71	Sea	Port of Le Havre	Work	Third phase of "Port 2000" container terminal	Port of Le Havre	2017-2020	220	EU funding 20%		X
FR 72	Sea/Inland port/IWW	Port of Le Havre	Study	River access to Port 2000	Port of Le Havre	2015-2017	2	EU funding 50%	X	X

ID	Transport mode	Location	Studies or work	Description of project	Project promoter	Timing	Costs (in MEUR)	Financing sources	Critical issue	CEF pre-identified section
FR 73	Sea/Inland port/IWW	Port of Le Havre	Work	River access to Port 2000	Port of Le Havre	2018-2020	98	EU funding 40%	X	X
FR 74	Inland port/IWW	Port of Le Havre	Work	Reliability of Tancarville's locks linking the port of Le Havre to the Seine	Port of Le Havre	2016-2020	15	EU funding 40%		X
FR 75	Inland Port/Rail	Port of Metz	Study and Work	Extension of the siding to improve rail access to the port area	Port of Metz	2015	3	Port of Metz, local and regional authorities, EU (0.6)	X	
FR 76	Inland Port/Rail/Road	Port of Metz	Work	Extension of the container terminal inside the port (2nd phase of the multimodal and multisite platform development in Lorraine)	Port of Metz	2017-2018	15	Port of Metz, local and regional authorities, EU (3)		
FR 77	Inland Port/Rail/Road	Port of Paris	Study and Work	Paris Seine Métropole phase 1 (western part). Development of aggregate products platform.	Port of Paris	2017-2030	110	EU funding 20-40%		
FR 78	Inland Port/Rail/Road	Port of Paris	Study and Work	Paris Seine Métropole phase 2 (eastern part). Development of multimodal platform	Port of Paris	>2030				
FR 79	Inland Port /Rail/Road	Port of Paris	Study and Work	City port of Triel-sur-Seine	Port of Paris	2015-2017	32	EU funding 20-40%		
FR 80	Inland Port /Rail/Road	Port of Paris	Study and Work	Extension of the Limay multimodal terminal	Port of Paris	2015-2019	30	EU funding 20-40%		

ID	Transport mode	Location	Studies or work	Description of project	Project promoter	Timing	Costs (in MEUR)	Financing sources	Critical issue	CEF pre-identified section
FR 81	Inland Port /Rail/Road	Port of Paris	Work	Multimodal access to platforms of the ports of Paris (including new road link N406)	Port of Paris / DRIEA	2015-2020	100	EU funding 20-40%	X	
FR 82	Inland Port /Rail/Road	Paris	Study and Work	Development of multimodal urban logistic Centers (Beaugrenelle, La Chapelle International, etc.) inside Paris	Port of Paris	2017	110	Ports de Paris, Caisse des Dépôts et Consignations , Sogaris		
FR 83	Inland Port /Rail/Road	Paris	Study	Development of multimodal urban logistic Centers in Paris area (Vigneux, Vitry-sur-Seine, etc.)	Port of Paris	2018-2021	35	Ports de Paris		
FR 84	Seaport /Inland Port	Port of Rouen	Work	Improvement of maritime access to the Port of Rouen	Port of Rouen	2015-2018	70	EU funding 40%	X	
FR 85	Inland port	Port of Rouen	Work	Creation of 2 river terminals (Alizay- Seine-Sud)	Port of Rouen	2016-2017	10	EU funding 20%		
FR 86	Inland Port/Rail	Haropa ports	Work	Improvement of rail connection to Haropa ports	Port of Rouen	2016-2019	20	EU funding 20%	X	
FR 87	Inland Port/Rail	Port of Strasbourg	Work	Strasbourg rail : Increasing capacity at the Port du Rhin station ; Upgrading rail access to the port; Upgrading signalling and points equipments; Rail access to the port from the German network	Port of Strasbourg	2015	17	Port Autonome Strasbourg/VNF (EU funding: 5.5)	X	

ID	Transport mode	Location	Studies or work	Description of project	Project promoter	Timing	Costs (in MEUR)	Financing sources	Critical issue	CEF pre-identified section
FR 88	Inland Port/Road	Port of Strasbourg	Work	North road access to the port	Port of Strasbourg	2015	10	Port Autonome Strasbourg/VNF (EU funding: 3)	X	
FR 89	IWW	Port of Strasbourg	Work	Increasing the size of entry locks to the port	Port of Strasbourg	2020	7	Port Autonome Strasbourg/VNF (EU funding: 2.3)	X	
FR 90	Inland Port/Rail	Port of Strasbourg	Study and Work	Lauterbourg rail : Improving rail capacity of the Lauterbourg-Woerth line; rail connection to Lauterbourg station	Port of Strasbourg	2015				
FR 91	IWW/Rail/Road	Port of Strasbourg	Study and Work	Strasbourg inland port : development of a container terminal ; study and work on a new terminal for empty containers to be shared with Kehl port (Germany) / Lauterbourg inland port : development of the Lauterbourg container terminal	Port of Strasbourg	2015	61	EU funding: 20.3	X	
FR 92	IWW/Rail/road	Port of Strasbourg	Work	Development of a common and unique information system (Port Community System) to optimize the use of all existing tools with a slot booking system for loading and unloading	Port of Strasbourg	2015	1	Port Autonome Strasbourg/VNF (EU funding: 0.5)		

ID	Transport mode	Location	Studies or work	Description of project	Project promoter	Timing	Costs (in MEUR)	Financing sources	Critical issue	CEF pre-identified section
FR 93	Sea/road	Algeciras/ Vigo/ Montoir/ Le Havre	Work	Motorway of the sea between Algeciras/ Vigo/ Montoir/ Le Havre	Suardinaz (private operator) Port of Vigo (comprehensive network) Port of Nantes-Saint-Nazaire(core network)	2014		- Private - Port of Vigo - Port of Nantes-Saint-Nazaire - Spain - France - EU	X	
FR 94	Sea	Port of Nantes-Saint-Nazaire	Work	Nazaire Atlantic centre for container operations: development of a container terminal of European size on the Montoir-de-Bretagne site	Port of Nantes-Saint-Nazaire	2014-2017	40	EU funding: 8		
FR 95	Sea/road/IWW/rail	Port of Nantes-Saint-Nazaire	Work	Connections and related infrastructures in port: development of multimodal links (maritime/road/waterway/rail) at Nantes, Saint-Nazaire, Montoir and Le Carnet to increase modal shift on the TEN-T network	Port of Nantes-Saint-Nazaire	2014-2018	60	EU funding: 12		
FR 96	Sea	Port of La Rochelle	Work	Development of the port terminal at Chef de Baie	Port of La Rochelle	2014-2020				
FR 97	Sea/rail	Port of La Rochelle	Work	Upgrade of the port’s rail network	Port of La Rochelle	2014-2020				

ID	Transport mode	Location	Studies or work	Description of project	Project promoter	Timing	Costs (in MEUR)	Financing sources	Critical issue	CEF pre-identified section
FR 98	Sea	Port of La Rochelle	Work	Development of the la Repentie earth platform	Port of La Rochelle	2014-2020				
FR 99	Sea/rail	Port of Bayonne	Work	Promote sea/rail connections by the setting up and the development of a local freight operator	Port of Bayonne					
FR 100	Sea	Port of Bayonne	Work	Development of the Castel terminal at Blancpignon	Port of Bayonne	2017				
FR 101	Sea	Port of Bayonne	Work	Saint Bernard terminal upgrade/extension	Port of Bayonne	2017				
FR 102	Sea/Inland port/IWW/rail	Port of Rouen	Work	Creation of multimodal platform at Grand Quevilly	Port of Rouen	2025				
FR 103	Rail	Bordeaux-Hendaye	Work	Avoiding lines Bordeaux-Hendaye	RFF/Aquitaine region					
FR 104	Rail	La Rochelle-Poitiers (compreh. network)	Work	Doubling the single track Lusignan - Saint Maixent, rail access to the port of La Rochelle	RFF/Poitou-Charentes region					
FR 105	Rail	Poitiers - Niort-Saintes - Bordeaux (compreh. network)	Work	Alternative itinerary of the Atlantic rail motorway project	RFF/Poitou-Charentes region					

Notes:

Local passenger train projects on RER C (FR 32) and RER E (FR 35 and FR 41) are designed to increase capacity on key bottlenecks of the Paris network for both passenger and freight trains. Whereas it is currently almost impossible for freight trains to run on these links during peak hours, completion of these projects will allow more capacity to freight trains, including international trains circulating on RFC4 paths, during peak and off-peak hours. These projects are therefore included on both the RFC4 workplan and the Atlantic CNC's implementation list, although not a TEN-T network project.

Although ERTMS deployment on Longuyon-Basel (FR 8) is more important to the NSMED corridor as it is on the continuity with ERTMS deployment in Belgium, the project also has a role to play on the Atlantic corridor. For freight this is the first step towards ERTMS deployment on the conventional network whereas for passenger trains this link is on the continuity with the LGV Est, the only line on which ERTMS is already deployed in France.

5.3. Spain

ID	Transport mode	Location	Studies or work	Description of project		Project promoter	Timing	Costs (in MEuro) (VAT excluded)	Financing sources	Critical issue	CEF pre-identified section
R1	RAIL	Medina del Campo - Fuentes de Oñoro	Work	Medina del Campo – Salamanca. Electrification, signalling system and elimination of level-crossings	Electrification + Signalling	Grupo Fomento **	2014-2030	From 50 to 500 M€	own resources+ EU funds	X	X
R2			Work	Salamanca – Fuentes de Oñoro.Electrification, signalling system and elimination of level-crossings	Electrification + Signalling	Grupo Fomento **	2014-2030	From 50 to 500 M€	own resources+ EU funds	X	X
R3			Work	Fuentes de Oñoro – Medina del Campo Implementation of UIC	Implementation of UIC track gauge	Grupo Fomento **	2014-2030	From 50 to 500 M€	own resources+ EU funds	X	X
R4*		Conventional rail line Madrid-Alcázar-Córdoba-Algeciras *	Work	Implementation of ERTMS *	Implementation of ERTMS *	Grupo Fomento **	2014-2020	9,10	FEDER + own resources	X	X
R5*			Work	Electrification 25KV AC Bobadilla - Algeciras *	Electrification 25KV AC Bobadilla - Algeciras *	Grupo Fomento **	2014-2020	81,55	FEDER + own resources	X	X
R6*			Work	Interoperable sidetracks to allow train length 740m *	Interoperable sidetracks to allow train length 740m *	Grupo Fomento **	2014-2020	17,85	FEDER + own resources	X	X

ID	Transport mode	Location	Studies or work	Description of project		Project promoter	Timing	Costs (in MEuro) (VAT excluded)	Financing sources	Critical issue	CEF pre-identified section
R7*			Work	Madrid-Algeciras line (section Villaverde Bajo-Algeciras). Implementation of UIC track gauge *	Implementation of UIC track gauge *	Grupo Fomento **	2014-2030	> 500 M€	own resources+ EU funds	X	X
R8*			Work	Almoraima Bypass (San Roque Railway Station) *	Railway bypass	Grupo Fomento **	2014-2030	< 50 M€	own resources+ EU funds		
R9*			Work	San Cristobal - Villaverde bajo - Pitis railway track for freight *	Railway track for freight	Grupo Fomento **	2014-2030	From 50 to 500 M€	own resources+ EU funds		
R10		All freight rail lines of Atlantic Corridor	Study + Work	Enlargement of maximum freight train length to 740 m	Enlargement of maximum freight train length to 740 m	Grupo Fomento **	2014-2030	100,00	own resources+ EU funds		
R11		RFC4 ERTMS implementation	Work	Implementation of ERTMS in RFC4 double track section	Implementation of ERTMS in RFC4 (double track)	Grupo Fomento **	2014-2030	> 500 M€	own resources+ EU funds	X	
R12			Work	Implementation of ERTMS in RFC4 single track section	Implementation of ERTMS in RFC4 (single track)	Grupo Fomento **	2014-2030	From 50 to 500 M€	own resources+ EU funds	X	
R13		Burgos-Vitoria	Work	High Speed Rail section Burgos – Vitoria (only for passengers)	Implementation of UIC gauge and ERTMS + Electrification	Grupo Fomento **	2014-2030	> 500 M€	own resources+ EU funds		
R14			Work	Conventional rail line Burgos-Vitoria	Renewal + tunnels	Grupo Fomento **	2014-2030	181,82	FEDER + own resources		

ID	Transport mode	Location	Studies or work	Description of project		Project promoter	Timing	Costs (in MEuro) (VAT excluded)	Financing sources	Critical issue	CEF pre-identified section
R15			Work	Implementation UIC section Burgos-Vitoria BAB	Implementation of UIC track gauge	Grupo Fomento **	2014-2030	From 50 to 500 M€	own resources+ EU funds		
R16		Y Vasca	Work	Y Basque High Speed Rail (freight and passenger traffic): all sections + access to cities (Bilbao and Vitoria) + works in Jundiz + implementation of UIC between Astigarraga-border+ ERTMS + electrification + systems	Implementation of UIC gauge and ERTMS + Electrification	Grupo Fomento **	2014-2020	2.000	CEF + own resources	X	X
R17		Vitoria-Alsasua-Astigarraga conventional line	Work	Implementation UIC Section Vitoria - Alsasua	Implementation of UIC track gauge	Grupo Fomento **	2014-2030	From 50 to 500 M€	own resources+ EU funds		
R18			Work	Implementation UIC Section Alsasua - Astigarraga	Implementation of UIC track gauge	Grupo Fomento **	2014-2030	From 50 to 500 M€	own resources+ EU funds		
R19		Bilbao conventional line	Study	New section for freight transport (South rail bypass)	Railway bypass	Grupo Fomento **	2014-2030	Evaluation ongoing	own resources+ Regional+ EU funds		
R20		Valladolid-Venta de Baños-Burgos	Work	HS line Section Valladolid – Burgos (freight and passenger	Implementation of UIC gauge and ERTMS	Grupo Fomento **	2014-2030	> 500 M€	own resources+ EU funds		

ID	Transport mode	Location	Studies or work	Description of project		Project promoter	Timing	Costs (in MEuro) (VAT excluded)	Financing sources	Critica l issue	CEF pre-identified section
				traffic) + Double track Pinar de Antequera (UIC track, electrification, systems, ERTMS. Valladolid-Burgos 247,49 M€ before 2020)							
R21			Work	Valladolid (freight) Bypass (2 IB+North access UIC to the complex =10 km)	Upgrade	Grupo Fomento **	2014-2030	From 50 to 500 M€	own resources+ EU funds		
R22		El Escorial-Ávila-Medina del Campo-Valladolid-Burgos	Work	Medina del Campo – Valladolid – Burgos Implementation UIC	Implementation of UIC track gauge	Grupo Fomento **	2014-2030	From 50 to 500 M€	own resources+ EU funds		
R23			Work	El Escorial - Ávila (currently B.A.B + ENCE)	Implementation of UIC track gauge	Grupo Fomento **	2014-2030	From 50 to 500 M€	own resources+ EU funds		
R24			Work	Ávila - Medina del Campo (currently B.A.)	Implementation of UIC track gauge	Grupo Fomento **	2014-2030	From 50 to 500 M€	own resources+ EU funds		
R25		Madrid-Extremadur a	Work	HS line Madrid-Extremadura: Navalmoral - Plasencia (1st phase)	New sections, platform, track and systems	Grupo Fomento **	2014-2020	317,11	FEDER + own resources	X	X

ID	Transport mode	Location	Studies or work	Description of project		Project promoter	Timing	Costs (in MEuro) (VAT excluded)	Financing sources	Critica l issue	CEF pre-identified section
R26			Work	HS line Madrid-Extremadura: Navalmoral - Plasencia (2nd phase)	Second phase of on-going works	Grupo Fomento **	2014-2020	99,79	FEDER + own resources	X	X
R27			Work	HS line Madrid-Extremadura: Plasencia - Cáceres - Badajoz (1st phase)	New sections	Grupo Fomento **	2014-2020	16,53	FEDER + own resources	X	X
R28			Work	HS line Madrid-Extremadura: Plasencia - Cáceres - Badajoz (2nd phase)	Second phase of on-going works	Grupo Fomento **	2014-2020	221,28	FEDER + own resources	X	X
R29			Work	HS line Extremadura Plasencia-Navalmoral-Pantoja (2nd section). Actions not included in R26	New sections + Second phase of on-going works	Grupo Fomento **	2014-2030	> 500 M€	own resources+ EU funds	X	X
R30			Work	Link HS line Madrid – Extremadura to Madrid freight line	Connection of HS line with freight line	Grupo Fomento **	2014-2030	> 500 M€	own resources+ EU funds	X	X
R31			Work	Illescas - La Calzada de Oropesa	Signalling and upgrading	Grupo Fomento **	2014-2020	197,02	FEDER + own resources		

ID	Transport mode	Location	Studies or work	Description of project		Project promoter	Timing	Costs (in MEuro) (VAT excluded)	Financing sources	Critica l issue	CEF pre-identified section
R32*		Madrid (Atocha-Chamartín) *	Work	Atocha - Chamartín connection (1st phase - systems) *	New connections	Grupo Fomento **	2014-2020	85,79	CEF + own resources		X
R33*			Work	Atocha - Chamartín connection (2nd phase) *	New connections	Grupo Fomento **	2014-2020	227,27	CEF + own resources		X
R34*			Work	3rd and 4rd tracks Atocha - Torrejón de Velasco (systems) *	New connections	Grupo Fomento **	2014-2020	46,97	CEF + own resources		X
R35*			Work	Implantation of ERTMS in Atocha-Chamartín connection and 3rd and 4rd tracks Atocha - Torrejón de Velasco *	ERTMS	Grupo Fomento **	2014-2020	12,70	CEF + own resources		X
R36		Madrid commuter line (Pitis-Villalba-El Escorial)	Work	Pitis - Villalba - El Escorial (commutter line)	Implementation of UIC track gauge	Grupo Fomento **	2014-2030	From 50 to 500 M€	own resources+ EU funds		
R37*		Madrid-Sevilla HS line *	Work	HS line Madrid - Sevilla *	Upgrade	Grupo Fomento **	2014-2020	273,60	FEDER + own resources		
R38*		Sevilla-Málaga/Granada	Work	Sevilla-Málaga/Granada connection *	New connection (passengers)	Grupo Fomento **	2014-2020	20,00	FEDER + own resources		

ID	Transport mode	Location	Studies or work	Description of project		Project promoter	Timing	Costs (in MEuro) (VAT excluded)	Financing sources	Critical issue	CEF pre-identified section
		connection *									
Road1	ROAD	Fuentes de Oñoro - Border ES/PT (A-62)	Work	Fuentes de Oñoro - Border ES/PT (A-62)	Upgrading conventional road (N-620) into motorway (A-62)	Grupo Fomento **	2014-2020	28,80	CEF + own resources	X	
Road2		Road network	Study	Atlantic Corridor road network	Upgrading parking areas to TEN-T requirements	Grupo Fomento **	Evaluation ongoing	Evaluation ongoing	own resources+ EU funds		
Road3			Study+ Work	Atlantic Corridor road network	Expansion of acceptance of VIA-T in France road network	Grupo Fomento **	2014-2030	Evaluation ongoing	own resources+ EU funds	X	
S1	SEAPORT	Atlantic Corridor ports	Work	LNG supply facilities/Availability of alternative clean fuels	Disposal of clean fuel stations	Grupo Fomento **	2014-2030	Evaluation ongoing	CEF + own resources		
S2		Bilbao Port	Study + Work	New port infrastructure and upgrading (Central Breakwater)	Upgrading infrastructures inside ports	Grupo Fomento **	2014-2030	197,00	CEF + own resources		
S3			Work	Upgrading the Port Information System to a Logistic Information System for the integrated management of information for ship, rail, truck		Grupo Fomento **	2014-2020	3,00	CEF + own resources		

ID	Transport mode	Location	Studies or work	Description of project		Project promoter	Timing	Costs (in MEuro) (VAT excluded)	Financing sources	Critica l issue	CEF pre-identified section
				and logistics zones							
S4*		Bahía de Algeciras Port *	Study + Work	New port infrastructure and upgrading/La Galera, Juan Carlos I, Campamento 1st phase (keywalls & jetty)/Campamento 2nd phase (breakwater)/Isla Verde expansion/Tarifa expansion		Grupo Fomento **	2014-2030	850,00	FEDER + own resources + private		
S5*			Study + Work	IT infrastructure (PCS, VTMS, etc.)		Grupo Fomento **	2014-2020	30,00	CEF + own resources		
A1*	AIRPORT	Madrid Airport *	Work	Modification of current Urbanización de Rejas and enlargement of platform for airplanes in Madrid airport to enable the construction of new freight terminals and maintenance warehouses	Enlargement of platform in Madrid airport	Grupo Fomento **	2015-2020	4,30	CEF + own resources		

ID	Transport mode	Location	Studies or work	Description of project		Project promoter	Timing	Costs (in MEuro) (VAT excluded)	Financing sources	Critica l issue	CEF pre-identified section
Sea-Road1	SEA-ROAD	Bilbao Port	Work	New road access (Ziérbana)	Road connections to ports	Regional Govermen t	2020-2030	46,90	CEF + own resources	X	
Sea-Road2 *		Bahía de Algeciras Port *	Work	Duplication of road N-350 (South-access to port of Algeciras)		Grupo Fomento **	2014-2020	38,50	CEF + own resources	X	
Sea-Road3 *			Work	Upgrading connection N-340 to North-access to port of Algeciras.		Grupo Fomento **	2014-2020	33,30	CEF + own resources	X	
Sea-Road4 *			Study + Work	Detour urban road CA-34. New road access to Campamento port facilities.		Grupo Fomento **	2014-2020	6,00	CEF + own resources	X	
Sea-Road5 *			Study + Work	New road connection. Tarifa Port road access (ouside/inside the port included)		Grupo Fomento **	2014-2020	10,50	CEF + own resources	X	
Sea-Rail1	SEA-RAIL	Bilbao Port	Study + Work	Implementation UIC Section access Bilbao Port (Y Basque)	Rail connections to ports	Grupo Fomento **	2014-2030	< 50 M€	CEF + own resources	X	
Sea-Rail2			Work	Upgrading rail network and access (inside the port)		Grupo Fomento **	2014-2020	2,50	CEF + own resources	X	

ID	Transport mode	Location	Studies or work	Description of project		Project promoter	Timing	Costs (in MEuro) (VAT excluded)	Financing sources	Critica l issue	CEF pre-identified section
Sea-Rail3*		Bahía de Algeciras Port *	Study + Work	Implementation UIC access Algeciras Port + New rail connection to Campamento / Campo Gibraltar, including rail network inside the port + others (electrification, etc.)		Grupo Fomento **	2020-2030	120,00	CEF/FEDER + own resources	X	
Sea-Rail4*			Study + Work	New rail terminals inside the port (adapting T-2 terminal as intermodal terminal ro-ro / rail to provide services to the rolling motorways)	Upgrading rail terminal	Grupo Fomento **	2014-2020	15,00	CEF + own resources	X	
RRT1	RAIL-ROAD TERMINAL	Valladolid RRT	Work	Valladolid RRT	UIC gauge rail connection	Grupo Fomento **	2014-2030	< 50 M€	own resources+ EU funds	X	
RRT2 *		Madrid-Vicálvaro RRT *	Work	Madrid-Vicálvaro RRT	Renewal of Madrid-Vicálvaro railway station (1st phase) Implementation UIC to Madrid-Vicálvaro RRT	Grupo Fomento **	2014-2030	200,00	CEF + own resources	X	

ID	Transport mode	Location	Studies or work	Description of project		Project promoter	Timing	Costs (in MEuro) (VAT excluded)	Financing sources	Critical issue	CEF pre-identified section
RRT3 *		Madrid-Aranjuez RRT *	Work	Madrid-Aranjuez RRT*	UIC gauge rail connection	Grupo Fomento **	2014-2030	< 50 M€	own resources + private	X	
RRT4 *		Madrid-Coslada RRT *	Work	Madrid-Coslada RRT*	Upgrading rail-terminal facilities	Grupo Fomento **	2014-2030	< 50 M€	CEF + own resources	X	
RRT5 *		Madrid-Abroñigal RRT *	Work	Madrid-Abroñigal RRT *	UIC gauge rail connection	Grupo Fomento **	2014-2030	< 50 M€	CEF + own resources	X	
RRT6 *		Alcázar de San Juan RRT *	Work	Alcázar de San Juan RRT *	UIC gauge rail connection	Grupo Fomento ** + Regional Government	Evaluation ongoing	Evaluation ongoing	own resources+ EU funds	X	
RRT7 *		Córdoba RRT *	Work	Córdoba RRT *	UIC gauge rail connection + Upgrading of Córdoba RRT	Grupo Fomento ** + Regional Government	Evaluation ongoing	Evaluation ongoing	own resources+ EU funds	X	
RRT8 *		Área Logística de Antequera RRT *	Work	Área Logística de Antequera RRT *	Construction of Antequera RRT-Phase I	Regional Government	2014-2020	30,00	Regional+Private+EU funds	X	
RRT9		Bilbao Puerto Seco - Pancorbo	Work	Second phase of Pancorbo Logistic Inland Terminal	UIC gauge rail connection & developing infrastructure for port logistic uses	Grupo Fomento **	2014-2020	15,00	CEF + own resources	X	
RRT10		Vitoria-Jundiz RRT	Study+Work	Vitoria-Jundiz RRT	UIC gauge rail connection	Grupo Fomento **	2014-2020	24,79	CEF + own resources	X	

ID	Transport mode	Location	Studies or work	Description of project		Project promoter	Timing	Costs (in MEuro) (VAT excluded)	Financing sources	Critical issue	CEF pre-identified section
RRT11*		Algeciras-San Roque RRT *	Work	Algeciras-San Roque RRT *	Upgrading rail terminal and logistic development	Grupo Fomento ** + Regional Government	2014-2030	Evaluation ongoing	CEF + own resources	X	
RRT12		Bilbao Arasur Logistic Terminal	Work	Bilbao Arasur Logistic Terminal. Phases I & II	Railway connections & developing infrastructure for port logistic uses	Grupo Fomento **	2014-2030	12,66	CEF + own resources	X	
RRT13		Salamanca RRT	Study+ Work	Development of rail terminal and of Dry Port with ports of Leixoes and Aveiro	Railway connections & developing infrastructure for port logistic uses	Regional Government + City Council + Zaldesa S.A.	2014-2020	14,00	CEF + own resources + regional funds + private		
RRT14		Badajoz RRT	Work	Badajoz RRT	UIC gauge rail connection + development of logistic platform	Regional Government	2014-2020	46,70	CEF + FEDER + own resources		
SRR1*	SEA-RAIL-ROAD	Logistic Single Window*	Study + Work	Integrated management of information from ports to the hinterland (Logistic Single Window)*	Logistic Single Window	Grupo Fomento **	2014-2020	1,00	CEF + own resources	X	Horizontal
SRR2		Gijón-Montoir (Saint-Nazaire) MoS	Work	Motorway of the Sea Gijón-Nantes-St Nazaire. New mobile ramp + last mile	Implementation and upgrading of Motorways of the Sea	Spain, France	2014-2020	85,00	CEF + own resources	X	Horizontal / Other sections of the core network

ID	Transport mode	Location	Studies or work	Description of project	Project promoter	Timing	Costs (in MEuro) (VAT excluded)	Financing sources	Critical issue	CEF pre-identified section
				connection (port of Gijón)						
SRR3		Vigo-Montoir (Saint-Nazaire) MoS	Work	Motorway of the Sea Vigo-Nantes St Nazaire. New mobile ramp + MoS terminal development (port of Vigo)	Spain, France	2014-2020	7,00	CEF + own resources	X	Horizontal / Other sections of the core network
SRR4		Motorways of the Sea	Study+ Work	Implementation and upgrading of MoS & promotion of sea-based freight transport services	Grupo Fomento **	2014-2020	Evaluation ongoing	CEF + own resources	X	Horizontal

* Common actions for Atlantic and Mediterranean Corridor.

** Grupo Fomento comprises Ministerio de Fomento, ADIF, Renfe, Puertos del Estado, Autoridades Portuarias, AENA.

5.4. Portugal

ID	Transport mode	Location	Studies or work	Description of project	Project promoter	Timing	Costs (in Euro)	Financing sources	Critical issue	CEF pre-identified section
PT 1	Road	IP5 (E80). Vilar Formoso (Border) (PT)	Work (upgrade)	Completion of missing link in cross-border PT/ES (Vilar Formoso) - motorway with a new alignment, bypassing Vilar Formoso village	Estradas de Portugal, S.A.	2016-2020	12	National Funds EU co-funding	X	
PT 2	Road	IC33. Santiago do Cacém - Grândola	Work (upgrade)	Upgrade of sections (already express road) - resolution of existing bottlenecks in level crossing (freight)	Estradas de Portugal, S.A.	2016-2020	40	National Funds EU co-funding		
PT 3	Road	IP1 (E80). Construction of a new interchange with IC9 (Fátima / Leiria)	Work (new construction)	Establish the connection to the core road network.	Estradas de Portugal, S.A.	2016-2020	5	National Funds EU co-funding		
PT 4	Road	IC16 Radial (Lisboa)	Works in course (new construction)	Last Mile connection to Lisboa ring road (IC17 CRIL, A9 CREL and 2ª Circular).	Estradas de Portugal, S.A.	2014	4,3	QREN		
PT 5	Road	Along corridor	Traffic Mng system	Adaptation of parking areas to accomplish with ITS booking requirement	Road concessionaires	2021-2030	Not defined	Private (desirable)		
PT 6	Road	Along corridor	Other (clean fuels)	Clean fuels stations along core network	Road concessionaires	2021-2030	Not defined	Private (desirable)		

ID	Transport mode	Location	Studies or work	Description of project	Project promoter	Timing	Costs (in Euro)	Financing sources	Critical issue	CEF pre-identified section
PT 7	IWW	Douro River	Study Work (upgrade) Maintenance equipment (IWW)	Geometrical correction of the channel (deepening and widening of the inland waterway between the mouths of rivers Tua and Sabor)	To be defined IMT or APDL	2014 - 2018	50	National Funds - 40 million EU (CEF or other) - 10 million	X	
PT 8	IWW	Douro River	Study Work (rehabilitation) Maintenance equipment (IWW)	Interventions in locks in order to solve technical, logistic and functional obsolescence	To be defined IMT or APDL	2016 - 2021	24	Private Funds - 19 million EU (CEF) - 5 million	X	

ID	Transport mode	Location	Studies or work	Description of project	Project promoter	Timing	Costs (in Euro)	Financing sources	Critical issue	CEF pre-identified section
PT 9	Maritime	Leixões	Works	Expansion of South Container Terminal of the Port of Leixões This project permits to expand the embankment of the South Container Terminal which includes the following components: - Strengthening and resurfacing of the embankment to increase the parking area of full containers in about 2.4 ha; - Construction of a Rail and Maritime Terminal; - Reconversion of the truck waiting parking for an empty containers parking. This investment will allow to: - Profit from underexploited areas for increased port operations; - Establish conditions for expansion of the south container terminal, to increase the supply capacity of parking for the largest growth cargo in the Port of Leixões; - Increasing rail and maritime intermodality.	APDL	2014-2016	38	Co-financing from CEF Private: estimated 23 million Public: 15 million		
PT 10	Maritime	Leixões	Works	Logistic Platform of Leixões Platform located near the Port of Leixoes with the same private access (VILPL – Internal Road Connection of the Port of Leixoes), comprising: - Site 1, with a total area of 31 hectares, a construction area of 9.1 hectares, including business support services to vehicles; - Site 2, with a total area of 35 hectares, a construction area of 8.6 hectares and road-rail terminal with 9 hectares. This investment value doesn't include the **investment in the road-rail terminal in the**	APDL	2008-2020	180	Cohesion fund (road accesses) Loan from EIB Co-financing from CEF APDL - estimate to invest	X	

ID	Transport mode	Location	Studies or work	Description of project	Project promoter	Timing	Costs (in Euro)	Financing sources	Critical issue	CEF pre-identified section
				site 2 of the Logistic Platform of the Port of the Leixões, which will be developed by REFER.				in this project about 90 million Euros within the period 2014-2020.		
PT 11	Maritime	Leixões	Works	New Cruise Terminal of the Port of Leixões it includes a new berth for vessels up to 300 meters long (already completed), a marina for 170 boats and a passenger station building. We intend to develop the public access to the Building of the New Cruise Terminal in 2015. This component value is estimated in 2 million Euros	APDL	2009-2015	56	61,4% co-financed ERDF Loan from EIB		
PT 12	Maritime	Leixões	Studies / Works	New Container Terminal of the Port of Leixões (the new container terminal will have depths of -14 meters, an area of about 16 ha and two quays of 500meters and 250 meters). The investment value includes the following components: reshaping the current Fishing Harbour, deepening of the rotation basin and port access channel, 300 meters extension of Leixoes Breakwater and the private investment in infrastructures and superstructures of the New Container Terminal.	APDL	2013-2020	400	Co-financing from CEF		

ID	Transport mode	Location	Studies or work	Description of project	Project promoter	Timing	Costs (in Euro)	Financing sources	Critical issue	CEF pre-identified section
PT 13	Maritime	Leixões	Studies / Works	Improving the environmental performance of the Port of Leixões and develop its environmental certification process. Within the 2020 EU targets in terms of climate change/energy, the port of Leixões intends to intensify the quality of the environmental operational conditions and to define the measures/actions to contribute for the reduction of the greenhouse gas emissions, the increase of energy consumption produced from renewable resources and the increase of the energy efficiency. Some of these actions/works will be defined in connection with the Portuguese strategy implementation of the EU Directives, namely in terms of development of alternative fuels facilities. The studies and ancillary equipments/structures costs are included in this project. Works and equipments to be identified will be contemplated in subsequent phases.	APDL	2014-2017	1	APDL+ Concessionaires +Port Community + CEF		

ID	Trans port mode	Location	Studies or work	Description of project	Project promoter	Timing	Costs (in Euro)	Financin g sources	Critic al issue	CEF pre-identifi ed section
PT 14	Mariti me	Leixões	Equipmen ts, ITS	Upgrade of VTS and Main Gate System The actual VTS implemented in 2000 contains some hardware and software components with technological obsolescence and it is required to process the complete replacement of the VTS system in order to assure the high levels of safety and efficiency of maritime vessel traffic. Another system that we intend to improve is the Main Gate System through the following interventions: -evolution of the truck process dematerialization (named "blue line"); -upgrade of the weighbridge system; - creation of the vehicle process in the Logistic Platform; - development of the rail process allowing the integration with Port Single Window (JUP) and Logistic Single Window (JUL); -upgrade/evolution of the OCR (Optical Character Recognition) truck and container; -upgrade /evolution of the Dialog Box and LPR (License Plate Recognition) of truck and trailer; - upgrade of lighting system to LED system; - information board and contingency equipments; - implementation of several major components related to the port business continuity plan, mainly the disaster recovery data-center and all relevant business continuity contingency systems.	APDL	2014-2017	5,35	APDL+CE F		

ID	Transport mode	Location	Studies or work	Description of project	Project promoter	Timing	Costs (in Euro)	Financing sources	Critical issue	CEF pre-identified section
PT 15	Maritime	Leixões	Studies MoS	Promotion of the Leixões - Rotterdam Motorways of the Sea service, improving the environmental performance in cargo transport in the European space. Based on the recently implemented Ro-ro service between Leixões and Rotterdam with the maritime transport operator COBELFRET, which has been sucessfully growing, we intend to develop studies and works that will facilitate and potentiate the development of this service. In Leixões we purpose to promote the Port of Leixões Strategic Development Plan, which will identify the port sectors where this service might be developed combined with the port's other challenges, namely the growing demand in contentorized cargo and handling ore from Moncorvo mines through the river Douro inland waterway.The environmental sustainable concerns will be present in planning and operational management port solutions. The Short Sea Shipping and Motorways of the Sea development studies specific costs are included in this project. Works and equipments to be identified will be contemplated in subsequent phases by each partner.	APDL with other relevant partners	2014-2017	1	APDL+Port Authority of Rotterdam+Shipping Company +CEF	X	
PT 16	Maritime	Lisbon	Studies / Works (upgrade)	Increase the efficiency of current Alcantara container terminal (increase capacity from 350.000 TEU to 840,000 TEU, equipment reinforcement, dredging and paving of embankment area)	APL	2014-2016	47	Private funds - 85% Nat Funds / EU (CEF) - 15%	X	

ID	Transport mode	Location	Studies or work	Description of project	Project promoter	Timing	Costs (in Euro)	Financing sources	Critical issue	CEF pre-identified section
PT 17	Maritime	Lisbon	Works (new construction)	New Container Terminal (South bank) with capacity for 2,7 million TEU/year, quay of 1,500 meters and an area of 99 hect	APL	2016-2020	600	Private funds - 480 million EU (CEF) - 120 million		
PT 18	Maritime	Lisbon	Studies/ Works (upgrade)	"Reactivation of Siderurgia Nacional (National Steel) Quay - Seixal Terminal"	APL, Baía do Tejo and SNLongos	2014-2018	50-80	CEF + Public Funds + Private		
PT 19	Maritime	Lisbon	Studies /Works (upgrade)	Improve navigation and environmental conditions (decontamination) in the estuary of Tejo + Alhandra (Cimpor)	APL	2014-2016	50	APL + CEF		
PT 20	Maritime	Lisbon	Works (new construction)	New Passenger area in Cruise Terminal Construction of pax building, area for luggage and customs, commercial area and parking	APL	2014-2015	20	Private funds		
PT 21	Sea/Rail/Road	Lisbon	Works (new construction)	Road and Rail Accessibilities to the New Lisbon Container Terminal	REFER EP	2016-2020	30	National Funds + CEF (% to be defined)		
PT 22	Maritime	Lisbon	Studies	Costs benefits analysis, feasibility studies (technical and socioeconomic assessments) and environmental impact studies (terminal and dredging) for the New Container Terminal (South bank)	APL	2014-2015	1,5	APL + CEF		
PT 23	Maritime	Lisbon	Work	Deepening of the Port of Lisbon South Bar	APL	?	14	APL + CEF		

ID	Transport mode	Location	Studies or work	Description of project	Project promoter	Timing	Costs (in Euro)	Financing sources	Critical issue	CEF pre-identified section
PT 24	Maritime	Lisbon	Work / Equipment / IT Systems	Upgrade of VTS The actual VTS, implemented in 1999, contains some hardware and software components with technological obsolescence. It is required to process the complete replacement of the VTS system in order to assure the high levels of safety and efficiency of maritime vessel traffic. The project will enlarge the VTS cover along River Tagus, maintain integration with VTS Coastal and implement a full integration with Port Single Window (JUP)	APL	2015-2017	2	APL + CEF		
PT 25	Maritime	Lisbon	Study / IT Systems / Pilot	Extended gateway model for the port of Lisbon - Design and implementation of an extended gateway model for the port of Lisbon in articulation with second line terminals in the hinterland. Extended concept of Logistic Single Window (JUL) to second line terminals. This model will allow the logistic nodes around the port of Lisbon to share status information about containers, thus incrementing planning and execution management capabilities over the supply chain. The project should include the definition of the model and implementation	APL	2015-2017	1,5	APL + CEF		
PT 26	Maritime	Lisbon	Study / IT Systems	River Information Services (RIS) - Development of RIS for the Tejo River Inland Waterway Infrastructure, including namely traffic management, real-time exchange of information and status information of barges and containers;	APL	2014-2017	0,4	APL + CEF		
PT 27	Maritime	Lisbon	Studies	Studies and projects regarding the recovery of Tejo navigability (namely dredging of first settlement)	APL	2014-2015	2	APL + CEF		

ID	Trans port mode	Location	Studies or work	Description of project	Project promoter	Timing	Costs (in Euro)	Financing sources	Critical issue	CEF pre-identified section
PT 28	Maritime	Lisbon	Study/ IT Systems/ Pilot	Container Consolidation and Interfacing System	APL	2016-2017	0,2	APL + CEF		
PT 29	Maritime	Lisbon	Work	Platform rehabilitation for the new cruise terminal	APL	2014-2015	1,7	APL + CEF		
PT 30	Maritime	Lisbon	Study/ IT Systems/ Pilot	Project MONALISA II	APL + APP	2015-2017	?	APL + APP + CEF		
PT 31	Maritime	Lisbon	Study / Equipment / Work / IT Systems / Pilot	Gate Operating System at Lisbon Terminals - Access control port of Lisbon: Definition of an access control system for the port of Lisbon, integrated with the port security plan. The project should consist on:- Identifying possible access control models (cards, biometric data, ID kiosks, etc)- Discussion and evaluation of solutions with port community stakeholders- Detailed specification and cost benefit analysis of the solution to be implemented- Definition of a governance model for the access control system- Implementation of the solution (It + hardware)	APL	2014-2017	2	APL + CEF		
PT 32	Maritime	Lisbon	Studies	Preparation of the Strategic Development Plan of the APL - Port of Lisbon, comprising: a) Analysis of strengths, weaknesses, opportunities and threats from a corporate perspective and from an operational perspective of the port; b) Definition of the strategic objectives of the company, bearing in mind the legislative framework and guidance applicable to the company and to the industry; c) Definition of the business and investment plans to achieve these strategic objectives; d) Definition of the organizational model to	APL	2014-2015	0,25	APL + CEF		

ID	Transport mode	Location	Studies or work	Description of project	Project promoter	Timing	Costs (in Euro)	Financing sources	Critical issue	CEF pre-identified section
				adopt; e) Definition of an action plan to implement and the respective monitoring model; f) Definition of the change management plan						
PT 33	Maritime	Lisbon	Studies	Improvement of environmental performance of the port of Lisbon, including: a) Studies in order to establish projects and actions for the accomplishment of Strategy 2020 objectives (and adaptation to Strategy 2030 if adopted soon, as foreseen) regarding energetic efficiency greenhouse gases emissions, as well as pilot projects and auxiliary equipment acquisition; b) Environmental Certification of APL services with reference to EMAS or ISO 14001, including an incentive program for environmental certification of concession port terminals (freight and passengers) and auxiliary port services; c) Studies in order to establish projects and actions for the Efficient Use of Water in services and buildings of APL, as well as an incentive program for efficient use of water in concession port terminals (freight and passengers) and auxiliary port services, including also pilot projects and auxiliary equipment acquisition	APL	2015-2018	1,2	APL + CEF + private funds		

ID	Transport mode	Location	Studies or work	Description of project	Project promoter	Timing	Costs (in Euro)	Financing sources	Critical issue	CEF pre-identified section
PT 34	Maritime	Lisbon	Studies	Implementation of a quality management system in order for further certification, providing recognition and customer satisfaction, better image, access to new markets, reducing of operating costs through better operational performance and a new culture with the awareness and motivation of staff	APL	2015	0,4	APL + CEF		
PT 35	Maritime	Lisbon	Studies	Studies for the development of the South Bank Logistic Platform	APL	2014-2015	0,4	APL + CEF		
PT 36	Maritime	Lisbon	Study / Work / Equipment	Centre of research for Maritime transports at Port of Lisbon (CDI) - This centre has the ambition to collaborate with researchers and public using new forms of technologies to offer multimedia presentation of the important archive about maritime transport, \infrastructure plans and way of life at port of Lisbon since about 2 centuries ago.	APL	2014-2015	1,5	APL + CEF		

ID	Transport mode	Location	Studies or work	Description of project	Project promoter	Timing	Costs (in Euro)	Financing sources	Critical issue	CEF pre-identified section
PT 37	Maritime	Sines	Works	THE EXPANSION OF CONTAINER TERMINAL (TERMINAL XXI) CAPACITY AND THE EXTENSION OF MARITIME INFRASTRUCTURE PROTECTION (3 projects) **Terminal XXI Capacity Expansion Project** In accordance with the obligations undertaken by PSA Sines under the provisions and conditions set forth in the Concession Agreement, including all subsequent amendments, the Concessionaire has put forward an investment plan to expand the throughput capacity of Terminal XXI. The current expansion works include the construction of a mooring quay that will increase the total working quayside to 940 metres and increase the port's annual TEU capability by increasing its assets to a total of 9 gantry cranes. Despite current expansion works, PSA, APS and the Portuguese Government have recently signed a Memorandum of Understanding, defining new investments in the Terminal XXI. This new investment in Terminal XXI will increase the containers' annual handling capacity from 1.7 million TEU to 2.7 million TEU and will allow it to operate three 18,000 TEU vessels simultaneously with a quay length of 1.350 m and 14 post-panamax and super post-panamax quay cranes, greatly increasing the terminal's competitiveness.	PSA Sines	2016-2017	137	Private funds	X	

ID	Transport mode	Location	Studies or work	Description of project	Project promoter	Timing	Costs (in Euro)	Financing sources	Critical issue	CEF pre-identified section
PT 38	Maritime	Sines	Works	**East Breakwater Extension Project (Phase 3)** Under this context, and also with the aim to provide the adequate shelter to the vessels manoeuvring basin and to the extended anchorage quay of Terminal XXI, APS has put forward an investment plan to extend the length of East Breakwater by an additional 500 meters (from 1.500 to 2.000 meters).	APS	2015-2016	63,5	EIB loan Co-financing from CEF Co-financing by Cohesion Fund Own Funds (financing %'s to be determined)		
PT 39	Maritime	Sines	Works	**Stabilization of the rotation's basin Terminal XXI's access channel Project** In addition, to provide safe berthing of larger vessels in operations, APS has planned an investment in order to stabilize the rotation's basin rocky bottoms and Terminal XXI's access channel to a depth of (-)16,5 m ZH. The following table summarises the current planning of both projects: Terminal XXI Capacity: 2.7 million TEU Quay length 1.350 mt No. of Berths: 3 Terminal Area: 45 ha Quay Cranes: 14 East Breakwater Length: 2.000 mt Access channel depth: 16,5 mt	APS	2014-2015	12	EIB loan Co-financing from CEF Co-financing by Cohesion Fund Own Funds (financing %'s to be determined)		

ID	Trans port mode	Location	Studies or work	Description of project	Project promoter	Timing	Costs (in Euro)	Financing sources	Critical issue	CEF pre-identified section
PT 40	Maritime	Sines	Studies	**Preparation of the Strategic Development Plan of the APS - Ports of Sines and Algarve Authority**, comprising: a) analysis of strengths, weaknesses, opportunities and threats from a corporate perspective and from an operational perspective of each port; b) definition of the strategic objectives of the company and each of the ports, bearing in mind the legislative framework and guidance applicable to the company and to the industry; c) definition of the business and investment plans to achieve these strategic objectives; d) definition of the organizational model to adopt; e) definition of an action plan to implement and the respective monitoring model; f) definition of the change management plan.	APS	2014-2015	0,25	CEF Own Funds (financing %'s to be determined)		
PT 41	Sea /Rail / Terminals	Aveiro	Works	Construction of a logistical and industrial maritime zone in Aveiro Port, including the improvement of the maritime access and a railway interface terminal	APA	2016-2020	54	Cohesion Fund (expected) - 35 million Nat funds - 19 million	X	

ID	Transport mode	Location	Studies or work	Description of project	Project promoter	Timing	Costs (in Euro)	Financing sources	Critical issue	CEF pre-identified section
PT 42	Maritime	Setúbal	Study+works	Maritime Access Improvement to the main terminals Economic Studies already concluded, Technical Project and Environmental Studies 2014-2015, dredging works 2016-2017 As a main Portuguese port on the use of the railway to the Atlantic Corridor and regarding the strong traffic growth with over 8 million tons (2014 onwards), considering as well the increase in the size of short and medium size ships, the port of Setúbal needs to deepen the navigation channels in order to maintain its position in the Atlantic market, the intra-European traffic and with South America and Africa, ensuring efficiency and low costs in the corridor connections, especially with Portugal hinterland and Spain/Extremadura to these foreign markets	APSS,SA	2014-2017	11,3	APSS + CEF		
PT 43	Maritime	Setúbal	Works	Expansion of the Ro-Ro Terminal This project aims to create an area to perform high value-added operations to new vehicles that are exported, imported, in transit to Spain, to the Atlantic corridor and during the transhipment operation between the Atlantic and the Mediterranean, via short sea shipping lines. This project will contribute to set up a car ro-ro hub centre linking south America and Mediterranean/Iberian Peninsula	APSS,SA	Studies concluded. Tender launched for works starting in 2015	3,5	APSS + CEF		

ID	Trans port mode	Location	Studies or work	Description of project	Project promoter	Timing	Costs (in Euro)	Financin g sources	Critic al issue	CEF pre-identifi ed section
PT 44	Mariti me	Setúbal	Study+ Works	Roro terminal expansion for the motorways of the sea (MOS Terminal) As the main ro-ro port of Portugal, the port of Setúbal aims to become an alternative solution to the road, within the European policy, being necessary to increase the size of the quay and terminal dedicated to short sea shipping in roll-on roll-off system for trucks and trailers, setting up a real Motorway of the Sea sustained in pilot projects that currently arise with pure car carrier ships in addition to the transportation of new light cars. This project contributes strongly to the goals of reducing road traffic in Europe, transferring it to the maritime mode.	APSS,SA	Economi c Studies 2015, Technic al Project and Environ mental Studies 2016-2017, works 2018-2020	30	APSS + CEF + private (tender)	X	
PT 45	Mariti me	Setúbal	Study+ Works	Multipurpose Terminal-Zone 1 (TMS-1) Quay advance As the main break bulk terminal of Portugal, TMS-1 terminal of port of Setúbal need to increase the terminal area and deepen the quay, aligning with the new existing container terminal, creating an united front that improves the efficiency in operations with ships, while taking advantage of the deepening maritime access channel. This project aims to reduce the cost of freight from the Atlantic corridor industrial chains that abundantly utilize this infrastructure, allowing the reception of larger ships with larger cargo volumes and ensuring better integration with railway, main mean of disposal and delivery of cargoes of the terminal with the hinterland	APSS,SA	Project and Environ mental studies 2015-2017, works 2018-2020	15	APSS+pri vate		

ID	Transport mode	Location	Studies or work	Description of project	Project promoter	Timing	Costs (in Euro)	Financing sources	Critical issue	CEF pre-identified section
PT 46	Sea /Rail / Terminals	Portugal+ Spain	Studies ITS	Leixões/Aveiro Ports - Salamanca Logistic Platform Corridor It aims to increase the competitiveness of multimodal transport within the Atlantic Corridor, more precisely in the axis Leixões-Aveiro-Salamanca-Valladolid through a combined offer of maritime infrastructures and added-value logistics services provided by the Portuguese ports of Leixões and Aveiro, as well as the Spanish logistic platform of Salamanca (a cross-border platform included in the platforms network of the region Castilla-Leon).	APP+APDL+ APA+Salamanca Logistic Platform	2014-2017	1	APDL+APA+ Salamanca Logistic Platform+ CEF		
PT 47	Sea /Rail / Terminals	Portugal+ Spain	Studies ITS	CILSIBA - Lisbon/Setúbal/Sines Ports-Badajoz Corridor Increase the competitiveness of multimodal transport within the Atlantic Corridor, more precisely in the axis Lisboa-Madrid (Extremadura) through a combined offer of maritime infrastructures and added-value logistics services provided by the Portuguese ports (Lisboa, Setubal, Sines) and Spanish logistic platform of Badajoz (a cross-border platform).	APP+APL+APSS+APS+PLSWE	2014-2017	2	APL+APSS+APS+Badajoz Logistic Platform (PLSWE) +CEF		

ID	Trans port mode	Location	Studies or work	Description of project	Project promoter	Timing	Costs (in Euro)	Financin g sources	Critic al issue	CEF pre-identifi ed section
PT 48	Mariti me	Portugal	IT systems	Portuguese Ports Information System Evolution of management and operational information systems for all Portuguese Ports, in order to achieve: the EU / 65-2010 Directive on formalisms of entry and departure of vessels of member states, amount with others EU initiatives (emanifest, SafeSeaNet, e-freight, etc); strengthen the integrated management of information to ship, rail, truck and logistic zones, from ports to the hinterland; automatize the integration with the information systems of all actors involved in the dispatch of ships and goods; harmonize and improve the usability of the systems, together with the technological evolution trough a distributed architecture.	APP, Ports of Portugal Association	2015-2016	4	APP+CEF	X	Horizon tal
PT 49	Mariti me	Portugal	Study	Portuguese Ports On Shore Power Supply Development of a feasability study of shore connected electricity supply to vessels in the portuguese ports, including vessels and shore investment needs, operational cost estimation, technical requirements, power capacities, electricity costs evalution, viability analisys, legal frameworks, case studies in European ports.	APP, Ports of Portugal Association	2015	0,5	APP+CEF	X	Horizon tal

ID	Transport mode	Location	Studies or work	Description of project	Project promoter	Timing	Costs (in Euro)	Financing sources	Critical issue	CEF pre-identified section
PT 50	Maritime	Portugal	Studies / works / equipments (in the scope of clean fuels)	Action Plan for LNG in Portuguese Ports (study and pilots) and Further Implementing Actions This global project includes several actions regarding the deployment of LNG availability in Portuguese commercial ports, involving also international partners, namely a study and pilot actions in the scope of the Motorways of the Sea to be developed as a first action plan in the context of the demand and supply sides regarding namely regulations, standardization with the USA and port risk analysis, and future implementing actions	IMT and APP / Port Authorities / Private Operators (implementing actions)	Action plan – 2015 – 2017; Implementing actions – To be developed till 2030	31 (1MEUR -studies + 30 MEUR (pilots)	Public, private, EU grants (CEF, ERDF, etc.) and loans (EIB, etc.)		
PT 51	Rail	Linha do Norte	Work (rehabilitation, upgrade)	Rehabilitation and upgrade of North line	REFER	2014-2021	431	CEF Own Funds (financing %'s to be determined)	X	X
				Section Alfarelos-Pampilhosa		2014-2019				
				Section Ovar - Gaia		2014-2019				
				Section Entroncamento - Alfarelos		2017-2019				
				Cartaxo-Entroncamento		2015-2019				
				Alverca-Castanheira Ribatejo		2016-2021				
				Layout Souselas, Alfarelos e Alhandra		2015-2018				
				Terminal da Bobadela		2015-2017				
PT 52	Rail/Sea	Linha do Sul	Works (upgrade)	Linha do Sul (Porto Setúbal+Praias do Sado)	REFER	2015-2018	20	CEF Own Funds (financing %'s to be		

ID	Trans port mode	Location	Studies or work	Description of project	Project promoter	Timing	Costs (in Euro)	Financing sources	Critic al issue	CEF pre-identifi ed section
								determin ed)		
PT 53	Rail/Se a	Linha do Sul	Works (upgrade)	Linha do Sul (Terminal de Termitrena)	REFER	2015-2018	14	CEF Own Funds (financing %'s to be determin ed)		
PT 54	Rail/Se a	Linha Leixões	Works (upgrade /new constructi on)	Linha de Leixões	REFER	2016-2019	18	CEF Own Funds (financing %'s to be determin ed)	X	
PT 55	Rail	Aveiro-Vilar Formoso	Work (rehabilita tion, upgrade)	Corredor Aveiro - Vilar Formoso	REFER	2015-2021	897	CEF Own Funds (financing %'s to be determin ed)	X	X
				Junction with North Line		2018-2021				
				Renewal lines		2015-2020				
				Railway Stations Layout		2015-2019				
				Profile optimisation		2016-2021				
				UIC Gauge (third rail)		2016-2021				
				Connection to Pampilhosa Terminal		2017-2021				
PT 56	Rail			Corredor Sines/Setúbal/Lisboa - Caia	REFER	2014-2021	921	CEF Own	X	X

ID	Transport mode	Location	Studies or work	Description of project	Project promoter	Timing	Costs (in Euro)	Financing sources	Critical issue	CEF pre-identified section
		Sines-Évora-Caia	Works (upgrade)	Modernization of sections Évora-Évora norte - via		2014-2017		Funds (financing %'s to be determined)		
			Works (new construction)	New connection Évora norte-Caia and renewal Elvas-Caia		2015-2021				
			Works (upgrade)	Ramal REN		2016-2019				
			Works (new construction)	S&T Évora-Évora Norte-Caia		2017-2021				
			Works (new construction)	New connection Sines-Linha do Sul		2015-2021				
			Works (upgrade)	S&T Sines-Linha do Sul		2017-2021				
			Traffic Mng system	ETCS+GSM-R em todo o itinerário		2015-2020				
			Works (upgrade)	Poceirão-Bombel - RIV+ stations layout		2016-2019				
			Works (upgrade)	Connection to Poceirão RRT		2018-2020				
			Works (upgrade)	Linha de Vendas Novas - Layout stations		2016-2019				
			Works (upgrade)	Linha de Vendas Novas - Profile optimisation		2016-2021				
PT 57	Rail	Lisbon area	Works (new construction)	Construction of fly under Nó de Alcantara	REFER	2021-2030	< 50 million	To be identified	X	

ID	Transport mode	Location	Studies or work	Description of project	Project promoter	Timing	Costs (in Euro)	Financing sources	Critical issue	CEF pre-identified section
PT 58	Rail	Aveiro Port - Cacia)	Works (upgrade)	UIC Gauge (third rail)	REFER	2021-2030	50-500	To be identified	X	
PT 59	Rail	Contumil - Leixões	Works (upgrade)	UIC Gauge (third rail)	REFER	2021-2030	50-500	To be identified	X	
PT 60	Rail	Vendas Novas-Setil	Works (upgrade)	UIC Gauge (third rail)	REFER	2021-2030	No estimation yet	To be identified	X	
PT 61	Rail	Country level	Works (upgrade)	Stations layout for train lenght 750 mts in core network sections not intervened till 2020)	REFER	2021-2030	No estimation yet	To be identified	X	
PT 62	Rail	Country level	Works (upgrade)	Connections to Logistic Platforms (not intervened till 2020)	REFER	2021-2030	No estimation yet	To be identified	X	
PT 63	Rail	Aveiro-Porto	Works (new construction)	New connection Aveiro-Porto	REFER	2021-2030	No estimation yet	To be identified		
PT 64	Rail	Country	Works (upgrade)	UIC Gauge (third rail) in sections not intervened)	REFER	2021-2030	No estimation yet	To be identified	X	
PT 65	Rail	Lisboa-Aveiro	Works (new construction)	New line Lisboa-Aveiro	REFER	2031-2050	No estimation yet	To be identified		
PT 66	Rail	Lisboa-Madrid	Works (new construction)	Conclusion of Lisboa-Madrid connection	REFER	2031-2050	No estimation yet	To be identified		
PT 67	Rail	Linha do Norte	Traffic Mng system	Full deployment ERTMS /ETCS - Lisboa-Porto (except sections intervened till 2020)	REFER	2021-2030	50-500	To be identified	X	

ID	Transport mode	Location	Studies or work	Description of project	Project promoter	Timing	Costs (in Euro)	Financing sources	Critical issue	CEF pre-identified section
PT 68	Rail	Linha Beira Alta	Traffic Mng system	Full deployment ERTMS /ETCS - Aveiro-V Formoso (except sections intervened till 2020)	REFER	2021-2030	50-500	To be identified	X	
PT 69	Rail	Lisboa-Poceirão	Traffic Mng system	Full deployment ERTMS /ETCS - Lisboa-Poceirão (except sections intervened till 2020)	REFER	2021-2030	50-500	To be identified	X	
PT 70	Rail	Linha Beira Baixa	Traffic Mng system	Full deployment ERTMS /ETCS - Beira Baixa Line (Abrantes - Entroncamento, Abrantes-Guarda, Setil-vendas Novas)	REFER	2031-2050	50-500	To be identified		
PT 71	Airport	Lisbon Airport		Lisbon airport upgrade	ANA - Aeroportos de Portugal, SA	2013-2017	137	Private (own) funds		
			Works (upgrade)	Terminal 1 - Expansion of Rooms "F" and new connection to the former Luggage room		2013 - 2015				
			Works (upgrade)	Infrastructures for the upgrade to CAT II/III on the 03-21 runway		2015 - 2016				
			Works	New entrances on the RWY 03 (runway)		2015 - 2016				
			Works (upgrade)	Reburbishment of the mid tension electric network - Phase I (operacional areas)		2015 - 2017				
			Works (upgrade)	Terminal 1 - New "Busgate" North and Upsize of Luggage Terminals, "Lost and Found" - "CHUTEX"		2013 - 2015				
			Works (upgrade)	Terminal 1 - Upgrade of departure "Kerbside"		2013 - 2015				
			Works (upgrade)	Deep Rehabilitation of "TWY'S "R02", "S01" and "W"		2013 - 2015				
			Works (maintenance)	Replacement of the runway 03-21 warable layer - Light signs, Command and Control		2013 - 2016				
			Works (rehabilitation)	Rehabilitation of "MIKE 5" e " SIERRA 4" taxiways		2015 - 2016				

ID	Transport mode	Location	Studies or work	Description of project	Project promoter	Timing	Costs (in Euro)	Financing sources	Critical issue	CEF pre-identified section
			Works (rehabilitation)	Rehabilitation of the Delta Plattform		2016 - 2017				
			Works (rehabilitation)	SO2 Pavement rehabilitation		2014 - 2016				
			Work (rehabilitation)	Rehabilitacion of TWY "M02" and "M01" (around the "STOP BAR")		2015 - 2016				
			Work (rehabilitation)	Rehabilitacion of TWY "U01"		2015 - 2016				
			Work (rehabilitation)	New Check-in and New Arrivals connections		2014 - 2015				
			Work (rehabilitation)	Other upgrade and maintenance projects		2013 - 2017				
PT 72	Airport	Porto Airport		Porto airport upgrade	ANA - Aeroportos de Portugal, SA	2013-2022	25	Private (own) funds		
			Work (rehabilitation)	Extension of the FOX circulation path		2017 - 2022				
			Work (rehabilitation)	Extension of the FOX circulation path-Signaling, Command and Control		2017 - 2022				
			Work (rehabilitation)	Kerbside external coverages on the 3rd floor		2013 - 2015				

ID	Transport mode	Location	Studies or work	Description of project	Project promoter	Timing	Costs (in Euro)	Financing sources	Critical issue	CEF pre-identified section
			Work (rehabilitation)	Runway painting (17-35)		2013 - 2014				
			Work (rehabilitation)	Reinforcement of the tunnel under the 17-35 runway		2013 - 2015				
			Work (rehabilitation)	Rehabilitation of the SIERRA Platform's pavement		2013 - 2015				
			Work (rehabilitation)	BRAVO Circulation path rehabilitacion		2013 - 2014				
			Work (rehabilitation)	Resizing of the draining trenches capacity and maintenance on 17-35 runway		2013				
			Work (rehabilitation)	Sound barrier		2017 - 2022				
			Work (rehabilitation)	Other development and maintenance projects		2013 - 2017				
PT 73	Maritime	Leixões	Studies	Preparation of the Strategic Development Plan of APDL, comprising: a) analysis of strengths, weaknesses, opportunities and threats from a corporate perspective and from an operational perspective; b) definition of the strategic objectives, bearing in mind the legislative framework and guidance applicable to the company and to the industry; c) definition of the business and investment plans to achieve these strategic objectives; d) definition of the	APDL	2015-2016	0,25	APDL own funds and CEF		

ID	Transport mode	Location	Studies or work	Description of project	Project promoter	Timing	Costs (in Euro)	Financing sources	Critical issue	CEF pre-identified section
				organizational model to adopt; e) definition of an action plan to implement and the respective onitoring model; f) definition of the change management plan						
PT 74	Maritime	Aveiro	Work/Equipment/IT system	Implementation in the Port of Aveiro of a Gate Operating System and its integration in Port Single window (JUP) - The main aims of the project are the improvement of the access controls of cargo flows in port by trucks or trains and persons, attending the port security plan, and the increase of efficiency of the operations along the supply chains.	APA	2015-2017	1	APA + CEF		
PT 74	Maritime	Aveiro	Studies	Definition and implementation of quality management system in the port of Aveiro, including the upgrade of its strategy	APA	2015-2016	0,15	APA + CEF		

ID	Transport mode	Location	Studies or work	Description of project	Project promoter	Timing	Costs (in Euro)	Financing sources	Critical issue	CEF pre-identified section
PT 75	Maritime	Setúbal	Work/Equipment/IT system	Upgrade of VTS of the port of Setúbal – Upgrade of the present information system (hardware and software), namely in what concerns to integrated management, monitoring, control, communications and automatic data recording regarding the maritime traffic in the port of Setúbal jurisdiction area and its maritime approaches, that is still working in Windows NT environment, implemented in 1999. This upgrade shall run in an operation system presently available in market and in Commercial off-the-shelf (COTS) equipment (servers, working stations, monitors, control panels, etc.), integrating radar, AIS base stations, VHF direction-finder and VHF (maritime band) communications already available in the port VTS, as well with automatic interchange of data with the Port Single Window (JUP) and the European system SafeSeaNet. The improvement will include the replacement of IT cabinets and operational consoles, as well as adaptation of server rooms and the maritime operations centre of the port of Setúbal VTS to the new equipment. This project also includes the training and coaching of the VTS operators and VTS manager, either for new the VTS software either to the IT network, as well as a 5 year warranty for equipment and software	APSS	2016	0,5	APSS + CEF		

6. Annex 2-Stakeholders List

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7. Annex3 - Transport Market Study

7.1. Introduction

The Transport Market Study (TMS) intends to analyse the Corridor-related transport and "assess the capacity and traffic flows on the respective parts of the infrastructure", covering the time period from 2010 to 2030. This corresponds to identify the current and prospective transport needs in the Corridor from the demand and supply perspectives. More specifically, the study provides information on how the traffic will evolve, and by which mode. Then, the TMS will assess whether the existing capacity is able to cope with the expected demand growth; this analysis will, additionally, incorporate ongoing and planned measures, up to 2030.

Analysis for Corridor transport activities starts from the overview of its macroeconomic context, identifying the external socio-economic drivers, i.e. variables which affect the Corridor transport activities, such as population, GDP, GAV. This takes into account the time horizon 2010-2030. For the global projections EU reference values and previous studies are used. The horizontal policies which could potentially impact the Corridor transport activities are considered.

The second step focus on the corridor demand providing the context of actual transport activities, focussing on the international freight demand in corridor countries: transported volumes, commodities and modal split. Together with the existing demand structure, existing forecasts are highlighted.

The third task of the TMS focus on the supply side of the market focussing on capacity (utilisation rates). A scenario with "infrastructure package" is defined evaluating corridor performance, i.e. how this is expected to behave based on ongoing and planned work and what efforts should be further considered for achieving the TEN-T targets.

Market study provides insight on the Corridor macroeconomic framework and the current and prospective transport demand mainly for international freight.

The following TMS diagram presents the tasks of the TMS.

7.1.1. Information Sources

For the socioeconomic analysis, the study mainly focused on the GDP and population values at national and regional level.

For existing and projected national data, the main sources are the Eurostat and the EU Energy, Transport and GHG Emissions Trends to 2050: Reference Scenario 2013 (EU Reference Scenario, 2013). For regional data, the main data source is the ETIS plus database, referring to 2010 data.

More specifically, sources for the TMS include:

- The literature review carried out in the first study phase, and particularly RFC4 market analysis.
- National / regional studies
- Data from transport observatories, in particular the CAFT / Transit survey data on Pyrenean crossing
- Infrastructure studies
- Port, terminal studies
- Studies from international organisations

Other sources for the TMS include:

- Eurostat and national statistical offices
- TENtec data collection
- ETISplus
- National / regional models
- Interviews with stakeholders for missing data or clarifying major discrepancies between different sources of information

7.1.2. Collecting and consolidating data

Information can be organized under three main headings: regional catchment area information, supply side information and demand information:

Regional Information

- Information on current and expected economic, political, social and technological developments in the catchment area will be defined
- Policies (covering environmental and technical standards)
- Macroeconomic indicators (influencing the demand for passenger/ freight transport services), e.g. GVA, GDP values but also social indicators (i.e. population, employment, motorisation).

Supply side

The supply side characteristics for the corridor have been built up during the data collection phase (e.g. length of stretches, electrification levels, maximum capacity, multimodal capacities):

- Create the baseline for supply characteristics using the TENtec collected data
- Based on the studies, identify the supply adaptations from 2010-2030 (ongoing, planned)
- Improve the supply characteristics with terminals information
- Highlight the current and future capabilities of the network as well as limitations and opportunities

Demand side

This section takes the figures of international cross-border freight transport, which is most related to the corridor traffic. The focuses are the Origin/ Destination (O/D) flows from and to the corridor countries. The main data is consolidated for 2010 and consist of O/D matrices (rail, road and IWW), which are filtered based on the network definition for the Atlantic corridor regions. The aggregated results are presented at national level for origin and destination, per transport mode and per commodity.

For consistency reasons, 2010 data is cross checked against Cross Border Observatories Surveys.

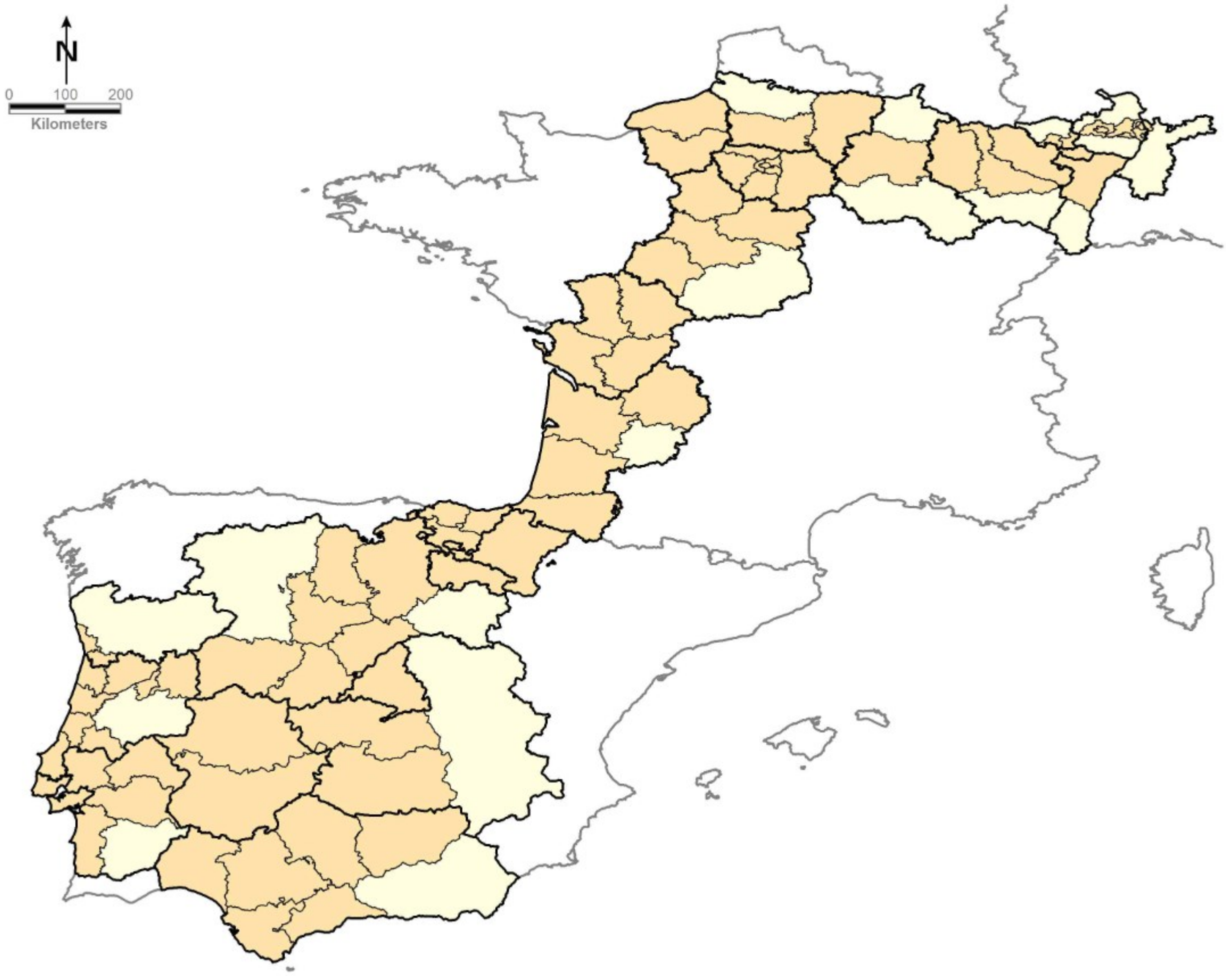
7.2. Regional Socio-Economics

7.2.1. Corridor catchment area

The definition of the geographical coverage for the corridor is based on the following criteria:

- NUT3 level for regions with core nodes or crossed by the corridor
- For the rest of Europe, the zoning depends on the distance to/from the corridor and as such its probability of using the corridor. This definition follows the zoning adopted in the TRANSYT survey 2010 (NUTS2 for bordering regions, NUTS0 for remaining zones).

The corridor area consists of 75 NUTS3 regions (orange), covering a surface area of about 441 thousand square meters. This accounts for 8 NUTS3 in Germany, 15 in Portugal, 23 in Spain and 29 in France.



Source: EUROSTAT/ETISplus, 2010

Figure 29: Corridor NUTS3

Overall figures on the socio economic elements characterising the corridor and its relation with EU is provided in the table below

	Pop 2010	Pop 2012	GDP 2010	GDP 2012	GDP per capita_2010	Unemployment rate 2010
	Mio Inhabitants		M EUR		€	%
Corridor regions	53,8	54,2	1,57	1,63	24 847	11,97
Corridor Countries	203,5	204,5	5,65	5,83	24 850	-
EU (28)	503,4	506,1	12,34	12,71	24 400	9,77
Corridor in EU	10,7%	10,7%	12,8%	12,7%	102,0%	122,5%

Source: EUROSTAT/ETISplus, 2010

7.2.2. Corridor Population

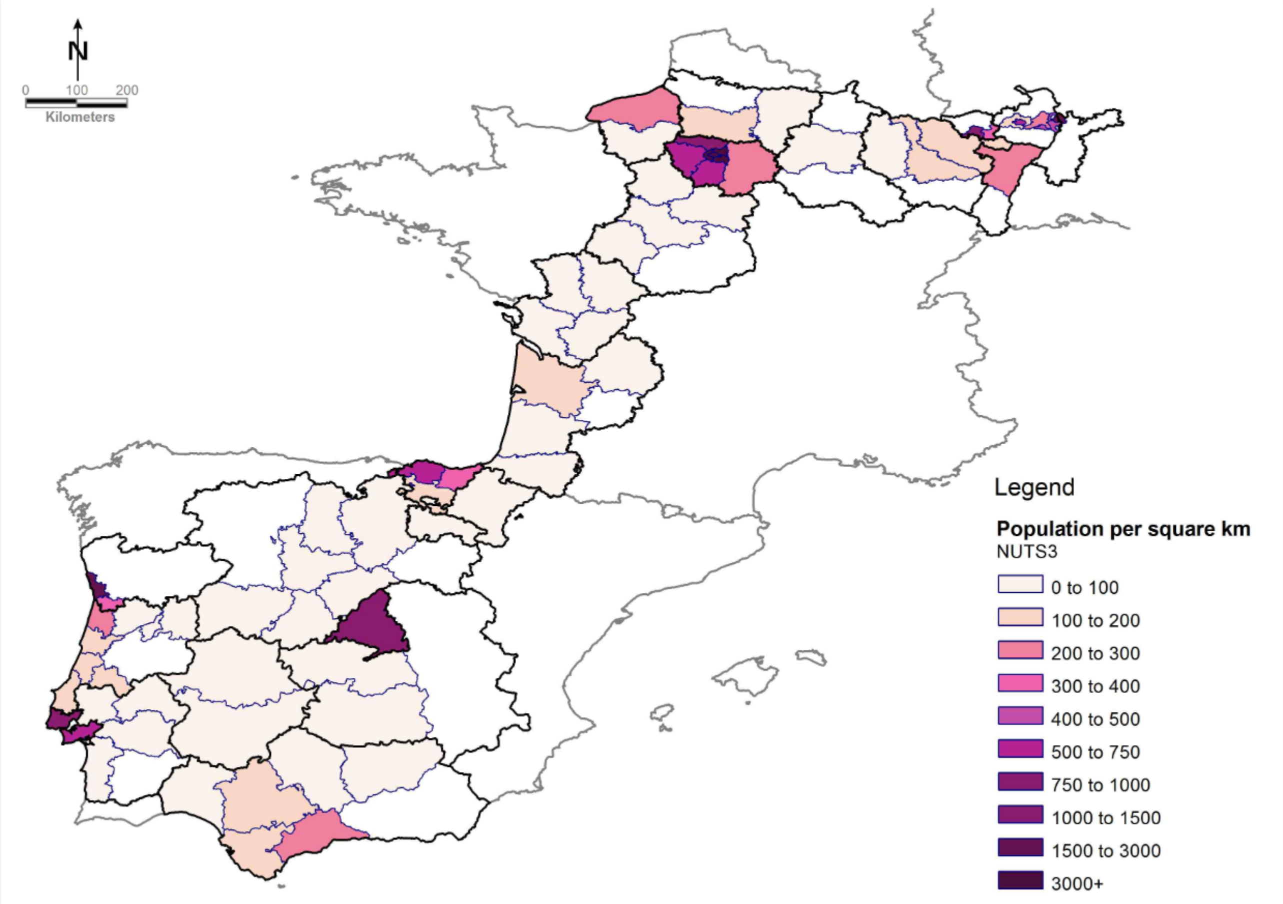
Some general socio-economic data for the current situation are presented in this section. Corridor counts with a population of 53 million in 2012 (52,7 million in 2010, the baseline year for the TMS). In corridor regions it could be observed that population remains relatively stable. In Portugal a negative annual growth in corridor regions is observed. In German corridor regions the annual growth is very low, while for the remaining corridor regions annual growth rounds 0,4%, with French regions showing the highest growth in the corridor.

Table 23: Corridor (NUT 3 regions) population (in millions)

Corridor Country	2010	2012	Annual growth
Germany	1,3	1,4	0,05%
France	25,3	25,5	0,46%
Spain	20,5	20,6	0,40%
Portugal	6, 8	6,8	-0,05%
Total	53,8	54,2	0,36%

Source: EUROSTAT

In terms of densities, the corridor crosses along several low density populated regions, with high dense regions corresponding to the corridor core urban nodes (Lisbon, Madrid, Paris, Bilbao, Mannheim), and seafront regions.



Source: EUROSTAT/ETISplus, 2010

Figure 30: Corridor Population Density, 2010

According to the EU reference scenario projections, the population of the MS along the corridor will be increased in Spain and France with about 8%, with an annual growth rate of 0,4% per year till 2030, while in Portugal population will increase just below 2% in period, with annual growth rates of 0,1%. In Germany a decrease in the order of 5% is estimated, with annual decrease rate of 0,2%.

Table 24: Main Demographic Assumptions

	2000	2010	2020	2030	2050	2010-2030	Annual growth rate
EU 28	485,6	503,6	517	524,9	526,5	4,2%	0,2%
DE	82,2	81,8	80,1	77,9	70,8	-4,8%	-0,2%
FR	58,9	62,8	65,8	68,2	71	8,6%	0,4%
ES	40	46,2	48	50	52,7	8,2%	0,4%
PT	10,2	10,6	10,7	10,8	10,6	1,9%	0,1%

Unit: Million Inhabitants

Source: EU Energy, Transport and GHG Emissions Trends to 2050: Reference Scenario 2013

7.2.3. Corridor Economic Activity

In terms of total economic activity, the Atlantic corridor regions (NUT 3 in corridor) account for approximately 1, 5 million euro in 2010

Table 25: Corridor regions GDP and GDP per capita

	GDP		GDP per capita	
	2010	2012	2010	2012
Germany	49 148	52 115	32 650	34 238
France	932 210	963 017	30 507	31 317
Spain	473 548	476 044	21 786	22 027
Portugal	123 217	121 951	14 740	14 593
Total	**1 578 123**	**1 613 127**	**24 921**	**25 544**

Unit: €

Source: EUROSTAT

The map highlights some clusters with a relatively high income along the corridor. Connect the most occidental regions, with less economic vitality, to those economic areas and from there to other central regions is a major challenge of the Atlantic corridor.

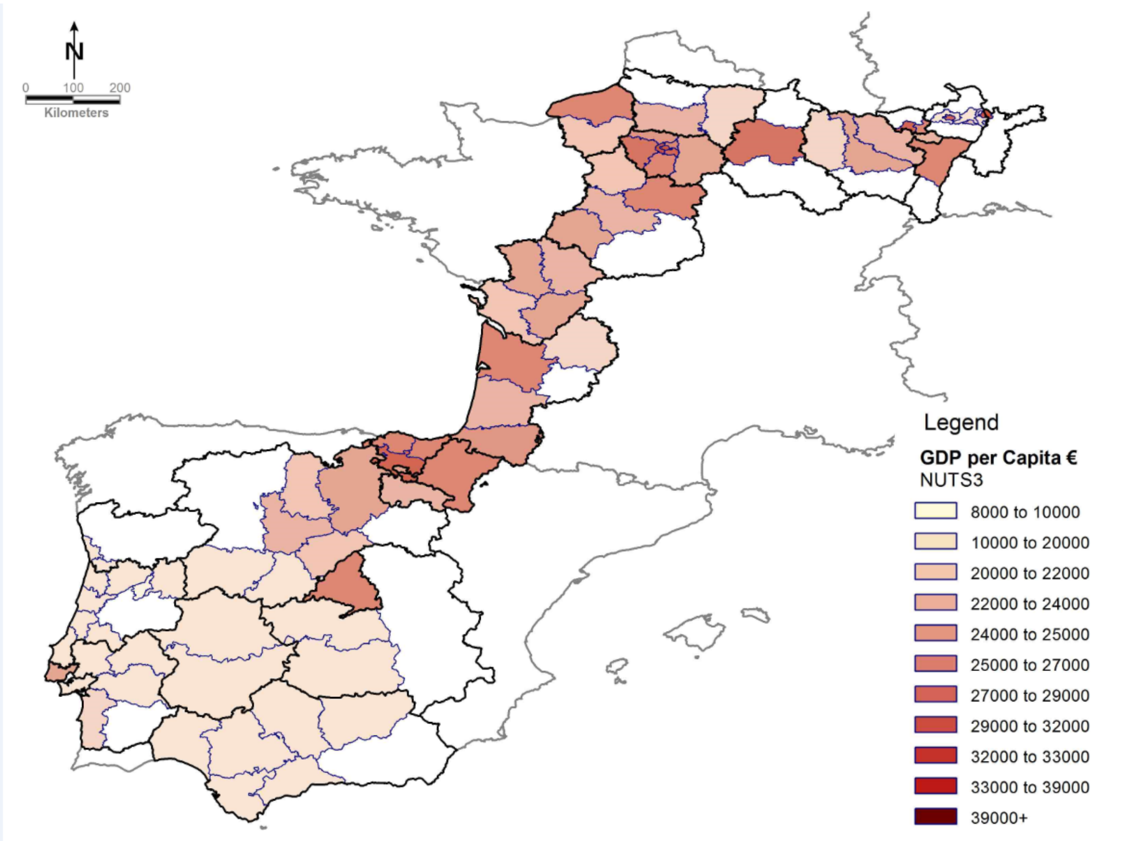


Figure 31: Corridor GDP per Capita

According to the EU reference scenario projections, the economic projections are positive for all corridor countries, with higher annual growth rates expected in Spain and France.

Table 26: Gross Domestic Product referred to 2030 (country level)

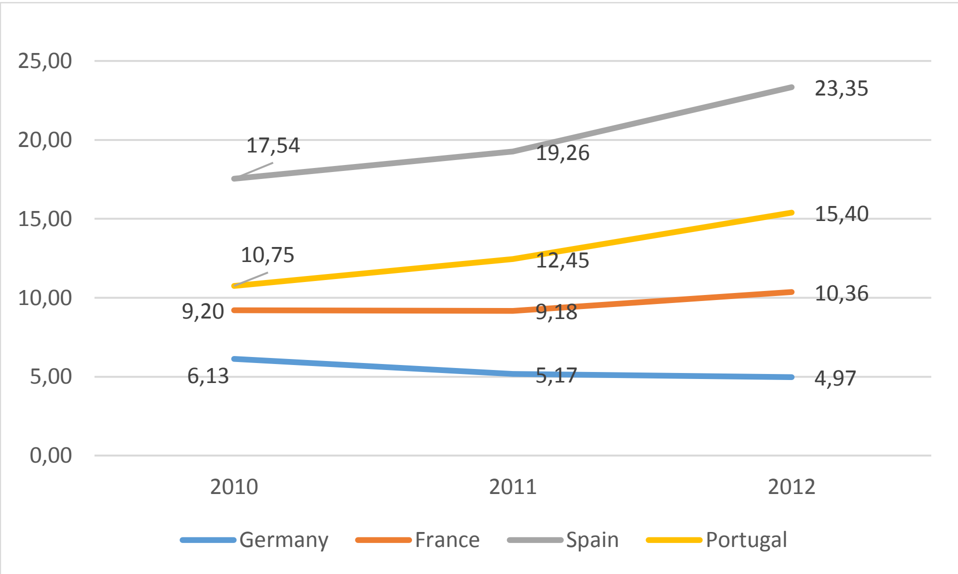
	2000	2010	2020	2030	2050	2010-2030	Annual growth rate
EU 28	10725,4	12301,4	14246,4	16667,7	21944,1	35,5%	1,5%
DE	2257,7	2476,8	2801,8	2997,7	3465,8	21,0%	1,0%
FR	1726,6	1932,8	2256,9	2698,9	3703,3	39,6%	1,7%
ES	856,8	1051,3	1227,4	1583,3	2045,3	50,6%	2,1%
PT	162,1	172,7	182	219,4	287,9	27,0%	1,2%

Unit: 000 MEuro'10

Source: EU Energy, Transport and GHG Emissions Trends to 2050: Reference Scenario 2013

7.2.4. Corridor Employment Activity

The evolution of this parameter clearly reflects the economic crisis in the period, in particular for Spain and Portugal. From 2010 to 2012, only the German NUT2 regions in the corridor show a decrease in the unemployment rate.

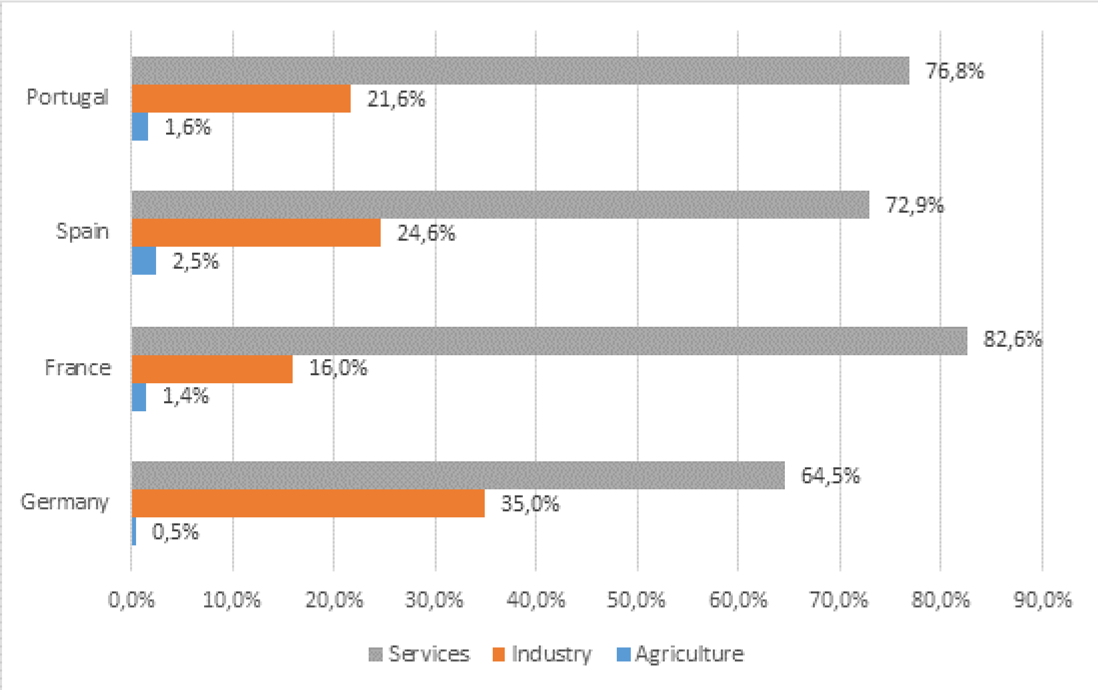


Source: EUROSTAT

Figure 32: Evolution of unemployment rate in Corridor NUT2 regions

7.2.5. Corridor GVA

In 2010, the corridor regions had a GVA of nearly 1.4 billion €. In terms of sector repartition, services count for 79% of the GVA composition. Industry counts with 20% and agriculture with 2%.



Source: EUROSTAT/ETISplus, 2010 data

Figure 33: GVA composition for corridor regions in 2010

7.2.6. Motorisation

In 2010 the total number of vehicles in the corridor regions was 29 million of which 86% light vehicles.

Table 27: Motorization rates and vehicles in corridor regions

	Nr Light vehicles	Nr Heavy vehicles	Mot rates_Light	Mot rates_Heavy
Germany	733 054	36 169	543,2	26,8
France	11 943 783	1 882 540	472,5	74,5
Spain	9 226 800	2 012 305	477,7	104,2
Portugal	3 181 822	36 802	470,7	5,4
Total	**25 085 459**	**3 967 816**	**476,0**	**75,3**

Source: ETISplus (vehicle stock), 2010

With about 543 light vehicles per 1000 inhabitants, the German corridor regions are well above the average rates for the whole corridor (476 vehicles). The other corridor regions show values close to the ones for the corridor.

The rate of heavy vehicles for the corridor regions is about 75 heavy vehicles/ 1,000 population. Spain is the country with the highest rate of heavy vehicles, with 104 vehicles. In Portugal the rate is substantially lower compared with the corridor average.

7.3. National Transport profile

A strong predominance for road is visible in all countries, but annual growth for rail is visible in all the countries. Seaport tonnage presents also a positive variation from 2010 to 2012, minus in France. Main growth is observed in the container traffic with annual growths between 9% and 10%, except for France, where only RoRo segment had grown.

Table 28: Freight volumes (country)

	DE			FR			ES			PT		
	2010	2012	Annual Growth	2010	2012	Annual Growth	2010	2012	Annual Growth	2010	2012	Annual Growth
Road btkm	304,1	297,6	-1,1%	182,2	172,5	-2,7%	210,1	199,2	-2,6%	35,3	31,7	-5,3%
Rail btkm	107,3	110,1	1,3%	30,0	32,5	4,2%	9,2	10,0	4,0%	2,3	2,4	2,3%
IWT tkm	62,3	58,5	-3,1%	9,5	8,9	-3,0%	-	-		-	-	
Seaport MTonnes	268,6	291,9	4,2%	309,6	246,4	-10,8%	376,4	422,2	5,9%	65,1	68,2	2,4%
Seaport Container MTonnes	107,1	127,8	9,2%	35,9	17,3	-30,6%	111,6	132,8	9,1%	15,2	18,8	11,2%
Seaport RORO MTonnes	34,3	36,8	3,6%	26,0	27,8	3,4%	15,2	17,1	6,2%	0,33	0,26	-10,6%
Air Cargo kTonnes	106,0	123,8	8,1%	149,4	181,4	10,2%	79,2	63,3	-10,6%	20,4	15,2	-13,6%

Source: EUROSTAT

Table 29: Rail Passenger volumes (country)

	DE			FR			ES			PT		
10^6	2010	2012	Annual growth rate	2010	2012	Annual growth rate	2010	2012	Annual growth rate	2010	2012	Annual growth rate
Rail pkm	82,84	93,92	**6,5%**	91,30	91,21	**-0,1%**	22,04	22,17	**0,3%**	4,11	3,80	**-3,8%**
National	78,52	88,79	6,3%	80,96	80,51	-0,3%	21,85	22,02	0,4%	4,01	3,71	-3,8%
Intern	4,32	5,12	8,9%	10,34	10,70	1,7%	0,19	0,15	-13,0%	0,10	0,09	-6,5%

Source: EUROSTAT

7.4. International transport demand

Main figures for international cross-border transport (passenger and freight) are below provided. The focuses are the Origin/ Destination (O/D) flows from and to the corridor countries. The main data for 2010 consist of three O/D matrices (rail, road and IWW), which are filtered based on the network definition, i.e. the Atlantic catchment area.

The break-down of commodities for all transport modes is given in the NSTR classification scheme[31].

The results were cross-checked with previous studies and observatories data and adjust accordingly (i.e. for rail freight flows PT-DE)

7.4.1. Passenger Flows

About 96.5 million passenger cross border trips were recorded within corridor countries in 2010. Car represents the predominant mode (57%) followed by air (40%). Just 3% of passenger flows within corridor countries are made in rail, although rail share France-Germany is 7,6%.

Figure 34 presents the total cross border passenger traffic (in 1000 passengers/year) on road, rail and air between the countries of the corridor.

Mode	1000 pax /year
Car	54 825
Rail	3 346
Air	38 419
Total pax	**96 590**

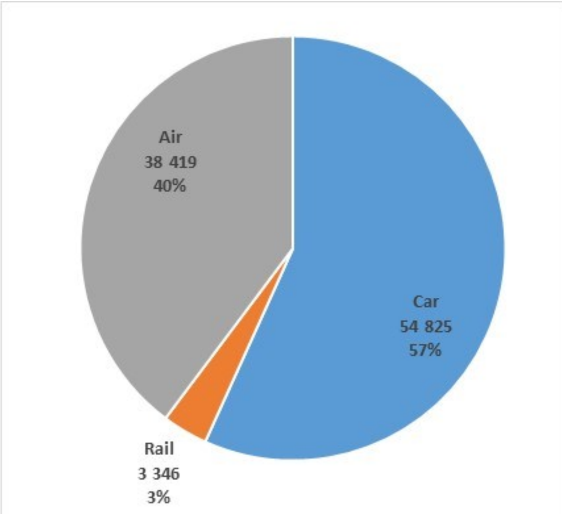
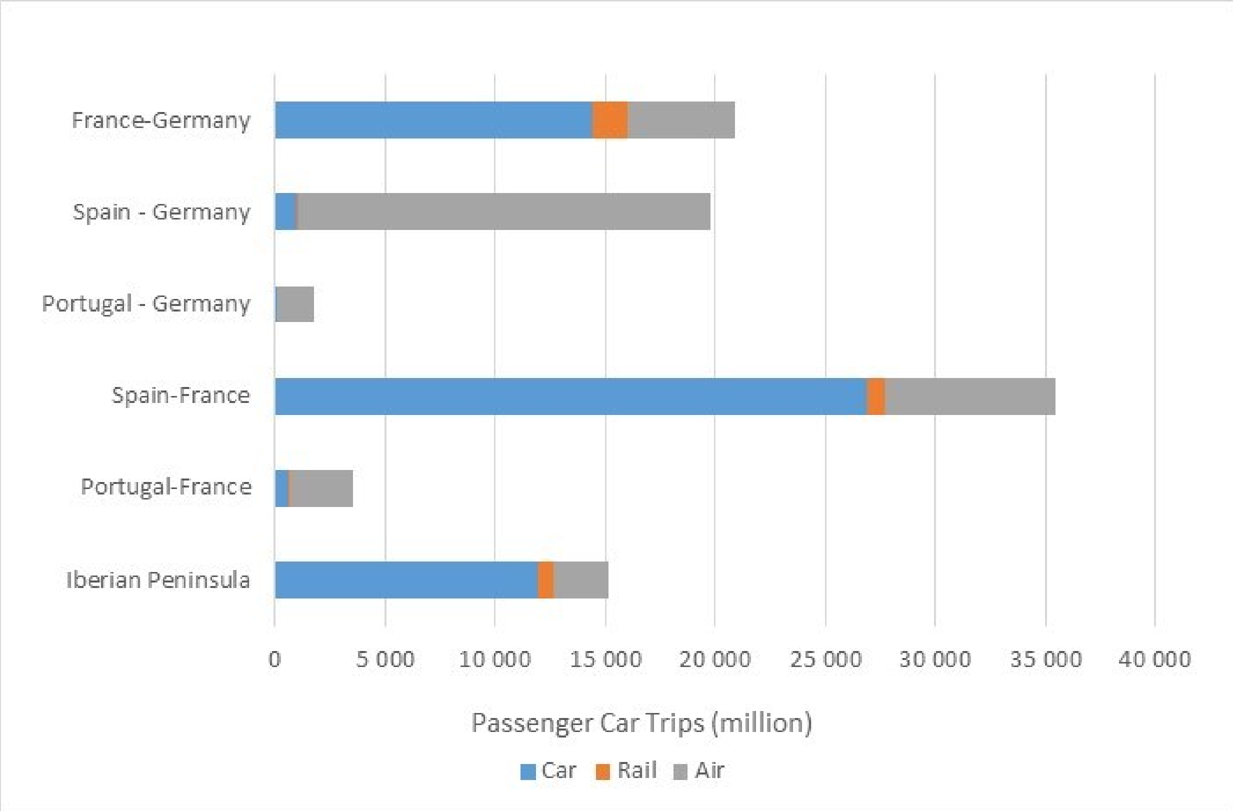


Figure 34: Passenger transport cross border demand in 2010 between corridor countries and modal split

[31] NSTR is the classification used in the TRANS-TOOLS freight module for all modes. Due to the multiple classification schemes for different transport modes, this classification was maintained in order to ensure harmonised results.



Source: ETISplus, 2010, Observatories and RFC4

Figure 35: Cross border passenger flows ('000 pax) between corridor countries

Regional Analysis

In order to understand better the corridor dynamics, the analysis is detailed at regional level (NUTS 2). Only the international flows with origin or destination in corridor regions or within corridor regions are considered.

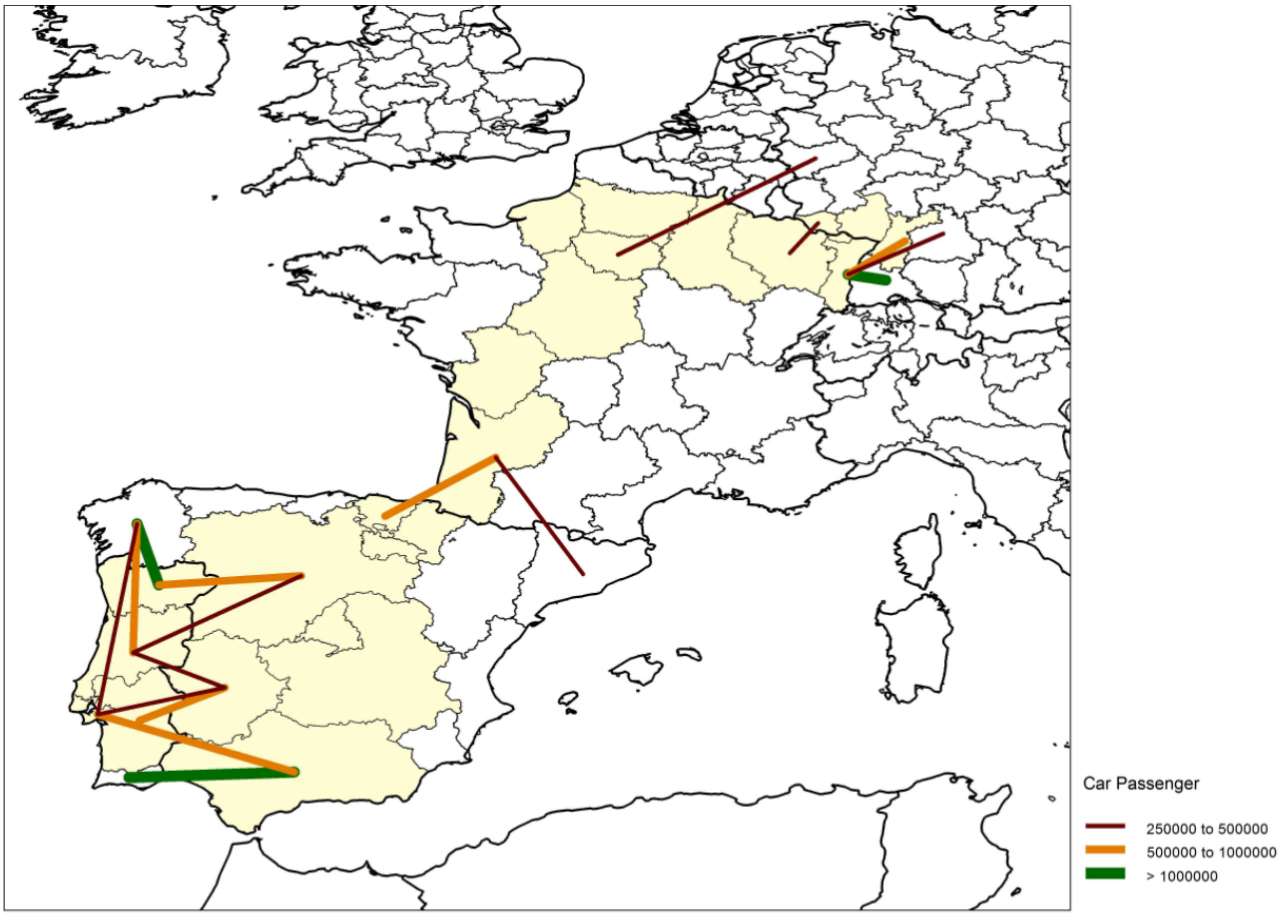
In the figures below, the main O/D pairs for car and rail passenger are detailed. Only flows above a certain threshold are presented, as follows:

For car

- Flows above 1 million passengers /year
- Flows between 500.000 and 1 million passengers /year
- Flows between 250.000 and 500.000 passengers /year

For rail

- Flows above 100.000 passengers /year
- Flows between 50.000 and 100.000 passengers /year
- Flows between 25.000 and 50.000 passengers /year



Source: Consultants elaboration on ETISplus, 2010

Figure 36: Car passenger flows to/from corridor regions

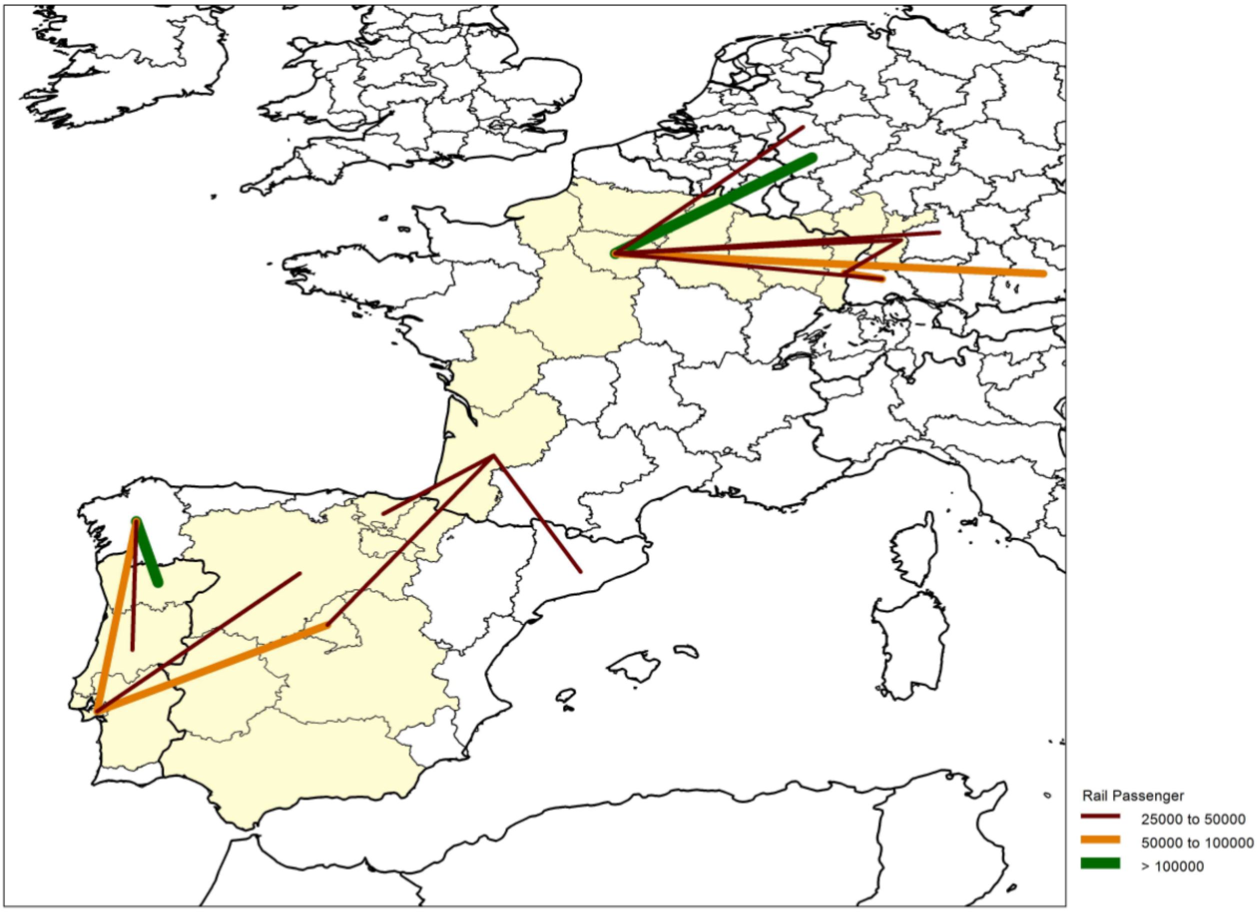
As it could be observed, most of the flows above 1 million refer to O/D pairs where one of the O/D is located out of the corridor regions (i.e. Norte region in Portugal and Galicia in Spain). For flows between 500.000 and 1 million passenger we can observe strong pairs within corridor regions (marked in bold) as well as for flows above 350.000 passenger/year.

NUT 2 region	NUT 2 region	Pax/year (car)
Norte	Galicia	3 689 117
Alsace	Freiburg	2 405 446
Algarve	Andalucia	1 380 945
Alsace	**Karlsruhe**	903 976
Alentejo	**Extremadura**	839 927
Centro (PT)	Galicia	632 538
Norte	**Castilla y León**	600 537
Aquitaine	**Pais Vasco**	596 541
Lisboa	**Andalucia**	513 236
Lisboa	**Extremadura**	432 626
Lisboa	Galicia	391 597
Centro (PT)	**Extremadura**	383 179

Lorraine	**Saarland**	338 691
Aquitaine	Cataluña	301 298
Centro (PT)	**Castilla y León**	283 130
Île de France	Köln	269 927
Alsace	Stuttgart	251 850

Source: ETISplus, 2010

As for rail, in order to visualize current flows at regional level, it was necessary to define lower thresholds, as highlighted in table above.



Source: Consultants elaboration on ETISplus, 2010

Figure 37: Rail passenger flows to/from corridor regions

As it could be observed, the main international flows (above 100.000 passenger/year) refer to flows with one of the O/D located outside the corridor regions.

NUT 2 region	NUT 2 region	Pax/year (rail)
Norte	Galicia	136 548
Île de France	Köln	120 639
Lisboa	Galicia	75 964
Île de France	Oberbayern	55 441

NUT 2 region	NUT 2 region	Pax/year (rail)
Lisboa	**Comunidad de Madrid**	54 765
Alsace	Freiburg	51 785
Île de France	**Stuttgart**	41 251
Centro (PT)	Galicia	41 047
Aquitaine	**Pais Vasco**	40 812
Île de France	Freiburg	40 035
Île de France	Düsseldorf	39 025
Île de France	**Karlsruhe**	32 653
Lisboa	**Castilla y León**	28 156
Alsace	**Karlsruhe**	27 746
Aquitaine	**Comunidad de Madrid**	26 132
Aquitaine	Cataluña	25 732

Source: ETISplus, 2010

7.4.2. Freight Flows

Figure 38 presents the total freight (in 1000 tons/year) exchanged by mode between (only) the countries of the corridor. Air freight represents less than 0,1% of the total tons exchanged. Goods exchanged via inland waterways refer only to Germany and France. Those flows represent almost 6% of the total flows between corridor countries, however flows DE-FR are quite representative (~14%). Rail share on the corridor as a whole is less than 5% of the flows. With almost 75% share, road is the predominant mode within corridor countries. Sea flows represent 15% of the total.

Mode	1000 ton /year
Sea	23 516
Rail	7 585
Road	116 753
IWW	8 704
Air	165
Total freight	**156 723**

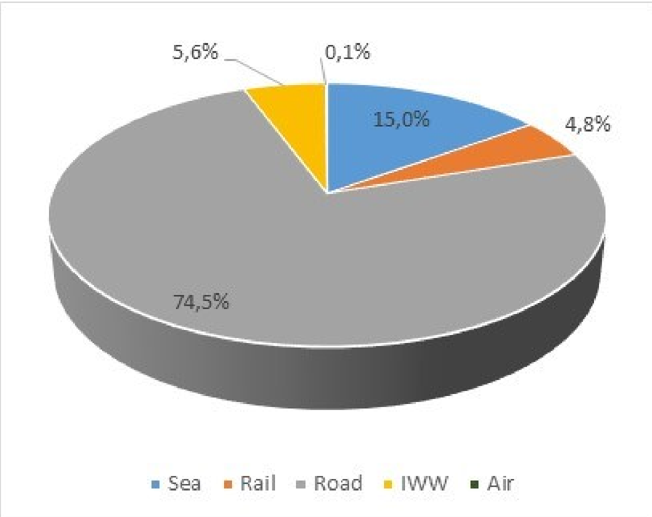
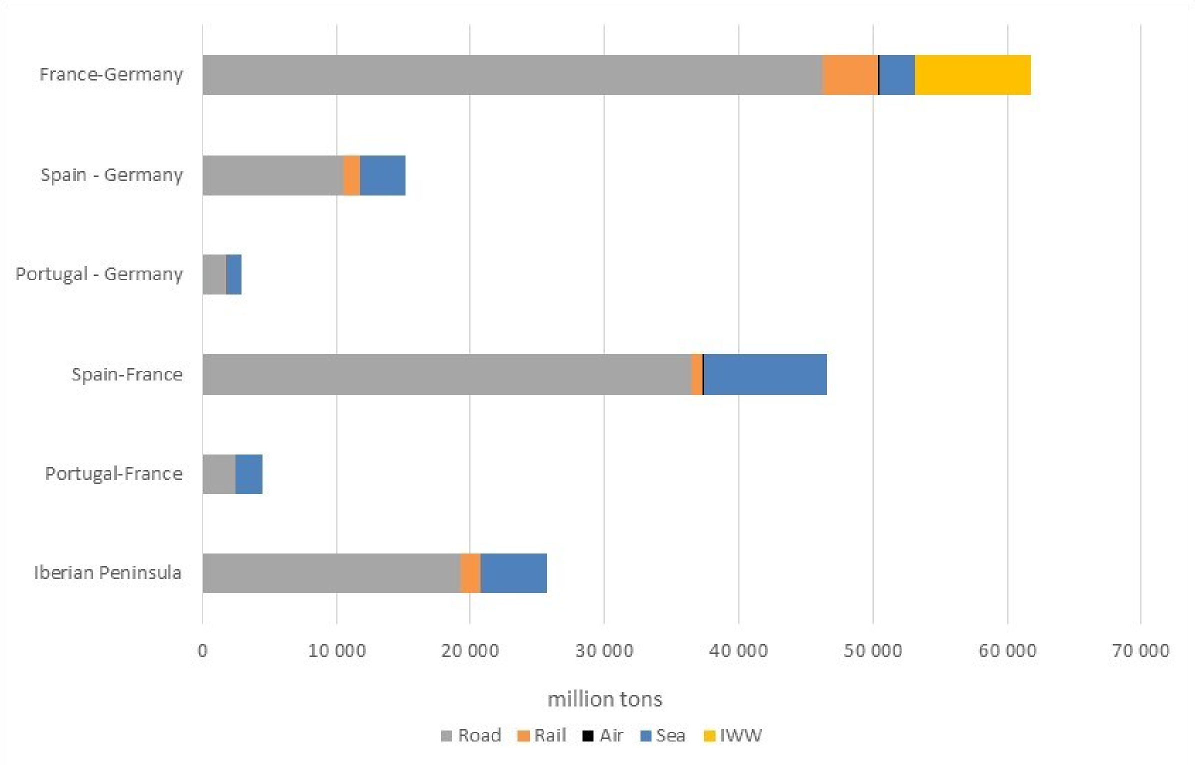


Figure 38: Freight transport demand in 2010 between corridor countries and modal split

Nearly 157 million tons of goods were exchanged between the 4 corridor countries. Main trade flows are noticed between France and Germany (about 2% referring to corridor NUTS regions), France- Spain (about 12% within corridor regions) and Spain-Portugal (with 30% within corridor regions).



Source: ETISplus, 2010, Observatories and RFC4

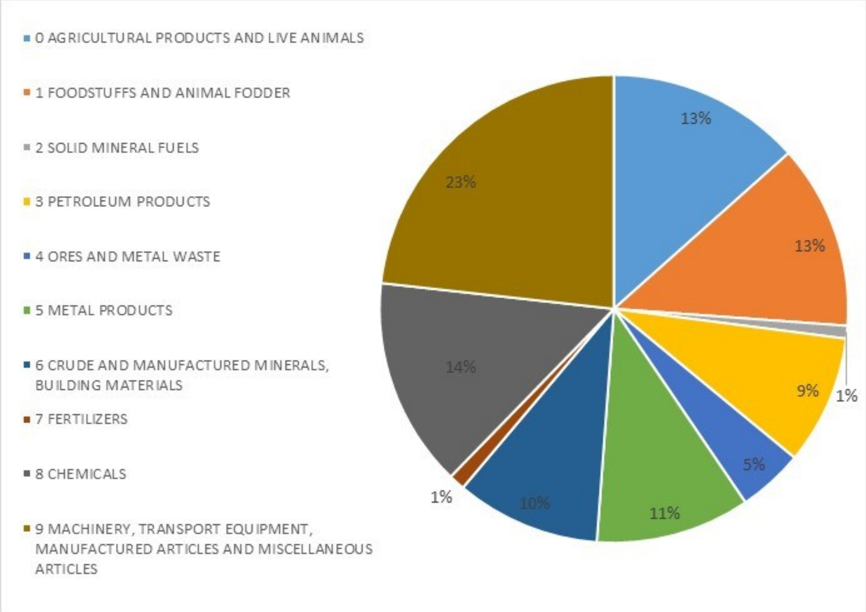
Figure 39: Cross border freight flows ('000 tons) between corridor countries

Four types of goods exchanged between corridor countries are particularly relevant: Machinery, transport equipment, manufactured articles and miscellaneous articles (23%), Metal products (14%) and agricultural products and foodstuff, each one representing 13% of the goods exchanged. Agricultural products are predominant in the flows between France and Portugal and Spain-France, whereas foodstuff is majority between Spain and Portugal and between France with Germany and Spain. The transport of machinery, transport equipment is predominant in the relations of Germany with Portugal (41%) and Spain (27%) as well as between Portugal and France (27%)

Table 30: Tonnages per type of commodity between corridor countries in 2010

Goods Type (NSTR)	1000 tons/year	%
0 AGRICULTURAL PRODUCTS AND LIVE ANIMALS	21 010	13%
1 FOODSTUFFS AND ANIMAL FODDER	19 981	13%
2 SOLID MINERAL FUELS	1 384	1%
3 PETROLEUM PRODUCTS	14 007	9%
4 ORES AND METAL WASTE	7 101	5%
5 METAL PRODUCTS	16 708	11%
6 CRUDE AND MANUFACTURED MINERALS, BUILDING MATERIALS	15 653	10%
7 FERTILIZERS	1 758	1%
8 CHEMICALS	22 701	14%

9 MACHINERY, TRANSPORT EQUIPMENT, MANUFACTURED ARTICLES AND MISCELLANEOUS ARTICLES	36 420	23%
Total	**156 723**	**100%**



Source: ETISplus, 2010

Figure 40: Tonnages per type of commodity in 2010

Regional Analysis

As for passengers, in order to understand better the corridor dynamics, the analysis is detailed at regional level (NUTS 2). Only the international freight incoming or out coming in corridor regions and within corridor regions are considered.

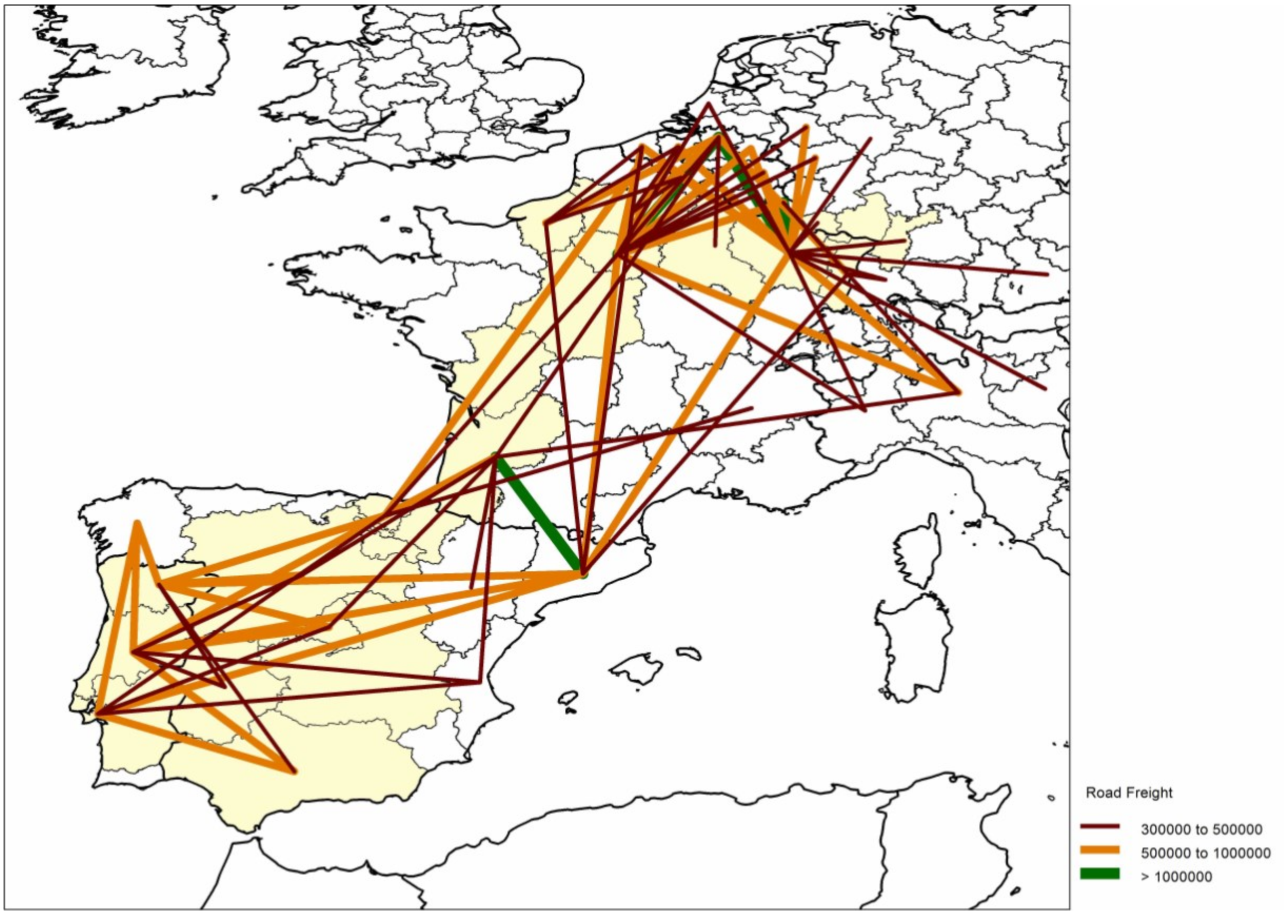
In the figures below, the main O/D pairs for road and rail freight are detailed. Only flows above a certain threshold are presented, as follows:

For road

- Flows above 1 million tons /year
- Flows between 500.000 and 1 million tons /year
- Flows between 300.000 and 500.000 tons /year

For rail

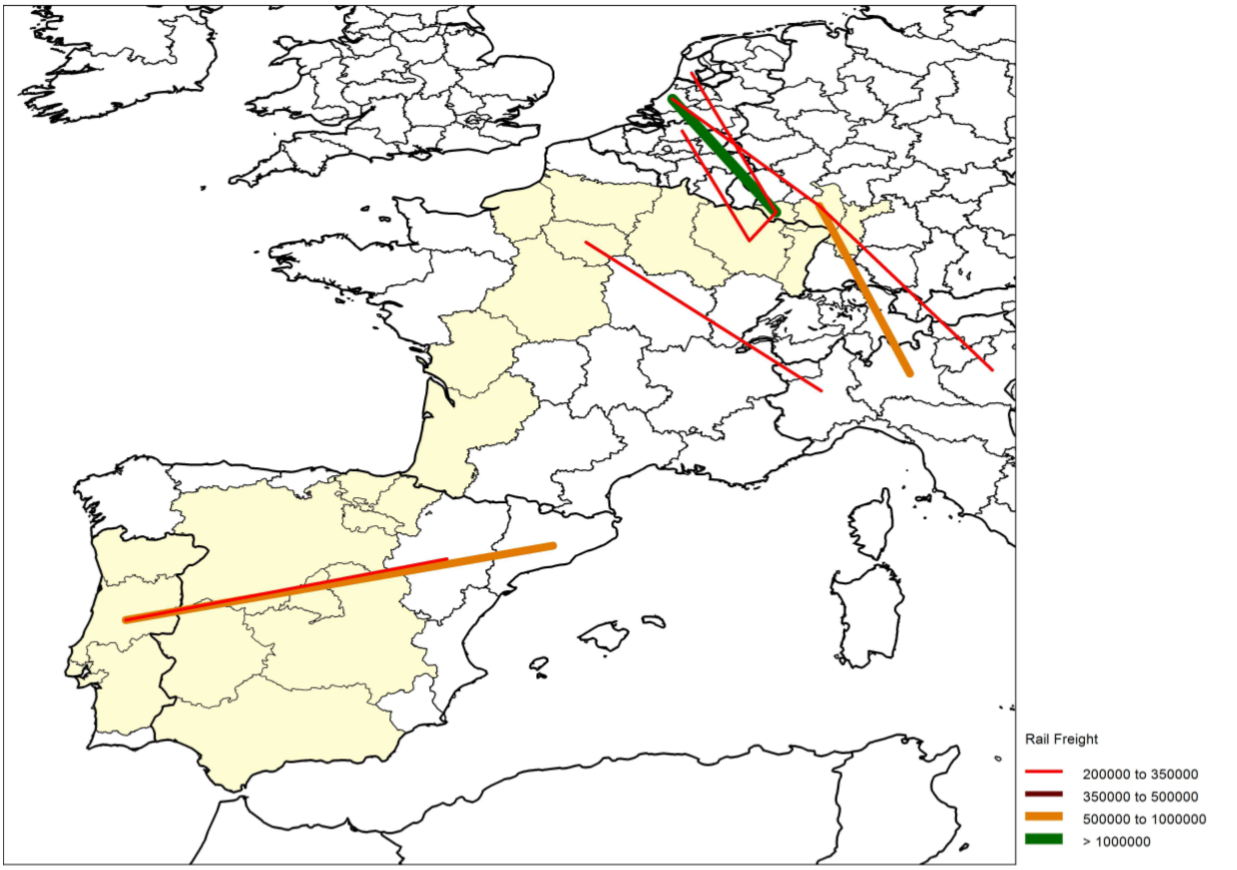
- Flows above 1 million tons /year
- Flows between 500.000 and 1 million tons /year
- Flows between 350.000 and 500.000 tons /year
- Flows between 200.000 and 350.000 tons /year



Source: Consultants elaboration on ETISplus, 2010

Figure 41: Road freight flows to/from corridor regions

NUT 2 region	NUT 2 region	Tons/year (road)
Lorraine	Prov. Antwerpen	1 373 672
Île de France	Prov. Antwerpen	1 358 149
Aquitaine	Cataluña	1 187 524
Luxembourg (Grand-Duché)	Lorraine	1 018 576
Lombardia	Lorraine	916 210
Île de France	Cataluña	845 819
Île de France	Prov. West-Vlaanderen	833 496
Centro (PT)	Galicia	826 304
Île de France	Prov. Oost-Vlaanderen	825 221
Île de France	Prov. Hainaut	814 844
Centro (PT)	Cataluña	793 605
Lorraine	Prov. Oost-Vlaanderen	754 788
Norte	**Pais Vasco**	730 739



Source: Consultants elaboration on ETISplus, 2010

Figure 42: Rail freight flows to/from corridor regions

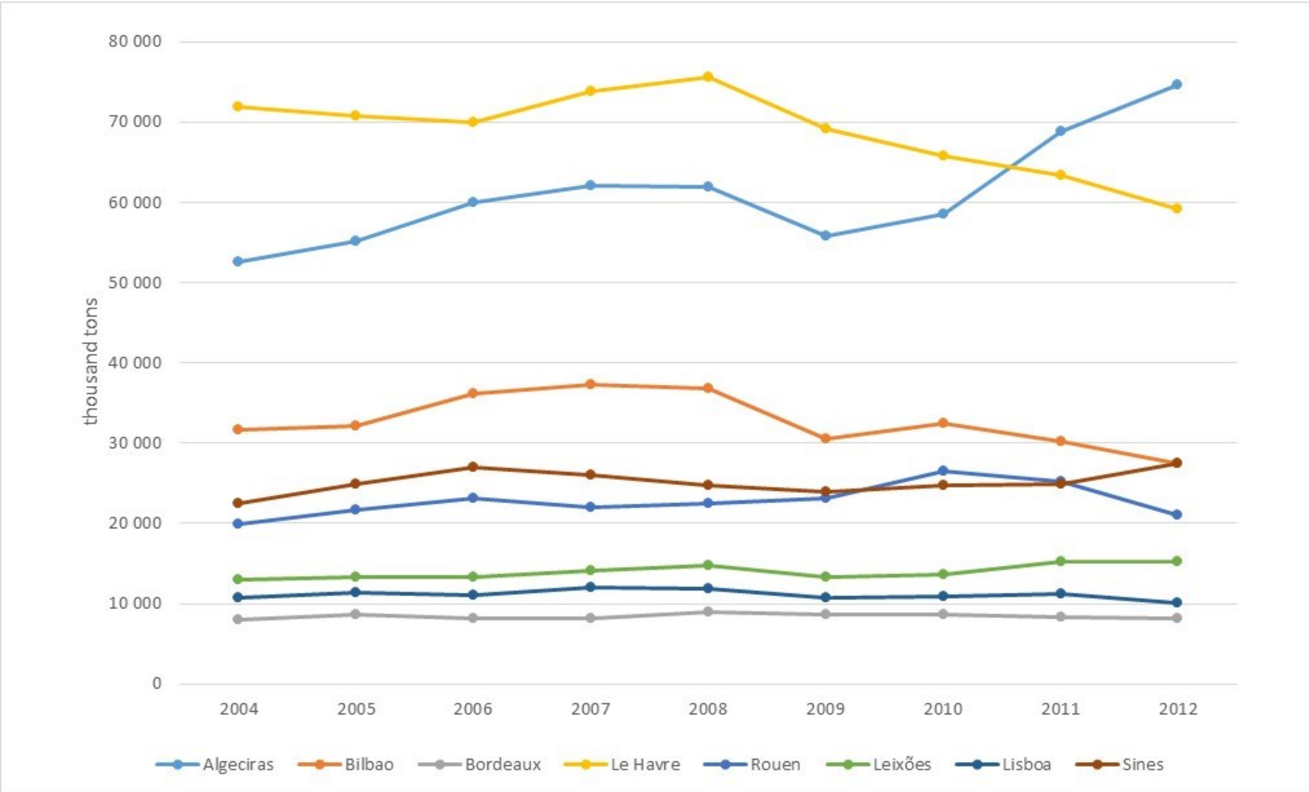
NUT 2 region	NUT 2 region	Tons/year (road)
Zuid-Holland	Saarland	2 072 145
Centro (PT)	Cataluña	936 509
Lombardia	Rheinhessen-Pfalz	641 898
Lorraine	Prov. Antwerpen	333 680
Zuid-Holland	Rheinhessen-Pfalz	289 430
Piemonte	Île de France	274 326
Noord-Holland	Saarland	248 287
Veneto	Rheinhessen-Pfalz	229 002
Centro (PT)	Aragón	216 164
Lorraine	**Saarland**	206 089
Lorraine	Düsseldorf	169 421
Alsace	Prov. Antwerpen	148 688
Lorraine	Darmstadt	138 753
Alsace	Gießen	117 591
Luxembourg (Grand-Duché)	Aquitaine	113 108
Lorraine	Cataluña	111 359
Norte	Cataluña	101 198
Île de France	**Comunidad de Madrid**	100 204

7.4.3. Regional information

The corridor is defined as multimodal network connecting a series of nodes. From the perspective of traffic movement, any transport flows taking place within the corridor will make use of the full range of available infrastructure. Long distance flows are either obliged to use or will choose to use sequences of modes, linked via multimodal nodes. Transport service providers are also engaged with door to door transport, often organised across modes, but within this multimodal picture, the basic transport operations rely upon suitable transport infrastructure, and modal transfer points.

Herewith we focus on seaports, airports and core nodes (terminals).

Maritime Ports



Source: Eurostat

Figure 43. Evolution of freight throughput in the core ports

Algeciras is the busiest Port of Spain and one of the most important ports in Europe, ranking as the 5th EU port in traffic. Algeciras is a common node to Atlantic and Mediterranean corridors with a key role in terms of the EU neighbourhood strategies, particularly with North Africa and Morocco. The Port of Algeciras Bay is currently the only southern European port capable to accommodate and serve the 18,000 TEU "Triple E" vessels, integrated in the Asia-Europe service (AE-10) of Maersk Line. This represents a great opportunity for the Atlantic corridor. About 85 Mt transported in Algeciras Port during 2013: 53,1 Mt (62,1%) were containers, 24 Mt (28,1%) were liquid bulks, 6,9 Mt (8,03 %) were non-container general cargo and 1,5 Mt (1,8%) were dry bulk. 93% of the containers of Algeciras were in transit and only 7% were import-export containers. The rail access to Algeciras Port is provided by Bobadilla-Algeciras line. It is a non-electrified single-track line and has a maximum slope of 24 ‰ from Bobadilla to Algeciras and 23 ‰ in the opposite direction.

The Port of **Bilbao** is located on the eastern end of the Bay of Biscay in the north of the Iberian Peninsula. The port is located in the Nervion estuary, in the municipalities of Ziérbena, Santurce, Portugalete, Sestao, Barakaldo and Bilbao. It has 17 km of quays with up to 32 meters of maximum depth and 372 ha of land area. A total amount of 29,6 Mt were transported in Bilbao Port during 2013: 15,7 Mt (53,2%) were liquid bulk, 6,3 Mt (21,4%) container general cargo, 4,4 Mt (14,9%) were dry bulk and 3,1 Mt (10,4 %) non-container general cargo. Bilbao Port has 5 road access points connected to Cantabrian motorway A-8. As for railways, Bilbao Port is connected to Miranda de Ebro – Bilbao line. This railway line has Iberian gauge and it is electrified. It has a maximum slope of 18‰ from Bilbao Port to Miranda de Ebro and 12 ‰ in the opposite direction.

Le Havre, the second French port and first container port in France, is a member of HAROPA (ports of Le Havre, Rouen and Paris). It covers an area of 10,000 ha and can hosts 460m long and 80m large ships. Port traffics amounted in 2013 to 67.2 Mt with 37.9Mt liquid bulk (56.5% of the total traffic, mostly crude oil), 24.8 Mt of containers (37.0%, 2.5M TEUs), 2.9 Mt dry bulk (4.4%) and 1.5 Mt of RoRo (2.2%). The port benefits from its location on the Channel next to the mouth of the Seine with easy access to the Paris area, one of the first regional markets in Europe by road, rail and waterway. The Port 2000 extension opened in 2006 and gives the port a capacity of 6 million TEU. However, there is to this day no direct IWW access to Port 2000 so that goods must either be transferred by rail shuttle to the inland port or carried by sea with special vessels to the older part of the port (North route) or to the Seine (South route). Several projects to solve this issue are being studied, including a new lock between Port 2000 and the inland port, a swell protected river path between Port 2000 and former outer port.

Rouen, accessible to maritime ships through the Seine (draught 10-11m up to Rouen), is both a maritime and inland port (22.4Mt of maritime traffic and 5.5Mt of IWW traffic in 2013). The port is specialised in dry (41.0% of the 2012 total, mostly grain) and liquid bulk (49.6%, mostly refined oil products). Other products include containers (4.7%), RoRo (0.4%) and other general cargo (4.3%). To allow handymax ships access to the Rouen (11-12m draught), the port is carrying out dredging of the river.

Rail access to Le Havre and Rouen is hindered by heavy passenger train traffic on the Paris-Normandy line between Paris and Mantes-la-Jolie. In the future, the Paris-Serqueux line is to become the main rail access to the ports of Normandy but it requires the Gisors-Serqueux link to be upgraded and electrified. IWW traffic on the Seine between the HAROPA ports witnessed a strong growth to reach 22.1 Mt in 2012 with container traffic on the Seine growing from 40,000 TEU in 2002 to over 250,000 TEUs in 2012.

Port of Bordeaux is composed of 7 specialised terminals located around the mouth of river Garonne:

- Verdon terminal is a deep sea port (12.5m draught), it benefits from 200ha of available land for logistics and industrial activities. It is specialised in containers and heavy parcels. Although it is the furthest terminal from the city of Bordeaux, rail connections link the terminal to the city.
- Pauillac terminal is used for oil products imports as well as for Airbus logistics, in particular to carry elements of the A380 airplane.
- Blaye is a small terminal dedicated to liquid and dry bulk.
- Ambès terminal is located at the confluence of rivers Dordogne and Garonne and specialised in oil and chemical products.
- Grattequina terminal, used mainly for heavy parcels (wind turbines), is being developed for bigger parcels and construction materials.
- Brassens terminal is a logistical centre through which bulk, containers, forest products and heavy parcels are shipped.

- Bordeaux terminal lies in the city itself and is used for cruises.

Port traffic at Bordeaux amounted to 9.1Mt in 2013 and is composed of liquid bulk at 60.5% of the 2012 traffic (mainly refined oil products), of dry bulk at 30.2% (mainly grain) as well as containers (7.5%) and other general cargo (1.8%).

Leixões port had a total traffic volume of 17,1 million tons in 2013 ports, 37% of which was containerized cargo, 46% liquid bulk and 12% solid bulk. It connects to rail and road network and includes its own logistic platform. The port is connected to the Portuguese rail network by the Leixões circular line. In 2013, utilisation rates in Leixões terminals reach the 93% for containers and 82% for liquid bulks. The entry in operation of the Logistics Platform is expected to impact positively on the level of the container cargo handled in the Container Terminal. Additionally it should be referred that Iron Moncorvo mines forecasts an output of about 10 million tons/year can be achieved and transported by different alternatives that involves rail and inland waterway that will connect to Leixões port.

Lisbon Port facilities are located inside the capital area along both banks of Tagus river. It has a strong demand as it centralizes many logistic chains for all the country. In 2013, 11,9 million tons of cargo have been shipped of which 45% were containerized. Port of Lisbon has three container terminals with different characteristics and utilization levels: Alcântara terminal, deep sea and already with utilization above the 70% ; Santa Apolónia terminal, short sea, with 50% and Poço do Bispo (mainly insular traffic) around 80% utilization rate. Although there is still available capacity in global terms (overall utilization is 60%), a bottleneck can be identified at Alcântara terminal. Strikes of dockers also had influence in the container terminals throughput last years and without this contingency the container terminals utilization rates would be even higher. Connectivity with train is constraint due to maximum train length and maximum tonnage in the section serving the port. On the other had the lack of a direct rail south connection to the Spanish border has a considerable detour (of more than 135km)

Sines Port is located in the southern part of the Portuguese Atlantic coast, presently holds a relevant position in the world's shipping market, with direct lines to/from major production/consumption centres in the world (many of which use large vessels of over 14,000 TEU of cargo capacity), namely to/from two of the most dynamic markets worldwide: Asia and South America. The port has seen recently (2013) an impressive increasing traffic both due to its hub & spoke (transhipment for large transatlantic vessels), its cost-efficiency advantages, and the performance posted by the Container Terminal sustained by a positive evolution in transhipment and import/export traffic from/to the Iberian market. In 2013, 36,5 tons of cargo have been shipped through Sines. The Container Terminal, with 16 regular line services that cover the main regions of the globe, handled 931 thousand TEU. These figures strengthen the port's leading position in the domestic sector and at Iberian level, to the fifth place in the ranking of goods and container traffic. More than 73% of the Sines inland traffic uses the rail connection. Even if there is a strong use of this railway line, there are several restrictions and above all the considerable detour mainly due to two missing links: Évora Norte/Elvas-Caia (91km) and Sines/Grândola Norte (about 10km).

Other core and comprehensive ports represent important link/nodes in both the rail and road networks of the Atlantic Corridor. As "last miles" for closing the corridor (or the gap), by attracting part of the road flows, as well as by deepening its hinterlands and attracting, nearby, new navigating lines, both from short and deep sea routes, these ports are important feeders in the corridor. Brief presentation of these ports is included in the Annex "Maritime Ports".

Table 31: Seaport throughput in Corridor,2013 (core ports in corridor)

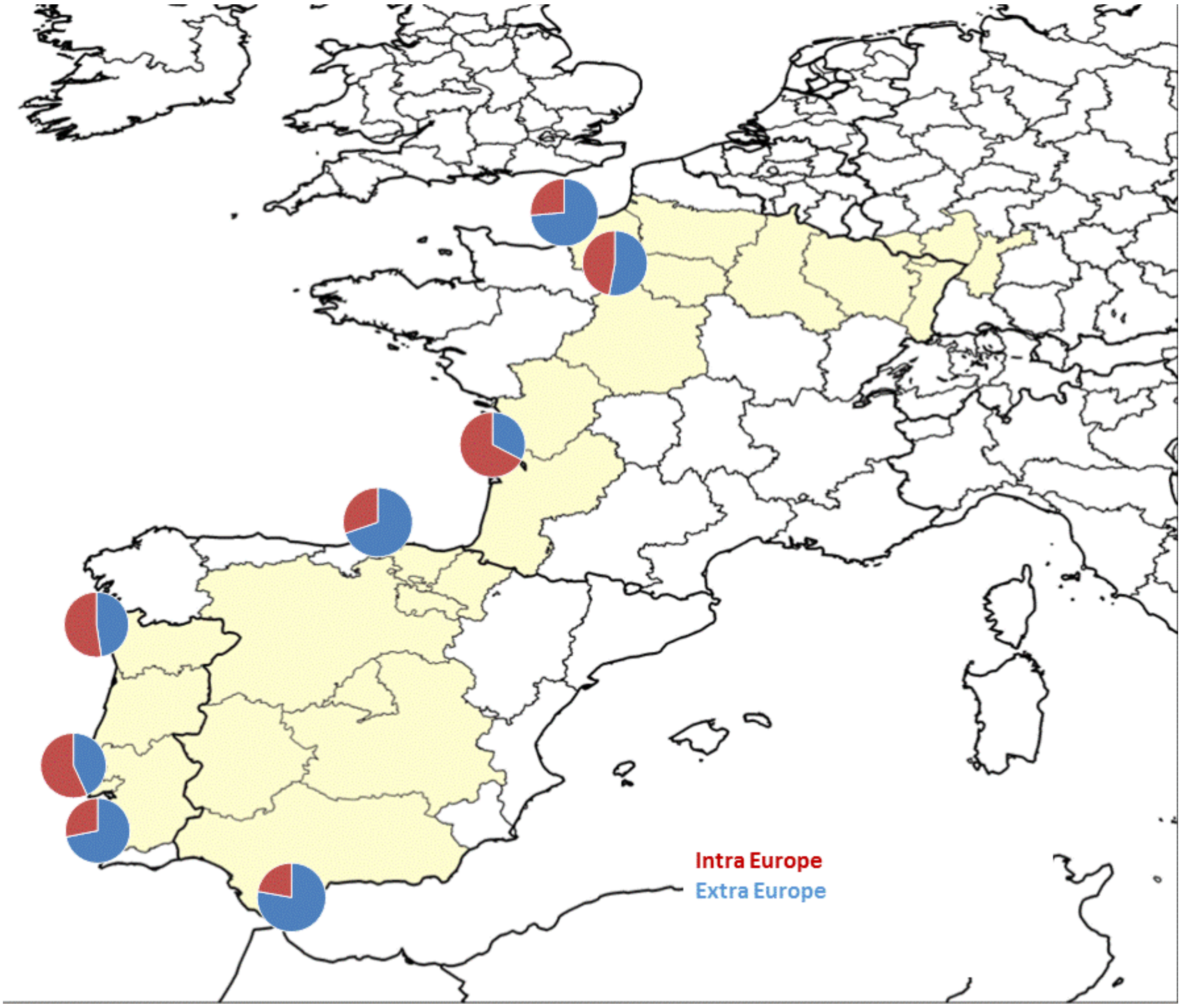
Core Ports	Dry Bulk	Liquid bulk	Containers	RoRo	Other General Cargo	Total	Container Units	Passengers
	000T	000T	000T	000T	000T	000T	TEU	
Algeciras	1 597,60	24 181,50	54 044,10	5 739,40	294,50	85 857,10	4 349 755,00	5 173 919,00
Bilbao	4 421,60	15 761,60	6 317,10	887,10	2 213,60	29 601,00	606 827,00	141 979,00
Bordeaux	2 471,30	4 958,10	614,70	0,00	148,20	8 192,30	63 285,00	56 945,00
Le Havre[32]	2 940,90	37 926,72	24 834,35	1 456,66	13,37	67 172,00	2 485 660,0	756 709,00
Rouen[26]	8 679,80	10 503,80	990,50	78,40	907,10	21 159,60	127 528,00	38 647,00
Leixões	2 095,95	7 824,51	6 293,05	74,88	890,64	17 179,03	625 480,00	46 620,00
Lisboa	4 814,74	1 643,85	5 418,82	19,75	93,74	11 990,89	547 047,00	559 434,00
Sines	4 615,43	19 705,91	12 038,85	0,046	153,55	36 513,78	931 035,75	
Total	**31 637,32**	**122 505,99**	**110 551,46**	**8 256,23**	**4 714,69**	**277 665,71**	**9 736 617,75**	**6 774 253,00**

Source: Port Administrations

[32] Data includes maritime and inland freight

Given the fact that not all the data is available for all ports for 2013, it was opt to detail the analysis using the 2012 Eurostat data.

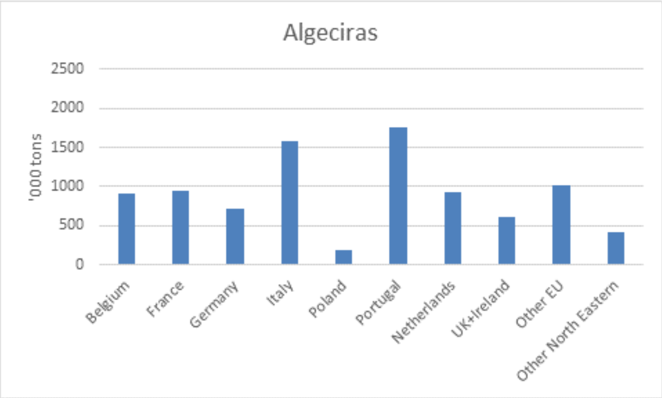
In 2012, the total freight volume passing through the core ports was 237 million tons. About 32% concern intra EU goods shipping. In the figure below it is highlighted the rate of EU internal flows.

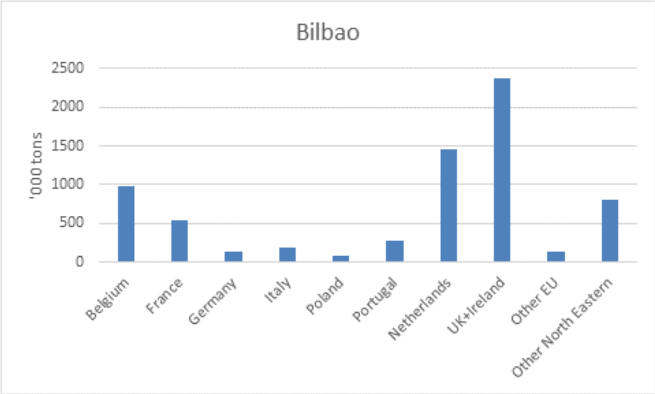


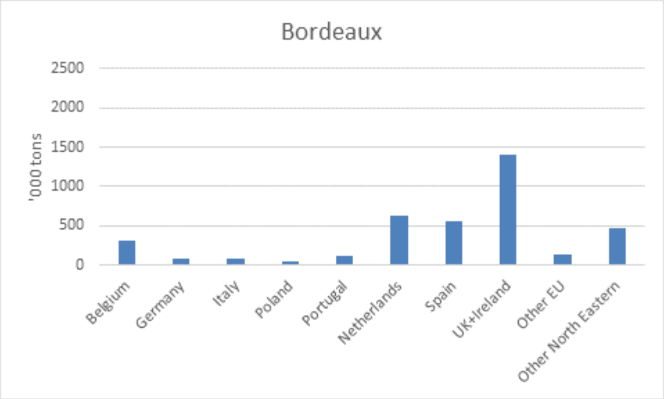
Source: EUROSTAT, 2012

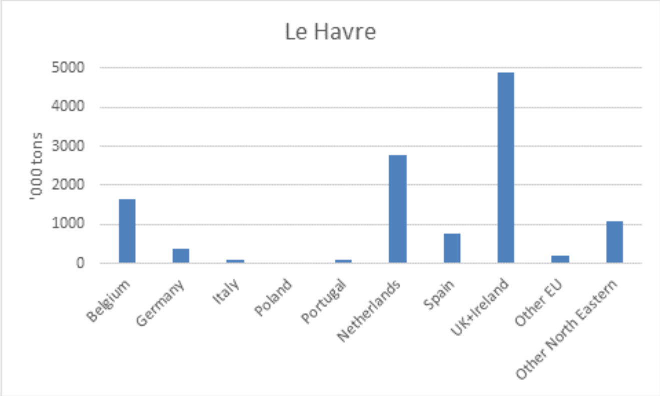
Figure 44: Core ports 2012 – rate of intra EU freight volume

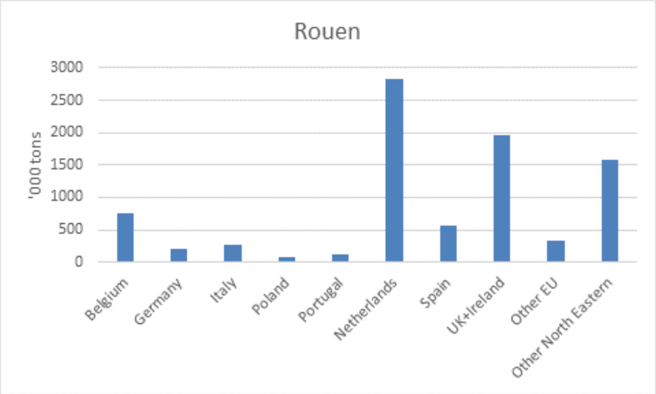
The main intra EU flows from each of the ports is below highlighted. Globally, it is highlighted the relevance of the Netherlands and UK+Ireland market for majority of Atlantic ports. For Algeciras port, Italy stands as a reference market, however most of this flow goes through the MED corridor.

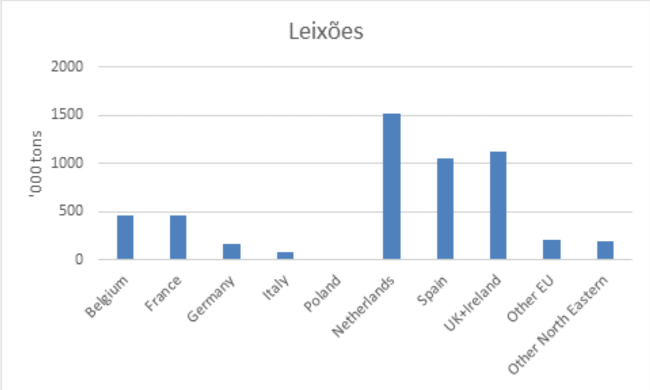


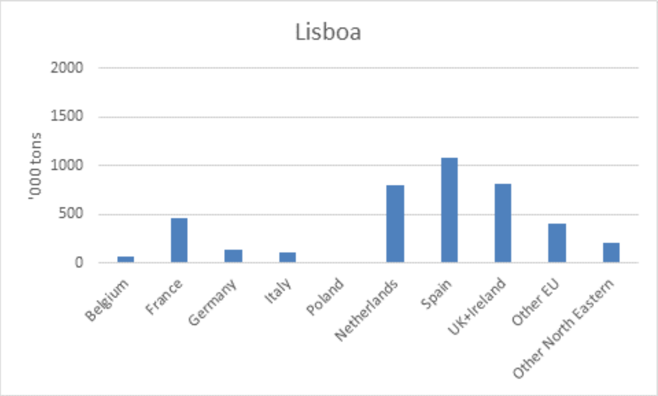


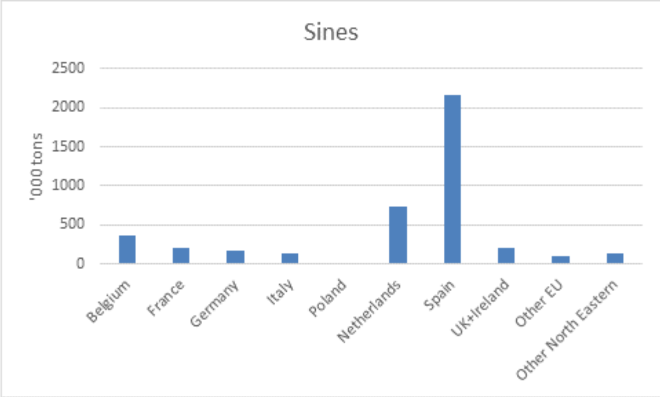






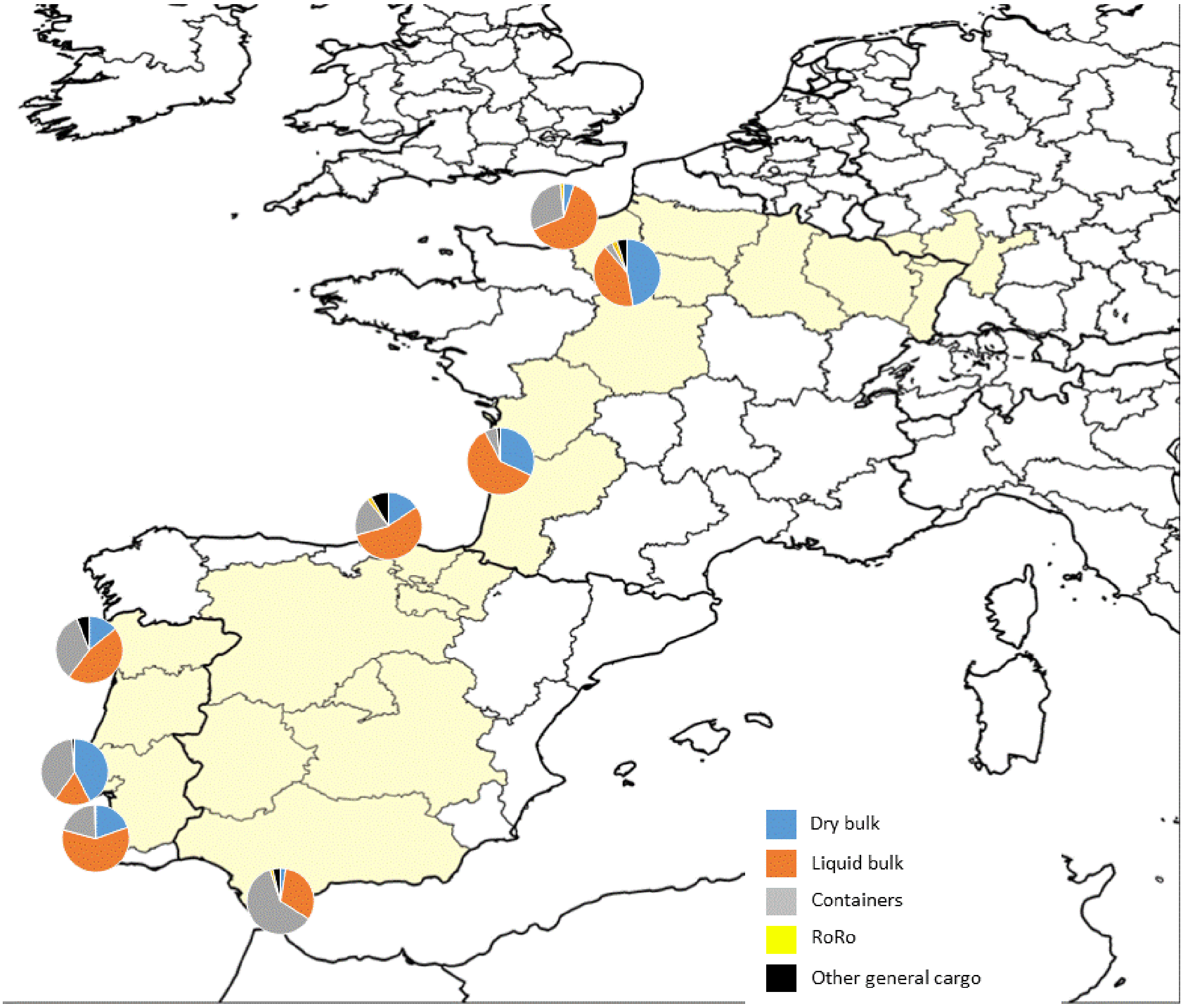






Source: EUROSTAT, 2012

In the following picture the volumes in function of the category of goods (i.e. bulk, dry, containers, RoRo) are presented.



Source: EUROSTAT, 2012

Once the volume of containers that are transhipped do not impact on the land corridor infrastructures, it was aimed to identify the volumes of transhipment in each of the ports and subsequently to evaluate (whenever available) the modal share for the hinterland flows. The following picture highlights transhipment rates in the Atlantic ports. Transhipment is relevant mainly for Algeciras and Sines. In fact those ports, with the improvement of rail connections, count with additional opportunities to transfer flows to Atlantic Corridor, capturing a share of the traffic from Asia with destination Europe that actually went through the northern ports. Overall, of the total volumes in core ports, nearly 67% are hinterland flows to corridor infrastructure. Ports represent as such large traffic generators to the corridor.

In what concerns the modal shares for hinterland flows, we focused on road, rail and IWW (i.e. not considering pipe transport). As it could be observed, with some few exceptions (i.e. Sines) road is predominant in comparison with other modes. In the port of Rouen it should be noticed the share of inland waterway traffic.

ambos puertos cuentan con potencial/oportunidad para incorporar parte del transbordo al corredor, canalizando de esta forma parte del tráfico de mercancías procedente de Asia que entra a Europa a través de los puertos del denominado Northern Range

Table 32: Hinterland trafic

Core Ports	Transhipped	Hinterland	Hinterland			Reference year
			road	rail	other (incl iww)	
Algeciras	60%	40%	87%	3%[33]	10%	2013
Bilbao	9%	91%	74%	7%	18%	2012
Bordeaux	~15%	~85%	94%	5%	1%	2011
Le Havre	20%	80%	59%	8%	13%	2012
Rouen	0	N/A	73%	6%	21%	2013
Leixões	2%	98%	97%	3%	0%**	2013
Lisboa	0,4%	99,6%	87%	13%	0%	2013
Sines	69%	31%	21%	71%	8%*	2013

*mainly national short sea shipping

** expected to grow in future after acting on the Douro river bottlenecks

As it was noticed above, the total traffic in the core ports already increased from 2012 to 2013. All ports have large expectations for the coming period (2020), including a variety of projects concerning the improvement of respective infrastructure capacities and (particularly) in Spain with the improvement of rail connections including train length and electrification of Algeciras – Bobadilla line, and in Portugal with the completion of the missing connection Évora-Caia (border), which will allow to reduce substantially the current detour that affects mainly the ports of Lisboa and Sines (as well as Setubal). The development of Atlantic ports (including its adaptations to the challenges of the widening of Panama channel) as well as the improvements (elimination of bottlenecks and completion of missing links) on the side of rail connections to these ports would contribute to increase the competitiveness of the overall Atlantic ports and modal share in favour of rail freight.

Inland Ports

Table 33: Inland ports throughput in Corridor (core inland ports in corridor)

Core inland port	Total traffic (tonnes, 2013)	Road	Rail	IWW
Metz	3 914 000	51%	1%	48%
Paris	23 200 000		9%	91%
Strasbourg	16 760 000	42%	11%	47%
Mannheim [34]	8 786 000	64%	8%	24%
Total	**48 746 000**			

[33] In 2013-2014, 36 300 annual TEU were moved from Algeciras using rail

[34] Modal split in the hinterland referring to 2004, in addition 3% combined modes. Traffic in Ludwigshafen inland port (not a core port) was in 2013 in the order of 7,6 million tons

Source: Annual Reports, TENtec

Ports of Paris is a member of HAROPA (Le Havre, Rouen and Paris ports) and the first inland port in France with 21.2Mt of IWW traffic in 2013 and 1.3 TEUs in 2011. It is composed of 70 ports on 3 rivers of the Paris area (Seine, Oise and Marne). The main ports are:

- Gennevilliers, the first port of the area with over 20Mt traffic all modes included, 401ha and trimodal access, is located on the Seine downstream from Paris. It carries extensive containers traffic on the Seine to and from Le Havre (210,000 TEUs in 2011) and also hosts a rail-road terminal (RRT).
- Bonneuil-sur-Marne comes second with 1.2 Mt waterway traffic in 2008 and 186ha. It is trimodal and lies on the Marne, upstream from Paris, it is mainly used for building materials and activities but also contains important combined transport activities between waterway and road (25,000 TEUs in 2011) but also road and rail with the second RRT in the Paris area (60,000 units shifted in 2013). The port suffers from an inadequate road access through residential areas and therefore supports the project to lengthen the RN406 expressway to the port.
- Limay is the third trimodal port and covers an area of 125ha. As Gennevilliers, it is located on the Seine downstream from Paris. It is used for building and recycling activities, food products, logistics and containers (10,000 TEUs in 2011).

New Port of Metz (Nouveau port de Metz) is the main port of the *Ports de Moselle* managed by the CCI (Chambre de Commerce et d'Industrie) de la Moselle together with the ports of Thionville-Illange and Metz-Mazerolle. Nouveau Port de Metz is the 6th inland port in France with 3.9Mt in 2013 and the first for grain with 3.6Mt (90.9% of the total 2013 traffic for the port) but is also used for building material (6.4%), fertilizer (1.5%), fuel oil (0.7%) and sodium chloride (0.5%).The port is located on the river Moselle which is CEMT Vb from the Rhine to Neuves-Maisons, south of Nancy, offering IWW connections to Germany and the Benelux countries.

Port of Strasbourg is composed of ports along a 100km stretch of the Rhine from the port of Lauterbourg at the far north of Alsace to the port Markolsheim in the south. In 2013 total waterway traffic of the port amounted to 7.96Mt with 36.4% of gravel, 21.0% of oil products, 16.2% of grain and 13.9% of manufactured products. The main port is located at Strasbourg on a 1065ha area (including 203ha of water), it is a trimodal port with 150km of railways and 40km of roads. It also includes a rail-road terminal (25,000 TEU in 2009).

The port of Mannheim on the Rhine is the largest inland port in Germany in terms of area (1,131ha). It includes 14 port basins and 3 river docks on 4 port areas (Trade Port, Rheinau Port, Altrhein Port and Industrial Port). In 2013 waterway traffic amounted to 8.8Mt.

Airports

More than 160 million passengers were moved in the corridor core airports. Roissy CGDand Madrid ranks respectively as 7th and 19th world busiest passenger airports. Roissy CDG is also a major hub for air freight ranking as the 6th worldwide airport

Table 34: Movements in the core airports

	Pax (2013) nr	Freight (2013) tons
Bilbao	3 800 789	2 536
Madrid - Barajas	39 729 027	345 802
Bordeaux-Merignac	4 574 357	5 909
Paris - Charles de Gaulle	62 000 000	1 111 921
Paris - Orly	28 300 000	52 177
Lisboa	15 992 907	88 399
Porto	6 321 899	34 271
Total	**160 718 979**	**1 641 015**

Source: Airports (data upload in TENtec)

Terminals

Freight terminals and logistics areas are key to access intermodal freight transport services and consequently to ensure efficient and competitive intermodal supply chains.

Together with the RRT belonging to the core network, other rail-road, port terminals and respective logistic platforms, as well as rail –rail terminals are critical connecting nodes for the right functioning of corridor.

	Terminal
Germany	Ludwigshafen Kaiserworthhafen (core RRT)
	Ludwigshafen KTL (core RRT)
	Mannheim Muhlauhafen (core RRT)
	Mannheim-Handelshafen (core RRT)
	Mannheim MCT (core RRT)
	Mannheim marshalling yard
France	Bordeaux Hourcade (core RRT)
	Grand Port Maritime de Bordeaux – Bassens
	Le Havre port terminals (core RRT)
	Le Havre Terminal Trimodal (under construction)
	Bourget marshalling yard
	Woippy marshalling yard
	Valenton (core RRT)
	Saint Pierre des Corps (Tours) sidings
	Terminal de Cognac
	Port de Bayonne
	Terminal de Bayonne – Mouguerre
	Hendaye terminal (cross border)
	Bonneuil-sur-Marne (core RRT)
	Noisy-le-Sec (core RRT)
	Gennevilliers (core RRT)
	Strasbourg CT Nord (core RRT)
	Strasbourg CT Sud (core RRT)
Spain	Bilbao Dry Port - Pancorbo (core RRT)
	Madrid Abroñigal (core RRT)
	Madrid-Vicálvaro (core RRT)

	Terminal
	Madrid Aranjuez (core RRT)
	Madrid Puerto Seco de Coslada (core RRT)
	Terminal Irún Mercancías (cross border)
	Terminal de Pasaia
	Terminal de Vitoria-Júndiz
	Córdoba (core RRT)
	Terminal Complejo de Valladolid (core RRT)
	Alcázar de San Juan (core RRT)
	Antequera (core RRT)
	Terminal de San Roque – La Línea Mercancías
	Badajoz (cross border)
	Salamanca (cross border)
	Terminals of Algecira
Portugal	Poceirão (RRT) – at present only Rail Terminal
	Port of Leixões and Logistic Platform of Leixões
	Aveiro Port and its logistic platforms ZALI M- Logistic and Industrial Maritime Zone, and Cacia Dry Port
	Pampilhosa terminal
	Entroncamento Terminal (TVT)
	MSC terminal (Entroncamento)
	Bobadela Terminal
	Setubal Port
	ZILS (core RRT)
	Sines Port

Due to the different track gauges between Iberian Peninsula and rest of EU, Irun-Hendaye terminal stands as a critical node for Atlantic, with the necessary transhipment of cargo and/or axle change with an operation area for gauge change (operated by Transfesa, in Hendaye) and another operation area for transfer facilities in Irún.

7.5. Overview on Existing Forecasts

7.5.1. Available national forecasts

In the following table available national forecasts are presented. They show significant increases, leading to the approximate doubling of French volumes for both road and rail, and for Spanish rail. Seaport traffic is also expected to grow at a rapid rate, with expected volumes expected to reach 650 M tonnes compared to 422 million in 2012.

Table 35: Available national freight forecasts

	DE	FR	ES	PT
Year	*2030*	*2030*	2024	*2020*
Source	*Verflechtungsprognose 2030*	*CGDD*	Logistic Strategy of Spain	*GTIEVA/PETI +3*
Road tkm (10^9)	437,3	426.0	244.8	No homogenous

	DE	FR	ES	PT
				forecast available
Rail tkm (10^9)	107,6	79.4	25.8	No homogenous forecast available
IWT tkm (10^9)	62,3	10.7[35]	No homogenous forecast available	-
Seaport Tonnes (k. Tonnes)		No homogenous forecast available	650,135	No homogenous forecast available [36]
Seaport LOLO (k. Tonnes)		No homogenous forecast available	No homogenous forecast available	No homogenous forecast available
Seaport RORO (k. Tonnes)		No homogenous forecast available	No homogenous forecast available	No homogenous forecast available
Airports Tonnes		No homogenous forecast available	869,492	No homogenous forecast available

In Germany, the ITP and BVU conducted in 2007 (BVWP, 2007) the study for the prognosis of the transport flows up to 2025 on behalf of the Ministry of Transport and Infrastructure. This study provided detailed results for the projection of passenger and transport flows with 2004 as the base year based on the socioeconomic assumptions presented in the previous section and a set of policies, including all expected infrastructural developments (as defined in the year of the study).

Based on the 2004 values, road is the dominant mode for freight transport with 1.45 billion tonnes (72.2% of the total transport), followed by rail with 0.32 billion tonnes (16%) and inland waterways with 0.24 billion tonnes (11.7%). By 2025, national estimations expect the road volumes to increase by on average 2% annually, reaching a share of almost 76%. Rail follows a comparable trend, however, with a lower growth of 1.4% pa and 14.5% of the modal split. Both road and rail in this forecasting draw demand from inland waterways, which grow by 0.9% pa and by 2025 have a share of 9.5%. The same trend is also observed for freight performance measured in tonne-km.

EU reference scenario forecasts to 2030 show more moderate growth rates of around 1% per annum across all inland modes. These do not include international shipping, but do include inland waterway and national maritime transport, which are both under the 'Inland navigation' heading.

[35] Using actual 2010 traffic data and the CGDD 2009-2030 annual growth rate excluding Rhine transit.

[36] Forecasts in the National Maritime Port Plan (PNMP, 2010) and Port Strategic Plans were done before the economic crisis with a different economic scenario and are not realistic. For the elaboration of GTIEVA and PETI each IM presented own forecasts but no homogeneous studies have been conducted.

Table 36: EU reference scenario growth rates – all inland modes (2030)

	Total growth 2010-2030	Annual growth rate
DE	20,0%	0,9%
ES	36,0%	1,5%
FR	52,5%	2,1%
PT	25,1%	1,1%

These estimates from DG-Energy, DG-Clima, and DG-Move, using the PRIMES model, show that mode shares for rail for both Spain and Portugal are substantially lower than in France and Germany for both passengers and freight.

Table 37: EU reference scenario, 2030 transport performance per mode.

	DE	ES	FR	PT
Passenger transport activity (Gpkm[37])	**1251,5**	**778,2**	**1173,1**	**150,4**
Public road transport	69,2	63,5	62,3	12,9
Private cars and motorcycles	942,3	483,2	867,2	100
Rail	141,4	58,3	137,6	8,4
Aviation	96,5	170,9	102,4	28,8
Inland navigation[38]	2,1	2,3	3,6	0,3
Share of passenger rail	*11%*	*7%*	*12%*	*6%*
Freight transport activity (Gtkm)[6]	**580,2**	**335,4**	**422,6**	**53,9**
Trucks	355,8	284,7	271	43,8
Rail	148,7	15	70,2	3,4
Inland navigation	75,7	35,7	81,4	6,7
Share of rail freight	*26%*	*4%*	*17%*	*6%*

Source: EU Energy, Transport and GHG Emissions Trends to 2050: Reference Scenario 2013

7.5.2. Corridor forecasts

The forecasts presented in the RFC4 market study cover a geographical area aligned with the Atlantic corridor and as such correspond for the freight segment to the closest estimations available.

From the 2010 origin-destination matrix, forecasts were made for estimating transport demand in the short, medium and long term (respectively 2020, 2030 and 2050).

On the demand side, macro-economic factors (i.e. GDP growth) were based on the Ageing Report (2012) and the trade forecast uses the GDP elasticities estimated by Progtrans for the World Transport Report for the countries in the corridor catchment area. Forecasts based on GDP growth have been done for each country in this area, considering the elasticity for export/import volumes in relation to the country GDP.

[37] giga passenger-kilometre, or 10^9 passenger-kilometre

[38] Under Inland navigation, the study considers IWW and National Maritime Transport

Overall, for the period 2010-2030, the study forecasts a total growth of 59% with an annual growth rate of 2,36%.

Table 38: 2010 RFC4 Base Year Cross-border Freight Flows, All Modes, ('000 Tonnes)

Destinations / Destinos

Origines / Origenes	Belgique	Suisse	Allemag.	Espagne	France	Irlande	Italie	Luxemb.	Pays-Bas	Portugal	Roy.-Uni	Fi-Scand.	Pl-Baltes	EC-Balka.	Export. tot
Belgique	-	316	804	4 498	7 045	-	271	-	-	1 035	145	-	-	79	14 194
Suisse	40	-	-	245	1 166	-	-	-	-	48	-	-	-	-	1 499
Allemag.	886	-	-	7 861	11 806	-	-	-	-	1 267	679	-	-	-	22 499
Espagne	3 542	487	8 238	-	23 468	474	11 661	59	4 978	20 513	6 119	1 582	2 191	6 250	89 885
France	3 973	4 453	9 227	26 528	-	292	5 549	3 848	2 289	3 475	2 769	180	809	2 723	66 117
Irlande	-	-	-	407	170	-	333	-	-	309	-	-	-	-	1 218
Italie	171	-	-	11 071	5 853	271	-	-	-	1 033	820	-	-	-	19 218
Luxemb.	-	-	-	144	1 917	-	-	-	-	12	-	-	-	-	2 073
Pays-Bas	-	-	-	5 682	3 490	-	-	-	-	2 127	-	-	-	-	11 299
Portugal	808	152	1 449	15 159	2 129	355	935	33	1 867	-	1 301	637	194	627	25 647
Roy.-Uni	205	-	899	6 185	2 855	-	550	-	-	2 129	-	-	-	30	12 853
Fi-Scandin.	-	-	-	5 326	202	-	-	-	-	1 405	-	-	-	-	6 933
Pl-Baltes	-	-	-	2 454	3 021	-	-	-	-	252	-	-	-	-	5 727
EC-Balkans	12	-	-	11 737	3 615	-	-	-	-	1 332	55	-	-	-	16 751
Import. totales	9 637	5 408	20 618	100 111	66 736	1 393	19 300	3 940	9 134	34 935	11 888	2 399	3 194	9 709	298 726

Thus, the RFC4 corridor study identifies cross-border 2010 freight flows amounting to 298.726 M tonnes. Note that not all country pairs, i.e. those outside the corridor such as Italy to Germany (Allemag.), are not counted.

In the next table, estimated 2030 figures are shown for the same traffic set, with overall growth rates (2010-2030 shown in the final row and columns). Total growth is 59%, meaning that total tonnes would rise to 475 million in 2030.

Various transport infrastructure projects planned for the different horizons have been analysed and modelled, in order to incorporate their impact on traffic projections. Most of those projects have a direct relation with the bottlenecks and missing links within the rail infrastructure. The analysis made of the results of the interviews with operators, carriers and other stakeholders involved in the freight transport in the area was also included. The modal shares estimated by RFC4 in 2030 are below presented.

Table 39: 2030 RFC4 Cross-border Freight Flow Forecasts, All Modes (‘000 Tonnes)

Destinations / Destinos

Origines / Origenes	Belgique	Suisse	Allemag.	Espagne	France	Irlande	Italie	Luxemb.	Pays-Bas	Portugal	Roy.-Uni	Fi-Scand.	Pl-Baltes	EC-Balka.	Export. tot
Belgique	-	584	1 200	7 120	10 231	-	353	-	-	1 165	204	-	-	114	48%
Suisse	75	-	-	406	2 308	-	-	-	-	57	-	-	-	-	90%
Allemag.	1 410	-	-	11 520	19 881	-	-	-	-	1 320	1 109	-	-	-	57%
Espagne	4 907	707	10 567	-	39 347	694	16 542	81	5 670	28 635	8 961	2 246	3 902	9 256	47%
France	6 223	9 405	15 720	50 739	-	469	8 243	7 615	3 486	4 731	4 449	325	1 859	4 480	78%
Irlande	-	-	-	680	302	-	532	-	-	367	-	-	-	-	54%
Italie	267	-	-	17 942	9 690	435	-	-	-	1 190	1 316	-	-	-	60%
Luxemb.	-	-	-	228	3 502	-	-	-	-	14	-	-	-	-	81%
Pays-Bas	-	-	-	7 395	5 156	-	-	-	-	1 968	-	-	-	-	28%
Portugal	1 105	217	1 834	25 707	3 521	514	1 309	46	2 099	-	1 880	892	341	917	57%
Roy.-Uni	324	-	1 548	10 349	4 781	-	826	-	-	2 532	-	-	-	50	59%
Fi-Scandin.	-	-	-	8 640	368	-	-	-	-	1 620	-	-	-	-	53%
Pl-Baltes	-	-	-	4 993	7 111	-	-	-	-	365	-	-	-	-	118%
EC-Balkans	19	-	-	19 859	5 949	-	-	-	-	1 602	88	-	-	-	64%
Import. totales	49%	102%	50%	70%	68%	52%	44%	97%	23%	30%	51%	44%	91%	53%	59%

Source: RFC4 Market Study (2013)

The flows are arranged into main groups, and then split by mode of transport.

Table 40: RFC4 Freight Cross-border Volumes by Mode, 2010, (Tonnes '000s)

		a) PT-Europe	*of which: PT-ES*	b) ES-Europe (excl. PT)	c) Other International Flows in Corridor	Total (a+b+c)
Road		39,758	*30,162*	78,254	44,918	**162,931**
Rail	Rail-rail	793	*793*	1,570	6,762	**10,692**
	Combined Tpt.	0	*0*	1,567		
	Rail-road	29		1,899		**1,928**
	Total Rail	*822*	*793*	*5,036*	*6,762*	***12,620***
IWT					2,307	**2,307**
Maritime		20,002	*4,717*	71,034	29,833	**120,869**
Total		**60,582**	***35,673***	**154,323**	**83,821**	**298,726**

Source: Rail Freight Corridor 4

In the base year of 2010, the 298 tonnes of international traffic are accounted for by 163 M tonnes of road transport (55%) and 121 M tonnes of maritime transport (41%). Rail traffic of 12.6 M tonnes accounts for a 4% market share, as measured in tonnes.

The groupings of O/D flows into blocs indicate that a high proportion of the overland transport from Portugal (road and rail) is trade with Spain. Portuguese maritime flows, however account for most of the longer distance flows to France and beyond. For Spain, volumes are higher, and the volumes are more balanced, with high volumes of road traffic going across the Pyrenees to the rest of Europe, and a smaller share of rail traffic. At the north eastern end of the corridor (mainly France) rail shares are higher still, and there are flows using inland waterway transport.

Table 41: RFC4 cross-border Freight Volumes by Mode, 2030, (Tonnes '000s)

		a) PT-Europe	*of which: PT-ES*	b) ES-Europe (excl. PT)	c) Other International Flows in Corridor	Total (a+b+c)
Road		58,340	*45,627*	128,286	75,628	**262,254**
Rail	Rail-rail	1,169	*1,169*	2,882	11,684	**18,245**
	Combined Tpt.	0	*0*	2,509		
	Rail-road	35		2,711		**2,746**
	Total Rail	***1,204***	***1,169***	***8,102***	***11,684***	***20,991***
IWT					4,047	**4,047**
Maritime		26,403	*7,546*	111,605	50,649	**188,657**
Total		**85,948**	***54,342***	**247 ,993**	**142,009**	**475,950**

Source: Rail Freight Corridor 4

By 2030, the RFC4 study estimated that total corridor volumes would rise to 475 M tonnes, with 262 tonnes by road (55%) and 189 tonnes by sea (40%), with 21 tonnes by rail (4%). Thus all modes of transport are expected to grow at similar levels.

7.6. Network Modelling for TEN-T Core network Corridors

In attempting to analyse freight flows through the core network, and core network far have been literature-based. In many cases there have been detailed studies made of parts of the network, which cannot be replicated in depth within current timescales. However, literature based approaches cannot answer certain questions raised within the current studies, e.g.

- How do "project-level" or "corridor-level" analyses fit into the wider picture of the core network?
- Are existing studies sufficiently multi-modal?
- How do forecasts for one corridor affect another overlapping corridor?
- Are assumptions up-to-date and consistent between studies?
- What are the likely impacts of corridor-related investments?

The potential solution has been to use a European-scale model to analyse freight flows throughout the network in order to produce a high-level forecast covering several corridors.

Assumptions for 2030 and 2050 are based upon the EU Energy, Transport and GHG Emissions "Trends to 2050" Reference Scenario 2013.

- Base Year: The modelled base year is 2010, using ETISplus data and networks.
- Reference Forecast: Reference forecasts, using GDP/GVA assumptions have been estimated for two years: 2030 and 2050.
- Model Methodology: A four-step model, NEAC10 has been used to estimate the flows. It includes the TRANSTOOLS (v1, and v2.6) methodologies for trade growth and modal shift.

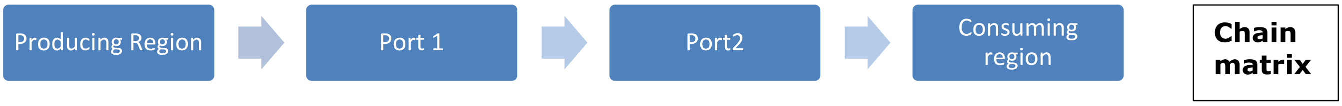
NEAC10 uses a transport-chain approach, routeing long distance flows through ports.

7.6.1. Transport Chain Approach

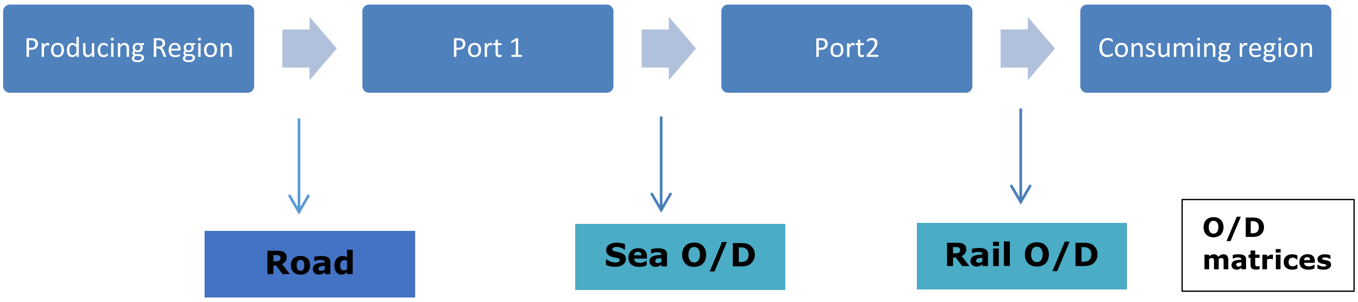
The analysis has been made top-down using trade data to estimate cross-border flows, and transport data to estimate the flows per mode, as highlighted in the next figure.

Flows are traced from producing region to consuming region, giving a production/consumption (P/C) matrix, estimated in tonnes.

The chain structure is then used to estimate intermediate transhipment points (e.g. seaports).



The three separate legs of the journey (as indicated by the arrows above) can be unpacked from the chains and stored in modal O/D matrices



In the base year estimation process, trade data (COMEXT) is used to estimate the P/C matrix, and this is regionalised to NUTS3, and converted into the chain structures, with flows calibrated through ports. The chains are then converted into O/D matrices (one matrix per mode of transport) which are then fitted to available transport data (Eurostat).

The following analyses refer to the Western half of Europe, ie. Portugal, Spain, France, Ireland, UK, Belgium, Netherlands, Luxemburg, Germany, Switzerland, Austria, Italy, Czech Republic and Denmark. However, the model assignment results include all flows including e.g. Finland-France and inter-continental flows e.g. China-Europe.

Regionalised Base Year P/C Matrix

An example of part of the P/C (trade) matrix with regional detail (NUTS1) for Portugal, Spain, France and Germany is shown below. Volumes are in thousands of tonnes for 2010. (e.g. PT-AG is Portugal-Algarve, FR-IF is France-Ile de France). For modelling, NUTS3 matrices are used. Note that not all data columns can be shown here.

	01-PT-AG	01-PT-AN	01-PT-CE	01-PT-LS	01-PT-NO	02-ES-CE	02-ES-ES	02-ES-MA	02-ES-NE	02-ES-NW	02-ES-SU		03-FR-BP	03-FR-CE	03-FR-ES	03-FR-IF	03-FR-MD	03-FR-NP	03-FR-SW	03-FR-WE	04-BE	05-LU	06-NL
01-PT-AG	8,550	8	10	205	0	51	88	31	39	33	64		13	6	8	7	10	52	7	7	11	0	33
01-PT-AN	713	15,157	4,176	2,509	631	115	441	107	185	149	191		44	15	30	29	17	27	18	21	30	0	96
01-PT-CE	262	3,077	44,260	5,317	5,513	572	1,495	440	698	601	501		181	58	104	108	103	102	83	112	115	2	411
01-PT-LS	122	1,985	3,653	34,185	984	326	748	221	387	313	419		171	62	85	89	70	99	120	87	150	2	383
01-PT-NO	95	239	4,163	511	53,889	457	1,069	373	657	610	494		210	55	95	111	84	57	128	113	108	1	297
02-ES-CE	78	177	572	473	706	212,438	2,933	21,430	9,300	5,135	3,304		434	137	232	195	265	451	401	413	371	7	544
02-ES-ES	138	429	1,669	849	1,494	2,253	378,785	2,575	4,699	2,109	8,765		1,137	792	1,162	672	2,309	965	580	547	782	30	1,235
02-ES-MA	30	71	236	210	330	12,685	2,319	81,639	961	427	1,045		141	64	87	96	139	122	155	176	151	3	201
02-ES-NE	61	172	646	474	973	6,114	5,575	1,241	192,718	2,143	1,604		732	293	513	375	667	556	802	823	365	11	592
02-ES-NW	44	135	461	346	885	2,775	2,556	278	2,261	181,473	2,710		639	154	230	257	150	261	393	372	340	9	488
02-ES-SU	161	364	731	752	798	3,544	12,469	1,157	1,582	1,940	243,672		721	450	384	347	591	304	486	544	705	15	1,188
03-FR-BP	30	116	342	450	427	600	1,283	335	896	803	1,180		382,835	6,235	10,366	30,322	1,724	10,283	1,396	17,370	6,902	572	3,867
03-FR-CE	12	24	57	95	69	272	966	164	409	182	408		7,425	217,536	2,970	1,322	6,322	916	3,927	784	1,362	200	1,464
03-FR-ES	24	32	93	110	128	319	1,220	205	646	352	374		7,422	3,567	187,916	2,063	423	2,841	379	364	5,247	1,004	6,404
03-FR-IF	13	36	78	82	105	175	465	223	350	253	271		23,309	1,361	848	127,533	960	3,542	650	1,733	1,987	215	1,288
03-FR-MD	15	25	60	79	71	291	1,721	213	493	137	581		1,424	6,322	691	458	213,295	470	4,429	525	813	130	1,206
03-FR-NP	22	22	81	83	89	381	867	235	467	245	489		13,474	810	3,312	6,089	526	109,424	615	2,305	5,823	361	2,857
03-FR-SW	16	34	90	107	131	548	695	378	987	536	534		1,471	2,745	276	283	4,625	340	216,628	6,154	1,470	224	1,713
03-FR-WE	14	65	201	179	210	422	393	180	553	577	1,027		15,902	519	304	2,413	341	1,542	9,278	318,981	2,087	126	2,437
04-BE	35	39	176	257	212	492	1,032	371	433	533	899		8,752	2,026	6,971	4,225	1,612	8,033	1,850	3,539	234,463	8,102	43,759
05-LU	0	1	5	5	4	17	49	17	27	22	21		579	267	967	332	206	404	130	169	1,543	29,630	498
06-NL	69	137	530	527	588	639	1,324	416	601	559	1,383		2,932	1,012	3,277	1,374	1,090	3,098	1,211	1,696	75,243	4,902	439,189
07-CH	0	0	1	2	2	11	54	19	38	14	10		268	305	641	136	179	156	93	108	376	54	820
08-AT	1	1	5	24	18	33	159	37	87	59	49		211	102	256	157	134	229	84	67	467	70	767
09-DE-BW	7	10	37	70	68	100	359	105	173	148	129		756	494	2,236	466	353	734	196	201	2,471	865	10,301
09-DE-BY	6	8	26	61	57	87	370	115	153	118	127		496	359	1,127	298	314	494	150	159	1,682	667	4,575
09-DE-HS	2	3	9	19	19	30	118	46	53	37	46		305	90	581	150	69	197	45	75	1,046	285	2,091
09-DE-NW	13	21	74	181	136	267	1,495	309	441	356	400		1,732	583	2,816	961	408	2,627	345	558	12,040	2,041	26,513
09-DE-OT	22	33	130	358	251	334	1,211	492	451	458	857		1,833	359	1,359	645	332	2,117	819	2,209	5,646	1,142	16,246
09-DE-RP	3	4	15	33	28	44	173	55	76	77	85		426	168	1,443	249	110	407	81	110	2,393	803	6,806
09-DE-SA	1	2	9	9	11	18	67	19	40	26	15		199	83	744	117	62	192	41	60	538	368	1,111
10-IT	59	104	314	491	461	2,220	6,229	1,237	1,931	1,679	4,174		1,955	2,127	2,928	1,854	2,407	1,499	1,391	1,087	1,785	162	2,305
11-UK	64	299	888	792	1,022	1,415	3,148	459	1,165	1,250	3,305		2,385	962	1,266	2,694	752	1,370	1,004	1,915	9,975	115	28,862
12-IE	1	70	88	46	80	88	221	30	88	174	312		174	52	66	88	109	87	103	170	482	11	822
13-DK	4	21	56	49	59	114	236	46	88	75	355		298	115	75	756	55	140	116	202	692	30	2,203
14-CZ	1	1	7	17	9	57	188	63	118	67	52		170	83	187	132	102	214	78	63	439	74	666
	10,688	22,920	63,953	49,956	70,458	250,303	432,521	115,263	224,249	203,672	279,852		481,154	250,367	236,551	187,403	240,916	154,350	248,211	363,819	380,100	52,232	614,241

Regionalised Transport Matrix

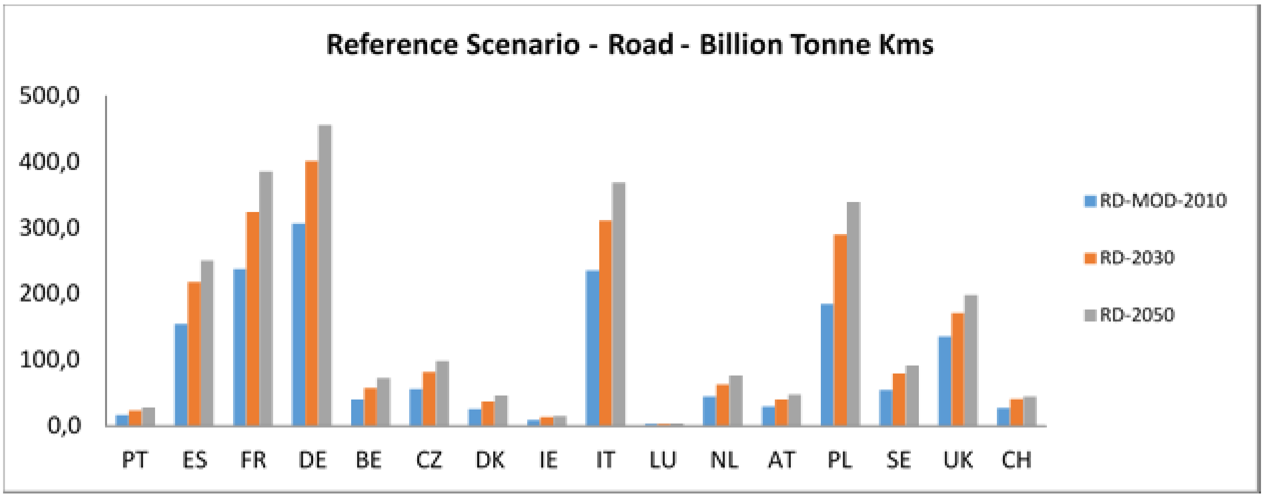
An example of the regionalised transport O/D matrix (for road) is shown below. Flows are for 2010, measured in thousands of tonnes. From the chain structure, it is possible to derive similar matrices for rail, waterway and sea transport.

	01-PT-AG	01-PT-AN	01-PT-CE	01-PT-LS	01-PT-NO	02-ES-CE	02-ES-ES	02-ES-MA	02-ES-NE	02-ES-NW	02-ES-SU		03-FR-BP	03-FR-CE	03-FR-ES	03-FR-IF	03-FR-MD	03-FR-NP	03-FR-SW	03-FR-WE	04-BE	05-LU	06-NL
01-PT-AG	8,550	165	5	238	-	48	53	30	31	27	90		6	3	7	4	7	7	5	3	5	-	5
01-PT-AN	930	16,690	4,452	3,431	360	190	197	106	144	130	132		17	9	23	13	8	2	11	3	5	-	13
01-PT-CE	144	3,536	46,976	6,714	5,947	587	671	413	516	600	304		61	36	76	48	55	4	48	15	26	-	51
01-PT-LS	31	2,923	4,929	35,045	740	322	359	212	268	250	203		47	25	58	38	19	-	25	2	16	-	31
01-PT-NO	8	158	4,284	273	55,102	447	675	357	532	702	189		67	37	76	52	44	-	38	3	31	-	32
02-ES-CE	66	171	469	413	604	211,300	3,747	21,317	9,810	6,475	3,445		296	105	212	148	218	252	363	158	126	5	222
02-ES-ES	99	220	609	567	1,046	3,514	391,023	2,803	8,534	908	6,519		1,149	679	1,048	643	1,811	1,009	1,381	541	387	30	558
02-ES-MA	27	59	177	181	288	12,369	2,813	81,639	1,151	663	959		110	53	79	74	109	100	149	63	55	2	76
02-ES-NE	49	136	396	338	714	7,090	7,979	1,998	196,817	1,831	122		642	283	504	361	512	430	896	330	181	11	227
02-ES-NW	38	119	419	289	872	6,166	998	666	1,859	185,213	818		172	90	181	131	129	102	241	17	54	3	63
02-ES-SU	168	242	516	519	517	4,923	10,933	894	10	193	262,761		269	135	243	130	290	64	362	140	126	7	208
03-FR-BP	7	12	33	41	61	392	1,224	281	822	237	150		381,937	5,129	8,240	27,827	242	10,681	358	16,739	5,608	507	1,310
03-FR-CE	3	6	15	22	30	152	830	145	388	109	73		5,569	212,129	2,003	706	6,909	472	3,238	261	1,215	155	420
03-FR-ES	17	18	50	63	83	267	1,168	188	591	219	121		5,988	2,489	181,686	1,034	22	1,914	1	9	4,699	842	1,291
03-FR-IF	3	4	12	18	28	121	429	122	331	98	39		22,483	676	228	121,540	23	3,937	59	962	1,785	198	372
03-FR-MD	4	4	15	14	24	206	1,251	186	451	110	106		34	6,561	17	172	216,689	25	4,735	16	755	114	355
03-FR-NP	7	-	-	-	-	244	800	185	393	-	58		13,198	492	1,638	6,483	53	106,121	16	956	6,099	418	1,138
03-FR-SW	5	7	22	26	30	504	1,615	366	1,179	330	201		427	1,989	1	0	4,385	9	218,049	5,589	1,244	118	561
03-FR-WE	2	1	4	-	-	146	389	113	300	27	51		15,866	186	9	1,196	26	666	8,359	328,585	968	87	318
04-BE	10	4	22	19	29	212	643	204	300	118	115		6,679	1,680	5,799	3,853	1,335	8,618	1,343	1,872	239,106	3,887	20,392
05-LU	-	-	-	-	-	14	48	16	25	13	10		542	245	943	326	205	490	121	149	1,889	27,978	487
06-NL	7	4	13	20	17	180	520	171	242	61	95		1,782	639	1,739	916	837	1,737	723	657	22,168	512	446,200
07-CH	-	-	-	-	-	9	56	19	26	11	8		227	241	469	115	201	190	69	49	319	38	235
08-AT	-	-	-	-	-	23	95	33	50	27	18		188	91	172	117	95	232	78	63	306	39	406
09-DE-BW	4	6	12	24	39	67	258	81	135	79	42		686	430	1,671	420	346	662	172	166	2,183	735	3,495
09-DE-BY	3	4	9	22	33	55	242	76	117	67	36		431	249	1,073	265	214	478	91	89	1,700	595	2,986
09-DE-HS	1	1	3	8	13	16	74	28	35	19	12		157	65	333	101	52	186	28	33	745	258	1,425
09-DE-NW	8	14	31	50	79	163	587	176	306	174	115		1,482	487	2,002	768	383	2,236	258	320	7,947	1,851	16,282
09-DE-OT	7	6	13	26	38	133	522	169	233	77	62		804	280	1,315	469	213	1,185	132	161	4,356	999	11,313
09-DE-RP	1	2	5	10	13	30	122	36	56	32	23		378	150	717	222	121	393	71	88	1,679	774	2,919
09-DE-SA	1	2	3	6	9	16	57	17	36	19	9		194	82	399	112	67	200	40	49	657	363	961
10-IT	19	27	86	109	156	354	1,187	419	649	289	198		1,578	1,501	2,833	1,225	1,702	1,384	687	518	1,042	151	951
11-UK	2	2	3	8	12	82	246	92	102	32	19		628	291	629	436	323	625	187	149	1,596	63	1,096
12-IE	-	-	-	-	-	5	9	6	4	0	0		26	5	22	18	3	1	4	9	-	-	32
13-DK	-	-	-	-	-	21	75	22	17	-	2		40	16	40	24	32	20	22	13	183	28	719
14-CZ	-	-	-	-	-	52	170	47	101	51	29		162	77	178	102	101	197	77	59	491	66	558
	10,223	24,542	63,584	48,495	66,883	250,421	432,066	113,631	226,565	199,191	277,134		464,326	237,636	216,664	170,089	237,781	144,629	242,441	358,836	309,748	40,834	517,709

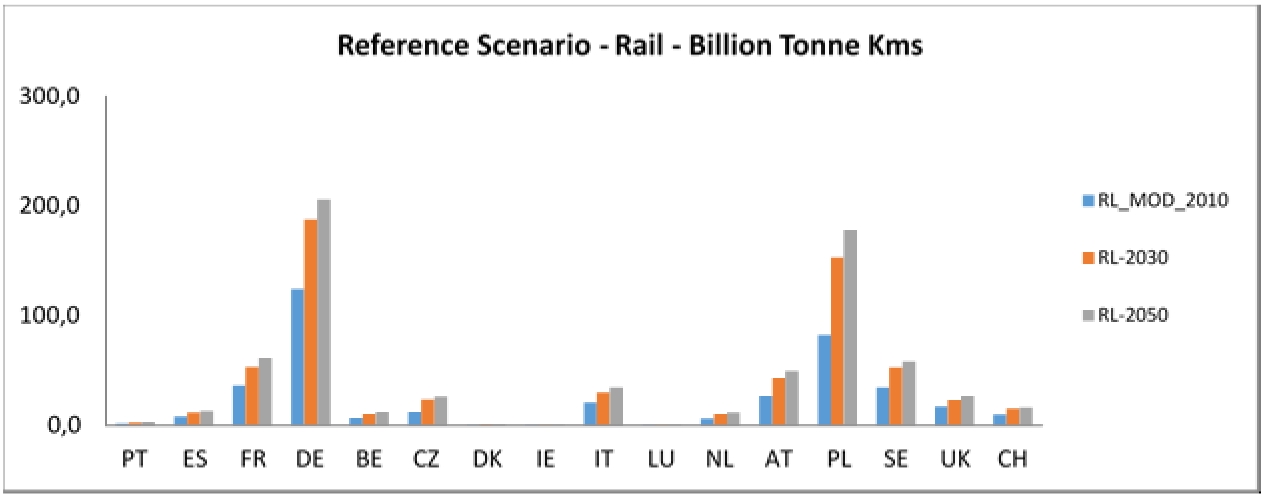
7.6.2. Forecasting exercise

Forecasts for 2030 and 2050 have been estimated using socio-economic assumptions from the 2013 EU reference Scenario. These are calculated using the P/C matrix, since the economic growth relates to the production and consumption regions, rather than the transhipment regions. Thus, inter-continental cargo grows at a different rate to intra-EU or domestic traffic.

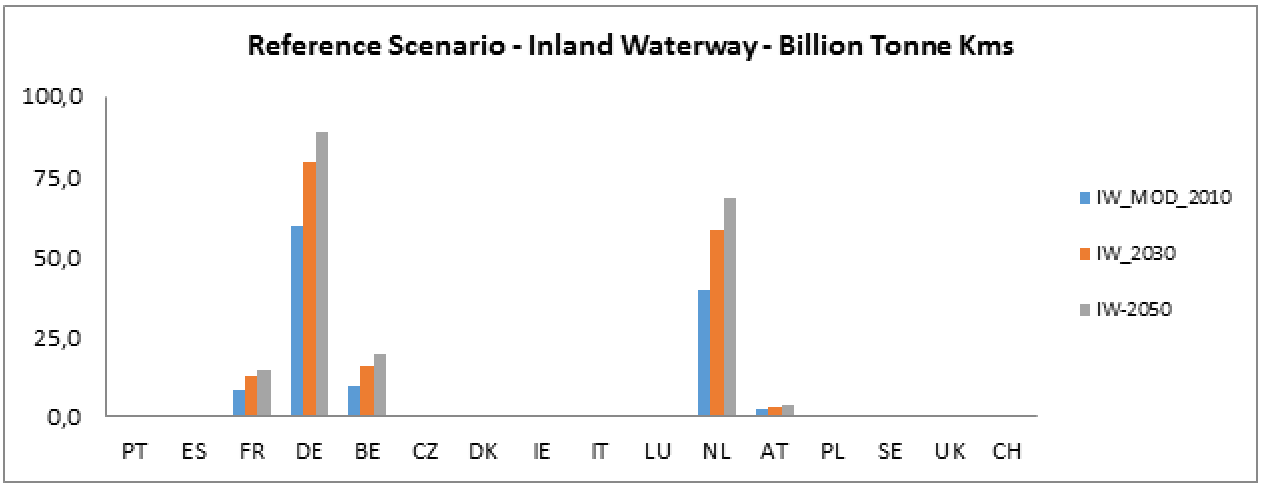
Road Forecast



Rail Forecast



Waterway Forecast



7.6.3. Scenario Analysis

In order to assess the potential effect of changes, a scenario analysis was performed. This network modelling considered the baseline case (i.e. forecast using GDP/GVA for 2050 using socio-economic assumptions from the 2013 EU reference Scenario; no policy) and a "policy scenario" considering the following inputs as additional to baseline case:

1. Network

- Missing link Évora-Caia completed

2. Seamless interoperable railway

- All core network electrified
- All core network with UIC gauge
- All core network with 22.5 tonnes per axle
- All core network allowing 740m trains
- All core network with ERTM, double track
- Interoperability improvements, reducing border crossing times

3. Road tolling

4. Single Window for maritime transport

5. LNG fuel for ships

The scenario development has been conducted for the whole EU network (i.e. not only for Atlantic) allowing to assess the various impacts of EU level measures and its effects on the corridor. In the following table the different measures are presented:

Table 42: Policy scenario measures

Scenario measures	Modelling assumptions
Network	No discontinuity in network
Missing link Évora-Caia completed	
Seamless interoperable railway (all EU network)	Improvement in rail efficiency & reliability (cost reduction per km and reduction of border crossing times)
Electrification	Identify newly electrified links
UIC gauge	Identify new UIC gauge links
740 m trains	Rail cost reduction
ERTMS	Supply side measure – additional paths, but no change in costs
Single /double track	Supply side measure – additional paths, but no change in costs
22,5 tonnes	No additional effect
Road measures (all EU network)	Increasing of operating costs and time
Tolling	Increase in road costs per km on core network links
Water measures (all EU network)	Various effects
Single window for maritime transport	Fixed cost reduction per ship arrival
LNG fuel for ships	Variable cost increase per tonne-km for maritime transport
Seine-Escaut CEMT V connection (NSM measure, impacting on network)	Reduction in costs for IWT in France

In addition to the reference forecast model runs for 2010, 2030 and 2050, two additional model runs were conducted: 2030 with policy scenario and 2050 with policy scenario.

Results are presented in tonne-kms measuring the changes in transport performance for (1) the national territory as a whole and (2) for just the Corridor sections. The traffic assignments include including domestic, import/export and transit flows.

7.6.4. Atlantic Mode Performance

Tables show modelled billion tonne-kms, per mode and per country. The left hand side of the table shows flows at the national level, and on the right hand side, only the corridor links. Sea transport, which competes with overland transport is elaborated later in this chapter.

National Level (modelled)

	Baseline				Policy scenario			
Road MTkm	**2010**	**2030**	**2050**	**Avg YoY %**	**2010**	**2030**	**2050**	**Avg YoY %**
PT	16 759	23 481	27 930	**1,3%**	16 759	23 166	27 574	**1,3%**
ES	153 487	217 436	249 470	**1,2%**	153 487	214 711	246 487	**1,2%**
FR	237 272	324 229	385 818	**1,2%**	237 272	314 247	374 166	**1,1%**
DE	307 094	401 847	456 333	**1,0%**	307 094	391 186	443 709	**0,9%**
	714 611	**966 994**	**1 119 551**	**1,1%**	**714 611**	**943 309**	**1 091 936**	**1,1%**
Rail MTkm	**2010**	**2030**	**2050**	**Avg YoY %**	**2010**	**2030**	**2050**	**Avg YoY %**
PT	1 893	2 746	3 023	**1,2%**	1 893	3 447	3 801	**1,8%**
ES	8 380	11 688	13 130	**1,1%**	8 380	14 988	16 708	**1,7%**
FR	36 404	53 367	61 495	**1,3%**	36 404	63 336	73 116	**1,8%**
DE	124 612	187 610	205 810	**1,3%**	124 612	205 867	226 755	**1,5%**
	171 289	**255 411**	**283 457**	**1,3%**	**171 289**	**287 639**	**320 379**	**1,6%**
IWT MTkm	**2010**	**2030**	**2050**	**Avg YoY %**	**2010**	**2030**	**2050**	**Avg YoY %**
PT								
ES								
FR	8 203	12 525	14 422	**1,4%**	8 203	13 926	16 056	**1,7%**
DE	59 744	79 919	89 049	**1,0%**	59 744	81 244	90 799	**1,1%**
	67 947	**92 444**	**103 471**	**1,1%**	**67 947**	**95 170**	**106 855**	**1,1%**

Corridor Links

	Baseline				Policy scenario			
Road MTkm	**2010**	**2030**	**2050**	**Avg YoY %**	**2010**	**2030**	**2050**	**Avg YoY %**
PT	10 212	14 613	17 512	**1,4%**	10 212	14 435	17 311	**1,3%**
ES	24 449	35 847	42 214	**1,4%**	24 449	35 348	41 667	**1,3%**
FR	34 720	49 084	58 840	**1,3%**	34 720	47 653	57 163	**1,3%**
DE								
	69 382	**99 544**	**118 566**	**1,3%**	**69 382**	**97 436**	**116 141**	**1,3%**
Rail MTkm	**2010**	**2030**	**2050**	**Avg YoY %**	**2010**	**2030**	**2050**	**Avg YoY %**
PT	1 420	2 052	2 123	**1,0%**	1 420	2 318	2 555	**1,5%**
ES	3 035	4 221	4 852	**1,2%**	3 035	5 106	5 827	**1,6%**
FR	6 303	9 293	10 727	**1,3%**	6 303	11 161	12 906	**1,8%**
DE	528	619	644	**0,5%**	528	650	679	**0,6%**
	11 284	**16 185**	**18 346**	**1,2%**	**11 284**	**19 235**	**21 966**	**1,7%**
IWT MTkm	**2010**	**2030**	**2050**	**Avg YoY %**	**2010**	**2030**	**2050**	**Avg YoY %**
PT								
ES								
FR	2 436	4 248	4 877	**1,8%**	2 436	4 475	5 146	**1,9%**
DE								
	2 436	**4 248**	**4 877**	**1,8%**	**2 436**	**4 475**	**5 146**	**1,9%**

The study uses tonne-km indicators to show the changes in the modal shares among the scenarios and market segments.

In the baseline scenario, road shows the highest growth trend, followed by inland waterways (only France and Germany) and a slightly lower growth for rail. Thus, under baseline assumptions rail is losing freight market share. This is consistent with reviews done where road maintains highest growth rates. This trend is even more visible in the corridor links than at national level.

When considering the effect of the different policy measures, rail shows faster growth rates than road, growing more or less at same average as inland waterways. This is mainly due to the implementation of infrastructure measures addressing the most critical missing links and bottlenecks (electrification, UIC gauge, etc.) but also to the expected decrease in travel costs and times, which make rail a more attractive option for hinterland transport. The growth in rail tonne-km is similar as the ones estimated for corridor links.

The total demand (all modes combined) is expected to become larger in the policy scenario, compared to baseline.

Growth rates overall are shown as indices (base year 2010 = 100) below:

	National Level				
Road BTkm	**2010**	**2030**	**2030S**	**2050**	**2050S**
PT	100	140	138	167	165
ES	100	142	140	163	161
FR	100	137	132	163	158
DE	100	131	127	149	144
TOTAL	100	135	132	157	153

	Corridor Links Only				
Road BTkm	**2010**	**2030**	**2030S**	**2050**	**2050S**
PT	100	143	141	171	170
ES	100	147	145	173	170
FR	100	141	137	169	165
DE					
TOTAL	100	143	140	171	167

Rail BTkm	2010	2030	2030S	2050	2050S
PT	100	145	182	160	201
ES	100	139	179	157	199
FR	100	147	174	169	201
DE	100	151	165	165	182
TOTAL	100	149	168	165	187

Rail BTkm	2010	2030	2030S	2050	2050S
PT	100	145	163	150	180
ES	100	139	168	160	192
FR	100	147	177	170	205
DE					
TOTAL	100	143	170	163	195

IWT BTkm	2010	2030	2030S	2050	2050S
PT					
ES					
FR	100	153	170	176	196
DE	100	134	136	149	152
TOTAL	100	136	140	152	157

IWT BTkm	2010	2030	2030S	2050	2050S
PT					
ES					
FR	100	174	184	200	211
DE					
TOTAL	100	174	184	200	211

Overall at national level road is expected to grow 57% (Index = 157) till 2050 in baseline scenario and 53% in policy one. For rail expected growth is 65% in baseline and 87% in policy scenario, while in IWT is 52% in baseline and 57% in policy. Such pattern is even more visible for the corridor links with road expected to grow 71% in baseline, 67% in policy and rail: 63% in baseline, 95% in policy.

The following maps show traffic assignments for each mode, for:

1. Base Year 2010
2. Baseline 2050 (socio-economic changes only)
3. Scenario 2050 (with policy measures in place)

All maps are drawn according to same scales. The thickness of the lines indicates the traffic level, and the corridor sections are also shown with a colour scale, also indicating estimated traffic level.

Assignment of Flows – Atlantic Base Year Rail

The example below shows rail assigned to the Atlantic Corridor for 2010. Note that the background shows the assigned rail volumes in other parts of the network.

Assignment of Flows – Atlantic 2050 Baseline Rail

This map shows the Atlantic Corridor rail flows estimated (as described above) for 2050.

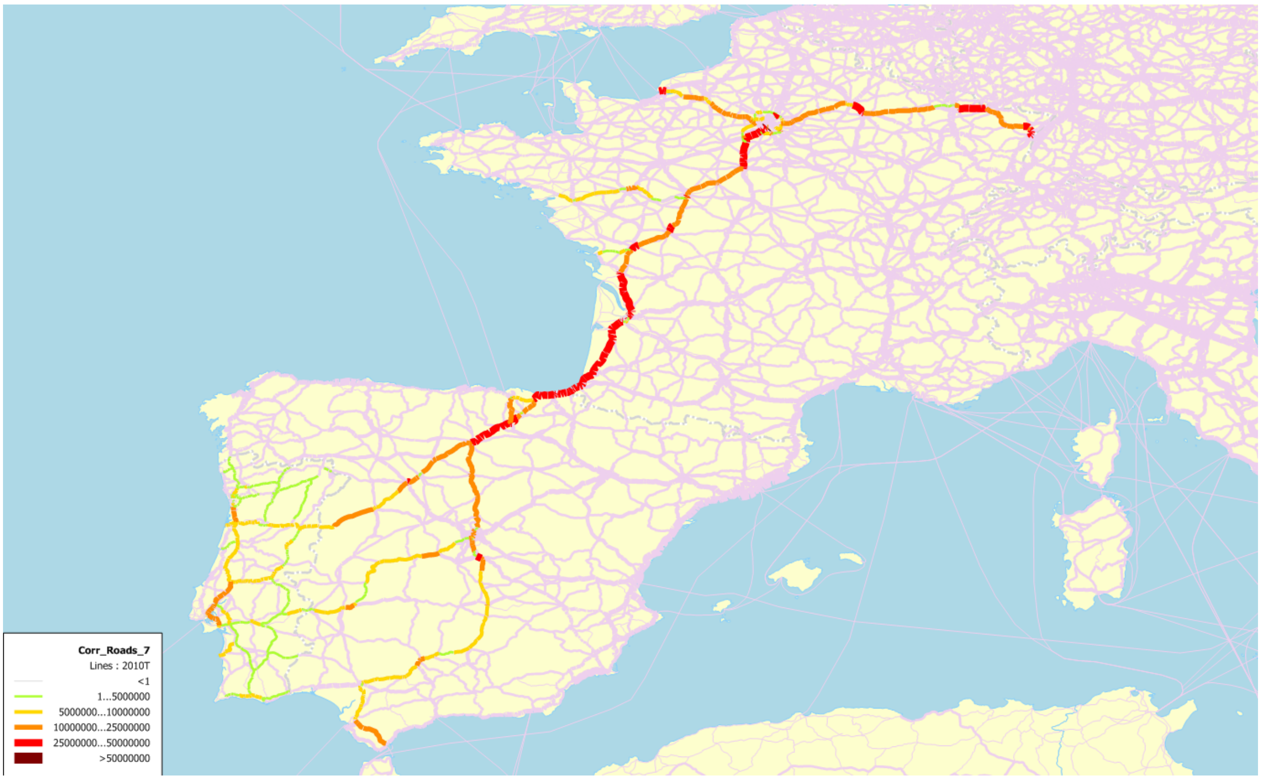
Assignment of Flows – Atlantic 2050 Rail - Scenario

This map shows the Atlantic Corridor rail flows estimated (as described above) for 2050, with assumed policy changes.

	Base Year			Scenario	
Rail BTkm	2010 National	2010 Corridor	Rail BTkm	2050 National	2050 Corridor
PT	1.9	1.4	PT	3.8	2.6
ES	8.4	3.0	ES	16.7	5.8
FR	36.4	6.3	FR	73.1	12.9
DE	124.6	0.5	DE	226.8	0.7
TOTAL	171.3	11.3	TOTAL	320.4	22.0

Assignment of Flows – Atlantic Base Year – 2010 - Road

This map shows the base year estimated traffic for road.



Assignment of Flows – Atlantic Baseline 2050 Road

This map shows the 2050 forecast traffic for road.

Assignment of Flows – Atlantic 2050 Road Scenario

This map shows 2050 forecast traffic for road, with assumed policy changes

	Base Year			Scenario	
Road BTkm	2010 National	2010 Corridor	Road BTkm	2050 National	2050 Corridor
PT	16.8	10.2	PT	27.6	17.3
ES	153.5	24.4	ES	246.5	41.7
FR	237.3	34.7	FR	374.2	57.2
DE	307.1		DE	443.7	
TOTAL	714.6	69.4	TOTAL	1091.9	116.1

Assignment of Flows – Atlantic Base Year – 2010 - Waterway

This map shows the base year estimated traffic for waterway.

Assignment of Flows – Atlantic Baseline 2050 Waterway

This map shows the 2050 forecast traffic for waterway.

	Base Year			Scenario	
IWT BTkm	2010 National	2010 Corridor	IWT BTkm	2050 National	2050 Corridor
PT			PT		
ES			ES		
FR	8.2	2.4	FR	16.1	5.1
DE	59.7		DE	90.8	
TOTAL	67.9	2.4	TOTAL	106.9	5.1

Assignment of Flows – Atlantic Base 2050 Waterway - Scenario

This map shows 2050 forecast traffic for waterway, with assumed policy changes

7.6.5. Atlantic Mode Performance – Total Traffic

One of the advantages of analysing the forecasts as traffic assignments is that it allows the network routeing to determine whether a flow is affecting the corridor or not. Flows between e.g. Italy and the UK might tangentially enter the corridor, and if so, they are picked up by the assignment, even if they are not considered to be corridor regions.

However, certain aspects, such as maritime flows are not visible in the assignment results, and it is also not possible to see which trade flows are generating the expected growth.

The following tables show the modelled results presented as aggregated O/D tables, per mode, for each of the corridor countries, and for groups of neighbouring countries.

The category 'Other C. Eur' includes Austria, Belgium, Czech Republic, Denmark, Switzerland, Italy, Luxembourg, and the Netherlands.

Corridor countries are shown as national level volumes, not only the corridor regions. Domestic flows are included, but a total is provided for each table showing just the cross-border traffics.

The 2050 tables are for the 2050 scenario, including the fill range of policy effects modelled above.

Table 43: Rail Volumes, 2010, 2050, ‘000 Tonnes

		Portugal	Spain	France	Germany	Oth C.Eur	UK, IE	Total
RAIL	Portugal	8,799	487	0	0	0	0	9,286
2010	Spain	913	16,515	186	558	289	0	18,462
	France	0	719	62,921	2,239	8,004		73,882
	Germany	0	681	1,464				2,145
	Oth C.Eur	0	401	3,864				4,265
	UK, IE	0	0					0
	Total	9,713	18,803	68,435	2,796	8,293	0	108,040
								19,805
		Portugal	**Spain**	**France**	**Germany**	**Oth C.Eur**	**UK, IE**	**Total**
RAIL	Portugal	16,683	772	0	0	0	0	17,455
2050	Spain	1,433	33,492	594	843	762	0	37,124
Scen.	France	0	1,687	119,048	3,665	15,670		140,070
	Germany	0	1,216	2,617				3,833
	Oth C.Eur	0	1,401	10,388				11,789
	UK, IE	0	0					0
	Total	18,116	38,567	132,647	4,509	16,432	0	210,272
	Total Cr.Bord.							41,048

Table 44: Road Volumes, 2010, 2050, '000 Tonnes

		Portugal	Spain	France	Germany	Oth C.Eur	UK, IE	Total
ROAD	Portugal	201,633	8,788	1,005	724	678	39	212,867
2010	Spain	10,327	1,460,262	17,408	4,758	6,967	1,101	1,500,822
	France	693	17,704	1,968,040	19,801	47,089		2,053,328
	Germany	505	4,608	24,176				29,289
	Oth C.Eur	543	7,049	58,417				66,009
	UK, IE	27	597					624
	Total	213,727	1,499,008	2,069,046	25,283	54,735	1,140	3,862,939
	Total Cr.Bord.							233,004
		Portugal	**Spain**	**France**	**Germany**	**Oth C.Eur**	**UK, IE**	**Total**
ROAD	Portugal	266,346	18,452	2,269	1,595	1,400	92	290,154
2050	Spain	18,741	1,990,563	31,354	6,779	11,773	1,612	2,060,822
Scen.	France	1,278	30,450	2,608,149	29,703	79,536		2,749,116
	Germany	830	7,477	37,686				45,993
	Oth C.Eur	1,033	13,143	104,724				118,900
	UK, IE	41	927					968
	Total	288,270	2,061,012	2,784,182	38,077	92,709	1,704	5,265,954
	Total Cr.Bord.							400,895

Table 45: Inland Waterway Traffic, 2010, 2050, '000 Tonnes

		Portugal	Spain	France	Germany	Oth C.Eur	UK, IE	Total
IWT	Portugal	0	0	0	0	0	0	0
2010	Spain	0	0	0	0	0	0	0
	France	0	0	32,469	6,005	10,294		48,768
	Germany	0	0	2,781				2,781
	Oth C.Eur	0	0	9,226				9,226
	UK, IE	0	0					0
	Total	0	0	44,477	6,005	10,294	0	60,775
	Total Cr.Bord.							28,306
		Portugal	**Spain**	**France**	**Germany**	**Oth C.Eur**	**UK, IE**	**Total**
IWT	Portugal	0	0	0	0	0	0	0
2050	Spain	0	0	0	0	0	0	0
Scen.	France	0	0	59,019	7,898	16,996		83,913
	Germany	0	0	3,782				3,782
	Oth C.Eur	0	0	14,596				14,596
	UK, IE	0	0					0
	Total	0	0	77,398	7,898	16,996	0	102,292
	Total Cr.Bord.							43,273

Table 46: Sea Traffic, 2010, 2050, '000 Tonnes

		Portugal	Spain	France	Germany	Oth C.Eur	UK, IE	Total
SEA	Portugal	1	2,984	1,798	505	2,878	1,365	9,530
2010	Spain	3,069	25,954	7,186	1,793	12,356	5,724	56,081
	France	3,163	9,075	6,409	2,210	6,900		27,757
	Germany	1,486	5,612	4,271				11,369
	Oth C.Eur	4,564	22,434	8,403				35,402
	UK, IE	3,220	10,338					13,558
	Total	15,503	76,398	28,067	4,508	22,134	7,089	153,698
	Total Cr.Bord.							121,334
		Portugal	**Spain**	**France**	**Germany**	**Oth C.Eur**	**UK, IE**	**Total**
SEA	Portugal	1	4,731	3,627	925	5,377	2,451	17,113
2050	Spain	4,760	46,384	11,908	2,660	19,910	9,115	94,738
Scen.	France	4,695	13,570	10,844	2,851	10,541		42,500
	Germany	3,111	12,921	6,008				22,040
	Oth C.Eur	7,668	35,242	13,523				56,433
	UK, IE	4,384	14,308					18,692
	Total	24,619	127,155	45,911	6,436	35,827	11,566	251,516
	Total Cr.Bord.							194,286

Table 47: Total Traffic, 2010, 2050, '000 Tonnes

		Portugal	Spain	France	Germany	Oth C.Eur	UK, IE	Total
TOTAL	Portugal	210,433	12,258	2,803	1,229	3,556	1,404	231,684
2010	Spain	14,309	1,502,731	24,780	7,109	19,613	6,824	1,575,365
	France	3,856	27,498	2,069,839	30,255	72,287	0	2,203,735
	Germany	1,991	10,901	32,693	0	0	0	45,585
	Oth C.Eur	5,107	29,884	79,910	0	0	0	114,901
	UK, IE	3,247	10,936	0	0	0	0	14,182
	Total	238,943	1,594,209	2,210,025	38,592	95,455	8,228	4,185,453
	Total Cr.Bord.							402,450
		Portugal	**Spain**	**France**	**Germany**	**Oth C.Eur**	**UK, IE**	**Total**
TOTAL	Portugal	283,030	23,955	5,896	2,520	6,777	2,543	324,722
2050	Spain	24,935	2,070,439	43,857	10,282	32,445	10,727	2,192,684
Scen.	France	5,973	45,707	2,797,061	44,117	122,743	0	3,015,600
	Germany	3,941	21,615	50,093	0	0	0	75,649
	Oth C.Eur	8,701	49,786	143,231	0	0	0	201,718
	UK, IE	4,425	15,235	0	0	0	0	19,660
	Total	331,006	2,226,735	3,040,138	56,919	161,965	13,270	5,830,033
	Total Cr.Bord.							679,502

Summary of Forecasts

Based on the above tables, with the corridor defined in terms of tonnages from selected O/D combinations, the shares of cross-border traffic per mode are as follows. This way it is possible to see the role played by maritime transport isolating only the flows where there is competition between land and sea modes.

The first table (below) shows the shares by mode for the cross-border O/Ds. The second includes the (larger) volumes of domestic traffic. Both tables exclude any flows with origins or destinations outside the range of countries selected. Those are mainly flows to or from Eastern Europe, Scandinavia, the Eastern Mediterranean, North Africa, and deep sea locations.

Table 48: Modal Share, according to cross-border tonnage (000s)

	2010	2010 Share	2050 (Scenario)	2050 Share
Rail	19 805	4.9%	41 048	6.0%
Road	233 004	57.9%	400 895	59.0%
IWT	28 306	7.0%	43 273	6.4%
Sea	121 334	30.1%	194 286	28.6%
Total	402 450	100.0%	679 502	100.0%

Table 49: Modal share, according to cross-border and domestic tonnage (000s)

	2010	2010 Share	2050 (Scenario)	2050 Share
Rail	108,040	2.6%	210,272	3.6%
Road	3,862,939	92.3%	5,265,954	90.3%
IWT	60,775	1.5%	102,292	1.8%
Sea	153,698	3.7%	251,516	4.3%
Total	4,185,453	100.0%	5,830,033	100.0%

Port Traffic

Total seaport traffic for the four corridor countries, including deep-sea flows are summarised below.

So whereas, the O/D tables show that maritime traffic in the corridor is 154 million tonnes in 2010, rising to 251 million tonnes by 2050, the table below shows total seaport volumes in the corridor countries of 957 million tonnes in 2010, rising to 1,681 million tonnes in 2050. These statistics include all the German ports and certain major French and Spanish ports such as Valencia, Barcelona, Marseille and Dunkerque which are outside the corridor. As previously estimated, volumes in 2013 for the core Atlantic corridor ports was 277 million tonnes, approximately one third of the volume through all ports in the corridor countries.

	TOTAL Seaport Tonnes (mln)			
	2010	**2030**	**2050**	**2050/10**
PT	62.278	92.875	105.409	169%
ES	341.420	563.040	641.198	188%
FR	309.385	442.036	490.087	158%
DE	244.101	406.910	444.927	182%
Total	957.184	1504.862	1681.621	176%

According to traffic type, the forecasts show:

	Dry Bulk Tonnes (mln)			
	2010	**2030**	**2050**	**2050/10**
PT	16.392	21.796	24.069	147%
ES	73.009	101.123	111.821	153%
FR	77.393	106.470	114.309	148%
DE	60.618	77.968	80.128	132%
Total	227.412	307.357	330.328	145%

Liquid Bulk Tonnes (mln)

	2010	2030	2050	2050/10
PT	28.642	38.662	44.461	155%
ES	145.437	218.857	253.038	174%
FR	154.644	201.116	219.777	142%
DE	51.415	70.963	77.680	151%
Total	380.138	529.598	594.956	157%

Other General Cargo Tonnes (mln)

	2010	2030	2050	2050/10
PT	4.124	7.587	8.257	200%
ES	20.309	33.356	35.164	173%
FR	15.592	23.245	24.025	154%
DE	20.492	34.126	34.985	171%
Total	60.517	98.314	102.430	169%

Containerised Tonnes (mln)

	2010	2030	2050	2050/10
PT	12.795	24.162	27.818	217%
ES	87.539	186.413	213.642	244%
FR	35.959	69.899	81.185	226%
DE	86.691	186.991	205.383	237%
Total	222.984	467.465	528.028	237%

RORO Tonnage (mln)

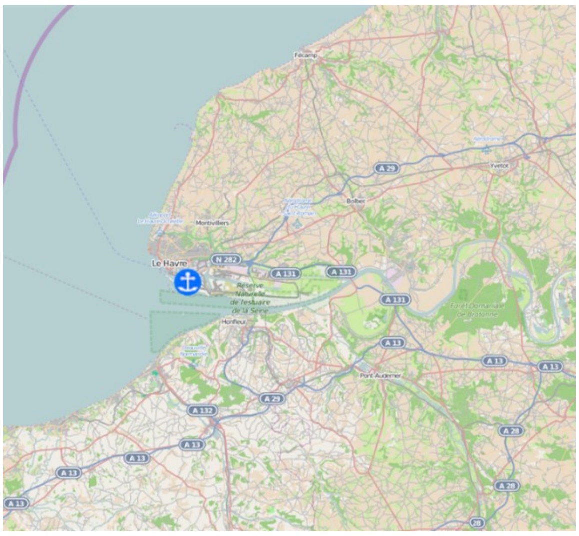
	2010	2030	2050	2050/10
PT	0.325	0.669	0.804	248%
ES	15.126	23.291	27.533	182%
FR	25.797	41.306	50.791	197%
DE	24.885	36.862	46.750	188%
Total	66.133	102.127	125.879	190%

8. Annex 4 – Atlantic Ports

Annex to Atlantic Corridor Report
"Atlantic Maritime Ports"

Port of Le Havre (France)

Location & Base Characteristics



CNC	Core port
Type of port	Maritime and inland
Activity	Passengers and Freight
Total throughput (2013)	68.01 million tonnes
Total Passenger (2013)	756’709 passengers

The Port of Le Havre is located at the Seine estuary in region Haute-Normandy where it benefits from its location on the Channel and proximity to the Ile-de-France market. It is a member of HAROPA and the first French port for container.

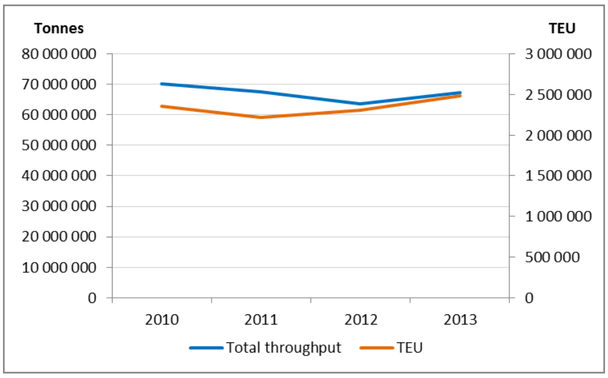
Terminals & Maritime Accesses

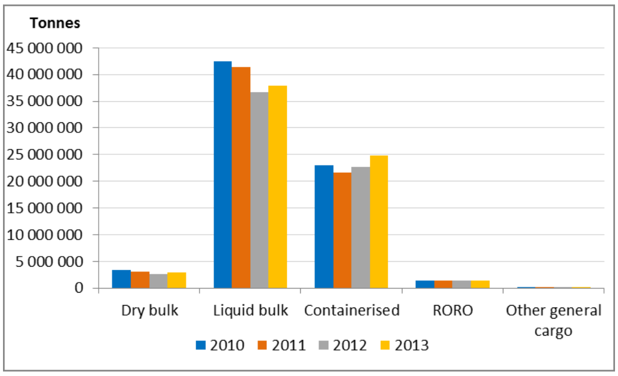
The port of Le Havre is composed of an outer-port, tidal basins, flushing docks and basins with constant level. Ship access to the port is carried on a 6 nautical miles. Port 2000 was opened in 2006 to complement the existing infrastructure with a new basin for larger ships.

The port is specialised in containers with 23 berths and 7’540m of quays dedicated to this activity, but is also carries other types of traffic (RORO, bulk and ferry) with 630m of quays for these other activities.

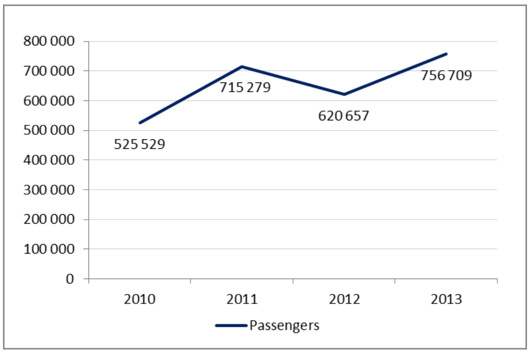
Traffic data

Freight traffic totalised 68 million in 2013, mostly liquid bulk (56% in 2013) and containerized items (37%). Traffic decreased slightly from 2010 to 2012 but increased again in 2013.





Passenger traffic at the port of Le Havre is on an upward trend with a 44% increase between 2010 and 2013 mostly explained by a raise in passengers from cruises.



Accessibilities

<u>Road accesses</u>

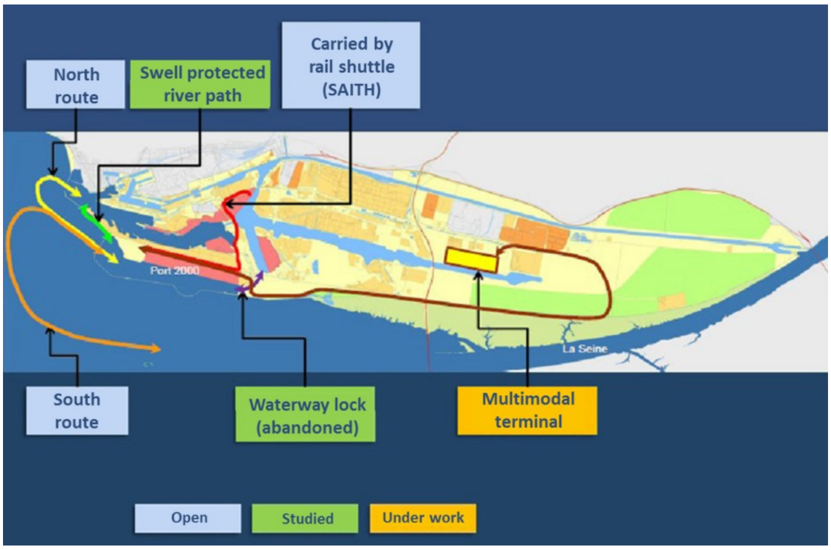
Port of Le Havre and its industrial area has a direct link to motorways A131 and A29. Those 2 motorways are connected to A13 which links the Haute-Normandie region to Paris.

<u>Rail accesses</u>

The port is connected to the core rail network. Rail access to Le Havre is hindered by heavy passenger train traffic on the Paris-Normandy line between Paris and Mantes-la-Jolie. In the future, the Paris-Serqueux line is to become the main rail access to the ports of Normandy but it requires the Gisors-Serqueux link to be upgraded and electrified.

<u>IWW accesses</u>

The port is located next to the Seine with the Tancarville canal linking the port to the river. However, there is to this day no direct IWW access to Port 2000 so that goods must either be transferred by rail shuttle to the inland port or carried by sea with special vessels to the older part of the port (North route) or to the Seine (South route). Two projects were studied to solve this issue: a new lock between Port 2000 and the inland port (project abandoned due to the cost) and a swell protected river path between Port 2000 and former outer port.



IWW traffic on the Seine between the HAROPA ports witnessed a strong growth to reach 22.1 Mt in 2012 with container traffic on the Seine growing from 40,000 TEU in 2002 to over 250,000 TEUs in 2012.

Logistic Areas

A multimodal terminal under construction will open in 2015, it will link terminals, including Port 2000, to land modes but also serve as a RTT.

The port hosts an extensive industrial area with around 32’000 persons employed in the port and industrial activities in 2010. This year, 14’400 were directly working in port activities and 17’400 were employed in industrial activities linked to the port (source: INSEE).

Port Connectivity and Motorways of the Sea

Combined transport services: The port currently is connected with 19 terminals in France, 1 in Germany (Ludwigshafen) and 1 in Italy (Novara).

The port currently hosts no Motorway of the Sea.

Facilities for clean fuels

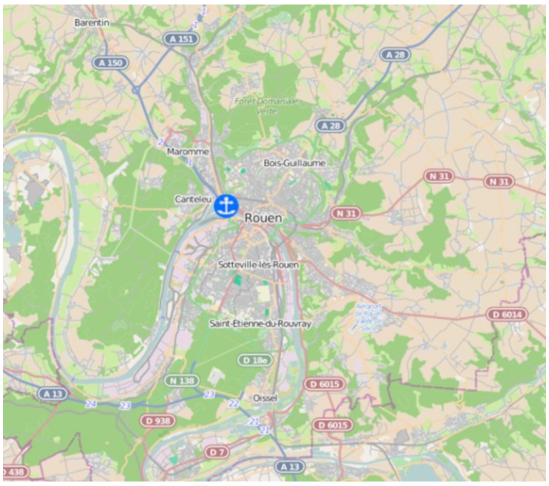
Currently no infrastructures are available. A project to create alternative fuels facilities at HAROPA ports (bunkering and storage facilities) is identified over the 2016-2020 period.

Telematic applications

Single window: the port uses the Cargo Community System AP+ developed by SOGET.

Port of Rouen (France)

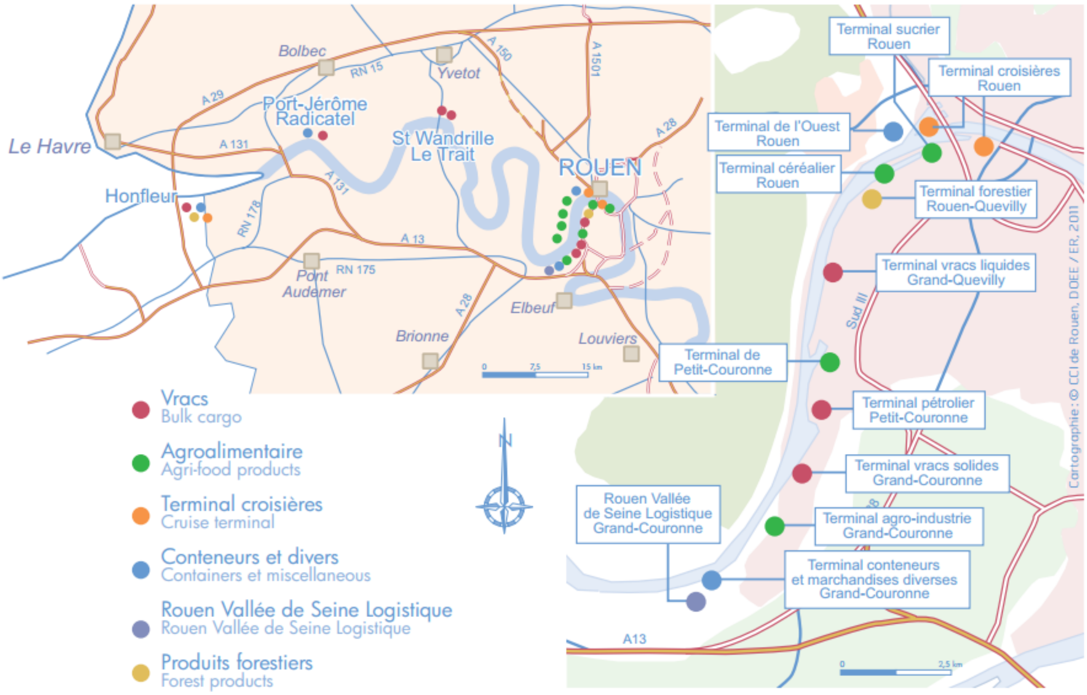
Location & Base Characteristics



CNC	Core port
Type of port	Maritime and inland
Activity	Passengers and Freight
Total throughput (2012)	21.16 million tonnes
Total Passenger (2012)	38'647 passengers

The Port of Rouen is located on the Seine, 120km from the estuary. Together with Le Havre and Paris, Port of Rouen is a member of HAROPA. Rouen is specialised in bulk, both liquid and dry. It is the first European for grain exports.

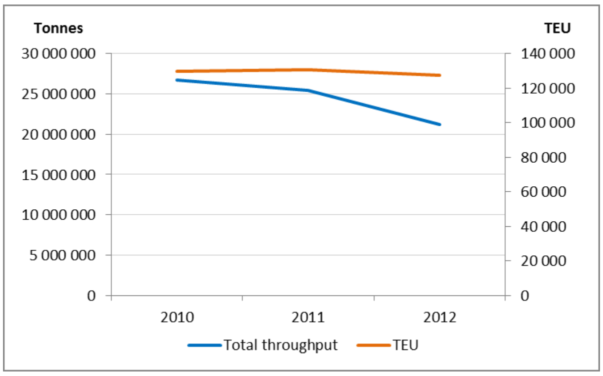
Terminals & Maritime Accesses

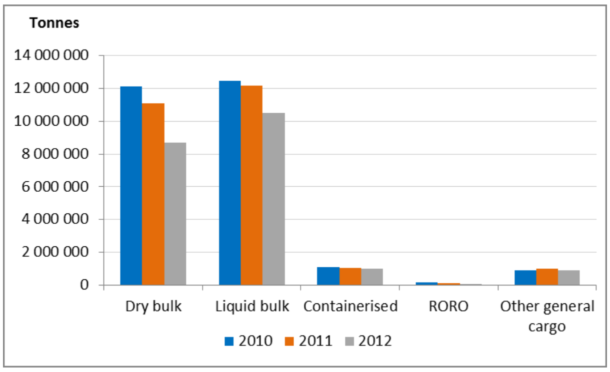


Navigation on the Seine up to Rouen is limited to 10-11m draught due to the river depth. To allow handymax ships access to the Rouen (11-12m draught), the port is carrying out dredging of the river.

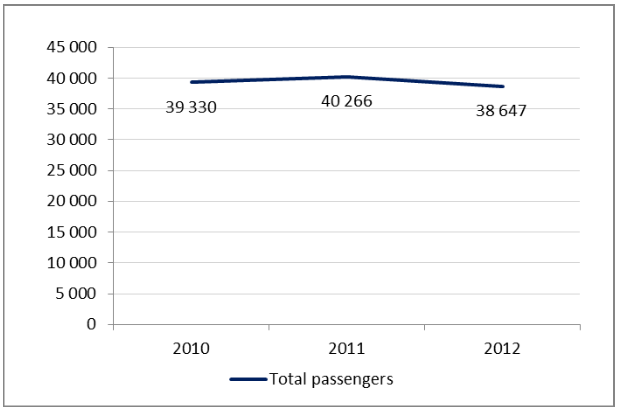
Traffic data

Freight traffic witnessed a decrease of all categories between 2010 and 2012. Although complete traffic data were to available when writing the present report (October 2014), it appears that total traffic at the port increase by 6% in 2013. The port is specialised in liquid (mostly refined oil products) and dry bulk (mostly grain exports).





With around 40'000 passengers per year (mostly from cruises), passenger traffic has been stable between 2010 and 2012.



Accessibilities

<u>Road accesses</u>

The main port is linked to motorway A13 to Paris by the N1338 expressway. Other motorways from Rouen are A28 and A151.

<u>Rail accesses</u>

The port is connected to the core rail network. Rail access to Le Havre is hindered by heavy passenger train traffic on the Paris-Normandy line between Paris and Mantes-la-Jolie. In the future, the Paris-Serqueux line is to become the main rail access to the ports of Normandy but it requires the Gisors-Serqueux link to be upgraded and electrified.

IWW accesses

The port is located on the Seine, offering a wide gauge waterway link to the Paris area.

Logistic Areas

The port generates more than 20’000 direct and indirect jobs in the Rouen area.

Port Connectivity and Motorways of the Sea

More than half of the port sea traffic is carried out with other European ports.

The port currently hosts no Motorway of the Sea.

Facilities for clean fuels

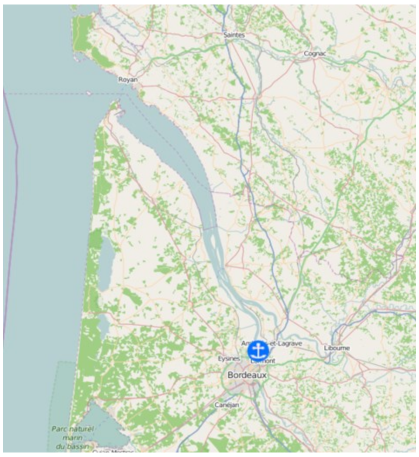
Currently no infrastructures are available. A project to create alternative fuels facilities at HAROPA ports (bunkering and storage facilities) is identified over the 2016-2020 period.

Telematic applications

Single window: the port uses the Cargo Community System AP+ developed by SOGET.

Port of Bordeaux (France)

Location & Base Characteristics



CNC	Core port
Type of port	Maritime
Activity	Passengers and Freight
Total throughput (2012)	8.19 million tonnes
Total Passenger (2012)	56’945 passengers

The Port of Bordeaux is located on the Garonne estuary with 7 terminals from the Ocean to the city of Bordeaux. The port focuses on liquid bulk with 60% of its total traffic in 2012 (mainly refined oil products).

Terminals & Maritime Accesses

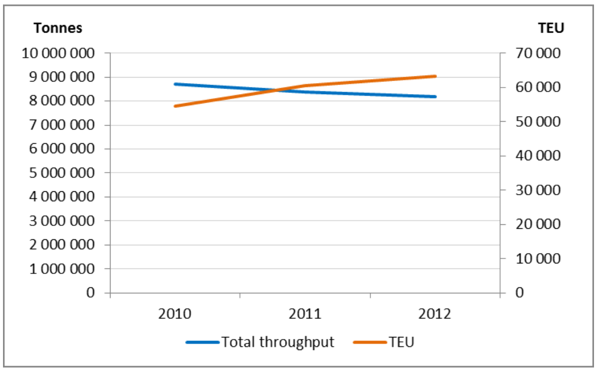
Port of Bordeaux is composed of 7 specialised terminals located around the mouth of river Garonne:

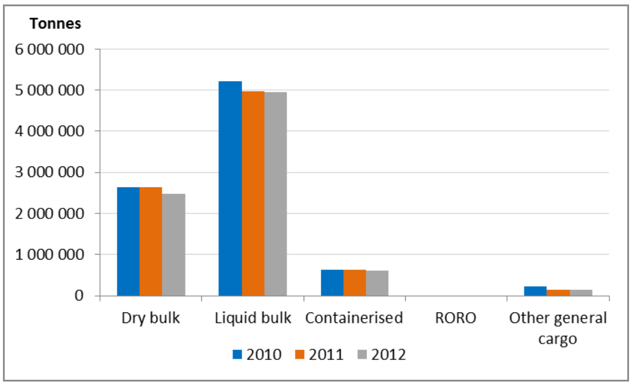
- Verdon terminal is a deep sea port (12.5m draught), it benefits from 200ha of available land for logistics and industrial activities. It is specialised in containers and heavy parcels. Although it is the furthest terminal from the city of Bordeaux, rail connections link the terminal to the city.
- Pauillac terminal is used for oil products imports as well as for Airbus logistics, in particular to carry elements of the A380 airplane.
- Blaye is a small terminal dedicated to liquid and dry bulk.

- Ambès terminal is located at the confluence of rivers Dordogne and Garonne and specialised in oil and chemical products.
- Grattequina terminal, used mainly for heavy parcels (wind turbines), is being developed for bigger parcels and construction materials.
- Brassens terminal is a logistical centre through which bulk, containers, forest products and heavy parcels are shipped.
- Bordeaux terminal lies in the city itself and is used for cruises.

Traffic data

The port of Bordeaux is specialised in liquid bulk. Traffic amounted to 9.1Mt in 2013 and is composed of liquid bulk at 60.5% of the 2012 traffic (mainly refined oil products), of dry bulk at 30.2% (mainly grain) as well as containers (7.5%) and other general cargo (1.8%).





In 2012 the port of Bordeaux hosted 60'000 passengers, mainly from cruises. No passenger traffic was reported for 2010 and 2011.

Accessibilities

Road accesses

Road access to Bordeaux is mainly done on 5 motorways: A89, A62, A63, A65, A10.

Rail accesses

The Bassens and and Ambès terminals are connected on the Bordeaux-Paris line, whereas the Verdon terminal, specialised in containers, is located further to the North-West, around 100km away from the main rail line.

IWW accesses

The port is located on the Garonne, but has very little waterway traffic.

Logistic Areas

Logitical activities are mostly located at Le Verdon, Pauillac, Bassens, Ambès and Grattequina. Le Verdon benefits from the main potential for development with 200ha of land available.

Port Connectivity and Motorways of the Sea

Around 75% of the port's traffic is done with other European ports.

The port currently hosts no Motorway of the Sea.

Facilities for clean fuels

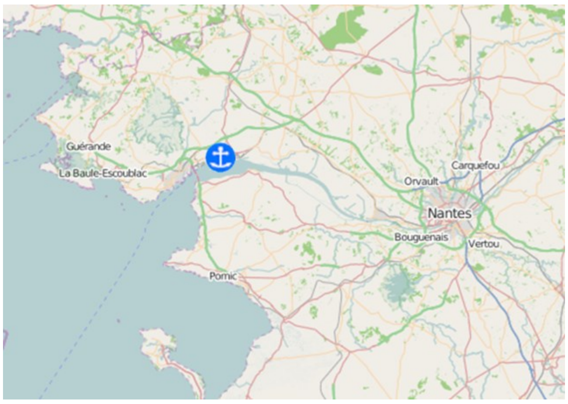
Currently no infrastructures are available. A project to create alternative fuels facilities at port of Bordeaux is identified over the 2016-2020 period.

Telematic applications

Single window: the port uses POSEIDON system which integrates several software (AP+, VIGIE2 and DELTA).

Other Maritime Ports (Corridor Feeders) - Nantes Saint-Nazaire (France)

Location & Base Characteristics

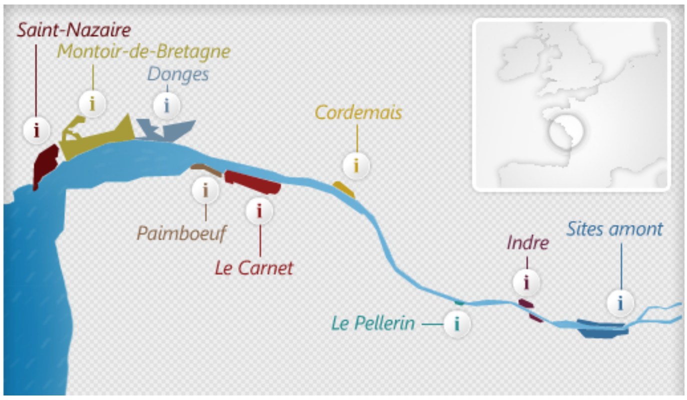


CNC	Core port
Type of port	Maritime
Activity	Passengers and Freight
Total throughput (2012)	29.9 million tonnes
Total Passenger (2011)	54'303 passengers

The Port of Nantes-Saint-Nazaire is located on the Loire from the Ocean to the city of Nantes. The main terminals are located around Saint-Nazaire. The port focuses on liquid bulk with 64% of its total traffic in 2012. Nantes-Saint-Nazaire is a core network port but is not on the Atlantic corridor but is a feeder of traffic.

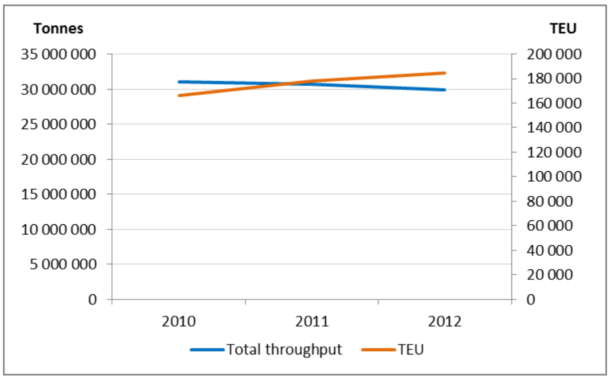
Terminals & Maritime Accesses

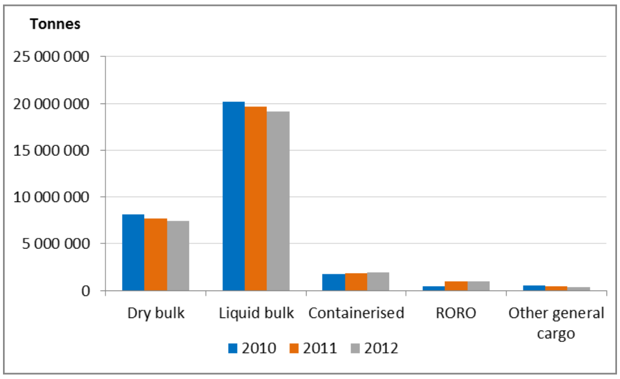
The port is composed of 9 sites along the estuary from Saint-Nazaire to Nantes: Saint-Nazaire, Montoire-de-Bretagne, Donges, Paimboeuf, Le Carnet, Cordemais, Le Pellerin, Indre and Sites amont.



Traffic data

Traffic at Nantes-Saint-Nazaire amounted to 29.9Mt in 2012 and is mainly made of liquid bulk (64% of the 2012 traffic), dry bulk (25%) and containers (7%).



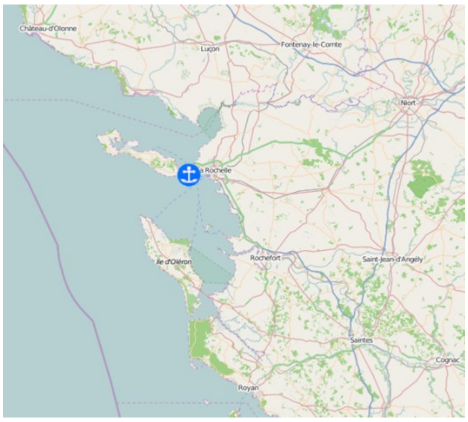


Port Connectivity and Motorways of the Sea

Until recently the port hosted the only Motorway of the Sea along the corridor (Gijon-Nantes-Saint-Nazaire) which was suspended in 2014.

Other Maritime Ports (Corridor Feeders) - La Rochelle (France)

Location & Base Characteristics



CNC	Comprehensive port
Type of port	Maritime
Activity	Passengers and Freight
Total throughput (2012)	8.3 million tonnes
Total Passenger (2012)	69’968 passengers

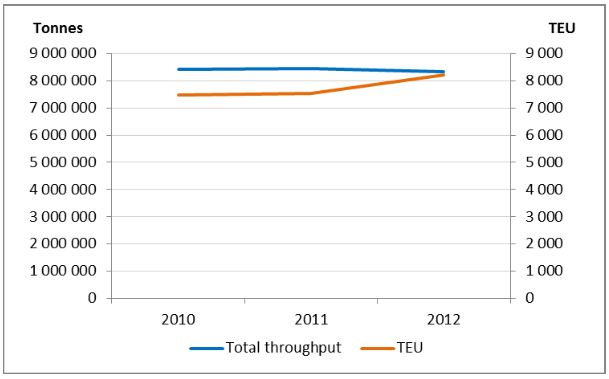
The port of La Rochelle is located on the Atlantic cost between Bordeaux and Nantes. It is the only deep water port on the Atlantic coast and is naturally protected by islands and is able to handle ships over 100’000 tonnes deadweight. La Rochelle is the 2d French port for cereals export and the main port for trade forestry and agricultural products. The port focuses on dry bulk with 55% of its total traffic in 2012 as cereal accounts for 40% of traffics. La Rochelle is not located on the Atlantic corridor but is a feeder of traffic.

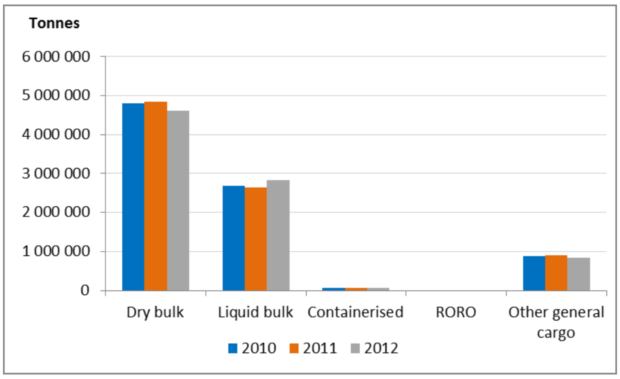
Terminals & Maritime Accesses

The port is located next to the city of La Rochelle.

Traffic data

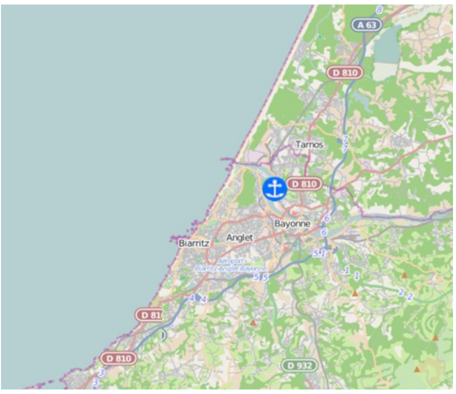
Traffic at La Rochelle amounted to 8.3Mt in 2012 and is mainly made of liquid bulk (55% of the 2012 traffic), dry bulk (34%).


Tonnes
TEU
9 000 000
8 000 000
7 000 000
6 000 000
5 000 000
4 000 000
3 000 000
2 000 000
1 000 000
0
9 000
8 000
7 000
6 000
5 000
4 000
3 000
2 000
1 000
0
2010
2011
2012
Total throughput
TEU


Tonnes
6 000 000
5 000 000
4 000 000
3 000 000
2 000 000
1 000 000
0
Dry bulk
Liquid bulk
Containerised
RORO
Other general cargo
2010
2011
2012

Other Maritime Ports (Corridor Feeders) - Bayonne (France)

Location & Base Characteristics

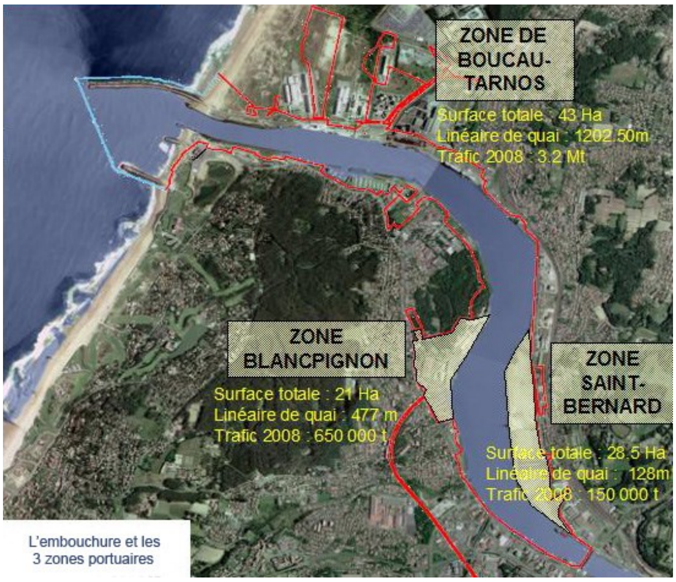


CNC	Comprehensive port
Type of port	Maritime
Activity	Passengers and Freight
Total throughput (2012)	3.3 million tonnes
Total Passenger (2012)	194 passengers

The port of Bayonne is located on the Adour estuary. The port focuses on dry bulk with 51% of its total traffic in 2012.

Terminals & Maritime Accesses

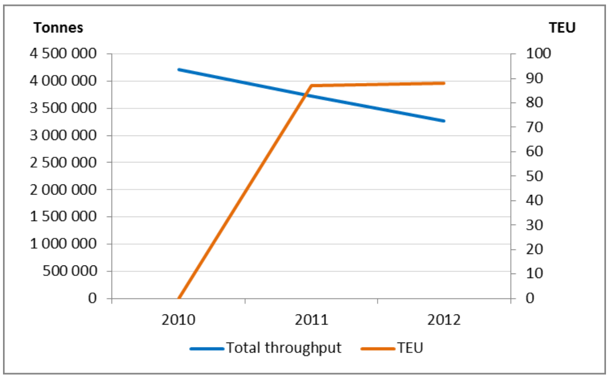
The port of Bayonne is composed of 3 port areas: Boucau-Tarnos, Saint-Bernard et Blancpignon.

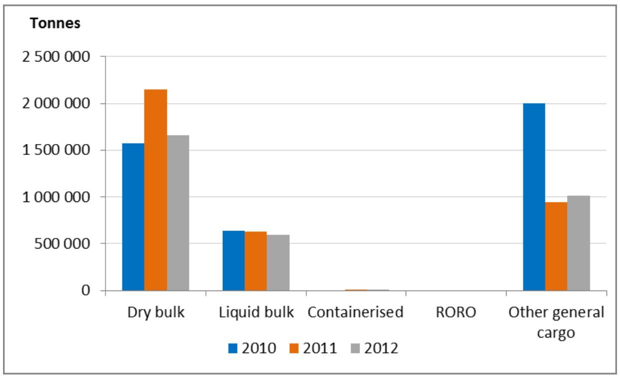


L'embouchure et les 3 zones portuaires

Traffic data

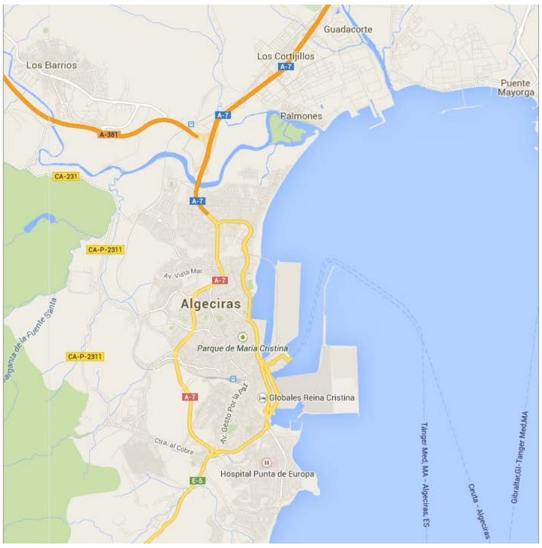
Traffic at Bayonne amounted to 3.3Mt in 2012 and is almost entirely made of liquid bulk (51% of the 2012 traffic), dry bulk (18%) and other general cargo (31%).





Port of Algeciras (Spain)

Location & Base Characteristics



CNC	Core port
Type of port	Maritime
Activity	Passengers and Freight
Total throughput (2013)	85,857,100 tons
Total Passenger (2013)	5,173,919 passengers

Located in Algeciras Harbor of the Strait of Gibraltar, Algeciras Port is the busiest Port of Spain and one of the most important ports in Europe. It is a hub port, where interoceanic vessels make a stop in order to change containers and liquid bulk into feeders. Those feeders continue their transit through Europe and Africa.

Terminals & Maritime Accesses

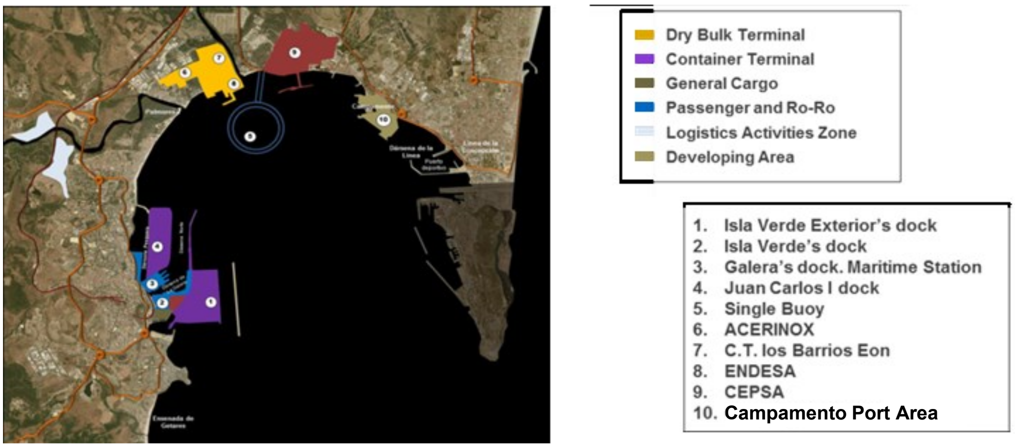
It has 17.1 km of quays with up to 32.5 meters of maximum depth. APM Terminal Algeciras has a capacity of 3.5 million TEUs, currently implementing a project to increase it considerably. TTI-A (Total Terminal International Algeciras) has a 35.76 Ha surface, with a capacity of 1.6 million TEUs in its phase A of IVE. The phase B of Isla Verde Exterior will add an additional capacity of 1.6 million of TEUs. In total the Port Bahía de Algeciras will have a capacity of around 8 million TEUs in 2020. Phases C and D of IVE would contribute to a total capacity of 12 million TEU in 2030. TTI-A is the first semi automatized terminal in the Mediterranean Sea.

Within the port there are 5 separate terminals with specialized facilities in different types of traffic:

- Dry bulk Terminal
- Container Terminal
- General Cargo
- Passenger and Ro-Ro
- Logistics activities zone
- Developing areas

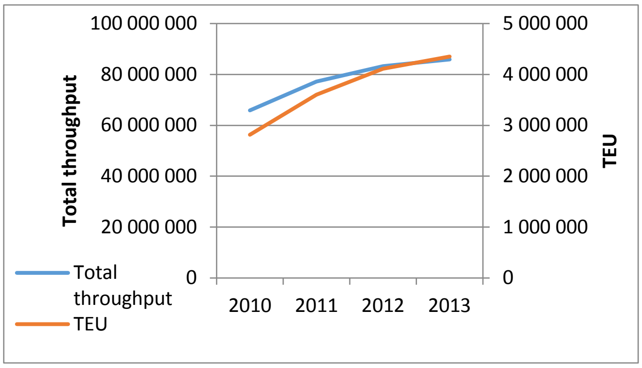
The Strait of Gibraltar concentrated a container handling volume in 2013 of around 7.3 million TEU managed by a total of 5 terminal between both sides of the Strait. The Bay of Algeciras port leads the activity in this area with a share of 60%.

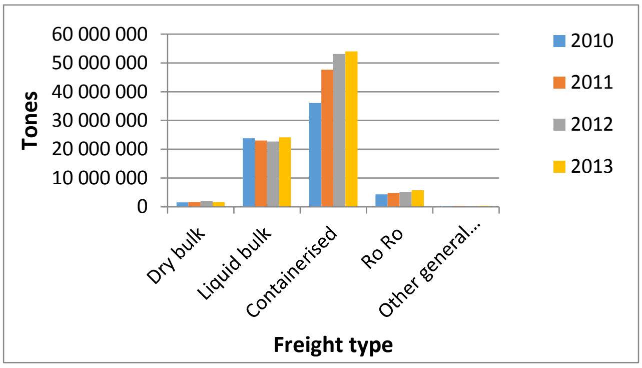
Also, traffic of goods by rail reached 36,300 annual TEU (2013), of which 18,300 TEU were maritime containers with origin/destination in the port of Algeciras.



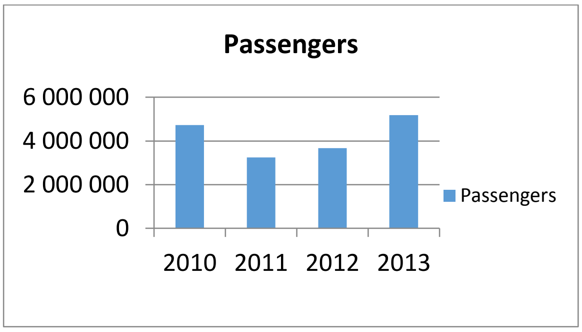
Traffic data

Freight performance





Passenger performance



Accessibilities

<u>Road accesses</u>

- Northern access: binds the highway A-7 with the north part of the port (Juan Carlos I quay and sea terminal) through N-357 road.
- South access: it connects Isla Verde quay and Isla Verde outer quay with the highway A-7 through C-223 road.

- Central access: private vehicle and pedestrian access to downtown Algeciras.

Improvements and upgrades of road connections are needed (North, South, Tarifa and Campamento road accesses). Concerning to this issue a specific project is foreseen: Upgrading road connection (South Access).

Rail accesses

The rail access to Algeciras Port is provided by Bobadilla-Algeciras line, whose main characteristics are:

- Train length: the section only allows trains up to 550 m.
- Iberian gauge.
- Non electrified single-track line.
- Gradient: it has a maximum slope of 24 ‰ from Bobadilla to Algeciras and 23 ‰ in the opposite direction.

Improvements and upgrades of rail connection are needed in order to fulfill modern standards.

IWW accesses

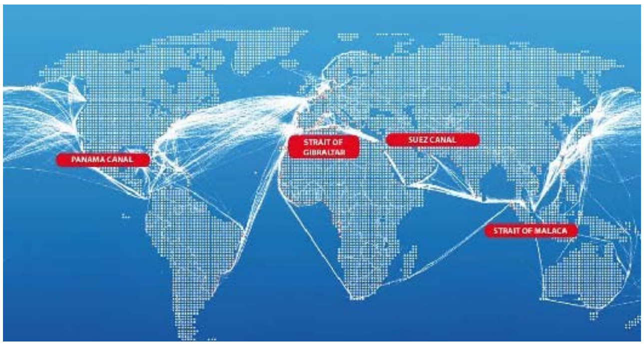
There are no IWW accesses in Algeciras Port.

Logistic Areas

The main logistics areas inside the Port of Algeciras are the following:

- Campamento Port Area. It offers 35 ha surface and 800 moorages available. San Roque- La Línea Adif freight terminal allows intermodal container road-rail activities. It also provides rail services to Campamento area.
- Algeciras Freight Logistics facility. It regulates Algeciras Port´s incoming and outcoming.
- APM Terminals. Situated in Juan Carlos I dock, it has a surface of 68.62 ha. Algeciras APM Terminals has already executed a 42 million € investment in the adaptation and purchase of new Over Super Post Panamax type cranes to serve the new series of mega-ships of 18,000 TEU loading capacity: the so-called Triple-E reaching 400 meters long, 59 meters wide and over 70 meters high.
- TCA (Andalusian container terminal).Situated in Isla Verde dock, it has a surface of 12.72 ha and contains a dock for containers and Ro-Ro. Also in Isla Verde, there is a Cold Storage Reefer Terminal.
- International Total Terminal Algeciras (TTI-A).

Port Connectivity and Motorways of the Sea



The 20 main global commercial sea routes own 60% of the container global traffic. Algeciras Port belongs to 9 of these routes.

Algeciras Bay Port provides 72 services by 22 shipowners that connect directly to 150 harbors.
Juan Carlos I, Isla Verde and Isla Verde Exterior docks are used for container transport.

Facilities for clean fuels

Flexible LNG bunkering value chain in the Spanish Mediterranean Coast: bunker Logix.

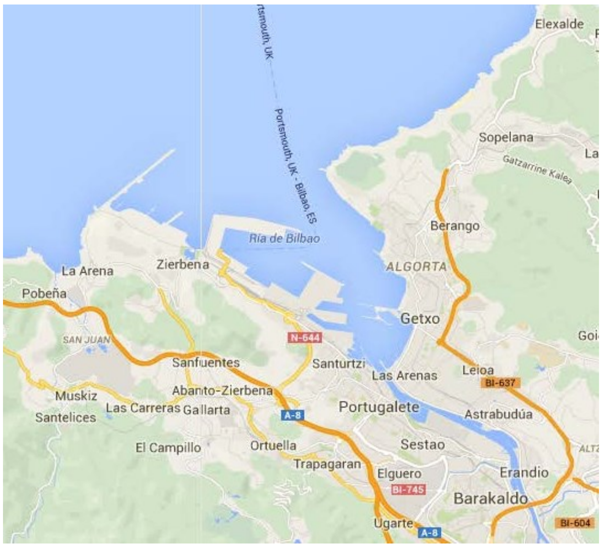
Telematic applications

There are the following available telematics applications in the Port of Algeciras:

- EDI system.
- Systems in semi automatized Isla Verde Terminal.
- Algeciras-Tanger passenger identification system.
- European Single Window initiative.
- VTS and PCS IT infrastructure, which need to be upgraded to improve their efficiency.

Port of Bilbao (Spain)

Location & Base Characteristics



CNC	Core port
Type of port	Maritime
Activity	Passengers and Freight
Total throughput (2013)	29,601,000 tons
Total Passenger (2013)	141,979 passengers

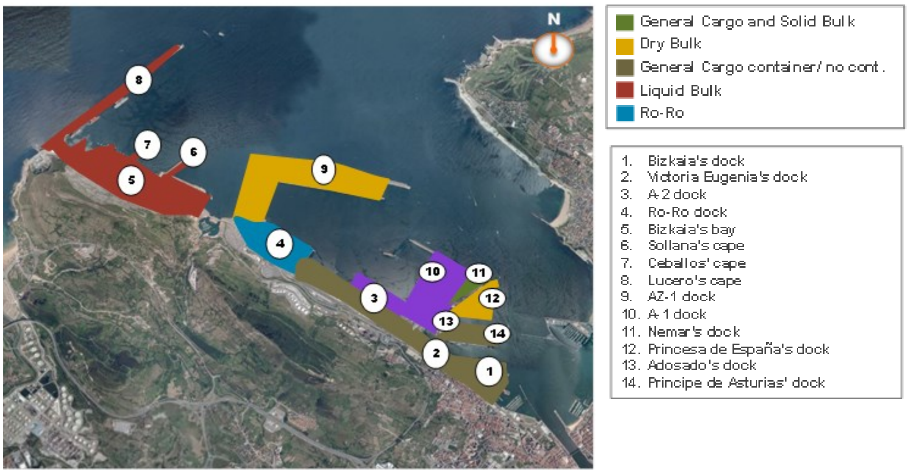
The Port of Bilbao is located on the eastern end of the Bay of Biscay in the north of the Iberian Peninsula. More specifically, the port is located in the Nervion estuary, in the municipalities of Ziérbena, Santurce, Portugalete, Sestao, Barakaldo and Bilbao.

Terminals & Maritime Accesses

The Port of Bilbao has 19.8 km of quays, with up to 32 meters of maximum depth and 400 ha of land area. Moreover, it has 480,000 m^2 of covered storage surface.

As shown in the figure below, within the port, there are 5 areas with specialized terminals in different types of traffic:

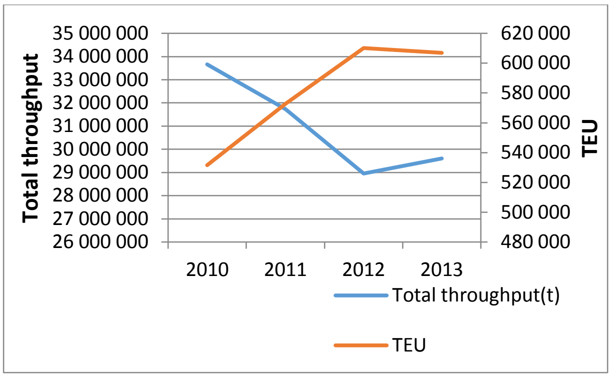
- General cargo and dry bulk
- Dry bulk
- General cargo (container and no container)
- Liquid bulk
- Ro-Ro (Roll on – Roll off)

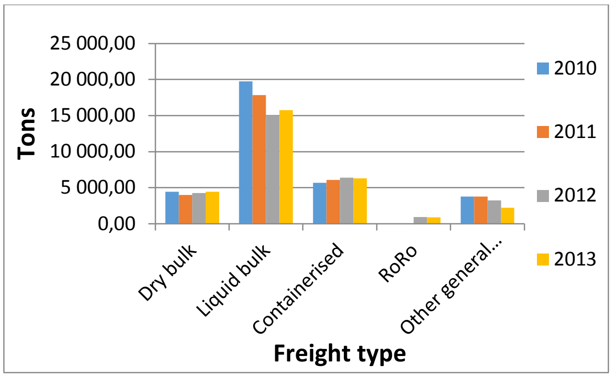


Traffic data

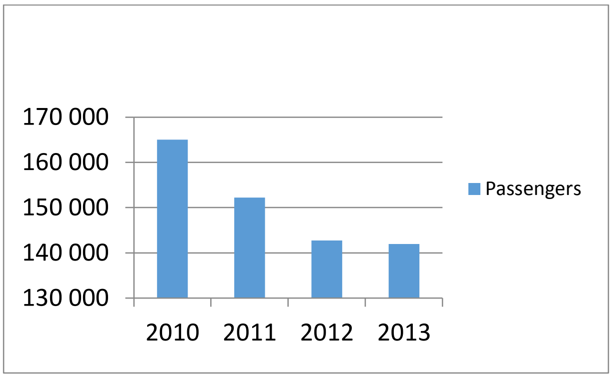
Since 2010 there has been a continuous decrease in throughput but growth in TEU. Since 2012 the throughput starts growing.

Freight performance





Passenger performance

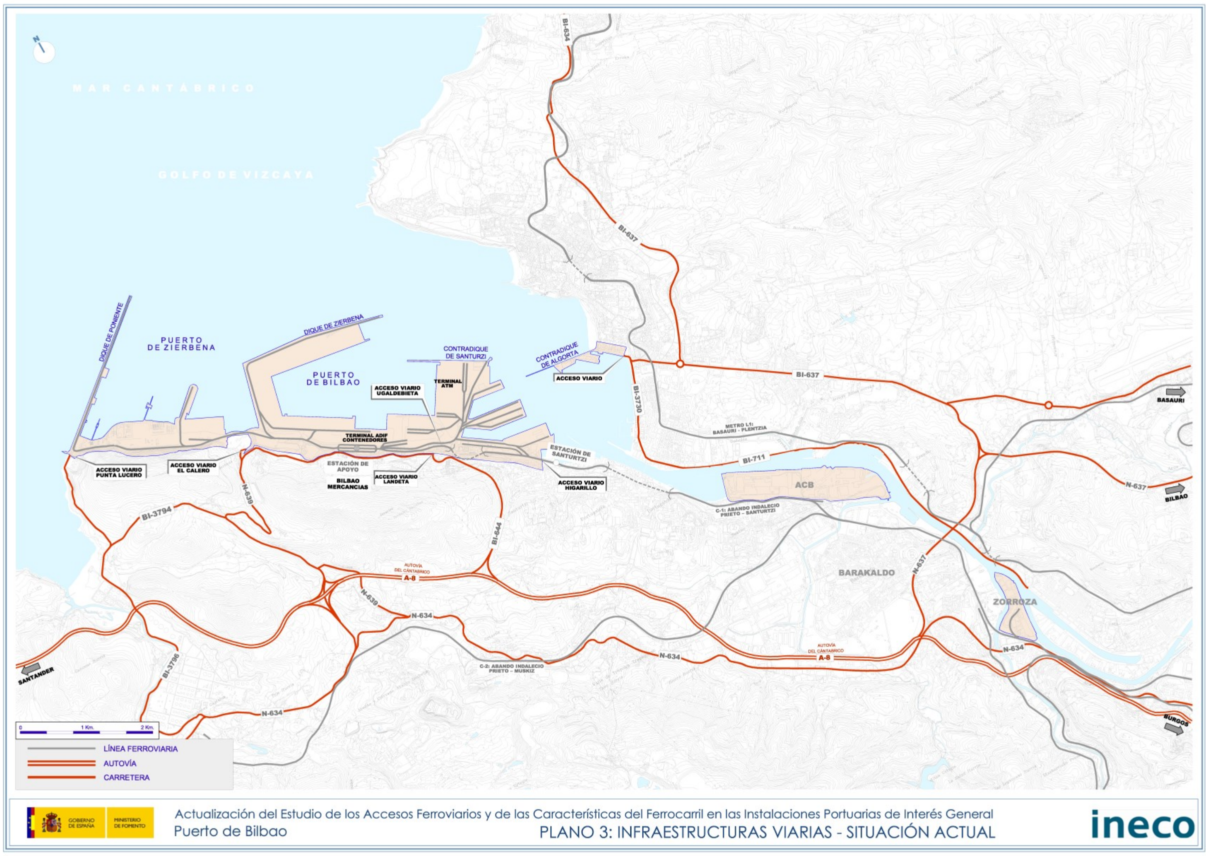


Accessibilities

<u>Road accesses</u>

Bilbao Port has 5 road access points available:

- Cantabrian motorway A-8 is the road that gives access, through road BI-644, to the two control access points of Ugaldebieta and Landeta entries, which are used to access Santurtzi-Zierbena and Santurtzi-Getxo areas. These areas are used by Bilbao freight and containers rail stations.
- N-639 road gives access to El Calero control point, connected to the industrial sector.
- Punta Lucero access point is located in the north, and it has a less appropriate access.
- Higarillo entry is located in the urban center of Santurtzi, and it only allows car access.



<u>Rail accesses</u>

Bilbao Port is connected to Miranda de Ebro-Bilbao line and from here to the national rail network. Main characteristics of this line are:

- Train length: the section only allows trains up to 520 m.
- Iberian gauge
- Electrified
- Gradient: 18‰ from Bilbao Port to Miranda de Ebro and 12 ‰ in the opposite direction.

<u>IWW accesses</u>

There are no IWW accesses in Bilbao Port.

Logistic Areas

Bilbao Freight Station is located in Bilbao Port, providing service to all the terminals/quays in the port that are connected through the internal railway network.

Apart from that, there is a logistics activities zone of the Port of Bilbao (ZAD). With a surface of 100.000 m², it has loading docks, access gates on the premises, parking areas and offices. As it is near the lorry-parking area, the rail freight station and maritime terminals, it proves to be especially accessible.

There is a project of new RRT in Burgos (TELOF or Dry Port of Pancorbo), currently under construction, which will be connected by rail to the Port of Bilbao. It will be located close to Miranda de Ebro, an important rail interchange node in Spain. The Port Authority is also involved in the multimodal platform Arasur in Alava, approximately 65 km from the Port of Bilbao.

Port Connectivity and Motorways of the Sea

Bilbao is a significant port for Short Sea Shipping, as its flows represent 52% of the total traffic.

Since 2007, the first Motorway of the Sea on the Bay of Biscay is operating. Transfennica offers sailings from Bilbao to the Belgian port of Zeebrugge with two vessels, equipped with the means to transport driver-free lorries, platforms, containers and high & heavies. In addition, refrigerated goods are also accepted.

There are available SSS services from Bilbao to UK (every day at least one vessel sails from Bilbao to UK), Ireland, Rotterdam, Poland and Baltic..

Facilities for clean fuels

Bahía de Bizkaia Gas plant has 2 GNL storage tanks with a storage capacity of 300,000 m^3. Its production rate is 800,000 Nm3/h. Berth has been dedicated for loading/unloading LNG and supplying LNG as bunker to vessels. There is, as well, the possibility of loading trucks to supply LNG as bunker to vessels in different quays. There is a petrol station in the port of Bilbao premises for providing bunker to trucks.

Telematic applications

The “e-puertobilbao” telematics platform is the Bilbao Port Authority’s (APB) commitment to improve document interchange and communications with companies in the port community in such a way that its services offer enables the maximum possible competitive positioning for the companies participating in the Bilbao maritime-port business.

The “e-puertobilbao" initiative was born in 2003 with a vocation to become the platform of reference for providing electronic commerce services within the whole user community of the Port of Bilbao.

The following services are at present in operation and available for users:

- Integrated Calls Procedure service (linked to European Single Window)
- Management of Summary Declarations and Manifests Service (linked to e-manifest)
- Management of Dangerous Goods Service
- Service for Coordination of container positioning at Border Inspection Post (BIP)
- Road Transport Interface:
    - Transport order
    - Pre- entry notification management
    - Delivery and Acceptance Service
- Rail service
- Export cargo list service
- Entry Summary Declarations Management Service (ENS)
- Exit Summary Declarations Management Service (EXS)

Some of these services are being developed under the IBUK (Iberian – UK) intermodal corridor project, with the aim of providing IT services throughout the logistic chain from origin to destination in a specific corridor.

Other Maritime Ports (Corridor Feeders) - Spain

Apart from Bilbao and Algeciras core ports on Atlantic Corridor, the following ports are also relevant feeders for the Atlantic Corridor (according to Regulation (EU) Nº 1315/2013):

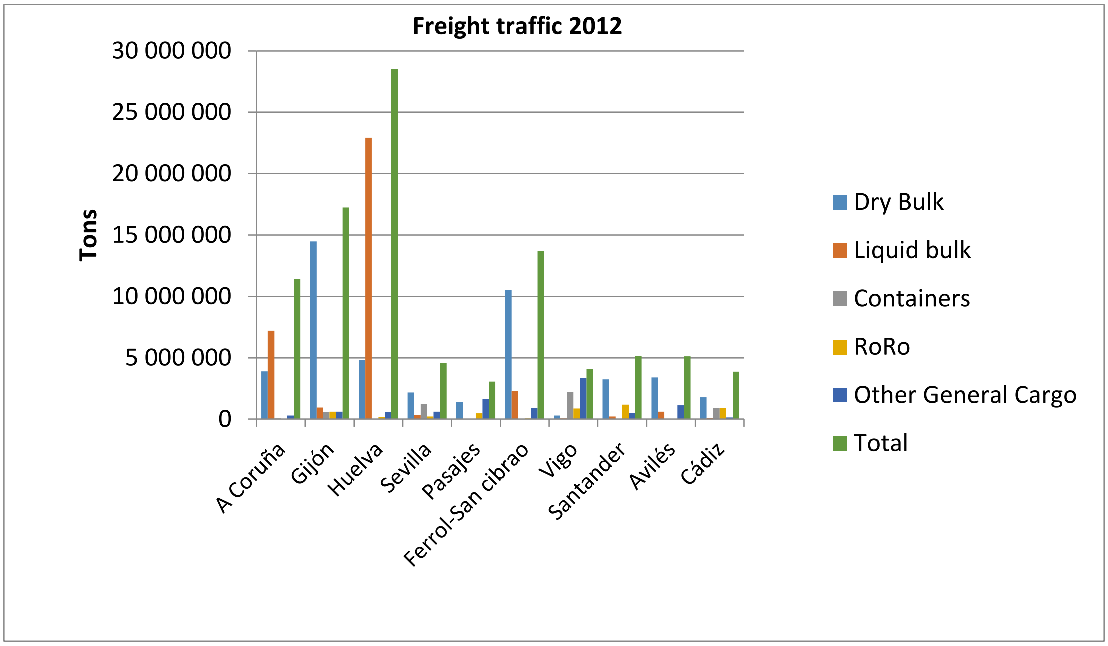
- A Coruña (core)
- Gijón (core)
- Huelva (core)
- Sevilla (core)
- Vigo (comprehensive)
- Ferrol-San Cibrao (comprehensive)
- Santander (comprehensive)
- Pasajes (comprehensive)
- Avilés (comprehensive)
- Cádiz(comprehensive)

Location

In the following picture the location of the considered ports along the Spanish Atlantic maritime façade is shown:

Traffic data

The figure below shows the freight traffic statistics of these ports, compiled in the Annual Memory 2012 of *Puertos del Estado*.



Port Connectivity and Motorways of the Sea

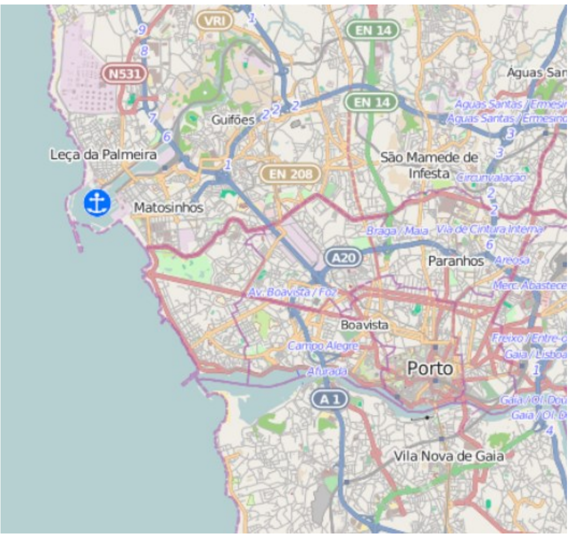
In the second half of 2013, 44 **SSS services** operated on the Atlantic coast, of which 29 were alternative to the road (66%). (Source: Spanish Statistical Observatory of Short Sea Shipping, 2009-2013).

Concerning **Motorways of the Sea (MoS)** involving these ports, we can point out the following ones:

- Gijon – Nantes – Saint-Nazaire (currently suspended)..
- Vigo – Nantes: It is planned to be established a new MoS between Vigo and Montoir (Saint-Nazaire).
- Santander-Rostock (MOS project SEAGAS for a corridor)

Port of Leixões (Portugal)

Location & Base Characteristics



CNC	Core port
Type of port	Maritime (Inland)
Activity	Passengers and Freight
Total throughput (2013)	17 186 thousand tons
Total Passenger (2013)	46 620 passengers

The Port of Leixões is situated in the north of Portugal, in the north-west of the Iberian Peninsula with a connection to River Douro (Core Inland Waterway).

Terminals & Maritime Accesses

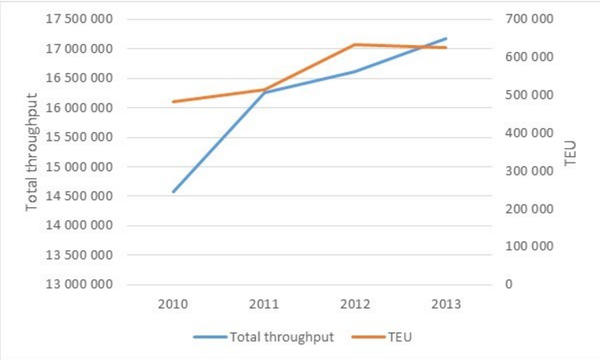
The port of Leixões has about 5km of quays, 55ha of embankments and 120 ha of wet area. Within the port are separate terminals with specialized facilities in different types of traffic :

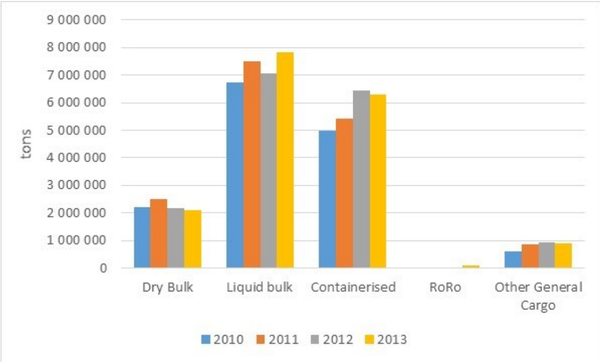
(1)	Passenger Terminal
(2)	Roll-on/Roll-off Terminal
(3)	Solid Bulk - Dook 1 South
(4)	South Mole
(8)	Cruise Terminal
(5)	Oil Terminal
(6)	Containers Terminal
(7)	Break-bulk and Solid-bulk Terminal

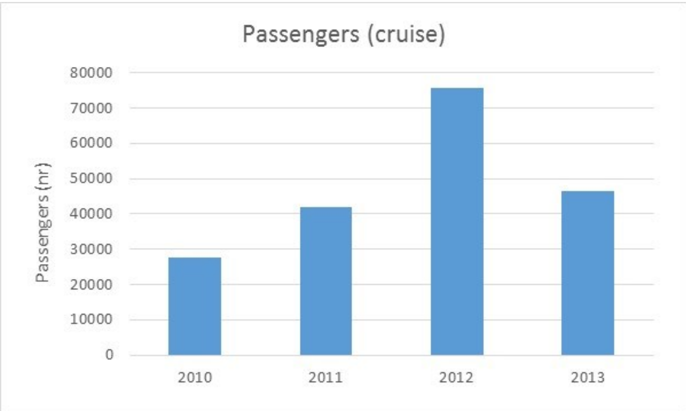
Depth in the main entrance channel to the port is -12 and the width, between the heads of the breakwater, is 220 metres. In the foreport the channel widens to 500 metres at 240 metres from the entrance and then narrows again to the entrance to Dock 1, which is 113 metres. The width of the entrance to Dock 2 is 58 metres. Works to increase the depth to -14 in the main entrance channel and new containers terminal is expected to be concluded till 2018.

Traffic data

The port of Leixões had a total traffic volume of 17,1 million tons in 2013, of which 46% liquid bulk, 37% containerized cargo and 12% solid bulk. In 2013, utilisation rates in Leixões terminals reach 93% for containers and 82% for liquid bulks.







The Cruise Tourism is configured as a segment with high growth potential in Europe and in Portugal especially, with Leixões (Porto) gaining a major relevance in the new cruise routes. The new cruise terminal will include a new mooring quay for vessels up to 300 feet long, a yacht marina for 170 boats and a Passenger Station Building. Up to September 2014, 49 thousand passengers were recorded in Leixões.

Accessibilities

Road accesses

The port of Leixões is connected with the long distance trunk roads IP 1 and IP 4 and with the motorway IC1/A28, IC 23 and IC 24/A41. The access between the port and these motorways is made by a dedicated fast way road, the VILPL (Via Interior de Ligação ao Porto de Leixões) that allows all heavy transport to be diverted to the town cities that surrounds the port (Matosinhos and Leça da Palmeira).

Rail accesses

The port is connected to the core rail network, however several bottlenecks are noticed: train length is limited to 490 meters in a single track line, with operating speed limited to 70 km/h and with 15, 6 ‰ gradient.

<u>IWW accesses</u>

The port of Leixões also have inland connection (class IV), however, this connection mainly in what regards to cargo is not exploited to its potential, namely due to existing navigation bottlenecks along the Douro River (core IWW). It is foreseen that with the planned projects on the IWW such connection will turn as a real modal choice.

A predominant share of road transport is noticed, with rail representing 3% of the total flows to the hinterland.

Logistic Areas

The Leixões Logistics Platform ensures the complementary support to logistics chains undergo Leixões.

The logistic platform is well positioned as an important element for the logistics in the north (Greater Porto) and promotes collaborative agreements with the logistic networks in the region of Castile and Leon (Cylog) through partnership with Salamanca platform.

It is developed in two sites near the Port of Leixões, with access through VILPL (Internal Road Connection to the Port of Leixões) and will help to attract new traffic to Leixões and supply chains surrounding and has unique conditions to provide establishment of logistics activities and distribution:

- Site 1 – Gonçalves, situated next to the concession facilities Silos de Leixões (Grain Storage) and mainly oriented to give an answer to the direct port logistic activities and support to vehicles
- Site 2 – Gatões / Guifões, with a multifunctional role and rail road terminal

The full entry in operation of the Logistics Platform is expected to impact positively on the port and surrounding environment; notably:

- Increasing the level of the container cargo handled in the Container Terminal by the establishment of more favorable operating conditions in adjacent segments of the logistics chain;
- Acting as a multimodal interface (sea, road, rail and air);

Port Connectivity and Motorways of the Sea

Port counts with 64 regular lines connecting to 46 ports in all Continents and especially to the north of Europe.

The recently implemented Ro-Ro service between Leixões and Rotterdam (MoS) with the maritime transport operator COBELFRET has been successfully growing.

Facilities for clean fuels

Currently no infrastructures are available. Some projects are identified to provide answer to this requirement.

Telematic applications

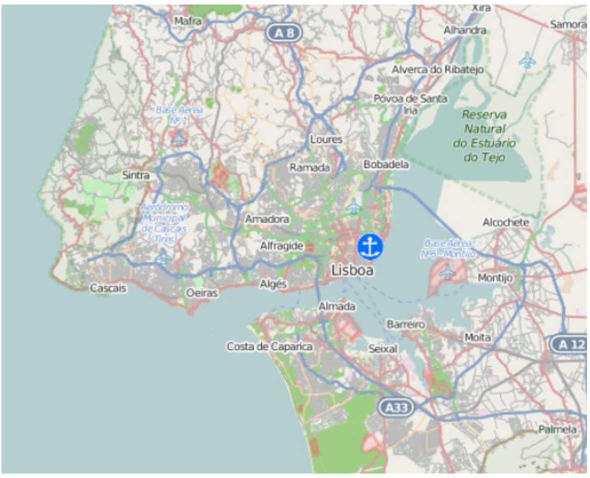
A set of e-port community systems are integrated into the concept of the Port Single Window (JUP – already in its 2nd version), ensuring 100 % paper free, integration with customs and efficiency improvements in whole chain. Leixões has been deeply involved in MIELE project (Multimodal Interoperability of E-Services for the Logistics and Environmental Sustainability) developing a pilot system called middleware MIELE, interacting with IT systems already in place in the e-maritime and e-freight domains.

An innovative service is provided by the "Container Tracing", a service that provides all port agents, customers and freight forwarders with access to the container identification number can check the container tracing at the port. With this service is now possible to have real time information about the status and customs clearance of any container that comes through Leixões. Also relevant to highlight is the integration of road data system in the scope of the port gate process (Blue line), already in pilot operation but in need of further development.

The actual VTS implemented in 2000 contains some hardware and software components with technological obsolescence and it is required to process the complete replacement of the VTS system in order to assure the high levels of safety and efficiency of maritime vessel traffic.

Port of Lisboa (Portugal)

Location & Base Characteristics



CNC	Core port
Type of port	Maritime
Activity	Passengers and Freight
Total throughput (2013)	12 030 thousand tons
Total passengers (2013)	559 434 passengers

Port of Lisboa facilities are located inside the capital area along both banks of Tagus river. It has a strong demand as it centralizes many logistic chains for all the country.

Terminals & Maritime Accesses

Port activities are developed on both banks of the river. On the Northern bank, the handling of containerised cargo, Roll-on/Roll-off and the majority of breakbulk cargo is concentrated. On the South bank, various terminals specialised in liquid and solid bulk can be found.

The Port of Lisbon offers exceptional conditions for the handling of solid bulk, especially in relation to bulk agricultural foodstuffs, as it operates as a transhipment platform for products which come from America and are redistributed in the Iberian and European markets. The Bulk Foodstuffs Terminal of Trafaria is one of the largest infrastructures in Europe in terms of cereals. Breakbulk cargo is mainly handled at two multipurpose terminals located on the North bank of the River Tagus – the Beato Multipurpose Terminal and the Poço do Bispo Multipurpose Terminal – and the Barreiro Terminal on the South bank. The Roll-on/Roll-off cargo is handled at the Port of Lisbon through the advanced quay of Alcântara. The containers are presently concentrated in three terminals in the North bank: Alcântara, Santa Apolónia and Poço do Bispo (multipurpose terminal).

The port is equipped with three cruise terminals: Alcântara, Rocha Conde de Óbidos and Santa Apolónia, all located on the North bank of the River Tagus, surrounded by the historical and cultural centre of Lisbon.

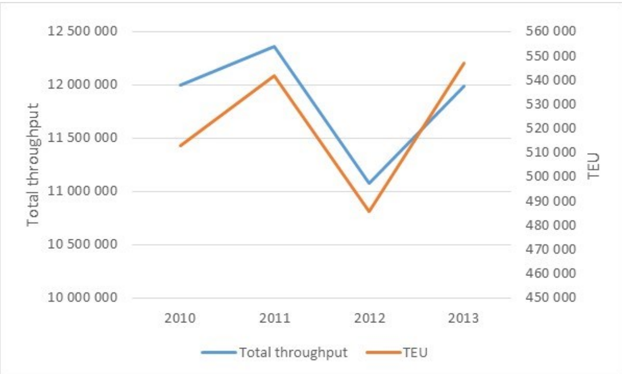
The estuary of River Tagus, with an extension of 50Km and between 2 and 14Km in width, offers the Port of Lisbon excellent navigating conditions. The main access channel of the port has depths of -15,5m ZH.

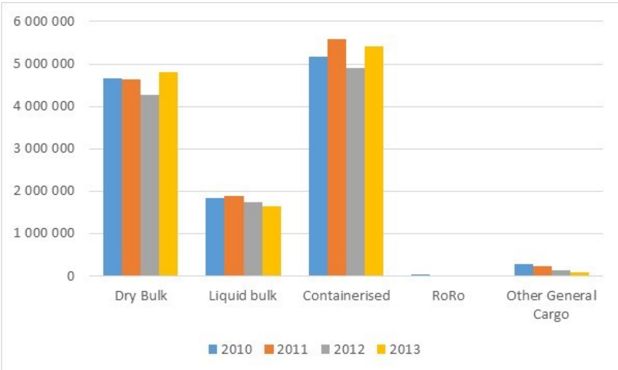
River traffic permits the transport of goods between the two margins of the estuary as well as along a significant part of the River Tagus itself.

Traffic data

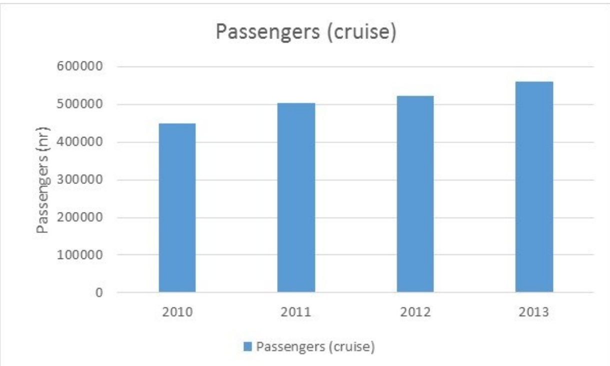
In 2013, 12 million tons of cargo have been shipped of which 45% were containerized. Port of Lisbon has three container terminals with different characteristics and utilization levels: Alcântara terminal, deep sea and already with utilization above the 70% ; Santa Apolónia terminal, short sea, with 50% and Poço do Bispo (mainly insular traffic) around 80% utilization rate. Although there is still available capacity in global terms (overall utilization is 60%), a bottleneck can be identified at Alcântara terminal.

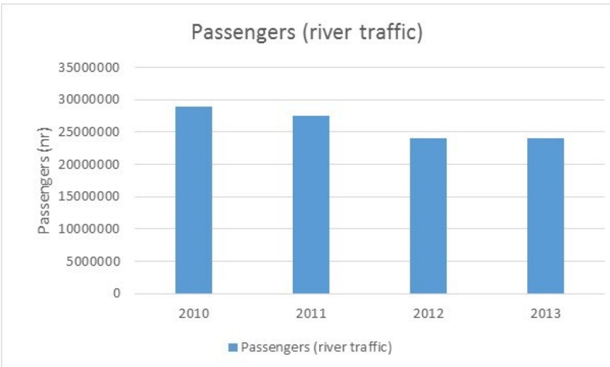
Strikes of dockers also had influence in the container terminals throughput last years and without this contingency the container terminals utilization rates would be even higher.





On the other hand, cruise market in the Port of Lisboa presents a continuous growth, both in number of vessels and passenges. The river traffic (urban) shows a continuous decrease.





Accessibilities

Road accesses

On the North bank of River Tagus, the Port has an internal road system which is organised around a main longitudinal axle in which various own routes converge and which serve the different terminals and others which establishes a connection to the external network. The south bank in served by various fast routes which facilitate the access of goods to national and international transport networks.

On the north bank, the road accessibility to core network is given by IP7 (North-South Axis) and CRIL which ensure the connectivity to last mile road network.

On the south bank, A38 – Trafaria that connects Lisbon through 25th April bridge, IC21 connecting to Barreiro terminal.

Rail accesses

The port is connected to the core rail network, however connectivity with train is constraint due to maximum train length and maximum tonnage in the section serving the port:

- From the exit of the port and for an extension of 2,4 km (between Alcântara Mar and Agulha 13 km) the line is a single track, with typical gradient of 20‰, maximum speed of 50 km/h, maximum length of the train of 300 m.
- Line is extensively used by suburban passenger's traffic limiting the available capacity for freight trains. Along all section maximum speed is 90 km/h
- On the other hand the lack of a direct rail south connection to the Spanish border forces a considerable detour (of more than 135km)

The elimination of current existing level crossings in the area of Alcântara is object of TEN-T project.

IWW accesses

The aim to use the estuary and river as a means of linking the port's operational areas, and these areas with logistics hubs, thus reducing traffic using city roads and its resulting environmental impact, is planned. Up to now the cargo river transport has been limited, however there is the intention to promote it, in articulation with the logistic platform Lisbon north.

In 2013, the traffic to the hinterland was mainly in favour of road (87%) with rail share reaching 13%.

Logistic Areas

Multimodal Port Logistic Activities in Lisbon follows a multinuclear concepts:

- Bobadela rail terminal, operated by CP-Carga
- Logistic Platform Lisboa North (Castanheira do Ribatejo), with rail and future river facilities
- RRT Poceirão (in future)

The planning pt logistic system in the metropolitan area of Lisbon is a priority action included in the regional plans, which delays impact on the port logistic performance as well as on the expected and necessary articulation of the port in the urban node

Port Connectivity and Motorways of the Sea

The Port of Lisbon offers a complete network of links with the world's main ports through more than 40 regular navigation lines to EU, Africa, America and Asia

Facilities for clean fuels

Currently the port doesn't have bunkering facilities for LNG.

Telematic applications

The port offers modern operational control and safety computing systems, fully integrated, and allowing the management of port safety and operations surveillance, in real time. A set of e-port community systems are integrated into the concept of the Port Single Window (JUP – already in its 2nd version). Implementation of JUP has allowed for a reduction of about 30 hours in the port administrative processes:

- Real time control of 100% of information (fraud and fiscal evasion)
- Continuous location of containers since entry to port exit
- Implementation of paperless philosophy – processes dematerialized in 90%
- Reduction of custom transit: 3-4 days to 1-2 hours

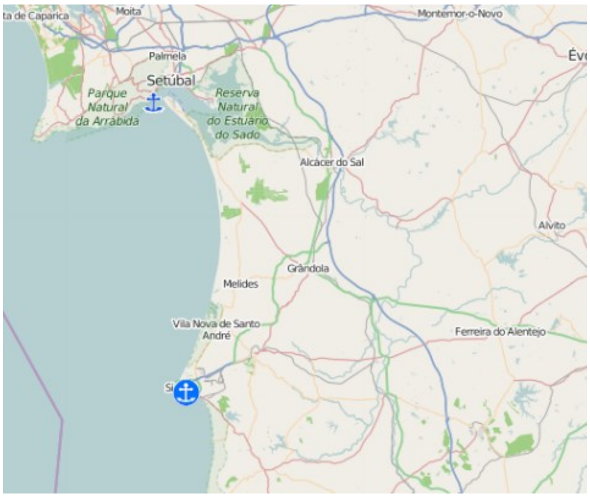
JUP turns possible to perform all operations electronically from ships – all information is dispatched before physical passage of ships and cargo, articulating all information processes between the different State authorities (port administration, customs, emigration, health, etc.) and service providers (port terminals, agents, forwarders, etc.).

The port of Lisbon was partner in MIELE project.

The actual VTS implemented in 1999, contains some hardware and software components with technological obsolescence and it is required to process the complete replacement of the VTS system in order to assure the high levels of safety and efficiency of maritime vessel traffic.

Port of Sines (Portugal)

Location & Base Characteristics

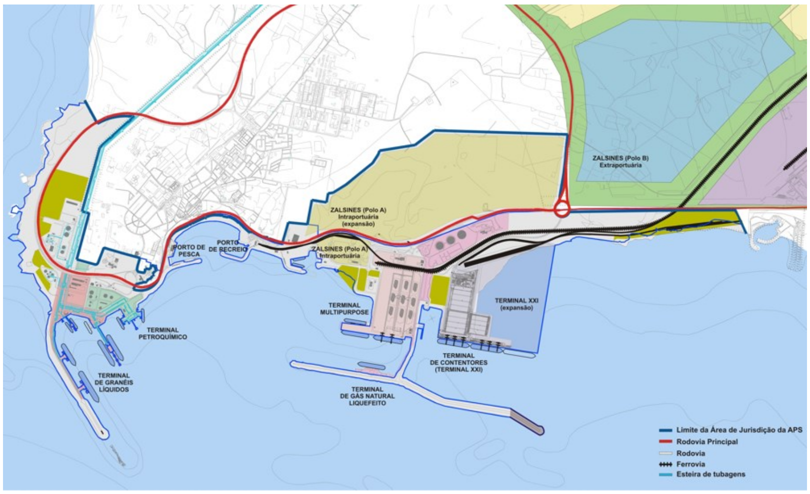


CNC	Core port
Type of port	Maritime
Activity	Freight
Total throughput (2013)	36 513 thousand tons

The port of Sines is located on the south-west of Europe, 58 nautical miles south of Lisbon at the crossroads of the main international maritime East-West and North-South routes. Its strategic location together with its physical characteristics, position it as a major hub port on the Ibero-Atlantic coast.

Terminals & Maritime Accesses

Port of Sines is an open deep-water sea port with excellent maritime access, with no restriction



in terms of depth (natural sea bottoms with no need to dredging), providing unique conditions for the reception of large vessels.

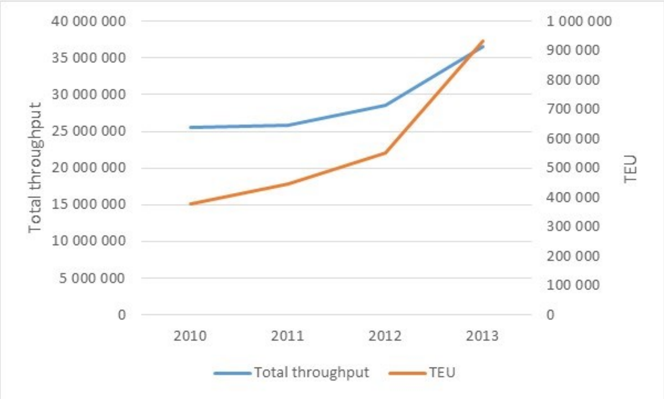
Due to its modern specialized terminals, the port is able to handle the different types of cargoes:

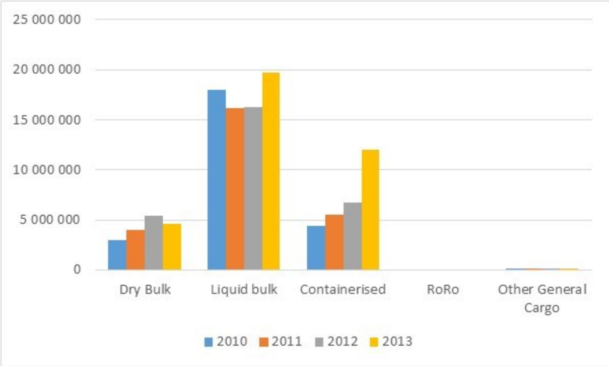
- Liquid bulks (Depths down to -28m/ZH; Vessels up to 350.000 dwt; Main Products Handled: Crudes, Refined products, LPG, Methanol and Chemical Naphtha)
- Petrochemical terminal (Dephts of -12m/ZH; Vessels up to 20,000 m3; Main Products Handled: Propylene, Ethylene, Butadiene, ETBE, Ethanol, MTBE, Aromatic Compounds, Methanol)
- Multipurpose terminal & RO-RO (Dephts down to -18m/ZH; Ships up to 190,000 Dwt; Main Products Handled: Dry Bulk, General Cargo and Ro-Ro)
- Container terminal - Terminal XXI (Depths down to -17.5m/ZH; Handling capacity: 1,000,000 TEU, Container handling: 9 Post-Panamax and Super Post-Panamax gantry cranes
- LNG (Liquefied Natural Gas) Terminal (Depths of -15m/ZH; Vessels up to 215,000 m3)

Traffic data

Sines has seen last years an impressive increasing traffic both due to its hub & spoke (transhipment for large transatlantic vessels), its cost-efficiency advantages, and the performance posted by the Container Terminal sustained by a positive evolution in transhipment and import/export traffic from/to the Iberian market. In 2013, 36,5 million tons of cargo have been shipped through Sines.

The Container Terminal, with 16 regular line services that cover the main regions of the globe, handled 931 thousand TEU. These figures strengthen the port's leading position in the domestic sector and at Iberian level, to the fifth place in the ranking of goods and container traffic.





Accessibilities

<u>Road accesses</u>

The Port of Sines is connected to the core road network through the main itinerary IC33 / IP8 /A2, with 2 lanes in each way, except in a section of IC33 (Santiago do Cacém – Grândola), that needs to be upgraded by converting some grade junctions into split level junctions and by localized cross-section adjustment, in order to minimize constrains and enhance heavy and light vehicles coexisting.

<u>Rail accesses</u>

The port has a dedicated line connected to the core rail network and more than 73% of the Sines inland traffic uses the rail connection.

Even if there is a strong use of this railway line, there are several bottlenecks present and above all the considerable detour mainly due to the missing link Évora/Caia (~91km)

Currently the line comprises the comprehensive sections Sines Ermidas Sado – Grândola (a single track with 20,0 ‰ gradient in the section Sines-Ermidas). A direct line Sines/Grândola (about 10km) is planned.

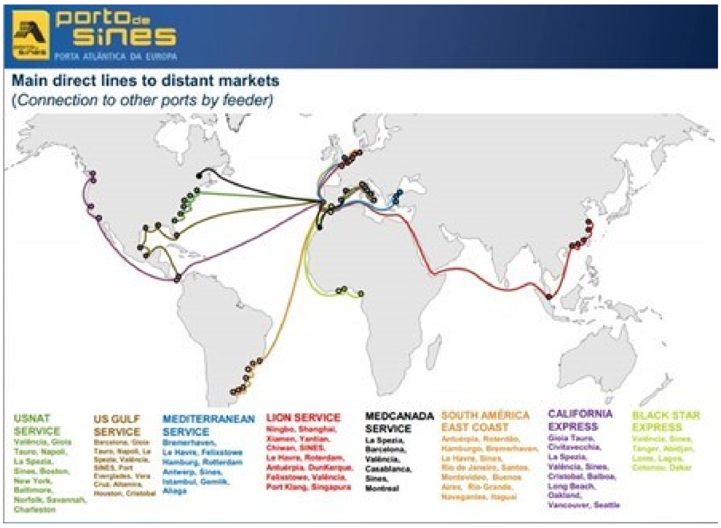
Logistic Areas

Port Logistics Area (ZAL) is located next to the Sines Multipurpose Terminal, with an area if 12.3 ha, with direct road connection to the main national network, and it's also served by rail. This area is already under commercialization for logistics activities (transport, storage, assembling and distribution), transformation, services providers, restaurants and others.

The port is connected to the two core RRT (ZILS and Poceirão) and there are progresses in partnering with Badajoz Platform (cross border).

The RRT ZILS (Industrial and Logistics Zone) with a total area of 215 hectares is managed by AICEP-Global Parques. It disposes of a vast area with logistical capability, with plots of land available, and being developed in a flexible and staged manner. It is geared towards the installation of industrial and service companies, connected to core road and rail network.

Port Connectivity and Motorways of the Sea



Sines holds a relevant position in the world's shipping market, with 16 regular direct lines to/from major production/consumption centres in the world (many of which use large vessels of over 14,000 TEU of cargo capacity), namely to/from two of the most dynamic markets worldwide: Asia and South America.

Facilities for clean fuels

Sines disposes of a LNG terminal in operation. The TGN – Natural Gas Terminal started its activity in 2003 and is run under a private use concession by the company REN Atlântico, today handling over 50% of the Natural Gas consumed in Portugal. Terminal has two storage tanks with the capacity for 120,000 m3 each, and a third storage tank with a capacity of 150.000m3, which guaranties a total storage capacity of 390.000m3.

Telematic applications

The latest IT technologies are being used, in order to guarantee a quick clearance of vessels and cargoes, based on simplified procedures - "One Stop Shop" concept, linking all public and private players, and allowing the participants to interact with all the authorities and port services through a single communication channel.

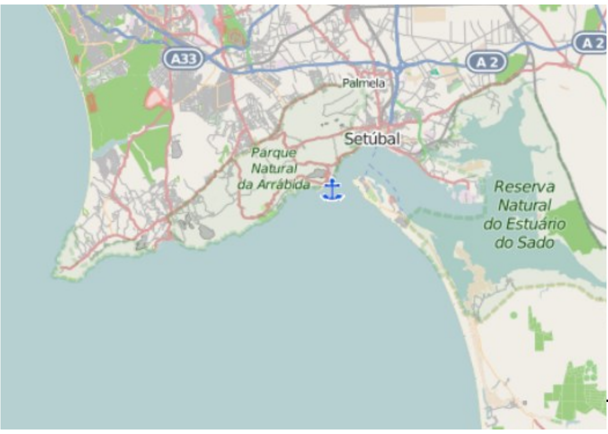
The port offers modern operational control and safety computing systems, fully integrated, and allowing the management of port safety and operations surveillance, in real time. A set of e-port community systems are integrated into the concept of the Port Single Window (JUP – already in its 2nd version). Implementation of JUP has allowed for a reduction of about 30 hours in the port administrative processes:

- Real time control of 100% of information (fraud and fiscal evasion)
- Continuous location of containers since entry to port exit
- Implementation of paperless philosophy – processes dematerialized in 90%
- Reduction of custom transit: 3-4 days to 1-2 hours

JUP turns possible to perform all operations electronically from ships – all information is dispatched before physical passage of ships and cargo, articulating all information processes between the different State authorities (port administration, customs, emigration, health, etc.) and service providers (port terminals, agents, forwarders, etc.). JUP is also operating from the MSC terminal in Entroncamento (comprehensive RRT)

Other Maritime Ports (Corridor Feeders) – Port of Aveiro (Portugal)

Location & Base Characteristics



CNC	Comprehensive
Type of port	Maritime
Activity	Freight
Total throughput (2013)	3 974 thousand tons

The port of Aveiro is located in the Centro region and is the starting node for the corridor section Aveiro-Valladolid – Vitoria towards Germany.

Terminals & Maritime Accesses

The port of Aveiro, a recent port infrastructure, offers today around of 3 km of quays for solid cargo and 6 piers for liquid cargo, served by rail infrastructures, and a total of 114 hectares of land surface. The offer includes 2 multipurpose terminals and 3 specialized terminals, such as:

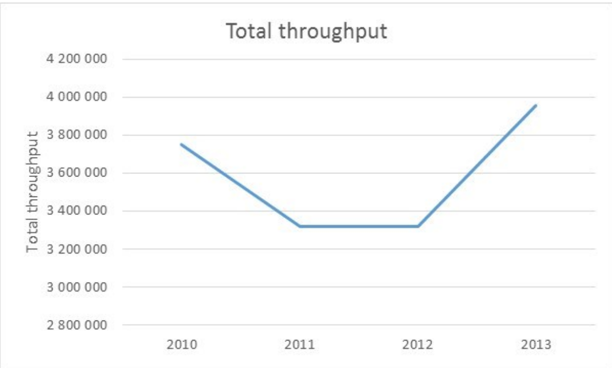
- North Terminal – Multipurpose
- The Multipurpose South Terminal
- Container and Roll-On/Roll-Off Terminal

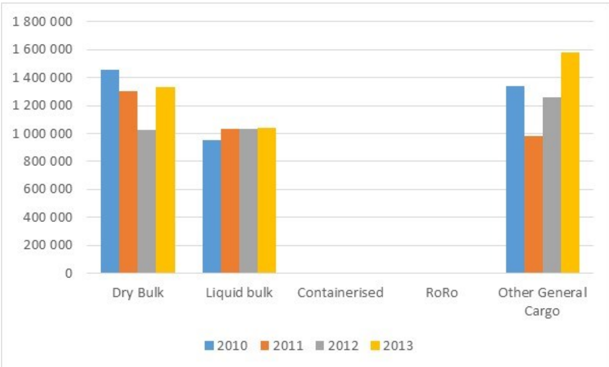
- Solid Bulk Terminal
- Liquid Bulk Terminal

The port entrance (harbour) is 1.5 miles from the terminals of the North Sector (North Terminal; Container and Roll-on/Roll-off Terminal; Solid Bulk Cargo and Liquid Bulk Cargo Terminal) and 4.5 miles from the South sector (South Terminal, High Sea Fishing Port and Specialised Fisheries Terminal. Maritime access to Aveiro harbour have depth of -13.20 m

Traffic data

With an annual throughput of around 3.5 million tonnes, Aveiro is a multi-functional port which plays a crucial role in serving a wide range of industries in its hinterland, such as the ceramics, chemical, winemaking, metallurgic, wood and derivatives industries, as well as the agricultural food and construction sectors. There are good expectations in attracting part of the road flows originated by the industries of its natural hinterland, centre of Portugal, where are located important industrial national clusters, like pulp and wood products, chemical products, automobile components and metallurgical products (at present some of them uses the port of Aveiro and the Atlantic Corridor). In 2014 is expected that the port of Aveiro reaches a new throughput record, around 4,5 million tonnes.





Accessibilities

<u>Road accesses</u>

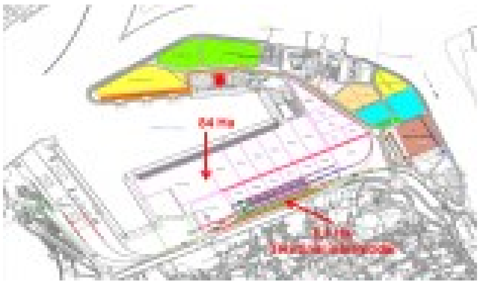
The port of Aveiro offers a competitive road link to its natural hinterland, and also to Castela Y Léon and Madrid regions of Spain. The excellent road accesses results of its offer of 2 nodes to motorway 25 (A25), the main road access that links Portugal to Spain and Europe, and part of Atlantic Corridor.

<u>Rail accesses</u>

The port of Aveiro is connected to the core rail network in the Atlantic, being the starting node for the corridor branches Aveiro – Valladolid – Vitoria – Bergara – Bilbao / Bordeaux – Paris – Le Havre / Metz – Mannheim / Strasbourg

The connection to the port (Cacia-Porto de Aveiro) is done in a non-electrified section (electrification works will start in few weeks, being expected to be concluded by August 2015), with limited speed to 60 km/h. Rail mode already represents 20% of total throughput of the port

Logistic Areas



The Port expects to start works for the construction of ZALI – Logistical and Industrial Activities zone of Aveiro, to be located between the ro-ro terminal and the solid bulk cargo Terminal, involving the improvement of maritime infrastructures and its technical infrastructure.

ZALI will be an intermodal logistical platform with the goal of facilitating the implantation of logistical operators and companies for which the nearness of the port brings an added competitive factor and added value to their products. This platform shall have 1 080 metres of mooring quay with depths of -12 metres.

Managed by APA, SA, the CACIA multimodal platform comprises 1 administrative building and 29.3 hectares of warehousing/car parks, and has a railway connection. It is approximately 8.8 km from the Aveiro port terminals. It is ready for use, with the business model being finalised.

Aveiro, together with Leixões has a partnership with the logistic platform in Salamanca (Spain) and integrates the CYLOG network and the recent established group on "transport and logistics" in the macro region RESOE.

Port Connectivity and Motorways of the Sea

The port of Aveiro is a short sea port, offering mainly tramping services, linked to the supply chains of the most important industries located in its hinterland, which are some of them multimodal door-to-door services. Today there are no MoS services in operation in the port of Aveiro, however its excellent hinterland connections and facilities can be a driving force to set up regular SSS services and MoS.

Facilities for clean fuels

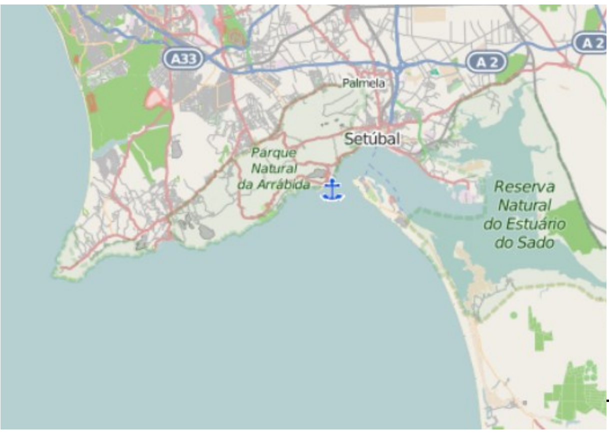
Currently no clean fuel facilities are available from Aveiro

Telematic applications

As all the main Portuguese ports, Aveiro has the Port Single Window (JUP) in operation, integrating with customs.

Other Maritime Ports (Corridor Feeders) – Port of Setúbal (Portugal)

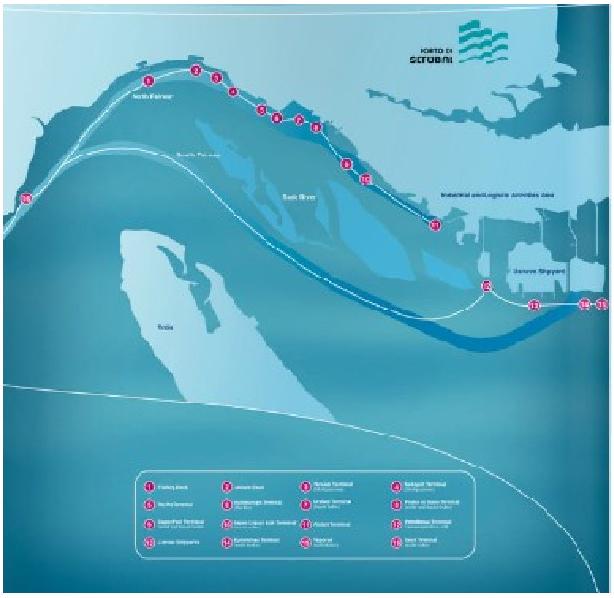
Location & Base Characteristics



CNC	Comprehensive
Type of port	Maritime
Activity	Freight
Total throughput (2013)	7 009 thousand tons

The port of Setúbal is located in the Lisbon Region and it is one of the main feeders of that hinterland, densely populated and with industrial clusters. It is situated 11 km away of Poceirão Logistic Platform, (core RRT)

Terminals & Maritime Accesses



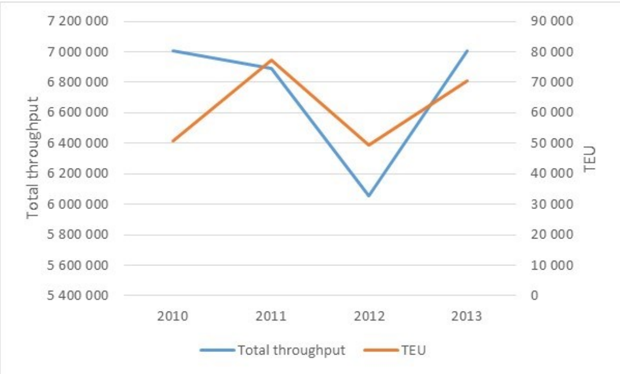
The Port of Setubal contains several specialized terminals that render public services in the various kinds of cargo.

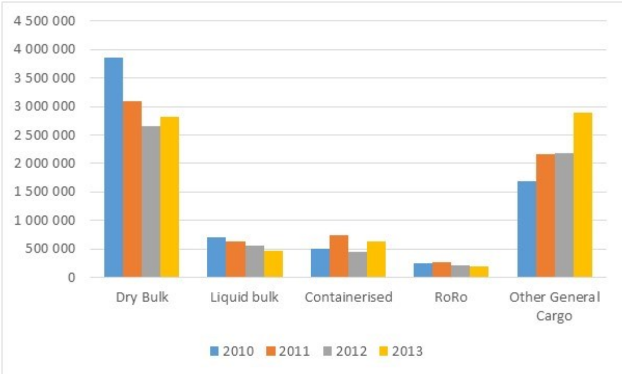
- Zone 1 Multipurpose Terminal – TERSADO:
- Zone 2 Multipurpose Terminal – SADOPORT
- Roll-on Roll-off Terminal / AutoEuropa Terminal
- SAPEC Port Terminal
- Liquid Bulk Terminal

The maritime access to the terminals is done through navigation fairways: entrance fairway, dredged at 12,7m; through north (by the right riverbank, giving access to the downstream terminals, dredged at 11,7m) and through south (access to downstream terminals).

Traffic data

The port of Setúbal is the biggest Ro-Ro port at national level and also the biggest in break bulk cargo. The port has been experiencing a considerable growth (25% in the first quarter of 2014) and 2013 was an excellent year with more than 7 million tons handled and expecting to exceed 8 million tons at the end of 2014.





Accessibilities

<u>Road accesses</u>

Direct access to the core road network through external route to the urban limits of the city of Setúbal

<u>Rail accesses</u>

The port is directly connected to rail core TEN-T from the General Cargo, Ro-Ro, Container and Bulk cargo terminals. Port of Setúbal is the second national port using railway in the maritime to hinterland transport interface of goods

Logistic Areas

The Port benefits of the presence of several private logistic platforms that complement to basic port services, adding value to logistic solutions for the supply chain:

- Poceirão core RRT (Multimodal Logistic Platform)
- Parque Industrial da AutoEuropa
- SAPEC BAY – Parque Industrial e Logístico
- SPC Multiusos – Rail road terminal Setúbal
- Bluebiz Global Parques
- Parque Industrial de Vendas Novas
- Quimiparque – Parques Empresariais, SA

Together with the ports of Lisboa and Sines, Setubal is committed in an overall and common strategy to enlarge its hinterlands to Spanish Extremadura and to Madrid Regions. They are working together in order to become eligible in the corridor link to Badajoz and Madrid hinterland.

Port Connectivity and Motorways of the Sea

The port offers 11 regular weekly schedule line services (RO-Ro, containers and reefers) linking the northern Europe ports, Mediterranean, Africa and America. The location and the facilities in Setúbal are favourable for regular short sea traffic, particularly to EU and occidental Mediterranean coast, however presently there is no MoS service from Setúbal.

Facilities for clean fuels

Currently no clean fuel facilities are available from Setúbal.

Telematic applications

As all the main Portuguese ports, Setúbal has the Port Single Window (JUP) in operation, integrating with customs. The port management system is in web format and links the process of automated cargo handling and ship management, from a single platform.

The port is currently involved as pilot case in the EUROPORT project (ESA), which is developing a solution to integrate space base assets with single windows in view of optimizing port logistic activities:

- Optimise the accuracy of the forecast of arrival (ETA) and departures (ETD) of ships in ports;
- Optimise the accuracy of the forecast of arrival and departures times of trucks to/from terminal and port gates;
- Improve port gate-in and gate-out operations in order to reduce time consumed by these operations;
- Improve the efficiency of pick-up and delivery operations in the yard

9. Annex 5 – Minutes Corridor Forum

Project:	Studies on TEN-T core network corridors – Atlantic Corridor
Meeting:	1st Corridor Forum
Place:	DG MOVE – DM28
Date:	2014/04/03 **Time:** 09:30 – 16:00
Author:	Daniela Carvalho

ATTENDEES

Name/Company	Name/Company
DG MOVE – Prof Carlo Secchi	TIS – Faustino Gomes
DG MOVE – Carlo de Grandis	TIS – Daniela Carvalho
Reiner Nagelkrämer (Germany)	INECO – Francisco Vilches
Thibaud Delvincourt (France)	INECO – Esther Dúran
María Corral (Spain)	EGIS – Eric Jeannière
Paloma Iribas Forcat (Spain)	
José Cruz (Portugal)	
Marta Capelo Gaspar (Portugal)	
EIB (observer) – Paulo Mendes	
INEA - Bianca Holdford	
DG MOVE - Raluca Mitu	
DG MOVE – Andreas Faergemann	
DG MOVE –EXT – Menno van der Kamp	
DG MOVE – Helmut Morsi (TENtec)	
DG MOVE – Mohammadi Laazzouzi (TENtec)	

Agenda

#	Agenda Items
1	Opening (Carlo Secchi, European Coordinator)
2	Tour de Table
3	General background on Core Network Corridors (Carlo De Grandis, EC)
4	First outline of the Corridor (Contractor: Daniela Carvalho, TIS)
5	Overview on-going TEN-T projects (INEA)

6	Exact determination of the infrastructure belonging to the corridor
7	Identification of responsible persons within the Member States
8	Identification of possible stakeholders in the Corridor Forum
9	Data encoding/missing data
10	Presentation of the timing and process for the establishment of the work plan
11	Conclusions / wrap-up

Meeting Summary

These minutes refer to the 1st Corridor Forum for the Atlantic Corridor held in Brussels the 3rd April 2014. The Corridor Forum is, as foreseen by the TEN-T Regulation the consultative board dealing with the Corridor planning and implementation.

The four Member States in the Corridor took part to the Forum and actively shared views on the Corridor.

The Forum started with a first introduction by the Corridor Coordinator (Prof Secchi) followed by a tour de table where each Member State was invited to share expectations and challenges for the Atlantic Corridor.

A general background on TEN-T corridors was given by the Policy Officer Carlo De Grandis, pointing above all on the concept of corridors as a tool for TEN-T Implementation, its development objectives and focus on monitoring and measuring.

The meeting was then centred on the first analysis of the corridor as presented by the consultants in the summary document provided to the Member States representatives in advance to the meeting. That first document provides the overview on corridor, including its critical aspects and open issues, presenting as well as the first details of the corridor infrastructures. It includes also a proposal of stakeholders (rail and ports infrastructure managers) for the second forum to be validated. After this presentation, Member States were invited to share their opinions.

Bianca Holdford (INEA) presented an overview of on-going TEN-T projects financed by the Agency, giving special attention to cross border projects Évora/Merida / Y Basque and Vitoria Dax.

A discussion on whether there are outstanding issues in terms of the exact determination of the infrastructure belonging to the corridor as included in the summary document provided, presented by the consultants, took place, touching issues as last mile connections and urban nodes crossing (notably Madrid and Paris).

The next points under discussion were the identification of responsible persons within the Member States and whether specific working groups could /should be established to discuss in more detail certain aspects (i.e. ports), followed by the identification and approval of stakeholders to be invited for the 2nd corridor forum in June, which will be targeted to rail and ports (maritime and inland) infrastructure managers.

Presentation of the timing and process for the establishment of the work plan has been discussed.

The afternoon session counted with the presence of TENtec team and was dedicated to discussing data encoding/missing data.

Carlo De Grandis wrapped up the meeting touching in particular the next milestones. Prof Secchi closed up thanking for the active participation of Member States and calling again to the need to receive from Member States comments to the summary document and validation of stakeholders as the next immediate steps.

The overall opinion from 1st Forum was positive with Member States reinforcing the particular importance of Atlantic Corridor for the countries. The critical issues identified in the analysis were recognised by all participants; the focus of the European coordinator role in relation to open issues was addressed as of utmost importance in the coming periods. Large expectations was attributed in relation to the corridor multimodal market study, a piece of large importance to Member States.

The main aspects discussed and decisions taken during the meeting are recorded on the next table, not necessarily in the order they have been presented.

Id	Description
N-001	In its introduction (see file "Opening speech by the EU Coordinator.xps"), Prof Carlo Secchi put out the maritime dimension of the Corridor and the key role of Ports; the speech focused in the persisting problems, notably in the Iberian Peninsula, in terms of rail interoperability; the crucial cross-border projects – comprising bottlenecks and missing links, where highlighted . In the speech the new projects being realized as well as the existing capacity in existing lines were briefly presented and the maritime dimension of the Atlantic corridor reinforced. Prof Secchi asked MS to provide comments and to proceed on a cooperative basis for the corridor plan. With regards to the summary document prepared by the consultants, he asked for a revision to contribute improving the report, highlighting the aspects deserving to be further developed and particularly to validate the list of key stakeholders that was included. The deadline for corridor plan - 22nd December – was recalled, as well as the following fora's structure, progressively enlarged to infrastructure managers, regions, etc.; corridor fora aim at bringing stakeholders together, adding value to the bilaterals with MS, in order to reach the maximum possible consensus over the corridor development.
N-002	Tour de table Mr Nagelkrämer (Germany) started the round of introductions. There is a high interest in TEN-T and CEF regulations, as well as in this new corridor approach, expressing the intention to work together towards this corridor approach success. Although Germany just have a few km of a railway line in the Atlantic corridor this corridor there is a high interest on it. In relation to the document, it was referred that there are small mistakes to be dealt bilaterally with the consultants (on technical parameters). The question on the inclusion of the Core Node of Mannheim (referred as Ludwigshafen-Mannheim) as core network end point of the corridor, was raised, considering also the road component – A6 Motorway (not core road but federal regional one) as this would turn corridor more consistent. Prof Secchi remembered the difficulty in adding to corridor approach components not planned in the CEF regulation; having said this it is conformed that Mannheim is the end point of the Atlantic corridor (urban node and inland ports) although in terms of data collection this was allocated to another corridor.

Id	Description
N-003	Mr Delvincourt (France) also stressed the importance the Atlantic corridor represents for France. The coordinator introduction was much appreciated, touching the most relevant and crucial issues in the corridor. The importance of Motorways of the Sea and the very important connections that are being developed with Spain were highlighted. A special remark is done in relation to the need to ensure connections between the different corridors – i.e. Seine
N-004	Mrs Corral and Mrs Forcat (Spain) expressed the strong support to the corridor approach, and notably the importance of viewing them as a network, having large expectations on the work plan as well as the planned market study. Interoperability and multimodality are seen as main goals in the corridor. In this respect it was mentioned a logistic event held 2 days ago between ES and PT and the relevance of the corridor for both countries to reach central Europe.
N-005	Mr Cruz and Mrs Gaspar (Portugal) also expressed high expectations on corridor, that in Portugal is mostly rail and ports, being this seen as of utmost relevance given that ports are a strategic asset in the country. They referenced the importance to include the comprehensive ports of Aveiro and Setubal in the corridor analysis. It was mentioned that Portugal recently studied the main infrastructure investments and that an evaluation is being conducted after the public consultation recently held. The Portuguese Government should announce soon the results. With regards to the summary document, the opinion was positive, although an in-depth analysis was needed before sending comments to consultants.
N-006	The presentation held by Carlo De Grandis focused on the TEN-T corridors background (see file Atlantic Corridor general background.xps). The following aspects have been particularly focused: • corridors do not cover all core nodes in each country although they the Core Network branches and nodes leading to the Corridor are considered in the market analysis. A basic issue is to develop the work starting from the market, as corridors aim to develop transport systems and not just infrastructure, being the overall goal to promote resource efficient intermodal transport services. • Interoperability, cross border, multimodality are key focuses for the corridor approach, being the analysis of barriers to achieve those goals a critical part of the studies and particularly in the work plan, the most important element of this integrated approach • The possibility to establish ad-hoc working groups exists and should be evaluated • Governance and support aiming for consistency in all financing component of CEF, cohesion policy but also with EIB. Looking for a comprehensive European planning with synergies with MS planning for the correct implementation of corridor is critical – promotion / development of Master Plans (special reference to ES-PT). • A focus on innovation – linking also with other initiatives as e.g. H2020, should be promoted
N-007	Daniela Carvalho presented the results of the first corridor analysis (see file Atlantic Corridor First Outline.xps), highlighting in particular: • the opportunity of this Forum as the 1st contact with the representatives and the relevance to obtain views, opinions and recommendations on the work done which was mainly supported by desk research • the 3 interrelated component related to the study, which are the corridor forum, the TENtec information system and the corridor work plan, reinforcing the elements underlying its development, notably the market study • the corridor objectives and the key milestones that contribute to its establishment • the corridor alignment and its interconnections with other corridors as important aspect to be taken into account for the multimodal market study • nodes and networks in corridor and the 1st critical overview of bottlenecks and opportunities • the critical issues in the corridor and, above all, the need to ensure a interoperable network. For that, three main aspects need to be addressed: track gauge, particularly the UIC deployment in ES and PT; electrification, and notably the lack of electrification in

Id	Description
	border sections and the presence of 3 different types of electrification, and ERTMS, namely in what concerns the slow implementation of ERTMS deployment plans • other issues that need to be addressed along all the nodes and networks • the open issues in corridor, corresponding to the items to which the Coordinator will devote more efforts in the coming months to reach a common position among the Member States
N-008	The most relevant issues deriving from the round of comments include: • from Germany, the fact that both report and presentation miss the reference to electrification, confirming that it corresponds to 15 kV (16.67 Hz) in the German rail network. • French representative congratulated for the inclusion in the report of the ITS interoperability item, as this was not discussed in previous forums attended by FR/DE, referring to the "Easyway" road interoperability project aiming to solve critical tolling issues is being conducted. He reiterated the concern about the ports of La Rochelle and Nantes-Saint Nazaire in terms of impact on the corridor analysis, and confirmed that the electrification of the freight line in the section Gisors - Serqueux as planned by the end of 2017 • Portugal highlighted that the Inland Waterway of Douro River, currently mostly used for tourism purposes, would play an important role in near future for the transport of iron from Moncorvo, in correlation with the core Sea port of Leixões, as well as with Spain • The Portuguese representative provided a comment on the need to have a shared vision for the deployment of interoperability in the Iberian Peninsula, namely regarding to rail • Spanish representative highlighted that Madrid node albeit detailed in the analysis, was missing the south-north junction - a key concern and a major bottleneck. She has also referred that RRT of Antequera was not mentioned in the presentation, although being considered in the report. She focused in particular to the maritime dimension and the need to consider in the analysis the isolated core ports in Spain, as included in the report • The EIB (observer) note that track gauge is in fact the hardest issue to be tacked in the corridor. A major remark is the fact that while Spain along the MED corridor is exploiting different solutions to address the UIC gauge, in the Atlantic this is less advanced, questioning whether it could be learned from what Spain is doing in MED to apply in Atlantic, aspect to which Spanish representative fully agreed upon. In relation to the electrification, he pointed out that key issue for the short/medium term is the availability of multi-voltage rolling stock (multi- tension). On the gradients, according to the EIB experience, it would imply new alignments in many cases , due to morphological constraints on existing routes, pointing to the need to clarify exactly in the study what is expected to be achieved and the specific location alignments where this is expected.
N-009	Bianca Holdford presented an overview of some of relevant projects supported by INEA (see file Atlantic Corridor Key on-going TEN-T Projects.xps). The focus of the presentation was not on the review of what was done, but touching particularly on ongoing projects of critical relevance to the corridor sections. Three projects along cross-border stretches were highlighted, namely Évora/Merida; the Y Basque and Vitoria Dax, touching on the objectives and its actual status.
N-010	The discussion on the infrastructures belonging to corridor took special attention on specific remarks to include in the summary report additionally to those previously discussed, such as MOS, Douro River inland waterway, comprehensive and isolated core ports, Madrid bypass, Paris node. The main objective is to confirm if all relevant aspects were included in this 1st analysis. This should include in special last mile connections identified, missing links in urban areas and not to propose changes in corridor as defined in the Regulation for which no changes can be done in 2014. Remarks should be provided to consultants, taking also into consideration the sections that were already included in the report. At this stage it was clarified with Member State representatives that whenever it exists common sections with other corridors, just one of the consultants is approaching the Member States for data collection purposes (TENtec upload), although the data is to be used by all corridors in their respective market analysis.

Id	Description
	In the Atlantic corridor, this is the case for Madrid node and Algeciras-Madrid section which are dealt by the MED corridor. For the common sections in France, the consultant in both corridors is EGIS while for Mannheim node and inland port, the data upload is conducted by the Rhine-Alpine team. EC has confirmed that when TENtec upload finalises by the end of May, the EC will prepare a complete report per MS with all changes performed to be validated by the Member State
N-011	Identification of responsible person in each MS as contact person for consultants and EC that will follow the progress MS invited to provide this information (either as a specific contact- person or as a legal representative of an entity, or, potentially a wider ministerial team. It was discussed whether it would be important for the corridor approach to establish working groups dealing with specific issues (i.e. ports) and if yes how to set up those groups, having present that intergovernmental entities are also working. German representative referred that Atlantic corridor as a privileged situation of having just 4 MS; accordingly, his opinion favours an open discussion to be taken at this global level rather than in working groups. Other participants also agreed on this. Spanish representative raised the suggestion to establish a group dealing with rail road terminals with the goal to discuss and learnt from others good practices – this could be interesting giving the current planning situation of RRT in ES and PT that could benefit from the experience from France and Germany. It was agreed that this suggestion should be pointed out in the next forum with infrastructure managers. In general the possibility to have specific working groups is to maintain open, i.e. Coordinator believes that this will be more evident after the next forum meeting with infrastructure managers
N-012	Stakeholders List for the 2nd Corridor Forum Coordinator invited representatives to comment and to provide suggestions / corrections to the list provided by the consultants. It was remembered that for this 2nd Forum the infrastructure managers were limited to rail and ports (maritime and inland) as well as the Rail Fright Corridor. In principle Spanish position, following the approach adopted for the MED corridor, is to have a single participant to the Forum representing all ports, in this case Puertos del Estado. The name for ADIF representative is to be changed. Portugal still needs to decide if each port will be present in the Forum or represented by the Port Association. For REFER, a representative will be nominated. In the case of Germany, there was a Ministerial decision to have a high level representation (CEO of DB NETZ) to be contacted for all the Corridors Fora. Then it will be his decision to participate or delegate. For inland Ports, the decision was to have BOB participating, who can then decide to delegate in specific port representatives. For France the decision in principle will be on the same line (have ports represented by a single entity) – to be confirmed. EC commented that idea to harmonise with approach in other corridors is understandable though in the case of Atlantic corridor, given the small number of participants it would be interesting to have the different entities represented.

N-013	Carlo de Grandis remembered the next relevant key dates (see file Atlantic Corridor Timing.xps) and steps to establish the corridor.
	In relation to the follow up of this 1st Forum, the following dates should be taken into consideration
	• 11/4 – MS to confirm the list of stakeholders and provide comments /remarks to the consultants document; consultants deliver the Forum minutes
	• 14/4 – consultants will integrate 1st Forum results in the summary note
	• 15/4 – EC will send revised summary note and Forum minutes to all participants of 1st Forum
	• 19/6 – 2nd Forum Discussions on…
	    o Input from infrastructure managers and Rail Freight Corridors – final discussion on technical parameters
	    o Multimodal Transport Market study

Id	Description
	o Identifying stakeholders for the 3rd Forum o Finalise collection data and input in TENtec (full description of the Corridor) • 29/9 to 3/10 - 3rd Forum, which focus will be place on the discussions on the draft implementation plan: • 17-20/11 - 4th Forum, where all stakeholders will discuss the final version of the work plan
	Afternoon Session
N-014	The last session of Forum was dedicated to data upload in TENtec information system. Consultants made an overall evaluation of the actual status of data in TENtec - in general there is a good filling of data, although there are some doubts on data consistency that should be discussed with the MS contact person responsible for filling the data in system. This would allow to confirm the criteria adopted in cases of merged sections. TENtec team will provide this information together with the date of last effective data update in the system. Consultants presented the proposed adjustments in TENtec as included in the report. The harmonisation of TENtec sections with the ones on RFC (more homogeneous) as proposed for PT still needs to be confirmed for ES and FR. In relation to the German sections in TENtec they will be merged in a single section.
N-015	As far as the last mile connections are concerned, Member States should comment on consultants' suggestions until the next 11/4. Spain informed that the Min. for Fomento conducted last year an identification of the different last mile connections. INECO would get this information to work out. It was clarified that start /end points of sections are not expected to be changed, the proposed changes to merge /split sections always take the existing sections as reference.
N-016	The coordinator thanked all for the fruitful meeting held remembering the importance to send the comments and remarks to the document produced and validation of stakeholders list.

The main action items identified during the meeting are recorded on the next table.

Action Items			
Id	**Action**	**Responsible**	**Due date**
AI-001	Member State representatives to send comments / remarks / suggestions on the report	Member States	11-4-2014
AI-002	Member State representatives to confirm the list of stakeholders (infrastructure managers) for the 2nd Corridor Forum	Member States	11-4-2014
AI-003	Minutes of Corridor Forum	Consultants	11-4-2014
AI-004	Revised summary document (after inclusion of MS remarks)	Consultants	15-4-2014
AI-005	Further details on Madrid and Paris nodes	MS Spain and France	30-4-2014
AI–006	Identification of a contact person in each MS with whom consultants can articulate (it can be a single person /entity or if wish a wider ministerial group)	Member States	15-4-2014

Action Items			
Id	**Action**	**Responsible**	**Due date**
AI-007	When TENtec upload is concluded, the EC will prepare a complete report per MS with all changes for validation	EC	after end May
AI-008	In the 2nd forum launch the discussion if specific workshop on good practices in RRT is interesting to be promoted	Coordinator	2nd Corridor Forum
AI-009	TENtec team to provide date of last effective data upload in the system	TENtec team	15-4-2014

The following documentation was provided during /after the meeting:

Documentation Annexed		
R	**Reference**	**Format**
D-001	Consultant summary document with 1st Corridor Analysis	PDF
D-002	Atlantic Corridor First Outline	XPS
D-003	Atlantic Corridor general background	XPS
D-004	Atlantic Corridor key on-going TEN-T projects	XPS
D-005	Atlantic Corridor timings	XPS
D-006	Opening speech by the EU Coordinator	XPS
D-007		
D-008		
D-009		
D-010		
D-011		
D-012		

Project:	Studies on TEN-T core network corridors – Atlantic Corridor
Meeting:	2nd Corridor Forum
Place:	DG MOVE – Centre Albert Borschette Room: CCAB-2C
Date:	2014/06/19
Time:	10:00 – 16:00
Author:	Daniela Carvalho

ATTENDEES

Name/Company	Name/Company
DG MOVE – Prof Carlo Secchi	TIS – Faustino Gomes
DG MOVE – Carlo de Grandis	TIS – Daniela Carvalho
Jacques Coutou (RFC 4)	INECO – Esther Dúran
Reiner Nagelkrämer (Germany)	INECO – Alberto Benito
Ralf Schulze (Germany)	INECO - Farah Giovio
Thomas Schneider (DB Netz, Germany)	EGIS – Eric Jeannière
Anne Pluvinage-Nierengarten (France)	
Luc Roger (RFF, France)	
Helen Haslé (Haropa, France)*	
Michel le van Kiem (Port of Bourdeaux, France)	
Cecile Raoux (VNF, France)	
María Corral (Spain)	
Alvaro Rodriguez (Puertos del Estado, Spain)	
José Cruz (Institute for Mobility and Transports Portugal)	
Vítor Caldeirinha (Portugal Ports Association)	
Marta Capelo Gaspar (Portugal Permanent Representation)	
EIB, Alfredo Diez	
INEA, Bianca Holdford	
DG MOVE (B4), Raluca Mitu	
DG MOVE (B3), Jakub Siwinski	
DG MOVE, James Cargy	

* representing also the Port of Strasbourg

Agenda

#	Agenda Items
1	Opening and Introductory remarks – approval of the First Corridor Forum minutes (*Carlo Secchi, European Coordinator - Chair*)
2	Tour de table of the participants, including the representatives from Infrastructure Managers
3	Current outline of the Corridor: State of play of the 2nd progress report of the Corridor analysis and revision of existing studies (*Contractor representative*)
4	Determination of the infrastructure belonging to the corridor – fine tuning; discussion with Member States Representatives and Infrastructure Managers (*Contractor representative*)
5	Data encoding/missing data Identification in TENtec – State of play (*Commission*)
6 (initially 7)	Presentation of the activities of Rail Freight Corridor 4 (*Mr Jacques Coutou, Managing Director RFC 4*)
7 (initially 6)	Transport Demand Analysis: methodology and key assumptions, relevant studies, and planning, outline (*Contractor Representative*)
8	Presentation of the potential stakeholders in the 3rd Corridor Forum
9	Conclusions / wrap-up (*Carlo Secchi, European Coordinator*)
10	Restricted De-briefing meeting with MS representatives only Formal approval of the minutes of the 1st Corridor Forum meeting (by MS)

Meeting Summary

These minutes refer to the 2nd Corridor Forum for the Atlantic Corridor held in Brussels the 19th June 2014. The Corridor Forum is, as foreseen by the TEN-T Regulation, the consultative board dealing with the Corridor planning and implementation.

The four Member States in the Corridor and its Rail and Ports (maritime and inland) infrastructure managers took part to the Forum and actively shared views on the Corridor.

The Forum started with a first introduction by the Corridor Coordinator (Prof Secchi) followed by a tour de table where each person was invited to briefly present him (her) self.

The meeting was then centred on the following main points:

- the analysis of the corridor as presented by the consultants in the 2nd progress report of the Corridor analysis to the Member States representatives in advance to the meeting.
- The fine tuning of the infrastructure belonging to the corridor, based on the same report and on TEN-TEC database; and
- The brief analysis of the Transport Demand analysis namely the methodology and its key assumptions, the relevant studies where it is based, the planning and the outline expected.

Jacques Coutou (Managing Director of RFC4 – Atlantic Rail Freight Corridor) also presented an overview of the Corridor, based on two main topics: a) the implementation progress of the Atlantic Corridor (regulation 913/2010 & 1316/2013); and, b) Capacity offer and allocation for 2014 / 2015 / 2016.

The methodology used to facilitate the comments and remarks from the audience was to accept interventions during the presentations, replying (the contractor or the EC, depending on the subject) after each intervention. Once the questions were related with each slide, the methodology worked well.

In general the consortium and the EC reinforced the importance of obtaining feedback from participants in relation to the reports produced.

For the next Forum, planned to the end September /beginning of October, in addition to current stakeholders, other infrastructure managers will be invited (roads, airports) as well as regions.

Additionally two working groups will be established, one for Ports (maritime and inland), and inland waterways active from the third forum, and another for regions. Working groups will meet before the Forum and will report their conclusions during the Corridor Fora.

The main aspects discussed and decisions taken during the meeting are recorded on the next table, not necessarily in the order they have been presented.

Id	Description
N-001	**Welcome and Introduction** Prof Carlo Secchi introduce the agenda and presented briefly the new TEN-T policy. This presentation focused on: • The new TEN-T policy ○ Prof Secchi reinforce the role of the core network corridors as an opportunity to drive transport policy forward; ○ The 9 core network corridors ○ The contents of the work plan (that will be built, one per corridor) ○ The role of the Forum a and the objectives foreseen for this 2nd Forum ○ Key features of the Atlantic Corridor Carlo de Grandis completed the presentation with some specific issues related with the corridor, namely presented the last three points of the above list of topics.

Id	Description
N-002	**Tour de table** Tour de table between all people presented. Each person presented itself and briefly introduce in what role its presence should be looked.

N-003	**Current Outline of the Corridor**
	
	Daniela Carvalho (DC), Contractor's representative made a presentation which focused on:
	• Consortium Overview
	• Methodology of the Study
	• Brief Description of the Corridor
	• Review of previous studies and projects
	• State of Play
	  o Rail, Road, IWW, Ports, Airports, Rail-Road Terminals, compliance with the parameters defined as a minimum standard to belong to corridors
	  o Cross borders sections
	  o Bottlenecks and Missing Links
	  o Interoperability, Intermodality and interconnections and Operational and Administrative Barriers
	• Critical Issues
	• General objectives for the Corridors and specific for the Atlantic Corridor
	• Key Performance Indicators
	
	The main issues raised by the MS and infrastructure managers were as listed below. The consortium, by DC or other members replied to some questions; others were accepted.
	
	MOTORWAYS OF THE SEA (MoS)
	• The MoS analysis can be improved with new data; Spain representative offers to provide it
	  o INECO will contact to gather more information to improve the report
	
	INLAND WATERWAYS (IWW)
	• The IWW section must be more developed in the report; Also, its multimodal dimension should be reinforced
	  o EGIS will contact VNF and HaRoPa to gather more information to improve the report
	• Once part of IWW next to Paris is not part of the Corridor, how can it be considered in the study
	  o This part of IWW will be considered in the Market Study
	
	RAILROAD TERMINALS (RRT)
	• In Portugal, the two RRT as foreseen in the Regulation should be considered (this refers to the RRT included in Regulation as Grandola/Sines, that should be mentioned only as Sines – ZIL; the second being Poceirão)
	• In Spain, there are other platforms next to Madrid that should be considered
	  o Agreed to refer to all these platforms as Madrid, instead of nominate each one (request from MS to delete references to "Puerto Seco Madrid" and always refer to "Madrid")
	• Other main terminals (i.e. Irun-Hendaya) should also be included in report (even if not core)
	
	RAIL
	• There is a general lack of information concerning passengers flows
	• There is a study provided to the EC that can be relevant
	• As in RFC4, the number of tracks is a limitation, in general more integration with RFC4 should be achieved

Id	Description

	• All sections lacking electrification should be highlighted and not only for cross border sections
	• Missing information of gradient and traffic management system of the existing lines should be added
	•
	
	General Issues
	• Report should be reviewed taking into account the need to:
	    o harmonise the classification of some infrastructures (i.e, Bilbao). This refers in particular to the cases including both RRT and Port infrastructures
	    o clarify the cross-border sections considered
	    o reduce the number ok KPI; use exclusively the ones that are Key, EC will evaluate this for all corridors
	    o consider the indicators on the RFC4 already in use
	    o highlight clearly all the nodes considered in the analysis (particularly for the market analysis)
	• DC replied that important part of the KPI derive from the TEN-TEC database, which means that they do not imply an extra effort to calculate it; this facilitate the need to build a common set across the nine corridors
	• How to reflect the (existing and new) RRT in the TEN-TEC database
	    o DC and Carlo de Grandis explained that TEN-TEC has specific parameters to be filled with regards to RRT
	
	Particular Issues
	• There is need to correct the title of Table 7 in the report
	• Germany delivered a note with some specific remarks to the report
	• Portugal already sent its comments /suggestions /additional information to the 2nd report and respective annexes (as Action Item Id AI-001) and its ports representative informed about a project in development by the ports of Lisbon, Setúbal and Sines, involving also rail, road and the logistic platform of Badajoz, in order to deploy a Logistic Single Window in the section between Lisbon/Setúbal/Sines and Badajoz of the alignment Lisbon/Sines-Madrid of the Atlantic Corridor. EC mentioned that this type of initiative is welcomed in the Atlantic Corridor

N-004	**Fine tuning of the infrastructure belonging to the corridor** Daniela Carvalho (DC), Contractor's representative, made a presentation which focused on: • Urban Nodes (List and Figure) • Airports (List and Figure) • Seaports (List and Figure) • Inland Ports (List and Figure) • Railroad Terminals (List) • Inland Waterway (List and Figure) • Rail (List and Figure) • Road (List and Figure) There were no main issues raised by the MS and infrastructure managers. Two remarks: • In the Railroad terminals,and ports there is few of them that should be listed, such as Irun-Hendaia (interconnecting point of the two networks and gauges), Sines, Mannheim, ports of Bayonne and La Rochelle etc. • Once there are infrastructures in different stages of development, the lists should be organised to present all the infrastructures that are in the same level of development (for instance, all infrastructures that are planned) like Vitoria-Jundiz , Bayonne-Tarnos and Dourges rolling motorways terminals)
N-005	**Data encoding/missing data Identification in TENtec – State of play**

Id	Description
	Mr Carlo de Grandis made a presentation which focused on: • The main modifications on TENTec • Missing data (from the Consortium) • Who to complete the gaps There were no main issues raised by the MS and infrastructure managers. Two remarks: • DC mentioned that in general the main missing aspects are related with traffic data, in particular for rail and RRT • Spain asked which type of data should be collected and for what date ○ DC explain that the data should be 31st December 2013, when possible

N-006	**Presentation of the activities of Rail Freight Corridor 4**
	
	Mr Jacques Coutou, Managing Director RFC 4. Made a presentation which focused on:
	• Atlantic Corridor Implementation Progress
	  ○ The multiple characteristics of rail infrastructure and the priorities of the investment plan; due to an important heterogeneity of the existing infrastructure on RFC4 to be resolved at short and medium term, ERTMS deployment is a medium/long term priority.
	  ○ The governance and the documents on progress, namely the implementation plan
	  ○ The new itineraries that will be analysed, based on the existing traffic, such as the connections: to Valongo Terminal (in Portugal); to RFC2 in Paris, to Zaragoza and RFC6 (in Spain); to Nantes & La Rochelle ports, Paris and RFC2 and Strasbourg (in France); and to and to Mannheim, Germany
	  ○ The timetable for 2015
	  ○ The goals for 2014 and 2017, per strategic objective and the indications that are defined in the Implementation Plan
	• The capacity offer all allocation for the years 2014, 2015 and 2016
	  ○ The international paths for 2014: offer and the actual reserve of capacity » it was highlighted the important number (24) of requested paths from French and German RU and the large reserve of capacity existing yet in Portugal and Spain –constraints due to works along Tours-Bordeaux are temporarily affecting the offer
	  ○ The PaPs offer for timetable and the requests already made for 2015
	  ○ The PaPs offer for timetable for 2016, which have a large increase for France and Spain

N-007	**Transport Demand Analysis: methodology and key assumptions, relevant studies, and planning, outline**
	
	Daniela Carvalho presented the Transport Demand Analysis done until the CF, covering:
	• The relevant studies and sources used as basis
	• The first figures
	  ○ Cross border passengers flows (matrix between countries and modal share)
	  ○ Cross border trade (matrix between countries and modal share)
	• How the refinement of traffic flows will be made
	• The next steps
	• The main inputs required from MS
	
	DC also stressed that this is a first draft of that analysis: traffic flows presented reflect the flows between the four corridor's countries, but not all the international flows. This is a working in progress document, and all inputs are welcome.
	
	The remarks were:

Id	Description

	• It should be verified if the Paris IWW passengers are considered (they represent about 7 million passengers per year)
	• What will be the geographic level of analysis
	  ○ DC replied that will be NUTS2 level
	  ○ Spain delivered a xls file with the matrix of goods at this geographic level, from the Cross border Surveys (Observatory)
	
	Apart this, there were raised the issue of what type of projects will be considered on the work plan.
	• DC stated that all projects identified on the CEF will be considered on the work plan
	• CdG stated that the financing will be for projects well supported, relevant and mature; not all the projects belonging to the annex I will be financed. The financing depends on its quality and maturity
	• Projects out of this list, and also those that do not belong to the core network can also be financially supported by EC on a specific case-by-case analysis

N-008	**Presentation of the potential stakeholders in the 3rd Corridor Forum** The CF3 will be held in the week between the end of September and beginning of October The CF3 will be opened as well to road and airport infrastructure managers and regional representatives. The MS should confirm the proposed list of invitations proposed by the EC. The MS should evaluate between the need to involve other stakeholders on the Corridor Fora or ask for their opinion and comments.
N-009	**Conclusions / wrap-up** EIB representative informed that EIB is looking for individual projects, and its cost-benefit value will determine the support. Carlo Secchi stressed that project bonds and innovative financial instruments open new opportunities; he then recalled the importance of the definition of which belongs to the Corridor. The coordinator thanked all for the fruitful meeting held remembering the importance to send the comments and remarks to the document produced and validation of stakeholders list.
N-010	**Restricted De-briefing** The 1st CF Meeting were formally approved. Carlo Secchi stated that 2 working groups (WG) will be created: one, for ports (maritime and inland) and other for regions. These WG will meet next to the CF and their conclusions should be presented on the Forum. The coordinator thanked again to all and reinforce the importance of comments and remarks to the document produced and the validation of stakeholders list.

The main action items identified during the meeting are recorded on the next table.

Action Items			
Id	**Action**	**Responsible**	**Due date**
AI-001	All participants to send comments /suggestions /additional information to	All	July

Action Items			
Id	**Action**	**Responsible**	**Due date**
	previous documents, in particular 2nd report and respective annexes		
AI-002	Consultants to circulate to MS the suggested list of stakeholders for the 3rd CF	TIS	1st week July
AI-003	Consultants to start a process of KPI revision taking stock of RCF	Consultants	August
AT-004	EC to discuss harmonisation of KPI among corridors	EC	Asap
AI-005	Consultants will contact MS for bilateral discussions on projects	Consultants	July

The following documentation was provided during /after the meeting:

Documentation Annexed		
R	**Reference**	**Format**
D-001	Consultants presentation	pdf
D-002	Coordinator speech and EC presentation	Xps
D-003	Attendance list to the 2nd Corridor Forum	pdf
D-004	Presentation of RFC4 (Atlantic Rail freight Corridor)	pdf
D-005		
D-006		
D-007		
D-008		
D-009		
D-010		
D-011		
D-012		

Project:	Studies on TEN-T core network corridors – Atlantic Corridor
Meeting:	3rd Corridor Forum
Place:	European Commission - Berlaymont Room: S5
Date:	2014/10/01 **Time:** 11:00 – 17:30
Author:	Daniela Carvalho

ATTENDEES

Name/Company	Name/Company
MS representatives	**European Commission & EIB**
Germany – Ralf Schulze	DG MOVE – Prof Carlo Secchi
France – Anne Pluvinage-Nierengarten	DG MOVE – Carlo De Grandis
Spain – Maria Corral	DG MOVE –Raluca Mitu
Portugal – José Cruz	DG MOVE – Dorothée Coucharriere
REPER (PT) – Marta Gaspar	DG MOVE – Jarvos Siwinski
Ports and IWW	DG REGIO – Mário Rodrigues
HAROPA – Christelle Larsonneur	INEA – Bianca Holdford
APP – Pedro Ponte	EIB – Paulo Jorge Mendes
Port of Algeciras - Jose Lusi Hormaechea	**Consultants**
Puertos del Estado – Alvaro Rodriguez	TIS – Faustino Gomes
Port of Le Havre – Jean Pierre Guellec	TIS – Daniela Carvalho
VNF – Cécile Raoux	INECO – Esther Durán
Port of Bordeaux – Michel Le Van Kiem	INECO – Alberto de Benito
Port of Bilbao – Luis Gabiola	EGIS – Georges Fusch
Port of Bilbao – Goiri Txaber	EGIS – Estelle Morcelo
Rail Managers	PANTEIA – Sean Newton
RFC 4 – Jacques Coutou	
ADIF – Lorenzo Jaro	
REFER – Ana Paula Coelho	
Regions	
Andaluzia region – Miguel Angel Paneque	
Andaluzia region – Ignacio Alvarez-Ossorio	
Poitou Charentes Region – Jacky Emon	
Poitou Charentes Region – Vera Kissler	

Castilla y Leon region – Francisco Prieto Toranzo	
Acquitaine region – Luc Federman	
Extremadura region – Miguel Angelo Rufo	
Extremadura region - Cesar Morcillo	
Norte region – Ricardo Pinto de Sousa	
Norte region – João Marrana	
Basque region – Julian Ferraz	
Lorraine region – Patrick Courtin	
Road and Airport Managers	
Airport Bordeaux – Christophe Parier	
EP – Mario Fernandes	
INAC – Susana Brites	

Agenda

#	Agenda Items
1	Opening and Welcome (*Carlo Secchi, European Coordinator - Chair*)
2	Tour de table presentation
3	Current outline of the Corridor: state of play from Third Progress report (*Contractor representative*)
4	Feedback from working group ports and IWW managers
5	Feedback from railway infrastructure managers and Rail Freight Corridor
6	Feedback from other infrastructure managers (*Mr Jacques Coutou, Managing Director RFC 4*)
7	Feedback from representatives of regions
8	Further steps for the Corridor Forum and new working group for the Regions
9	Conclusions / wrap-up (*Carlo Secchi, European Coordinator*)
10	Restricted De-briefing meeting with MS representatives only Formal approval of the minutes of the 2nd Corridor Forum meeting (by MS) Discussion

Meeting Summary

These minutes refer to the 3rd Corridor Forum for the Atlantic Corridor held in Brussels the 1st October 2014. The Corridor Forum is, as foreseen by the TEN-T Regulation, the consultative board dealing with the Corridor planning and implementation.

The four Member States in the Corridor and its Rail, Ports (maritime and inland), Airports and Road infrastructure managers, together with representatives from Regions along the Corridor took part to the Forum and actively shared views on the Corridor. Overall, the 3rd Forum counted with a large attendance of the different categories of stakeholders – 53 participants, including EC, INEA, DG REGIO, EIB and consultants.

The Forum started with a first introduction by the Corridor Coordinator (Prof Secchi) followed by a tour de table where each person was invited to briefly present him (her) self.

The meeting was then centred on the following main points:

- Welcome and quick overview on current state of play by the Coordinator and Commission.
- A presentation on the 3rd progress report of the Corridor by the consultants, including the outline of corridor and its characteristics and compliance with TEN-T requirements, objectives, market study and outline of workplan, in particular the overview on measures and investments.
- Feedback from working group on ports and IWW managers (meeting held in the day before)
- Presentation by Mr Coutou, Managing Director of the Atlantic Rail Freight Corridor
- Feedback from the different Infrastructure managers and Region representatives
- Presentation by the EC on the next steps for the Corridor Forum and new working group for regions
- Wrap up conclusions by the Corridor Coordinator

In general the meeting was very productive and with an active participation from the different Stakeholders. The consortium and the EC reinforced the importance of obtaining feedback from participants in relation to the reports produced.

The main aspects discussed and decisions taken during the meeting are recorded on the next table, not necessarily in the order they have been presented.

Id	Description
N-001	**Welcome and Introduction** Prof Carlo Secchi and Carlo De Grandis introduced the agenda and presented briefly the objectives for the 3rd Forum as: • To gather input for and feedback on the corridor study • To pave the way towards a corridor work plan, in particular: ○ to agree on the identified critical issues (i.e. bottlenecks, cross-border sections, missing links)

Id	Description
	◦ to comment on the results of the multi-modal transport market study ◦ to agree on the corridor objectives ◦ to discuss the list of investments / projects The basis for the discussion is given by the 3rd progress report of the contractors that has been provided to participants in the week before the Forum and the outcome of the working Group on Ports held in the day before. Carlo de Grandis completed the presentation with some specific issues related with the corridor, focusing on the relevance of corridor maritime dimension, highlighting the overall magnitude of about ~300M Tons from EU Ports along the Atlantic from Algeciras to Le Havre. The key elements of the new TEN-T policy and Core Network Corridors were remembered, as well as the corridor workplan main aspects and milestones: • multi-modal • concrete plan for the implementation of the core network based on a thorough analysis of the corridor • prepared by the contractors and presented by the Coordinator • continuously discussed with a number of stakeholders in the Corridor Forum meetings • draft work plan ready by 22 December 2014 • to be approved by Member States • followed by implementing decision of the EC in early 2015
N-002	**Third progress report and Multimodal Transport Study** Daniela Carvalho (DC), Contractor's representative made a presentation which was focused on: • Brief review on the study methodology and description of the Corridor nodes and networks to set the context for the new participants • Description of corridor characteristics, focusing in particular on the compliance requirements of core network along nodes and networks • Identification of main critical issues along Rail, Road, IWW, Ports, Airports, Rail-Road Terminals, taking particular attention to ◦ Cross borders sections ◦ Bottlenecks and Missing Links ◦ Interoperability, Intermodality and interconnections and Operational and Administrative Barriers • Overview on the specific objectives for the Atlantic Corridor, highlighting in particular how those objectives answer and are aligned with the TEN-T objectives (Cohesion, Efficiency, Sustainability and Benefit for the Users
N-003	The **Market Study** was presented by Sean Newton (SN). Results presented (work in progress) show a "as is today" scenario, i.e. it doesn't include yet the expected modal share resulting from a more efficient network answering to TEN-T criteria, namely in what concerns the elimination of bottlenecks and missing links. Starting from the overview on national transport performance as initial reference point, it was highlighted the relevance of ports in the corridor both for short sea and deep sea. The importance of UK and Benelux as main markets for Atlantic was noticed.

Id	Description
	The exercise on assigning flows to the network was highlighted (i.e. top-down assignment, considering the whole network, both domestic and international flows). The forecasting exercise to 2030-2050 was presented. The exercise, considers only macro- economic growth and is based on the EU reference scenario (more conservative than the 2012 "Ageing report" in which the RFC4 market study was based); however still considered as optimistic compared to actual GDP growth in corridor countries. The results of the assignments to actual sections of the corridor was shown, with results presented in tonnes.km. Overall, the forecast highlight a growth nearly the 45% while RFC show expected growth in the order of 60%. This can be partly resultant from a more conservative socio economic growth, but also due to the fact a) flows include national, and international flows on corridor links only; and b) infrastructure measures (i.e. from workplan) were not reverted yet in the current exercise. In the coming weeks, a "corridor scenario", taking into account the corridor developments will be developed
N-004	DC presented the **Workplan,** remembering that in the process for developing the implementation plan, elements from the previous progress reports, the critical issues, the compliance issues, the market developments and the set of specific objectives were brought together. Projects and investments reverted in the workplan have been discussed with MS representatives. Globally, about 230 projects were identified, majority of those targeting rail infrastructure notably in view of the elimination of bottlenecks (including connections to ports, interoperability) and missing links. About 20% of the projects target seaports, largely oriented towards capacity bottlenecks and increase of efficiency and about 9% target bottlenecks in inland waterway and 3% in inland ports. Road projects target essentially completion of last mile and measures in view of accomplishing TEN-T requirements such as availability of clean fuels, safe parking areas and tolling interoperability. Summary tables per country (already an updated version compared with the report submitted) were presented together with the overview on costs and funding sources.
N-005	DC highlighted the next immediate steps that consultants team will develop, requesting the collaboration from all stakeholders in providing comments and clarifications as soon as possible but no later than the 17th October, allowing to review and integrate them in the draft final report.
N-006	Short discussion mainly focusing on: Market study • whether analysis was taking into account capacity restrictions – it was clarified that analysis corresponds to a straightforward scenario, using the effects of the economic growth, so just corresponding to the natural trend. In next steps it will be necessary to include policy objectives • whether the model takes into account that traffics in ports doesn't depend only on EU economic growth but particularly on international demand – it was clarified that model includes also economic growth at international level and not only EU countries • differences in forecast assumptions between RFC4 (Ageing report, 2012) and current (EU reference scenario) – clarified that EU reference scenario updated the values from 2012, slightly less optimistic but in general values are comparable • whether final results will show O/D matrices or just flows in links – it was clarified that for the purpose of the presentation only national flows were shown but report will present desegregated data Investments and workplan • PT mentioned that workplan is in its case generally aligned with identified needs and in the observations to the 3rd report fine-tunning adjustments will

<table>
<tr><th>Id</th><th>Description</th></tr>
<tr><td></td><td>be presented, however this exercise reflects the position of MS representatives, stakeholders and respective working groups and not of National Governments, considering that at some point there will be the need to validate investments with Governments, assuming that it is only expected to take place later in time after the 4th forum meeting
• Question whether there will be capacity to review market study after the conclusion of workplan – it was remembered that this is continuous process and in 2016 the workplan will be reviewed
• Reasons for having some projects highlighted in bold in the workplan – clarified that those correspond to projects addressing the most critical issues at corridor level. It was reinforced that such highlight doesn't reflect any prioritization. Prof Secchi reinforced also this aspect mentioning that a project being included in the workplan is not a guarantee for financing as projects has to clearly show and qualify through the quality criteria. Bianca (INEA) clarified stakeholders against quality criteria highlighting that procedures are available from INEA website</td></tr>
<tr><td colspan="2">Lunch break</td></tr>
<tr><td>N-007</td><td>Feedback from working group on ports and IWW managers, presented by Luis Gabiola (Bilbao Port) and focusing in particular on three aspects:
1. Progress report
• short description of main bottlenecks, sea-side and landside, including additional parameters with respect to TEN-T ones (e.g.: water canal depth, gradients, loading gauge) - clarifications to be sent to Consultants and Commission to improve the progress report/ Corridor work plan
• Services: the need to take into account the existence of many additional Short Sea Shipping / MoS lines being deployed (some not financed by EU)
• LNG deployment already taking place (i.e. Pilot cases: Sines, Bilbao; Strasbourg Master Plan for IWW and studies for Seine)
2. Key points for ports and IWW
• Ensure seamless information systems to follow goods and enhance logistics performances
• Continuation of the Working group, with exchange of best practices, including on logistic platforms, ITS, goods flows and further assess impact of the global trade trends on Corridor and potential for its maritime dimension
3. Discussion with MoS Coordinator Brian Simpson on MoS priorities
• Integration of maritime transport in the logistics chain
• Alternative fuels
• Traffic management systems and safety
• Expansion of the concept of MoS beyond EU borders
• Opportunities offered by future trade agreement with US and Canada (TTIP) for the Atlantic Corridor
• Debate on Blue Belt, Single Windows and Logistics Single Windows
• Funding opportunities for MoS projects: Connecting Europe Facility (CEF) call for proposals; 2014-2020 programming period</td></tr>
<tr><td>N-008</td><td>Presentation of the activities of Atlantic Rail Freight Corridor (RFC4)
Mr Jacques Coutou, Managing Director RFC 4, made a presentation updating the one presented in previous Corridor Forum, which focused on:
• Implementation progress of the Atlantic Corridor (regulation 913/2010 & 1316/2013)
• The multiple characteristics of rail infrastructure, highlighting:
○ The governance and the documents on progress, namely the implementation plan</td></tr>
</table>

Id	Description
	○ The new itineraries that will be analysed in the TMS and infrastructure/exploitation study on progress that is being conducted and which final results are planned for the end of 2014. ○ The timetable for 2015 ○ The general purpose is to multiply by 3.5 the volume of rail freight which will cross the borders of Corridor 4 in the next 20 years. ○ The capacity offer all allocation for the years 2014, 2015 and 2016, focusing particularly on the Corridor one stop shop: ▪ PaPs offer adjusted to the Transport Market Study (TMs) and railway undertakings (RU) wishes expressed during the TAG/RAG meetings ▪ Prearranged paths (PaPs) offer coordinated with passenger trains rush hour, work and maintenance period planned along the corridor ▪ Guaranty for PaPs allocated by the C-OSS along the corridor ▪ Same IT tool (PCS) for all RU request about PaPs reservation Atlantic Rail Freight Corridor includes also other sections that doesn't belong to Core Network and priorities not always overlap with the Corridor ones (i.e. ERTMS) however in general there is an alignment of corridors, namely in what concerns urgent measures in terms of train length, gauge and train monitoring. Overall the corridor operations are progressing. Seeking for more capacity is becoming urgent (i.e. more slots).
N-009	Short discussion focusing mainly on intermodal aspects • It was raised the question whether it is planned to connect the one stop shop with logistic single windows – Mr Coutou explained that logistic terminals (public terminals, not the ones managed by private undertakings) are connected to the OSS and several PaPs are offered from those terminals, however as the scope of both OSS and Logistic windows are rather different and it is not expected to have a connection between them. • On the issue of terminals, it was issued the question on the possibility to reflect in market analysis the multimodal dimension, in particular time lost between modes – Mr Coutou referred the difficulty to find correct data on rail-rail and rail-road; consultants also reinforced this and the need to make use of statistical data that is quite limited to a modal basis, being extremely difficult to have data sources at corridor level. Also for sea/road it was mentioned that despite the easiness to get data, evidence is rather limited to estimate demand. • Prof Secchi suggested to keep this as an open question or as recommendation (maybe in an annex) for improvement in subsequent studies or as suggestion for future investigation areas
N-010	**Feedback from Road /Airport Managers and Regions** No specific comments were raised by road and airport managers, leaving this to be provided afterwards in written comments. The discussion was then open for regions, calling to the attention that a working group on regions will be established for the 4th Forum. The following points briefly highlight points raised by the present regions: • Andalucía (ES): a short note was read and will be provided to consultants. In essence region reinforced the section Algeciras-Antequera as the main bottleneck and the importance it has for the Port of Algeciras. It was also referred to the importance to treat the road accesses to RRT (namely Córdoba and Antequera) in the same line as it was done for ports. Overall, region considers that planned investments as presented in the workplan seem to be reduced in order to accomplish all requirements by 2020 as planned. It was also emphasised the importance to include in KPI, indicators related with sustainability of the transport system, such as GHG reduction.

Id	Description
	MS representative called the attention and reinforced the need for a strong coordination and articulation between the consultant teams in charge of Atlantic and MED corridor sharing this section of Algeciras-Madrid • Aquitaine (FR) reinforced the role of the Atlantic corridor as the EU gate for overseas and the importance of the corridor for the region, with all major cross border flows passing through it. The ongoing high speed projects Tours-Bordeaux and Bordeaux-Spain and its important role was presented as well as the key project Rolling motorway. Region reinforced the role of the port and airport of Bordeaux calling also to the importance that Bayonne can have in the corridor, stating the interest of the region in contributing actively to the corridor deployment • Poitou Charentes (FR) reinforced - as Aquitaine did - the role of the Atlantic corridor as the EU gate for overseas and the importance of the corridor for the region, with all major cross border flows passing through it. He also highlighted the dissatisfaction of the Atlantic Regions with the definition of the TEN-T. He reinforced the importance for the Atlantic Façade and the importance of the rail infrastructure l Bordeaux-Nantes conventional line which links 2 ports of Nantes and Bordeaux from the core network and the port of La Rochelle from the comprenhensive network which is the only port in deep-water of the Atlantic façade. This lines is a missing link in the TEN-T, in the Atlantic corridor with a connecting possibility with Bretagne. Nantes-Bordeaux line has with more than one million of travellers a year, a great potential of freigh with 3 ports but it does not figure in the central ou comprehensive network. Moreover this line is in danger because it is degrading . Poitou-Charentes has placed large emphasis on the importance of the port of La Rochelle and its rail connections, namely the line La Rochelle-Paris with capacity needed and its reference in the corridor. In view of clarifying the issue of comprehensive ports, the EC has recalled that core network was established following a clear methodology and will be revised in 2023 to take stock of progress in implementation, project pipeline and flows development. In this respect the EC clarified that comprehensive network are also object of open calls for TEN-T projects, referring that this year about 1 billion euros are available for 2 themes in which comprehensive ports can also submit proposals (MoS and connection of ports to core network). On the issue of the bottlenecks associated with single track, the EC also gave the example of the Lötschberg tunnel alpine rail crossing partly single track and even so carries more than 110 trains per day, highlighting that even a single line can be optimised and ensure high level of rail flows, notably due to the major role that ERTMS can fulfil in this process. • Norte (PT) reinforced the relevance and importance for the region of ongoing initiatives as the one linking Aveiro and Leixões Ports to Salamanca logistic platform and the planned investments in the railway line and the strong interest of the region in collaborating along the process • Castilla y León Region (ES) referred that one of its political priorities is to turn the Region into a logistic reference for the Northwest of Spain. The aim is to promote the development of the industrial and logistic sectors through the implementation and promotion of different measures. This logistic strategy is being implemented under the wings of the brand CyLoG. Also mentioned the MoU signed for the macro region of Southest European Regions "RESOE"

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Extremadura (ES) highlighted important ongoing initiatives being promoted by the region, notably the works and investments in the line Badajoz-Madrid; three RRT (Navalmoral, Mérida and Badajoz). It was emphasised the need to act on the current missing link Évora-Caia, given the importance that line Lisboa-Sines-Caia-Badajoz have for the region. It was also called to the attention to the Euroregion and Extremadura as the only region benefitting from the Cohesion Funds

The need to define common criteria for inclusion of projects in workplan (i.e. just core network or also other projects affecting the core network) was raised and was addressed in the closing remarks by the EC.
</td></tr>
<tr><td>N-011</td><td>
Conclusions / wrap-up
Carlo De Grandis briefly recap some remarks on the structure of the work plan, namely its key components:
characteristics,
market study,
critical issues,
objectives,
implementation: list of projects with the investment required and the envisaged sources of finance, deployment plan for traffic management systems (ERTMS, RIS), plans for the removal of barriers between and within transport modes and for the enhancement of efficient multimodal transport and services
It was also recap and clarified the main open issues in relation to the List of projects –i.e. 'project pipeline', in particular:
corridor study identifies and categorises the projects that are needed to lift the obstacles of the corridor (i.e. existing bottlenecks, missing links, …) and to complete the core network corridor by 2030
projects listed in the corridor work plan can be financed by various financing sources: public and private; local, regional, national or EU (EIB, CEF, ERDF, Cohesion Fund)
No correlation between list of projects in work plan and CEF Annex 1
list of projects may go beyond the list of the pre-identified projects of the Connecting Europe Facility (Annex 1)
no guarantee for funding for projects listed in work plan -> competitive approach of CEF is maintained
no necessity for a project to be included in work plan in order to get financing
Prof Secchi concluded by thanking all stakeholders for the active participation, informing on the follow-up for 2015-2016
<u>2015:</u>
a) indicatively 2 fora (May –November?), in Brussels
b) WG Ports, WG Regions, potentially WG on cross-border sections, can be hosted along the Corridor
<u>2016:</u>
a) 3 Fora, to develop the revision process of the Work Plan
b) Working Groups: to be discussed according to needs

Prof Secchi reinforced also the importance of providing comments and remarks to the document produced until the 15th October.
</td></tr>
<tr><td>N-012</td><td>Restricted De-briefing

The 2nd CF Meeting minutes were formally approved.</td></tr>
</table>

Id	Description
	The coordinator thanked again to all and reinforced the importance of comments and remarks to the document produced.

The main action items identified during the meeting are recorded on the next table.

Action Items			
Id	**Action**	**Responsible**	**Due date**
AI-001	4th Forum will be held between 17-21/11/2014. Working Group Regions will take place in the same week. EC will define the exact dates	EC	17 to 21 Nov 2014
AI-002	TENtec Maps will be sent to all stakeholders after the Forum meetings, at the latest on 6/10	Consultants	6-10-2014
AI-003	**Written procedure for comments on TENtec maps open until Friday 17/10 (comments to be sent to consultants)**	**All stakeholders**	**17-10-2014**
AT-004	Consultants will analyse comments and update data fields in TENtec where necessary until 31/10	Consultants	31-10-2014
AI-005	**Specific observations on Report, on the Work Plan and on Market Study: to be sent to Consultant AND EC by October 15**	**All stakeholders**	**15-10-2014**
AI-006	Final draft Report with Work Plan to be diffused by Nov. 3rd	Consultants	3-11-2014
AI-007	Discussion on the final draft during the 4th Forum (17-21 Nov 2014)	All	17 to 21 Nov 2014
AI-008	Approval by written procedure of the Report by November 30th	MS	30-11-2014
	Submission by the Coordinator to the member States in December 2014	Coordinator	Dec 2014

The following documentation was provided during /after the meeting:

Documentation Annexed		
R	**Reference**	**Format**
D-001	EC presentation [2014-10-01 Forum_EC_Coordinator.pdf]	pdf
D-002	Consultants presentation [CF3_Atlantic_v0.3.pdf]	pdf
D-003	Consultants presentation – Market [Atlantic_MarketAnalysis.pdf]	pdf
D-004	Conclusions WG Ports [2014-10-01 WG Ports with conclusions.pdf]	pdf
D-005	RFC4 presentation [CFM4 Corridor forum meeting 011014.pptx]	pptx
D-006	Set of TEN-T maps and tables for validation [TEN_T_maps.zip]	Zip file
D-007		
D-008		

Documentation Annexed		
R	**Reference**	**Format**
D-009		

Project:	Studies on TEN-T core network corridors – Atlantic Corridor
Meeting:	4th Corridor Forum
Place:	European Commission – CCAB – room 3 A
Date:	2014/11/19 — **Time:** 11:00 – 17:30
Author:	Daniela Carvalho

ATTENDEES

Name/Company	Name/Company
MS representatives	**European Commission & EIB**
France –Thibaud Delvincourt	DG MOVE – Prof Carlo Secchi
Spain – María Corral	DG MOVE – Carlo De Grandis
Portugal – José Cruz	DG MOVE –Raluca Mitu
Ports and IWW	DG MOVE – Julie Raffailac
HAROPA – Helene Hasle	DG MOVE – Karel Vinck
Port of Portugal Associatio – Vitor Caldeirinha	DG MOVE – Helmut Morsi
Port of Algeciras - Gerardo Landaluce	DG MOVE – Dorothee Coucharriere
Puertos del Estado – Antonio Góngora	DG MOVE – Dimitris Vartis
Port of Le Havre – Jean Pierre Guellec	DG MOVE – Karel Vinck
VNF – Cécile Raoux	INEA – Stefano Campagnolo
Port of Bordeaux – Michel Le Van Kiem	EIB – Paulo Mendes Jorge
Port of Bilbao –Txaber Goiri	**Consultants**
Port of Leixões – Amélia Castro	TIS – Faustino Gomes
Port of Leixões – Sara Marques	TIS – Daniela Carvalho
Port of Sines – Isabel Alves	INECO – Esther Durán
Port of Lisboa – Manuela Patricio	INECO – Blanca Martín
Rail Managers	EGIS – Georges Fusch
RFC 4 – Jacques Coutou	PANTEIA – Sean Newton
DB netz – Sebastian Dietrich	PANTEIA - Yuko Kawabata
RFF – Lucie Chevrat	
ADIF – César Folgueira	
REFER – Carlos Correia	
REFER – Patrícia Figueira	
Regions	
Andaluzia region – Miguel Ángel Paneque	

Andaluzia region – Ignacio Álvarez-Ossorio	
Castilla y León region – Francisco Prieto Toranzo	
Castilla y León region-Isabel Castaño	
Extremadura region – Miguel Angel Rufo	
Extremadura region - César Morcillo	
Basque region – Julián Ferraz	
Basque Region-Emilio de Francisco	
Basque Region-Marta Marín	
Poitou Charentes Region – Jacky Emon	
Poitou Charentes Region – Vera Kissler	
Acquitaine region – Frédéric Tobler	
Acquitaine region – M Piere Resprede	
North (PT) region – Ricardo Pinto de Sousa	
North (PT) region – João Marrana	
Road and Airport Managers	
Airport Bordeaux – Christophe Parier	
INAC – Susana Brites	

Agenda

#	Agenda Items
1	Opening (*Carlo Secchi, European Coordinator - Chair*)
2	Adoption of agenda and formal approval of minutes of the 3rd Forum meeting
3	Tour de Table
4	Presentation of the draft final progress report / corridor study by the contractor, including TENtec corridor maps (Daniela Carvalho – TIS – Sean Newton – PANTEIA) Questions & Answers
5	UIC gauge deployment plan in Iberian Peninsula (presentation by PT and ES representatives)
6	Presentation of the results of the Regions' working group – feedback on the report (Rapporteur of the working group)
7	Feedback from other stakeholders on the draft final progress report

8	Presentation of cross-cutting issues: ERTMS data of the Atlantic Corridor (Karel Vinck, European Coordinator / Judit Bertrand, DG MOVE) ITS data of the Atlantic Corridor (DG MOVE) Innovation perspective on the Atlantic Corridor (Helmut Morsi, DG MOVE)
9	Further steps (Carlo De Grandis, DG MOVE)
10	Conclusions / wrap-up (*Carlo Secchi, European Coordinator*)
11	Restricted De-briefing meeting with MS representatives only Formal approval of the minutes of the 2nd Corridor Forum meeting (by MS) Discussion

Meeting Summary

These minutes refer to the 4th Corridor Forum for the Atlantic Corridor held in Brussels the 19th November 2014. The Corridor Forum is, as foreseen by the TEN-T Regulation, the consultative board dealing with the Corridor planning and implementation.

The four Member States in the Corridor and its Rail, Ports (maritime and inland), Airports and Road infrastructure managers, together with representatives from Regions along the Corridor took part to the Forum and actively shared views on the Corridor. Overall, the 4th Forum counted with a large attendance of the different categories of stakeholders, including EC, INEA, EIB and consultants.

The Forum started with a first introduction by the Corridor Coordinator (Prof Secchi) followed by a tour de table where each person was invited to briefly present him (her) self.

The meeting was then centred on the following main points:

- Presentation and discussion of the draft final progress report including the results of the Market Study
- Presentation by Portugal and Spain on the UIC gauge deployment plan in Iberian Peninsula
- Feedback from working group on regions held in the day before
- Presentation of cross-cutting issues by the EC, notably ERTMS, ITS and Innovation
- Wrap up conclusions by the Corridor Coordinator

In general the meeting was very productive and with an active participation from the different Stakeholders. The consortium and the EC reinforced the importance of obtaining feedback from participants in relation to the reports produced.

The main aspects discussed and decisions taken during the meeting are recorded on the next table, not necessarily in the order they have been presented.

Id	Description

N-001	**Welcome and Introduction**
	Prof Carlo Secchi and Carlo De Grandis introduced the agenda and presented briefly the objectives for the 4th Forum as:
	• To get the feedback in order to finalise the corridor report
	• To pave the way towards a corridor work plan, in particular:
	  ○ to agree on the identified critical issues (i.e. interoperability and intermodality barriers, other bottlenecks, cross-border sections, missing links)
	  ○ to comment on the results of the multi-modal transport market study
	  ○ to agree on the corridor objectives
	  ○ to discuss the list of investments / projects
	• To present a vision for the future development of the Corridor
	
	The basis for the discussion is given by the draft final report produced by the contractors and provided in advance to participants and the outcome of the working Group on Regions held the day before.

N-002	Minutes of 3rd Corridor Forum were approved

N-003	**Draft Final report**
	Daniela Carvalho (DC), Contractor's representative made a presentation which was focused on:
	• Results of compliance analysis of corridor infrastructure along nodes and networks
	• Identification of main corridor critical issues taking particular attention to
	  ○ Cross borders sections
	  ○ Bottlenecks and Missing Links
	  ○ Interoperability, Intermodality and interconnections and Operational and Administrative Barriers

N-004	The **Market Study** was presented by Sean Newton (SN) that started by a review on the analysis conducted, noting in particular that scenario analysis was done for the whole EU network (i.e. not only for Atlantic) allowing to assess the various impacts of EU level measures and its effects on the corridor with policy assumptions derived from Atlantic, Med, NSMed and Rhine-Alpine corridor studies. Exercise was made along five model runs: 2010, 2030 baseline, 2030 policy scenario, 2050 baseline and 2050 policy scenario. Results of exercise were presented for road, rail, IWW highlighting as well the port forecasts.
N-005	DC presented the **Elements of the Work plan**, starting by remembering that Work Plan will focus on projects of common interest demonstrating European added value, meaning that in addition to national benefits, the project should lead to a "significant improvement of either transport connections or transport flows between the Member States which can be demonstrated by references to improvements in efficiency, sustainability, competitiveness or cohesion". An overview on the projects per country, its typology and timeline was given. Overall, for the corridor nearly 260 projects were identified representing a total investment from 50 to 66 thousand MEUR of which about 35 thousand MEUR were related with identified critical issues. From the 260 projects (still in revision by MS), 150 refer to projects with a clear identification of costs and implementation till 2020. An overview on funding sources was also highlighted.

<table>
<tr><th>Id</th><th>Description</th></tr>
<tr><td>N-006</td><td>Discussion
In general there was a positive feedback on the report and progress of work. Some recommendations considering both the production of final report and suggestions for next developments of corridor studies were highlighted. In particular:
Suggestion for a deep analysis in next rounds of CNC studies (market analysis) on the consideration of the share of road /maritime flows
Ensure coherence on project assignment defining common criteria at corridor level (i.e. bottleneck, efficiency), but particularly in the harmonisation among the different corridors within the same country. Overlapping articulation of different corridors should be implemented in future Wok Plans
Suggestion to consider not only to the number of projects presented by country but also distribution of costs between countries
KPI: considered very general. Suggestion to give more attention to the process of achieving the KPIs in terms of quality and usefulness to fulfil the objectives of the process and not only to the accomplishing of Regulation parameters.
Market study: it was pointed the need to verify the flows in German border which forecast seems very low compared to actual situation as well as to consider in the analysis the integration of maritime flows, IWW in Portugal. In general, request to provide more details, notably in comparison with RFC4. Suggestion to add a simple analysis comparing the evolutions achieved with the White Paper targets, namely in what concerns to freight transport shift from road to rail and waterborne transport.</td></tr>
<tr><td>N-007</td><td>Feedback from working group on regions, presented by João Marrana (North region Portugal).
Four main topics were discussed as follows:
What is the role of the AC for your region? Which benefits can it deliver? Which traffic flows can be attracted / generated in your region through the implementation of the Atlantic Corridor?
Are there specific issues that concern your region and that you wish to be addressed in the wider Corridor perspective?
What are the most relevant cooperation structures / cross border initiatives or projects? How do they fit into the AC?
What is your vision for a sustainable and efficient transport pattern, in line with the EU transport policy objectives? What are your development plans and investment strategies and how are they synergic with the Corridor?
From discussion held, the following aspects emerged as the most relevant for the Atlantic regions:
Platforms are more than terminals and should be a flexible tool to serve regions
Corridor should not just link the extremes but serve regions
Synergies between Regional infrastructural/logistics plans and Corridor connections
The Maritime component of the Corridor is crucial: ports along the façade are the key interconnectors (inland/seaside)
Small ports also relevant
Port connections
MoS/SSS/Single windows
The critical corridor issue on UIC gauge / interoperability harmonised deployment (ES-PT) looking for from low-hanging fruit to long term vision
Integrated planning for UIC gauge needed
Signalling
Loading gauge
Train length
… double track in a long term perspective</td></tr>
</table>

Id	Description
	4. Reinforce the need to take stock of the cooperation structures in place (e.g.: CRPM, Cross-border Euroregions) both for studies, innovation and coordination of services 5. Remember that assessing Regions accessibility and weak points is needed (incl. potentially road missing links)
N-008	**UIC deployment in Iberian Peninsula** The first presentation was given by REFER (Patricia Figueira) and included an overview of Portuguese rail network characteristics and its main bottlenecks and critical issues (including non-core sections) followed by the foreseen developments of specific plans regarding also the migration to European Gauge deployment. The need for a clear articulation and cooperation with Spain, notably in terms of calendars and technical solutions towards the creation of conditions for interoperability and elimination of constraints was reinforced. Briefly the Portuguese strategy for UIC deployment was presented along 4 steps: preparation, Start-up, Implementation and Generalization. The process is at a planning stage. The start-up period has to be jointly planned with Spain, and the effective implementations should start in each corridor. The introduction of UIC gauge should be directed to major international freight routes and its extension to other generation/attraction poles should be evaluated case wise. Finally, The complete gauge migration should only be implemented in the case of identical option on the Spanish side, otherwise it would penalize the Iberian interoperability. On the missing link section along the Sines-Caia route (corridor missing link), REFER expects to finish studies for design preparation by the end of 2014 for a project in Iberian gauge with polyvalent sleepers; the works are predicted to start at the 3rd quarter of 2016 and to finish in late 2019, allowing the entry into service in early 2020. It was also mentioned the approved funding project to define the technical requirements for the adoption of the third-railway track system. Spanish presentation was ensured by Maria Corral (MS representative). A background on the ES strategy was presented, remembering that UIC gauge is implemented in all passenger HSL in Spain. The Resolution of the Secretary of State for Infrastructures of 16/04/2012 establishes that: • UIC gauge in all HSL • Use of polyvalent sleepers when upgrading HSL that already have Iberian traffic. • Use of polyvalent sleepers when upgrading every conventional line. Overall objective is to implement UIC gauge along all network. Different maps (see presentation) on the stage of implementation of the different solutions were presented, notably • Lines operating in UIC gauge • Lines operating in mixed gauge • Lines with UIC gauge in advance construction • Sections with polyvalent sleepers A suggestion for the inclusion in next year CEF calls of a specific line for the deployment of UIC gauge was raised, highlighting that as an opportunity for the countries to speed up the process, notably in the case of Portugal and Spain
	Lunch break
N-009	**Presentation by Julie Raffailac (DG MOVE) on ITS** Presentation started by highlighting IT'S as a cost-effective (fast to implement at moderate/low cost with quick wins) opportunity to foster integration and seamless travel across borders for both passengers and freight. The EU policy framework for the coherent and cost efficient deployment of ITS across Europe was highlighted as well as the priority actions under ITS Directive and its implementation status, notably: • EU-wide Multi-Modal Travel Information • EU-wide Real-Time Traffic information • Free safety-related minimum Traffic Info • Interoperable

Id	Description
	• EU-wide eCall • Information & Reservation services for Truck Parking (it was acknowledge that for Truck Parking reservation system there are no specifications as it was assessed that currently there is no business case justifying it) The 2013 TEN-T projects on ITS deployment were presented – the so called "ITS corridors", of which Arc Atlantique, MedTIS and EIP were particularly relevant for the Atlantic countries (see presentation and ITS projects brochure) Road ITS deployment in 2014 CEF calls and the funding opportunities for road ITS were presented

N-010	**Presentation by the Coordinator Karel Vinck on ERTMS**
	As like for the CNC, the ERTMS Coordinator will deliver the next 22nd December the Work plan to MS. Main objective is to provide the state of play of ERTMS implementation along the nine Core Network Corridors (CNC) and define the way of its acceleration, being developed in consultation and close cooperation with the Corridor Coordinators.
	Work plan is centred in two main pillars looking to go "faster" in the implementation:
	• Breakthrough program (2015-16) – it is focused on showing quick wins (e.g. freight length), tangible results to the stakeholders and give more certainty, credibility and support to ERTMS. It will also focus on deployment along all CNC's and the equipment of the locomotives-not on designing (i.e. an agreement on the OBU was agreed recently with rail operators at EU level)
	and
	• Proposal for a realistic ERTMS Deployment Plan (end 2015). An adjustment plan to existing ERTMS plan will be based on data collected by the contractors and existing information, notably RFC implementation plans, bilateral discussions, etc. Adjustment plan foresees:
	  ○ Beginning of 2015:bi-and tri lateral meetings with Member States, with an attention to cross-border sections (i.e. 12-15 cross border sections represent nearly 85% of the problem)
	  ○ Support of a Deployment Manager Team over 2015
	  ○ Impact Assessment is planned to be carried out
	
	The presence of specific funds for ERTMS (50 M€) projects was acknowledged.

N-011	**Presentation by Helmut Morsi (DG MOVE) on Innovation & new technologies** Brief Overview of DG MOVE Activities, notably in terms of the EC Support Pipeline, along a cycle from research to market, i.e. contemplating the new Horizon 2020 and the CEF calls: Research (H2020) / Demonstration (H2020) / Market introduction(TEN-T/CEF) in particular pilots to avoid expensive mistakes later(i.e. studies with integrated deployment) and Rollout (works). Key role for Member States to leverage R&I results along the Corridors was emphasised Some examples on Key R&I activities in Infrastructure were given, namely the ongoing Joint Technology Initiatives as SESAR and SHIFT2RAIL as well as on the R&I topics focused on infrastructure, with a particular attention to the open topic 2015 -MG8.3 (facilitating market uptake of innovative transport infra solutions) – see presentation Focus on TEN-T/CEF as the market sided of innovation, i.e. along CEF no research will be funded, the focus is placed only on new technologies ready for deployment. An overview on calls and its main framing conditions was given, together with some examples on TEN-T Innovation Studies with Integrated Deployment funded in previous calls (see presentation)
N-012	**Final comments by Regions and Infrastructure Managers** In general regions thanked for the opportunity to be involved in the Corridor Forum and participate in the discussions, reinforcing the added value of maintaining this exercise in future to progress and communicate at corridor level, even beyond the work plan Some recommendations considering both the production of final report and suggestions for next developments of corridor studies were highlighted. In particular:

Id	Description
	• Importance of maritime dimension of the corridor and the relevance to look beyond EU, notably looking to the Atlantic area, Asia and Africa • Need to clarify in the report the differences in the approach of CNC studies and RFC4 studies, namely in what concerns the inclusion of nodes (i.e. different ports and terminals) • Suggestion to create a tool for further exchanges between participants to better coordinate actions among stakeholders.
N-013	**Next steps** Carlo De Grandis briefly recap the steps towards the finalisation of Final Report and Corridor work plan: • Specific observations on Report to be sent to Consultant AND EC by November 26th • Final Report to be diffused by December 5th • Work plan to be drafted by the EU Coordinator • Submission of the Work Plan (Corridor description and priorities, maps and project list) by the Coordinator to the member States by December 22nd • Formal adoption of the Work Plan: spring 2015 He also remembered the planning for 2015 and 2016, namely the realisation of working group meetings. Possible dates are: For 2015: a) indicatively 2 fora (May – November?), in Brussels b) WG Ports, WG Regions, potentially WG on cross-border sections, can be hosted along the Corridor (PT representative mentioned the potential interest of new WG going beyond only cross-border section projects, including wider scope common interest issues, for example rail interoperability) In 2016: a) 3 Fora, Revision of the Work Plan b) Working Groups: to be discussed according to needs
N-014	**Wrap-up and future evolution** Prof Secchi highlighted the main aspects that will orientate his report and actions, notably in terms of • Addressing bottlenecks and missing links • Interoperability in the wide scope, including, but not only • Intermodality: e-integration and ITS, foster the development of interconnecting platforms where not fully exploited • Developing and exploiting the maritime: better port connections by sea and inland – Motorways of the Sea, Short Sea Shipping, evolution towards the LNG As future evolutions along 2015, Porf Secchi referred in particular: • Internalisation of the Climate dimension: what is the role of the Atlantic Corridor on decarbonisation / congestion / accessibility? Can benefits be monetised? • Develop a CBA at corridor level to highlight benefits • Detailed market analysis: searching for potential demand (i.e. widening of Panamá channel) • Successful model for developing logistic platforms
N-015	**Restricted De-briefing**

The main action items identified during the meeting are recorded on the next table.

Action Items			
Id	**Action**	**Responsible**	**Due date**
AI-001	Specific observations on Report to be sent to Consultant AND EC by November 26th	ALL	26-11-2014

Action Items			
Id	**Action**	**Responsible**	**Due date**
AI-002	Final Report to be delivered to EC by December 5th	Consultants	5-12-2014
AI-003	Work plan to be delivered to MS by December 22nd	Corridor Coordinator	22-12-2015
AT-004	Formal adoption of Work plan	MS	Spring 2015
AI-005			
AI-006			
AI-007			
AI-008			

The following documentation was provided during /after the meeting:

Documentation Annexed		
R	**Reference**	**Format**
D-001	EC presentation	pdf
D-002	Consultants presentation	pdf
D-003	Presentation on UIC deployment in Portugal	pdf
D-004	Presentation on UIC deployment in Spain	pdf
D-005	DG MOVE presentation on ITS	pdf
D-006	DG MOVE presentation on ERTMS	pdf
D-007	DG MOVE presentation on Innovation	pdf
D-008	Brochure with ITS projects	pdf

10. Annex 6 - Review of Studies

Table of Contents

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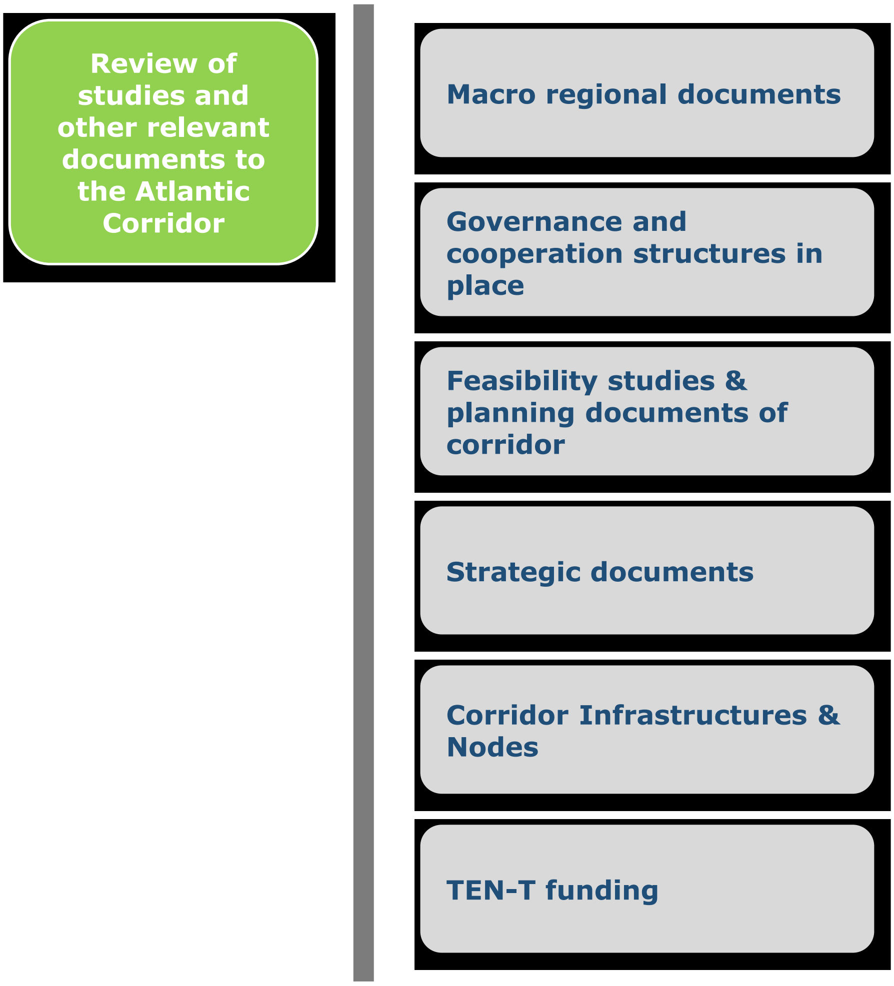
Abbreviations

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 Final Report. It includes the review of literature from previous studies and projects relevant for the corridor analysis.

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.

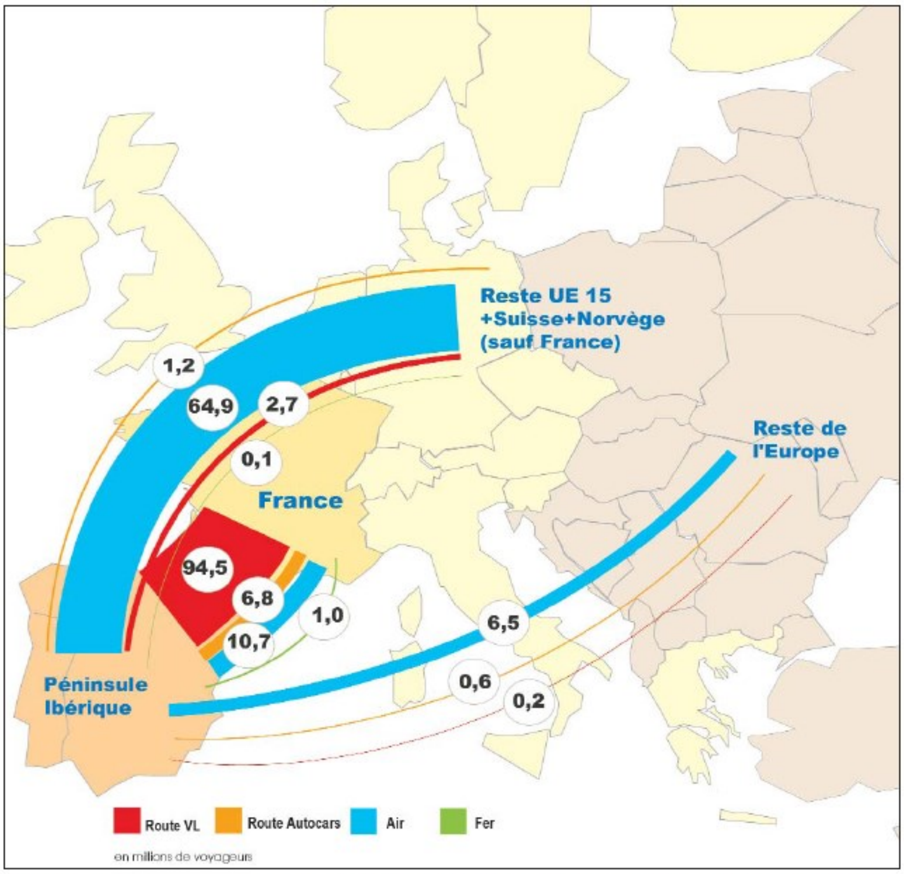
This document provides the latest figure for trans-Pyrenean flows. For passenger the main flow observed is between the Iberian Peninsula and France with 94.5 million of passengers crossing by car, 10.7 million by air, 6.8 million by bus and 1 million by train in 2011.

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



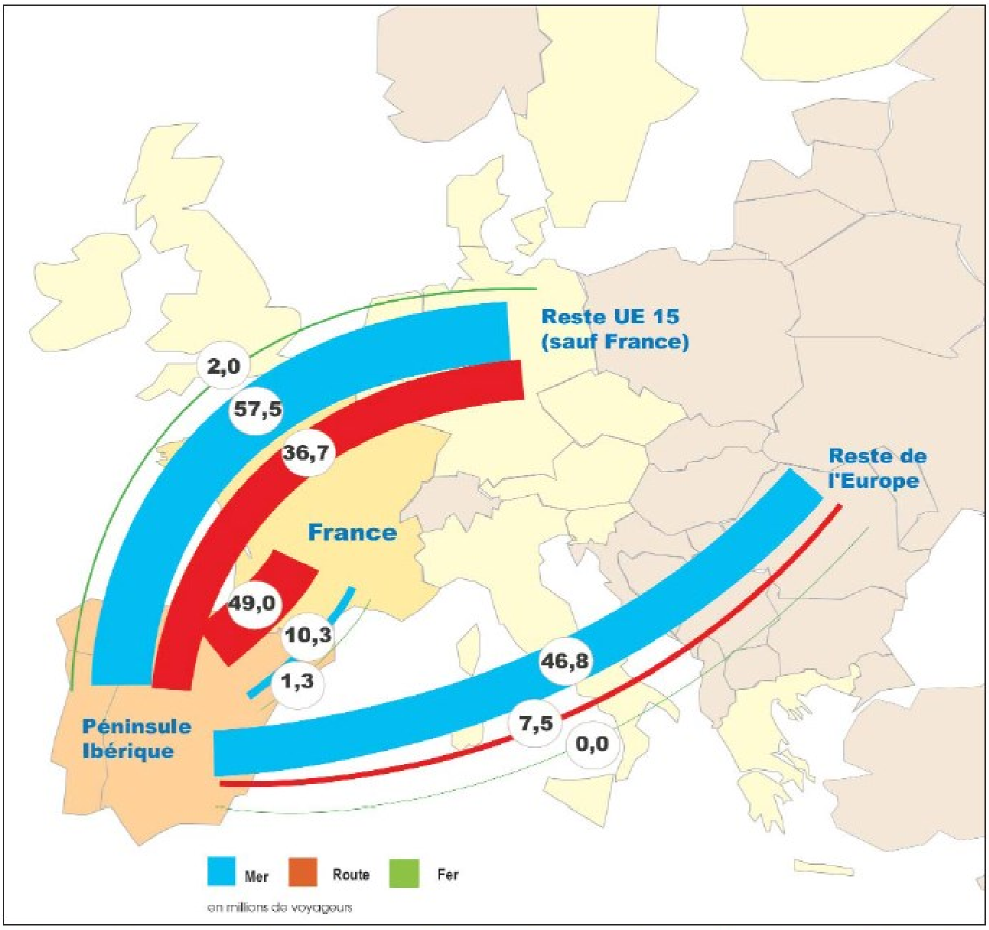
Observatoire franco-espagnol des trafics dans les Pyrénées - Document n° 6 – mise à jour de la carte 34 (page 74)

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

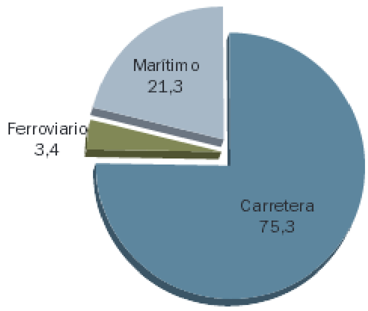
Spain-Portugal border observatory 2011

(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



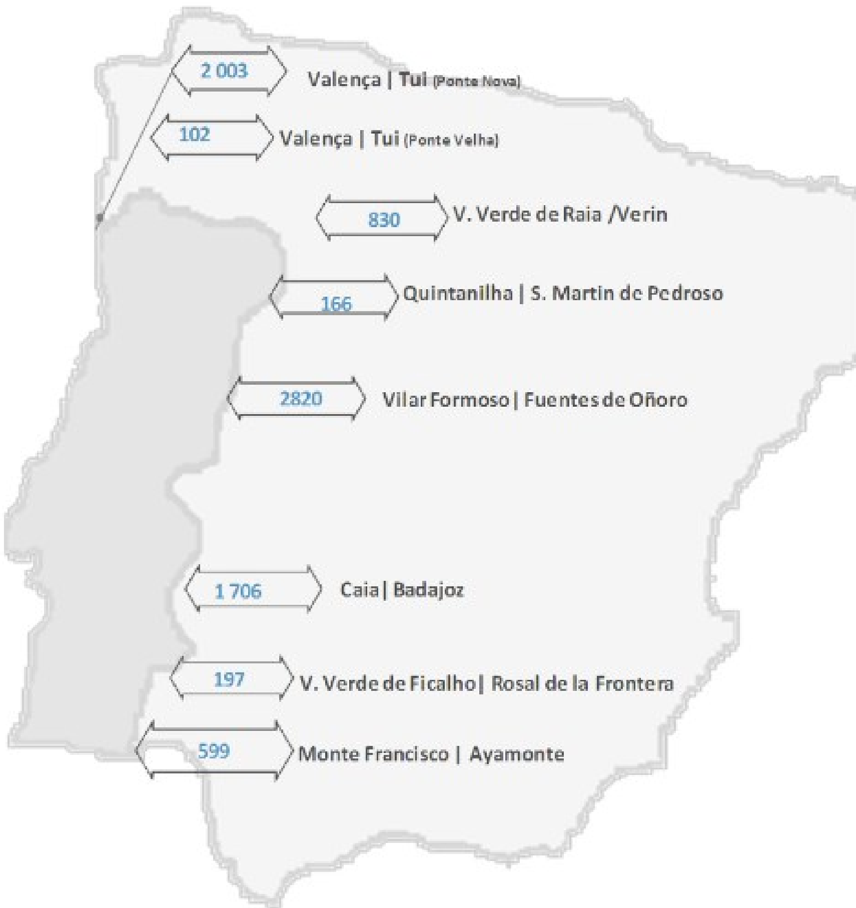
Miles de toneladas

	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

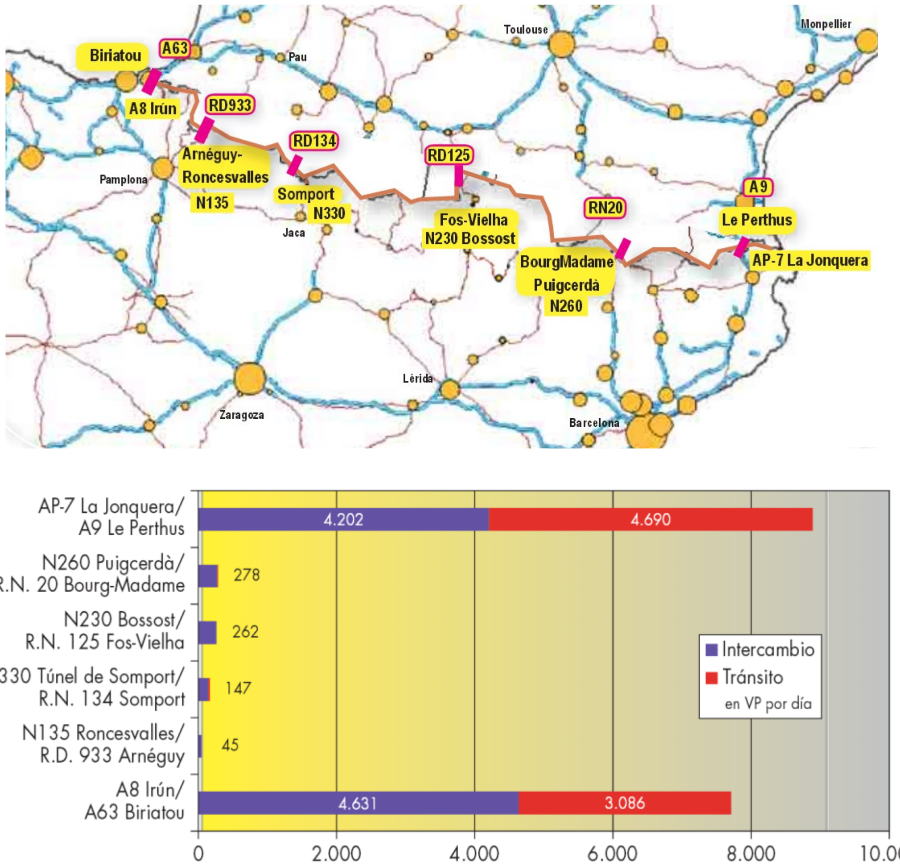
French-Spanish Observatory of the Pyrenees. March 2007. Transit Survey 2004

(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.

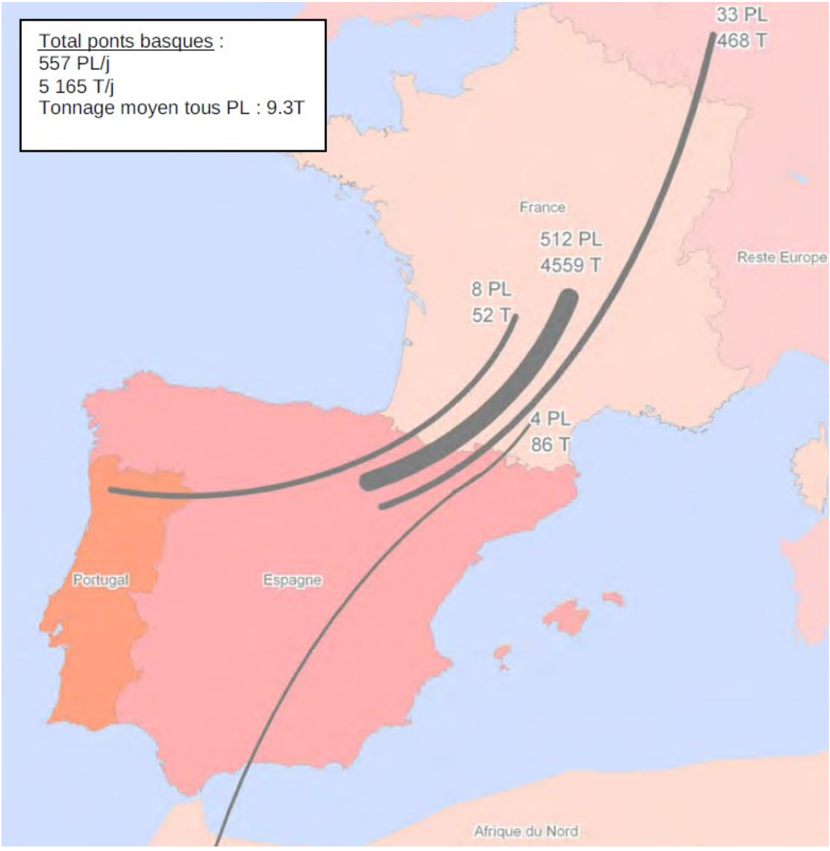
  - For the Béhobie Bridge, they represent 36% of the whole heavy vehicles traffic & 44% of the real lorry traffic.
  - For the Saint Jacques Bridge, they represent 54% of the whole heavy vehicle traffic & 67% of the real lorry traffic.
  - The average tonnage of the lorries for the medium and long distance 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

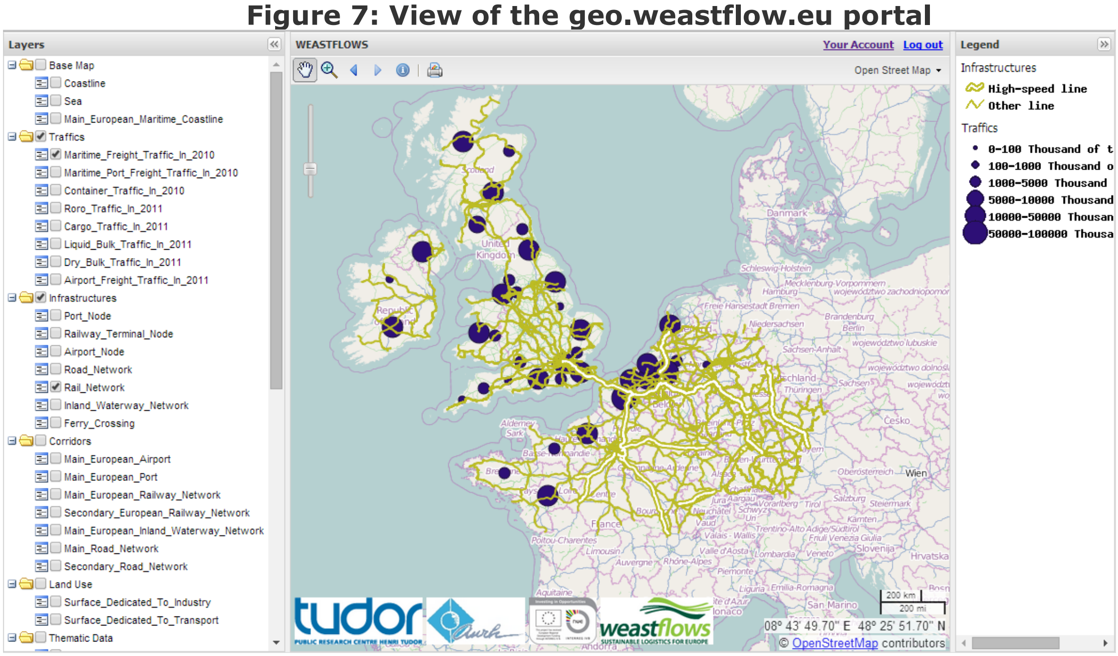
Weastflows (west and east freight flows) aims to encourage a shift towards more sustainable freight transport modes. It is an Interreg IV B North West Europe project funded by the European Regional Development Fund. The project is led by the French CRITT TL and the Institute for Sustainability in London. 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%	NST8	4843	2891	2024	42%
NST9	9436	6380	4466	47%	NST9	42498	27368	191575	45%
Empty	2517			0%	Empty	79984		39885	0%
TOTAL	23385	16784	11748	50%	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

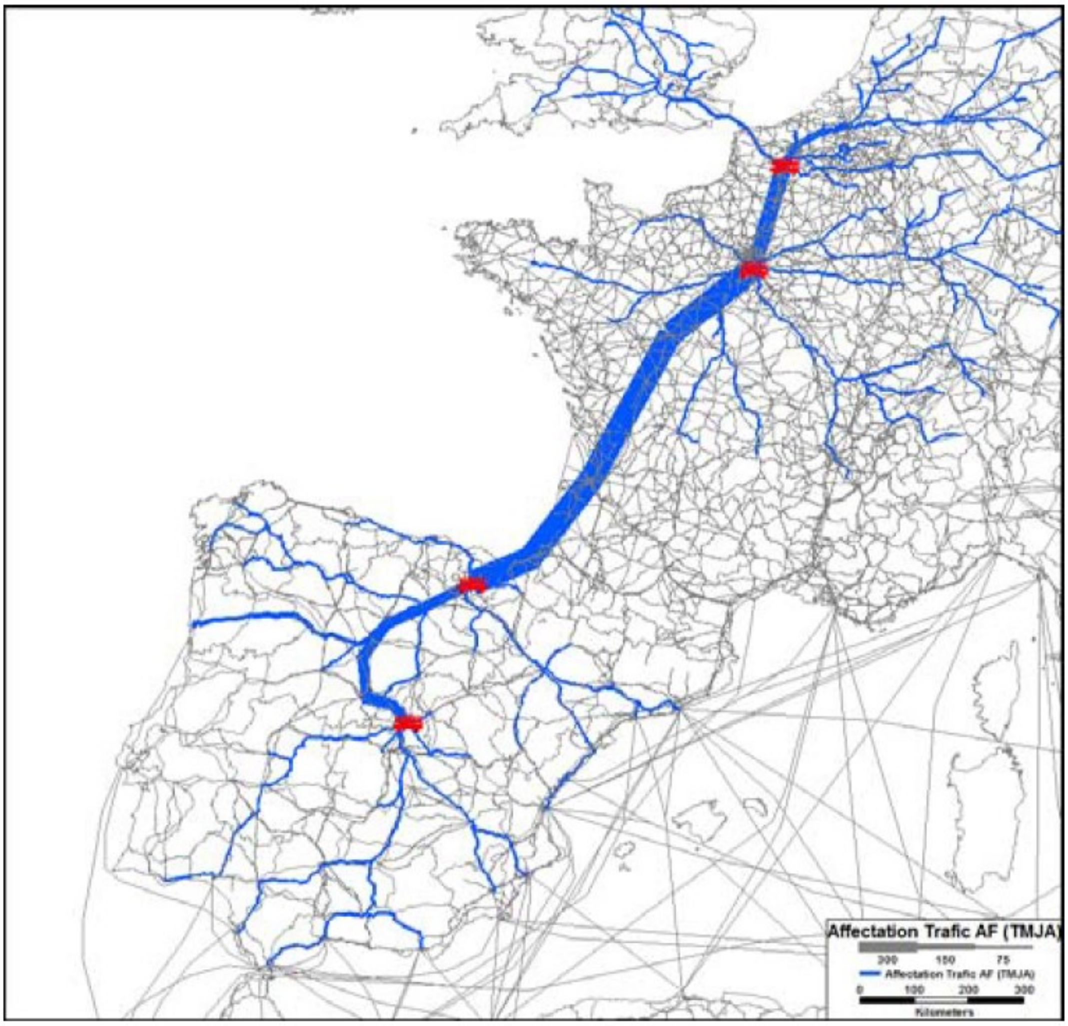
As a result of the previous analysis, the economically potentially absorbable traffic results can be found here below:

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

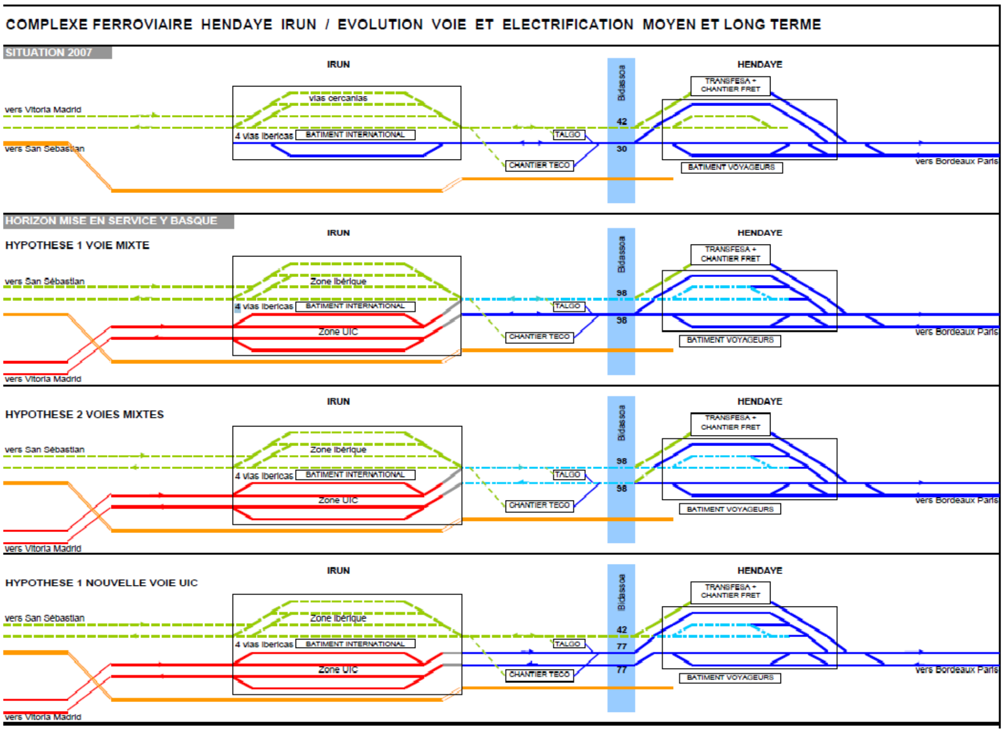
5) The last step focused on the action plan, which analyzes the real possibilities of establishing the rolling highways services along the considered corridors. The services which have been estimated the more interesting are:

    - 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:

- <u>Study of the passengers markets and traffic of the Atlantic Corridor in 2020</u>**:** 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.

- <u>Study of the freight markets and traffic in the Atlantic Corridor in 2020</u>*:* 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.

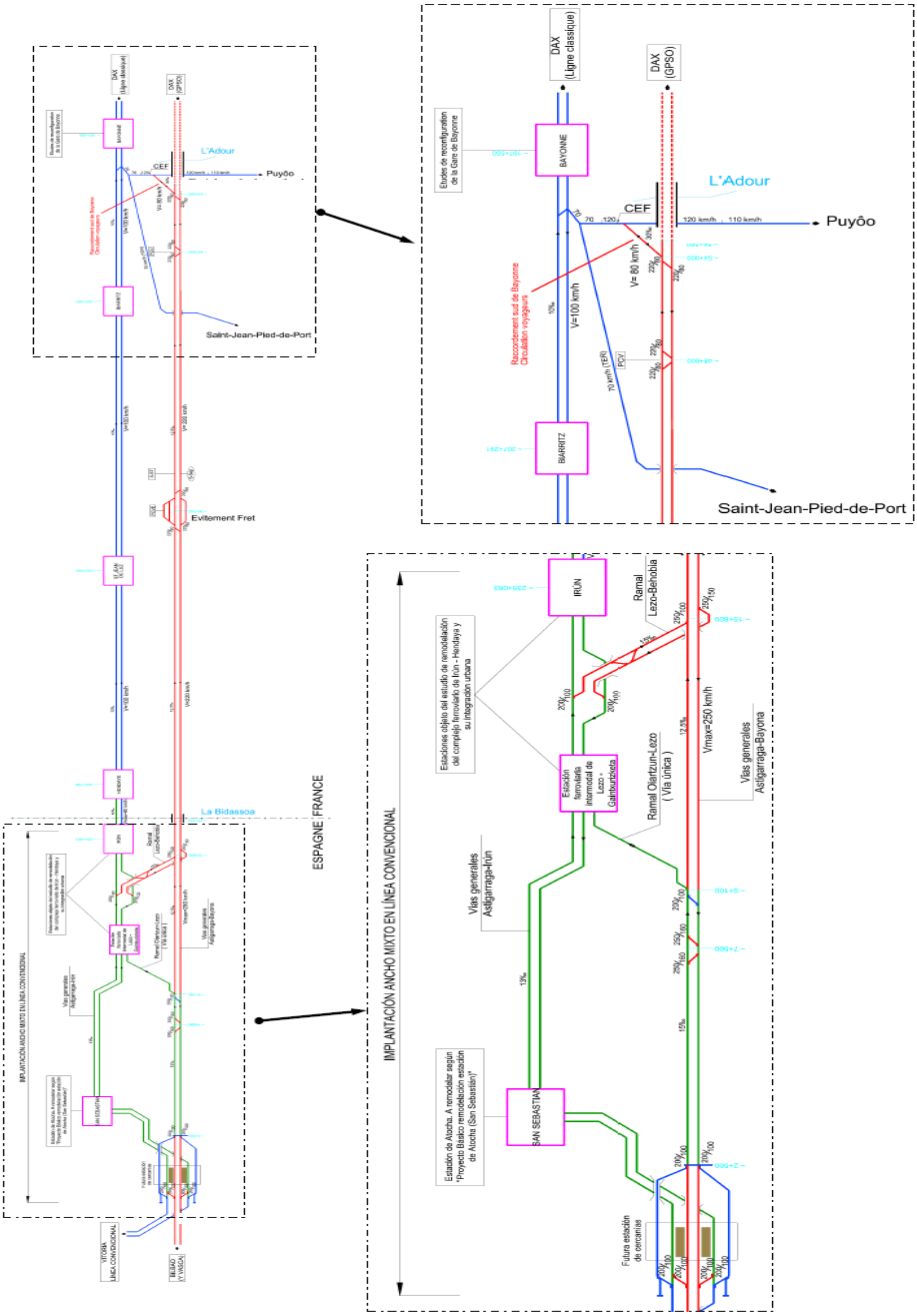
• 140 railway paths for speeds between 100 and 120 km/h, 73% international.

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)

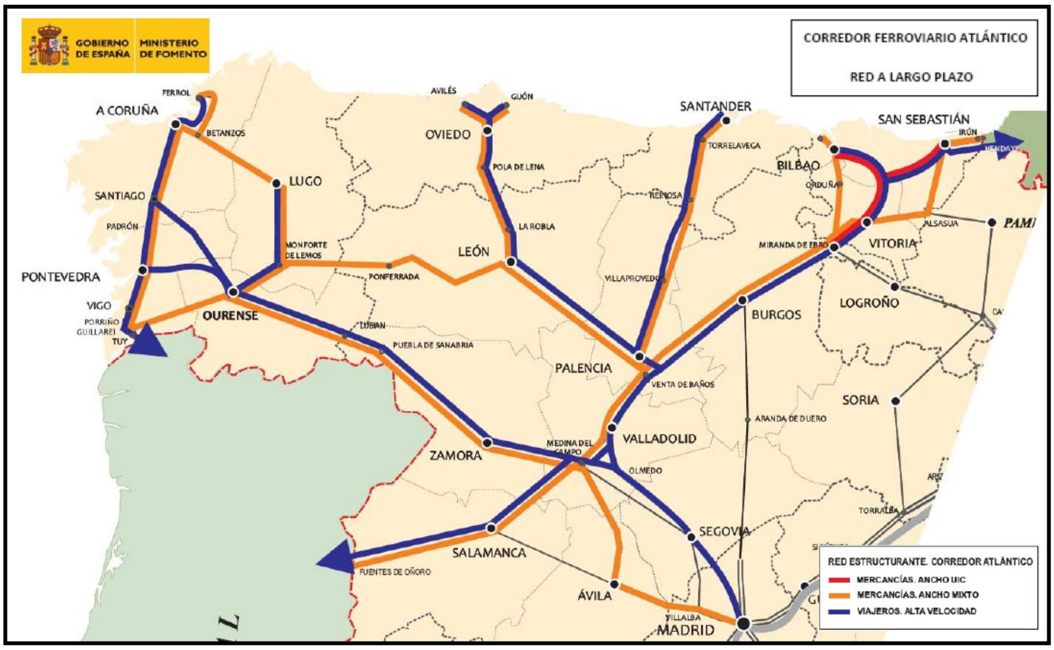
The main purpose of the Technical Work Plan for the Atlantic Railway Corridor is to identify actions to improve the functionality of the railway network and to promote the freight and passenger traffic along the Atlantic Railway Corridor in order to achieve a more balanced distribution among modes.

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.

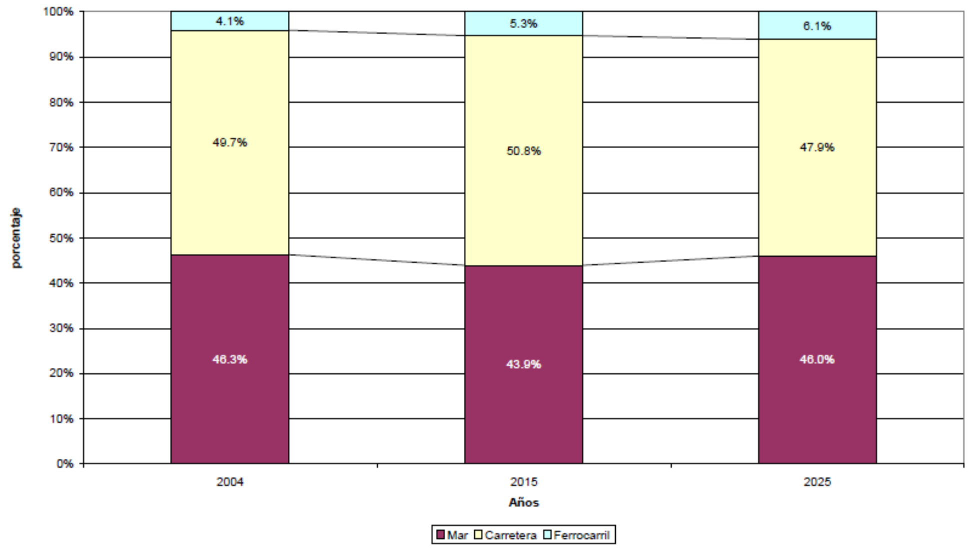
The first step was to estimate transport flows for the base year 2004 for different types of goods using mainly the 2004 Transit Study. Demand for the coming years was based on the growth rates indicated on a previous study done by BIPE for the French and Spanish ministries.

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.

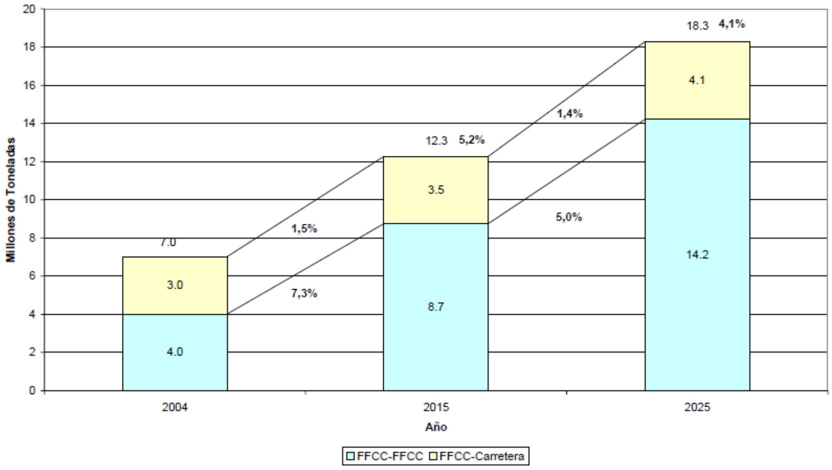
Finally, the study calculated the expected modal split and carried out a traffic assignment for the years 2015 and 2025. In the main scenario, rail modal share was expected to grow from 4.1% in 2004 to 6.1% in 2025, with most of the modal shift coming from the road (1.8 points versus 0.3 from sea transport).

Figure 16: Modal split for 2004, 2015 and 2025



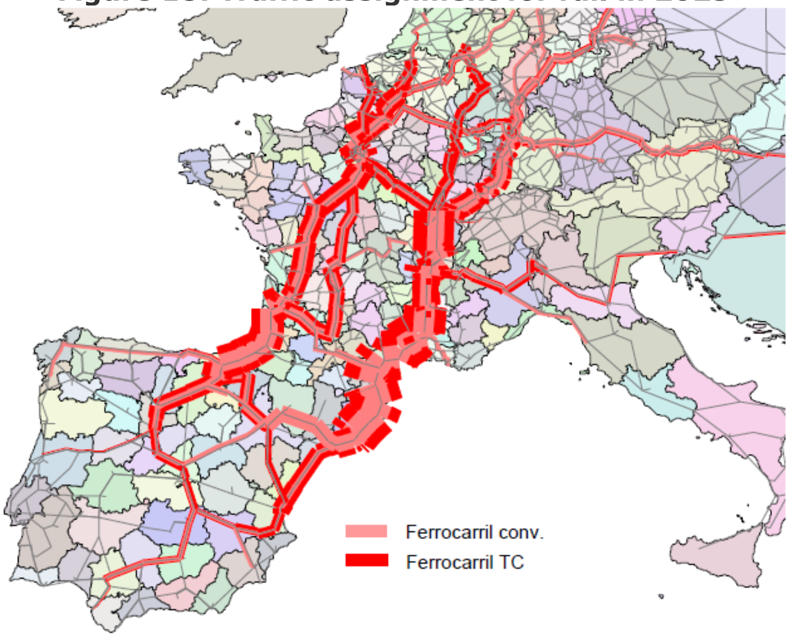
The following chart shows the expected growth of rail traffic for conventional (light blue) and combined transport (yellow) from a total of 7.0 million of tonnes in 2004 to 18.3 millions of tonnes in 2025. We notice a stronger growth in the conventional rail market compared with combined transport. 74%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

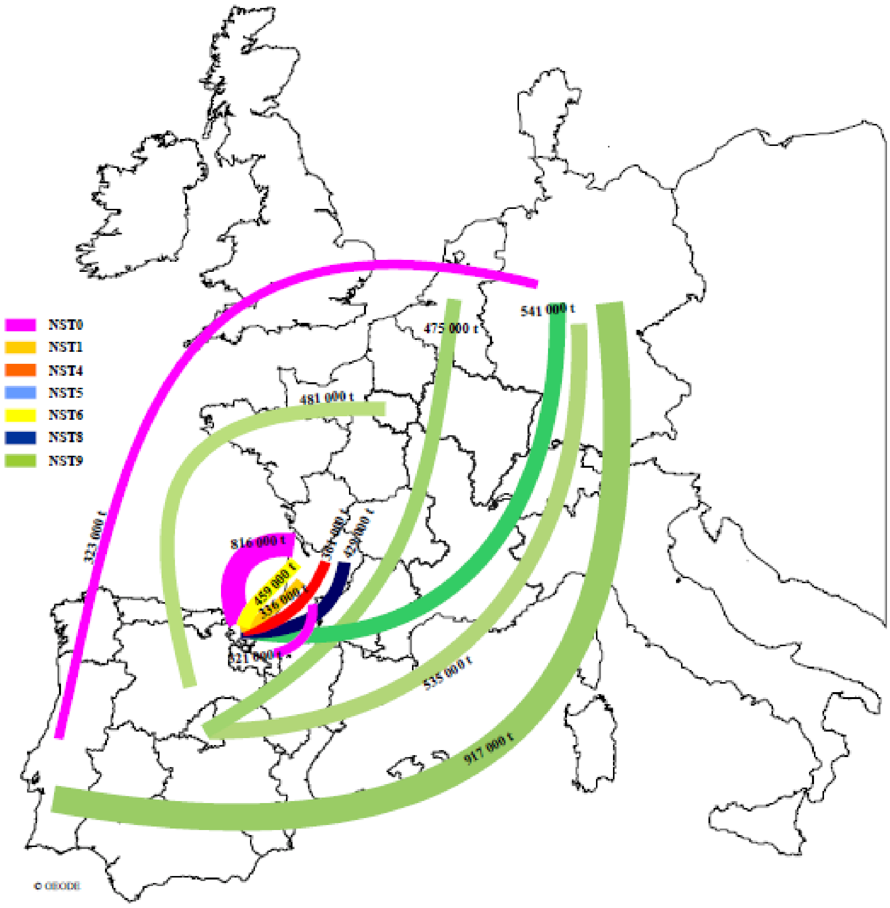
This study focuses on the Victoria-Dax cross border section. It aims at:

- 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



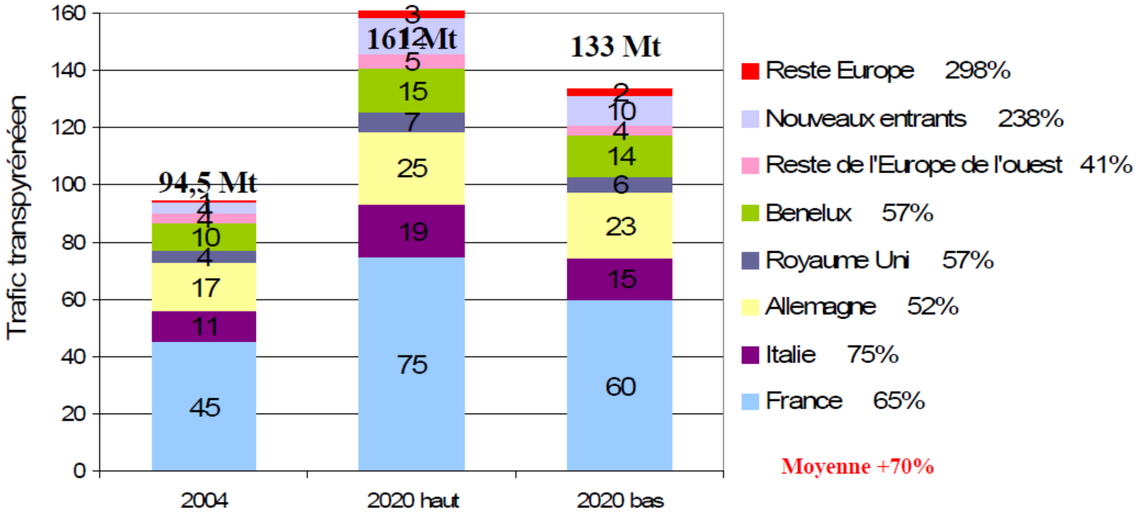
Source : GEODE d'après enquête transit 2004 et SNCF

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

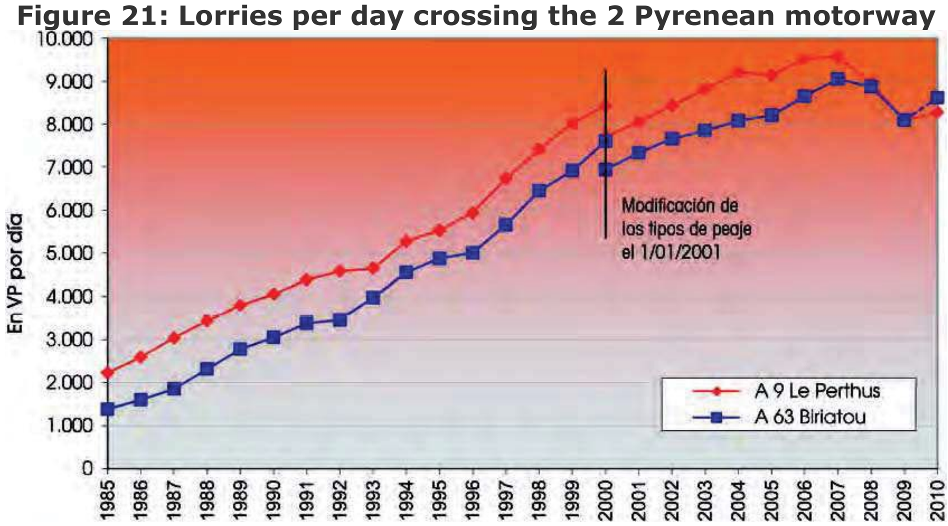
CESER Aquitaine and CES Basque (November 2013)

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).

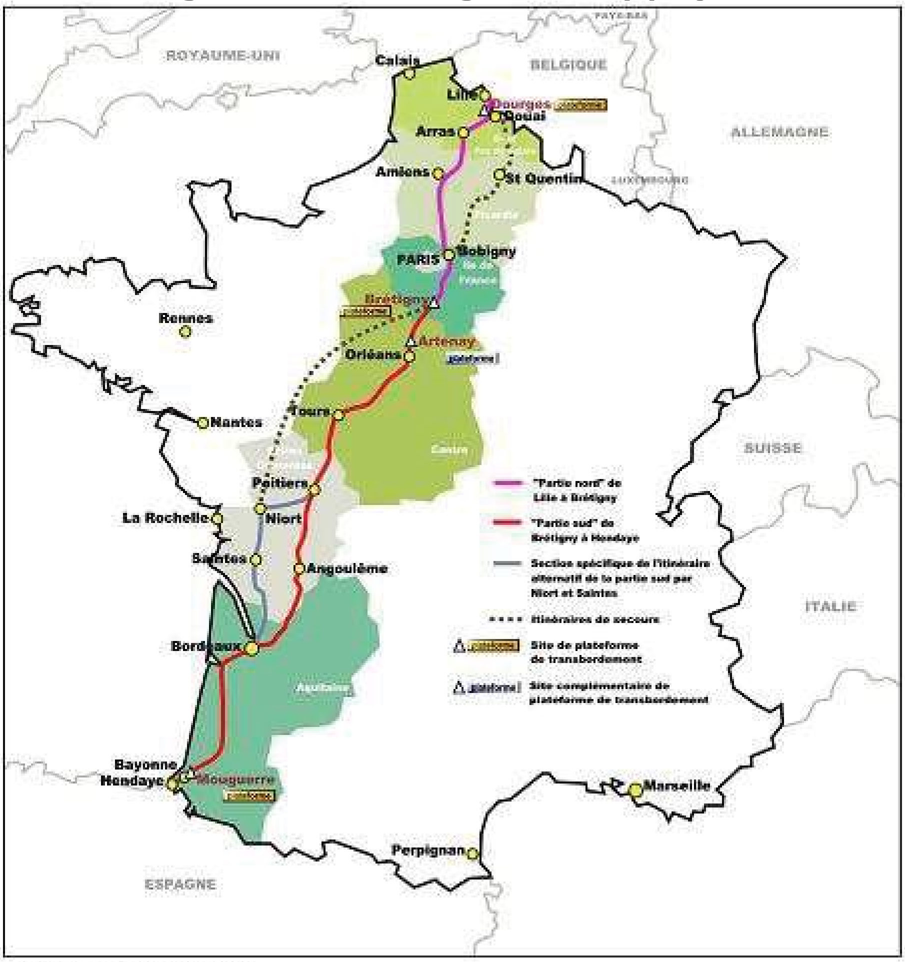
Figure 21: Lorries per day crossing the 2 Pyrenean motorway



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



Réalisation SNCF.CSC MOM - juin 2009

<u>Passengers transport</u>: 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.

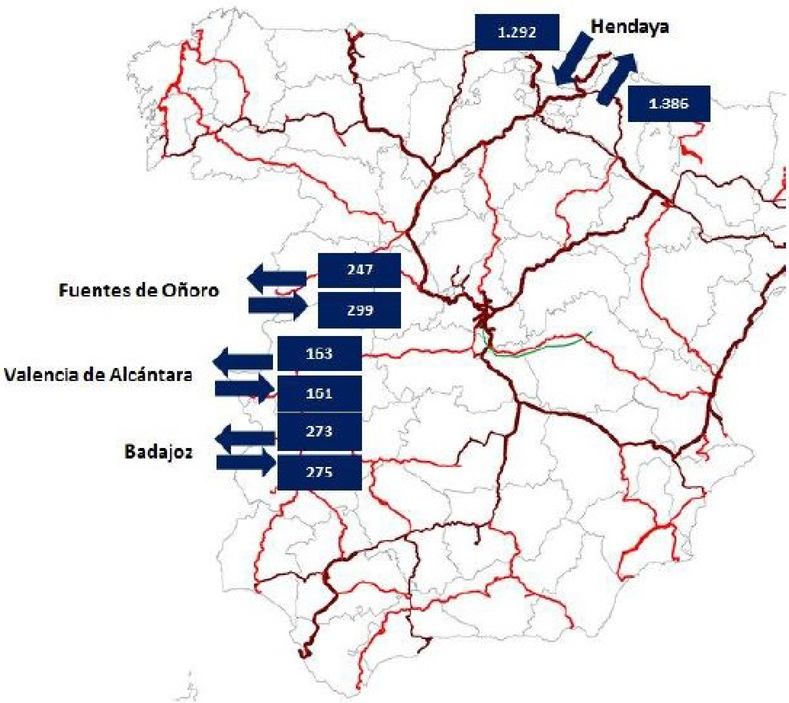
In terms of supply, the planned projects of transport infrastructures on the different horizons have been studied and modelled in order to take into account their impact on traffic projections.
To assess the determinants of the choice of mode of transport, stated preference surveys have been conducted 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	

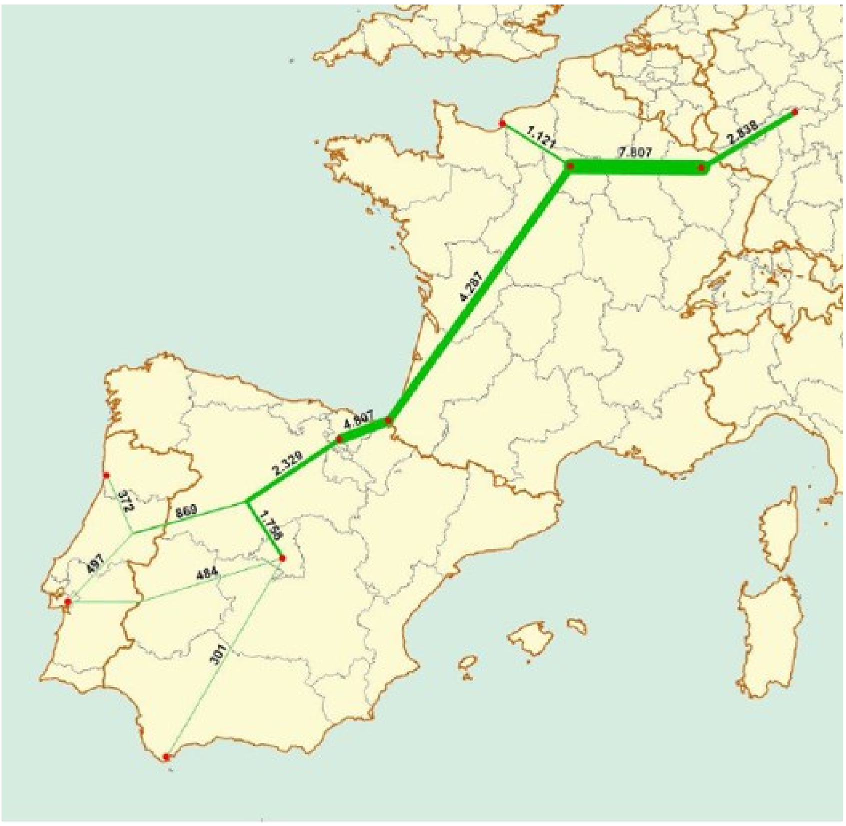
Source: Rail Freight Corridor No. 4 (2013)

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

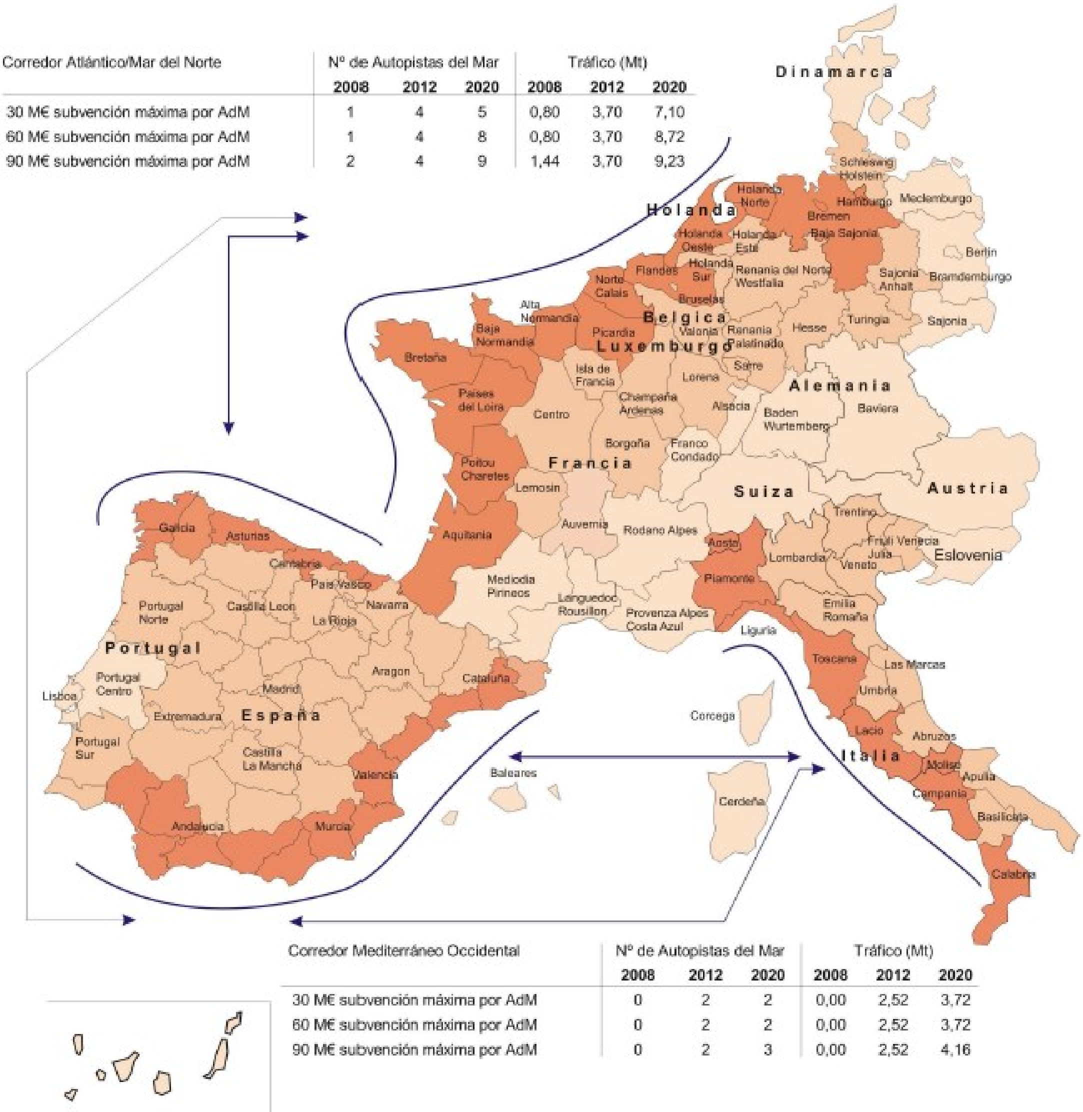
Market research of Motorways of the Sea in Spain (West-MoS project, 2008)

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



Corredor Atlántico/Mar del Norte	Nº de Autopistas del Mar			Tráfico (Mt)		
	2008	2012	2020	2008	2012	2020
30 M€ subvención máxima por AdM	1	4	5	0,80	3,70	7,10
60 M€ subvención máxima por AdM	1	4	8	0,80	3,70	8,72
90 M€ subvención máxima por AdM	2	4	9	1,44	3,70	9,23

Corredor Mediterráneo Occidental	Nº de Autopistas del Mar			Tráfico (Mt)		
	2008	2012	2020	2008	2012	2020
30 M€ subvención máxima por AdM	0	2	2	0,00	2,52	3,72
60 M€ subvención máxima por AdM	0	2	2	0,00	2,52	3,72
90 M€ subvención máxima por AdM	0	2	3	0,00	2,52	4,16

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:

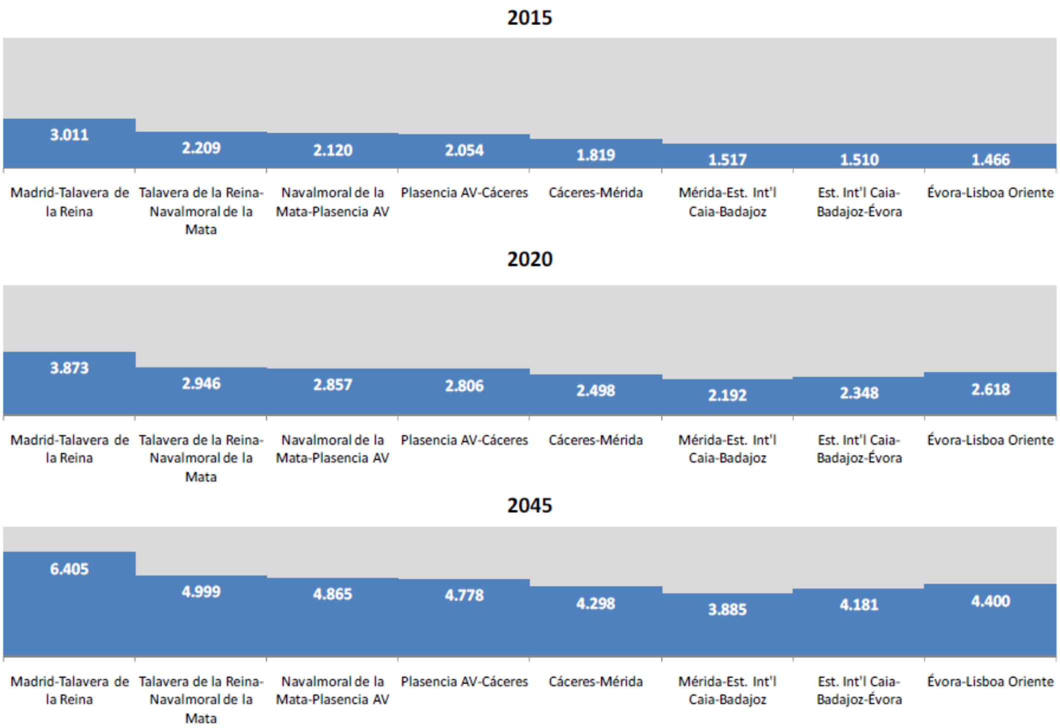
- to update the passenger and freight demand forecasts;
- to set the operational model dimension;
- to produce a cost-benefit analysis as well as a financial feasibility study.

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.

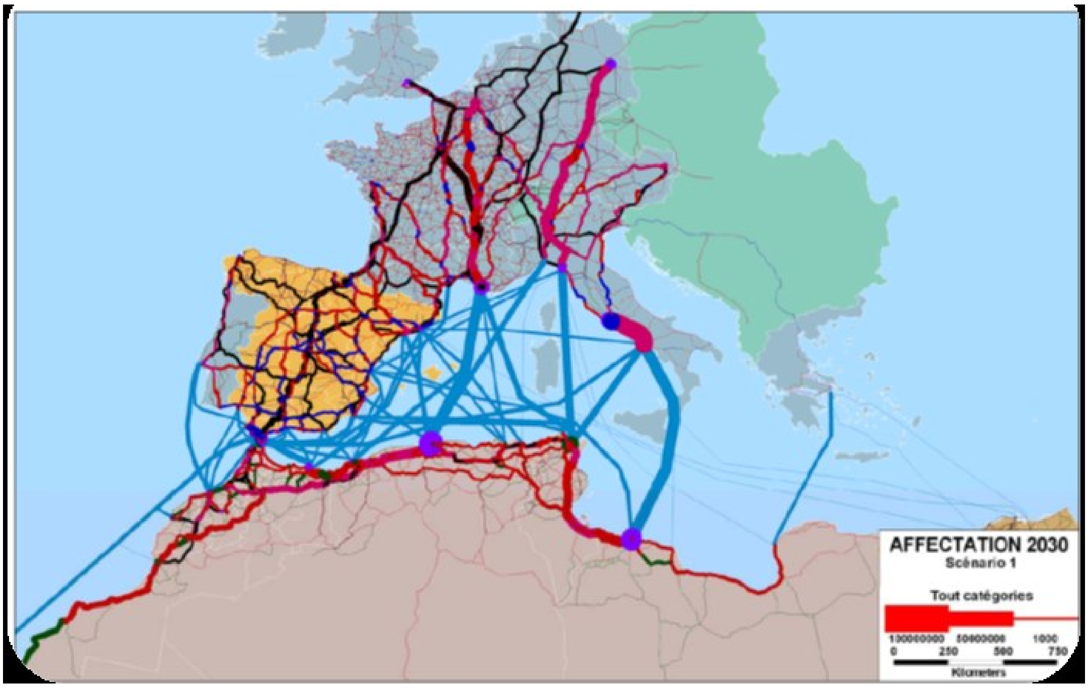
Study of freight and passenger flows through a fixed link in the Strait of Gibraltar (SECEG-SNED 2007)

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

<u>Second Approach: TREAT model</u>

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

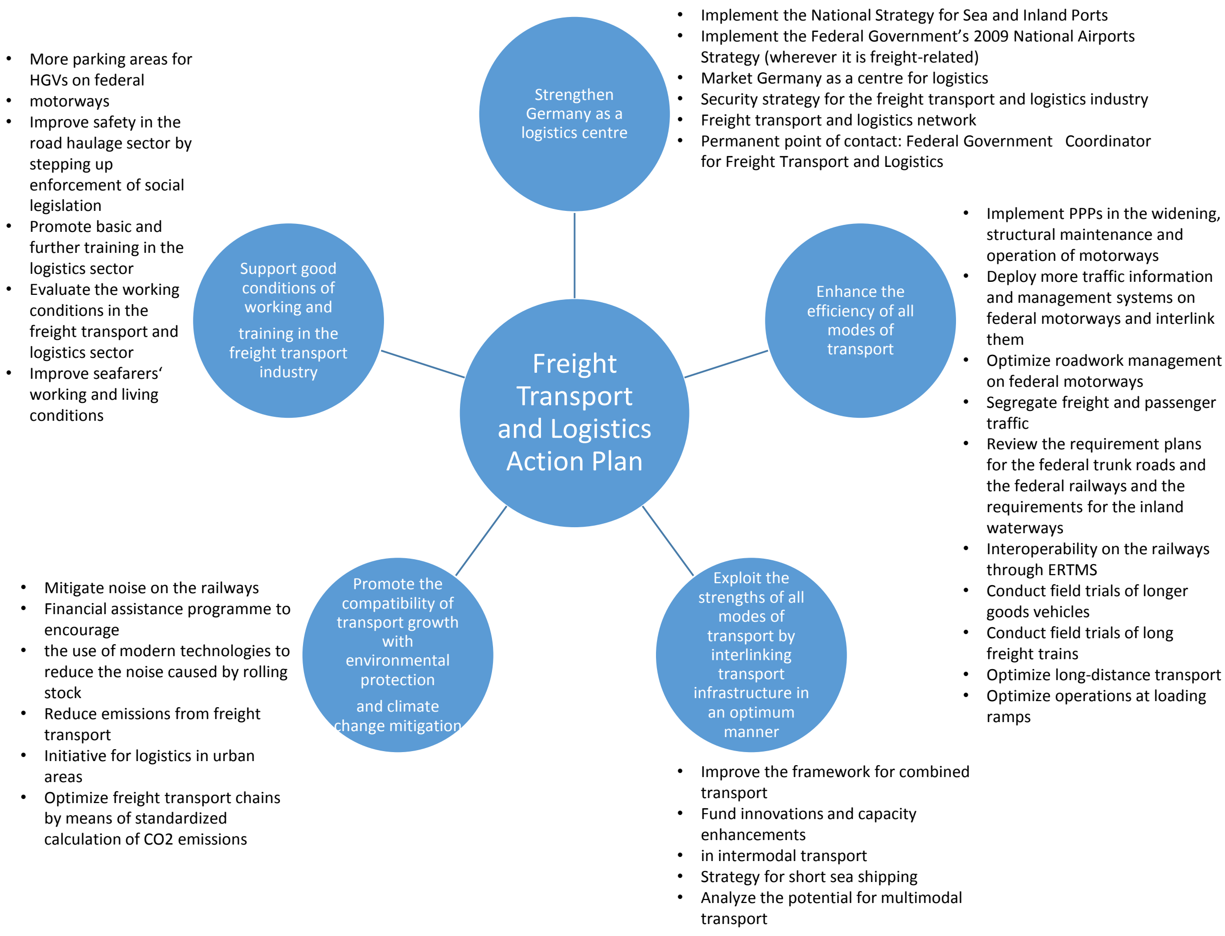
Strategic documents

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.

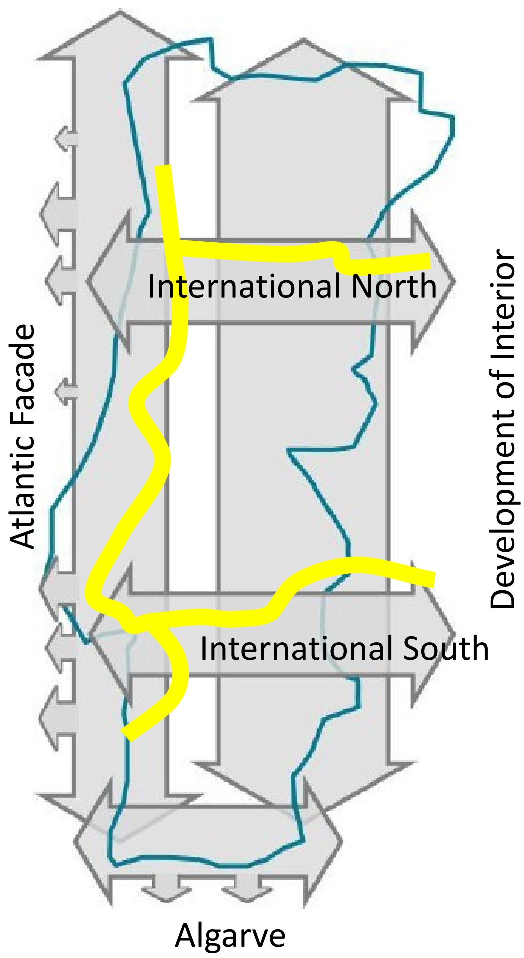
An inclusive working group (GT-IEVA) prepared and presented a list of preliminary proposals to feed the investment plan, which was object of a large public participatory process.

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:

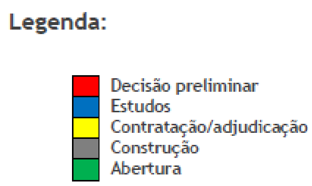
- Promotion of economy and transport system competitiveness and efficiency, namely solving main network constraints mainly of the core corridors of the Spatial Planning Policy National Program and TEN-T, increasing the transport system operational sustainability and raising traffic attraction either 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.

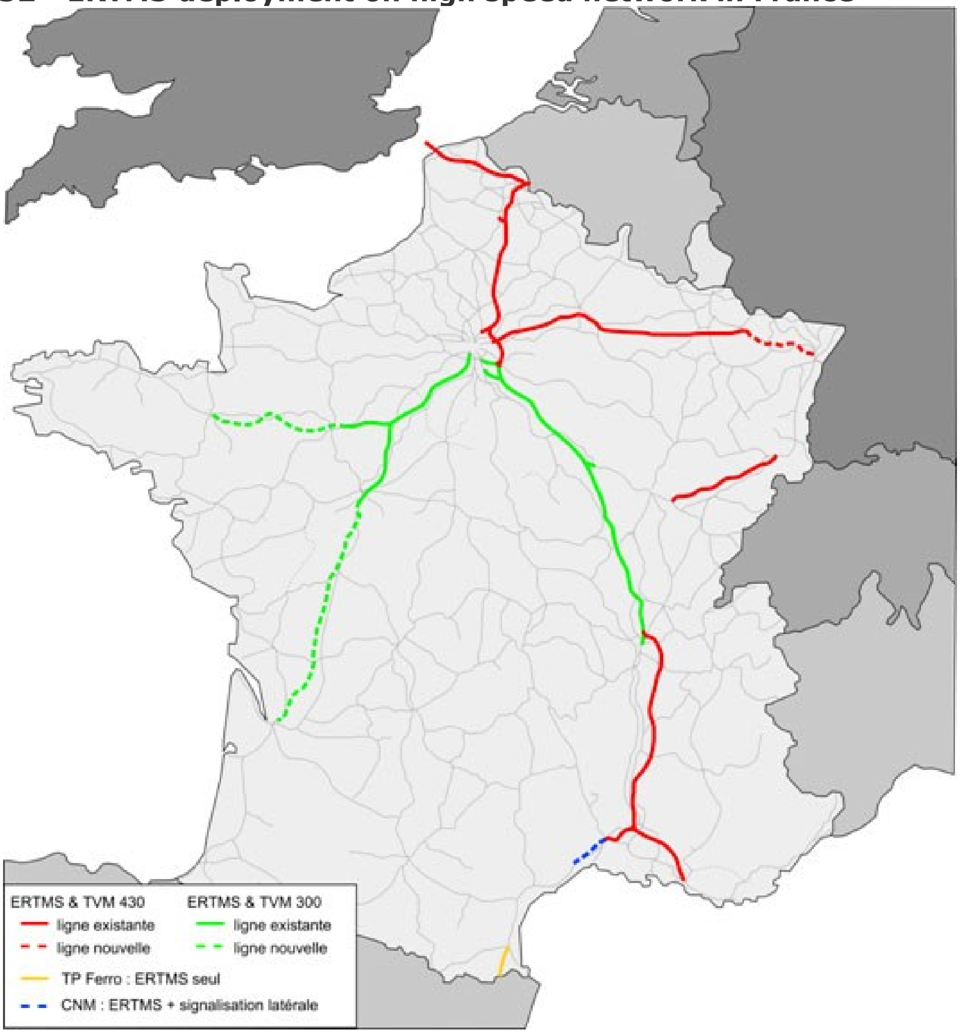
Corridor Infrastructure and nodes

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

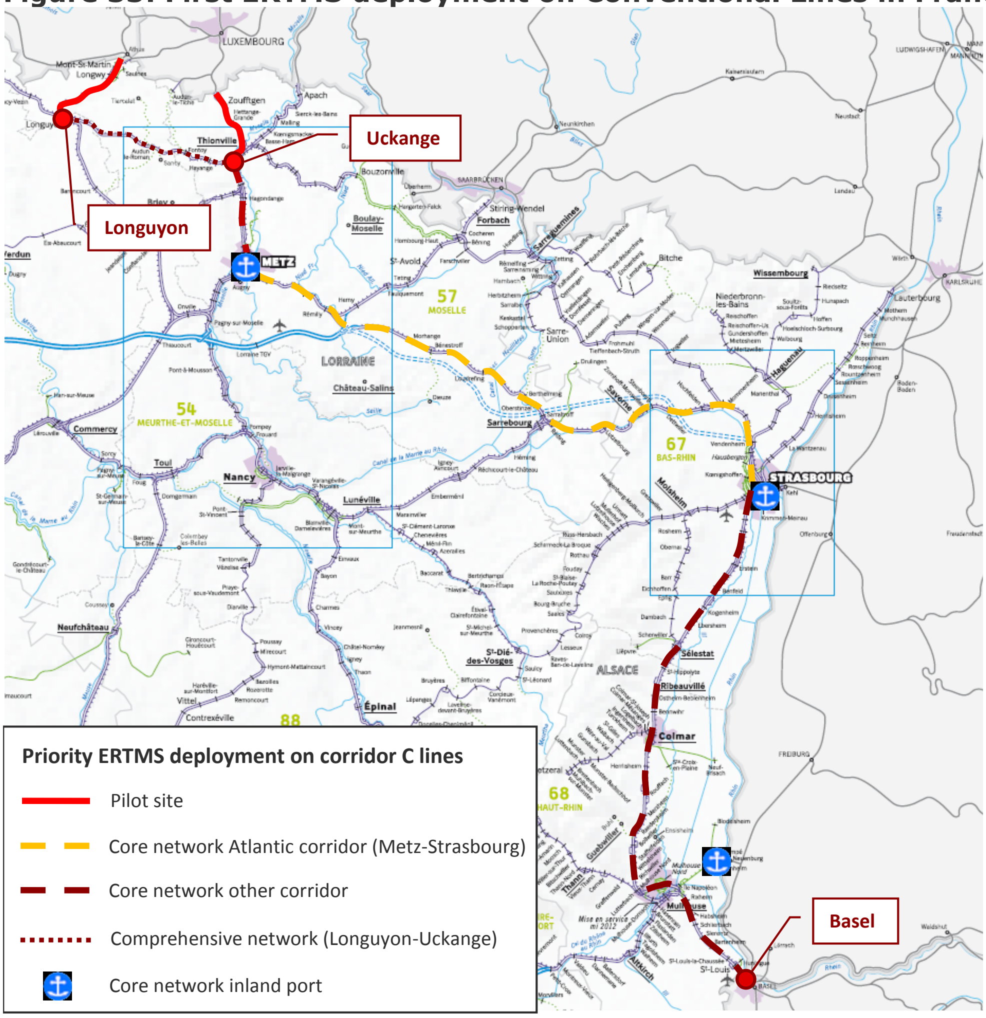
On the conventional network, the original ERTMS deployment plan is currently being redefined because of raising estimated costs and delays due to technical difficulties to integrate ERTMS to the existing signalling systems. A new framework is expected for 2014.

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

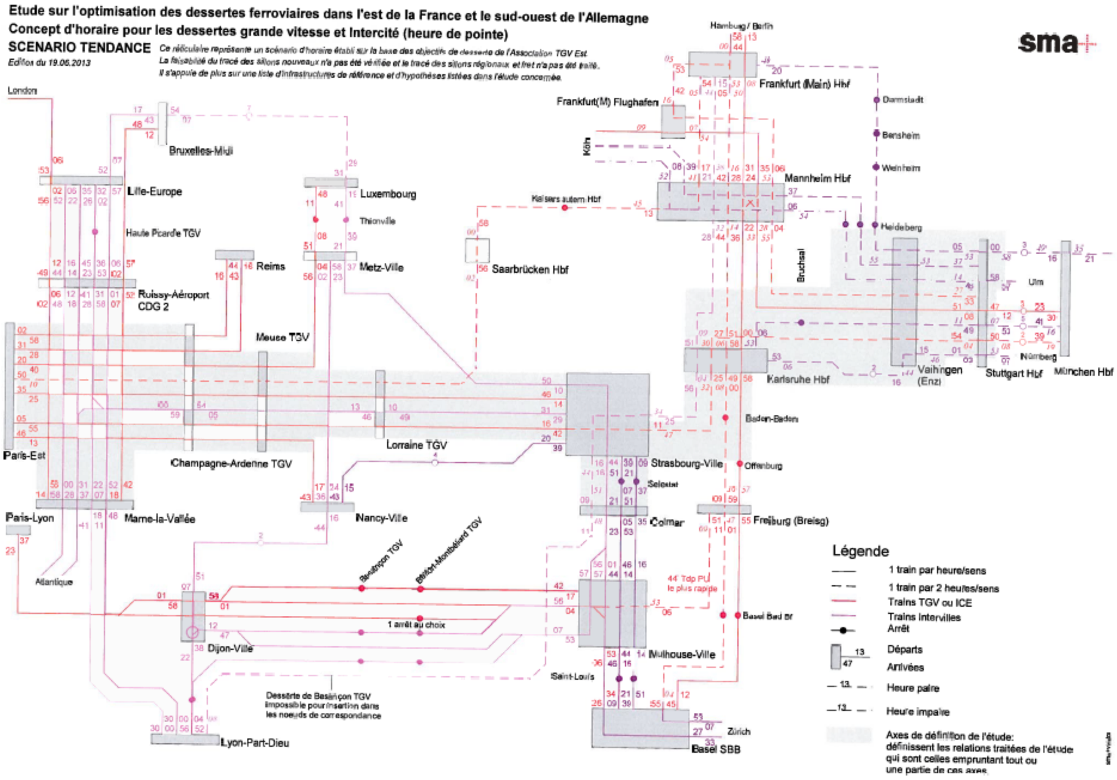


Study on the optimisation of rail services in the East of France and the South-West of Germany

(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.

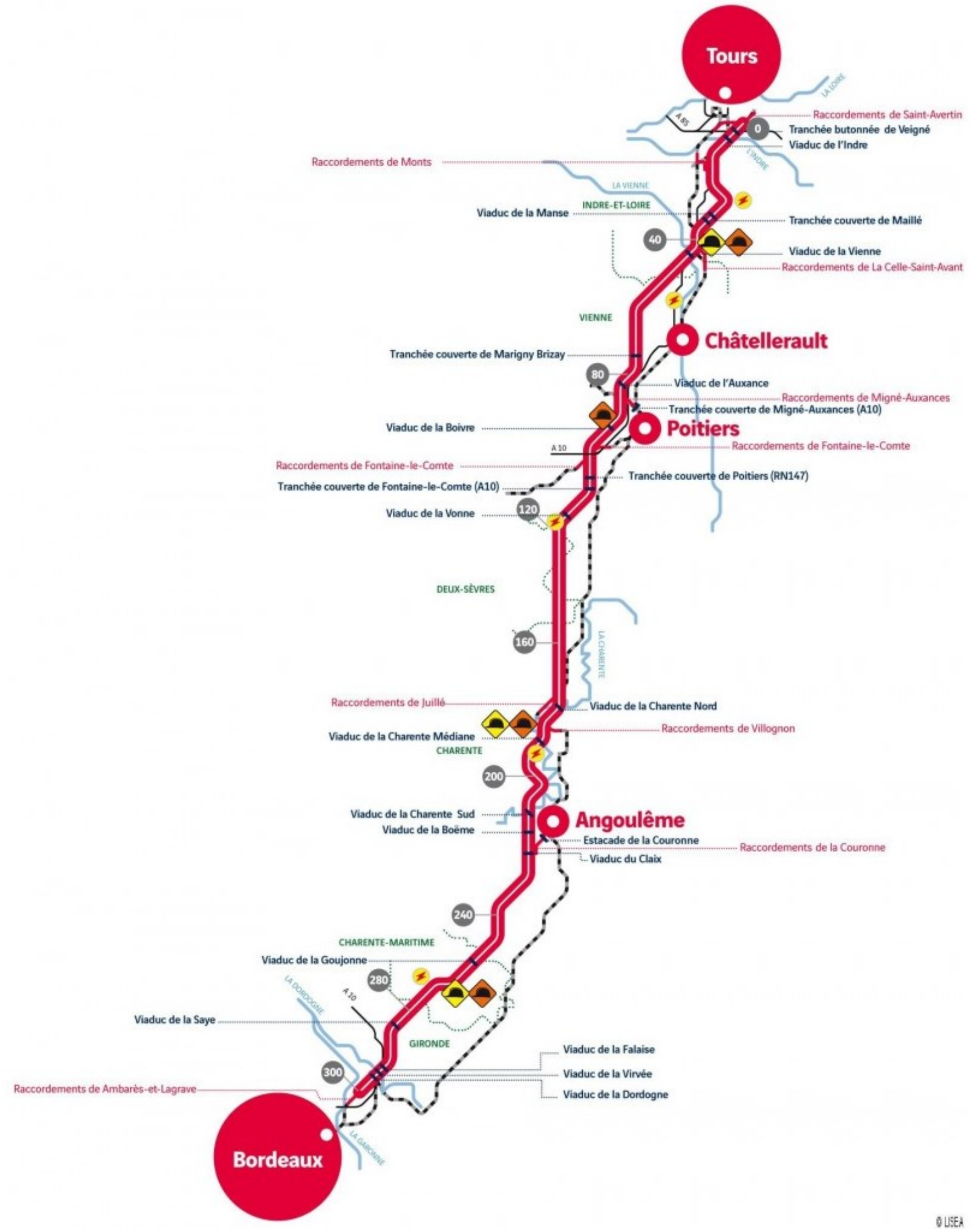
The study suggests not to limit services to axis from Paris, but to also develop North-South connections such as between Strasbourg and Brussels or between Lyon and Germany (Stuttgart and Munich). It recommends that timetables for high speed and international trains be planned well in advanced.

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.

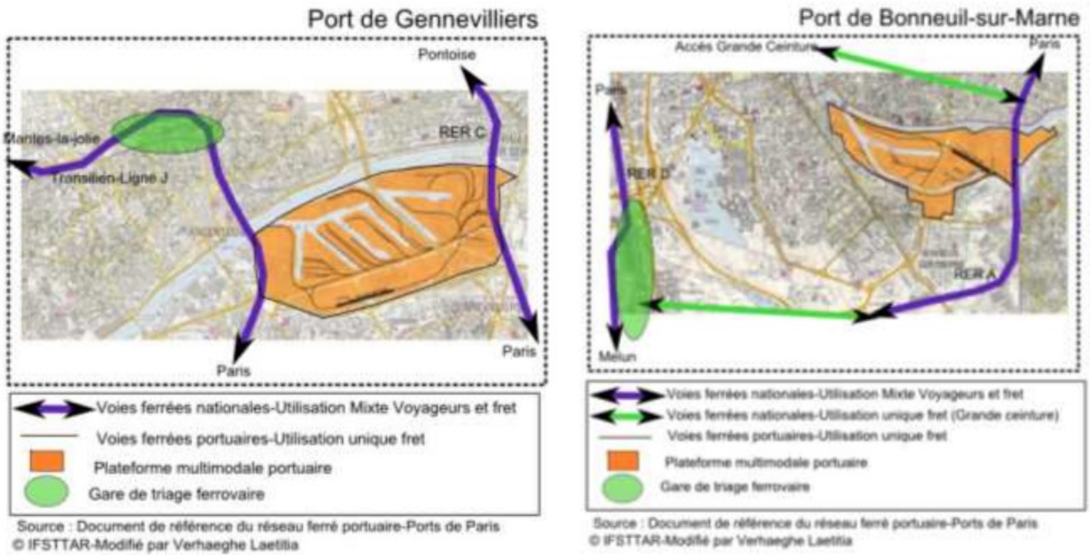
Rail connections to ports of the Paris area, A. Beyer and L. Verhaeghe (2013)

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.

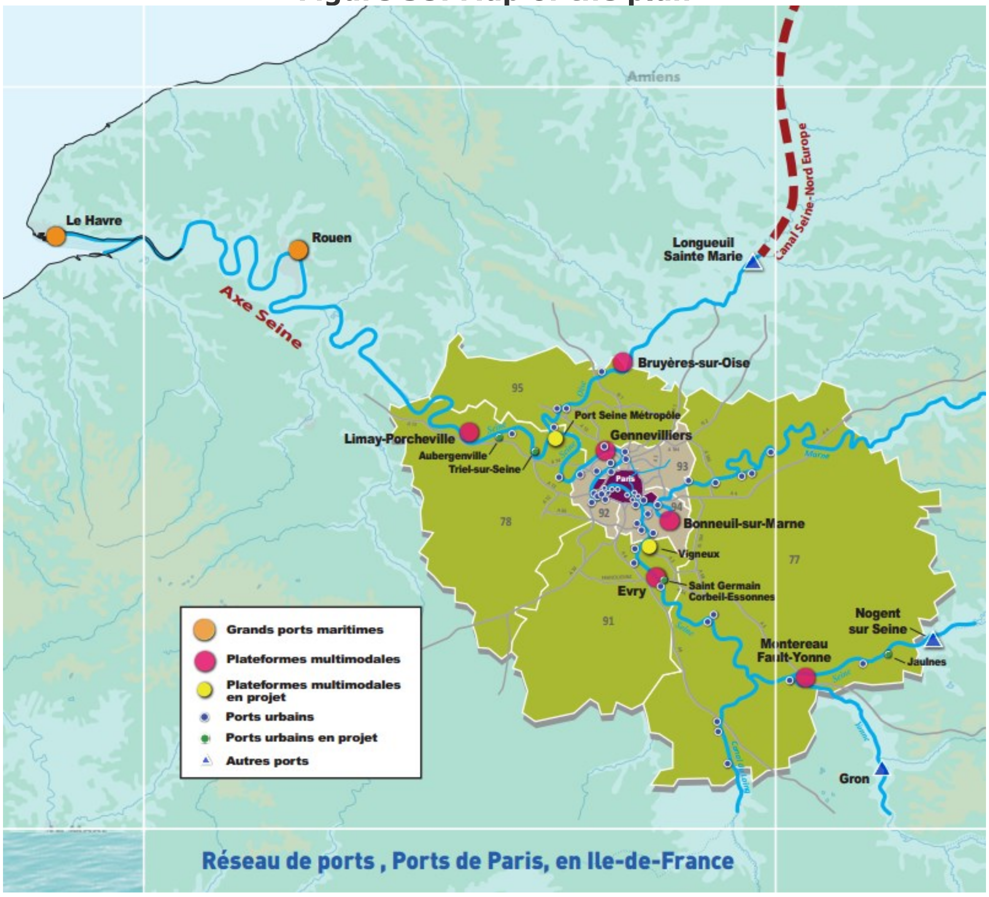
Port services plan for the Ile-de-France region (2013)

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

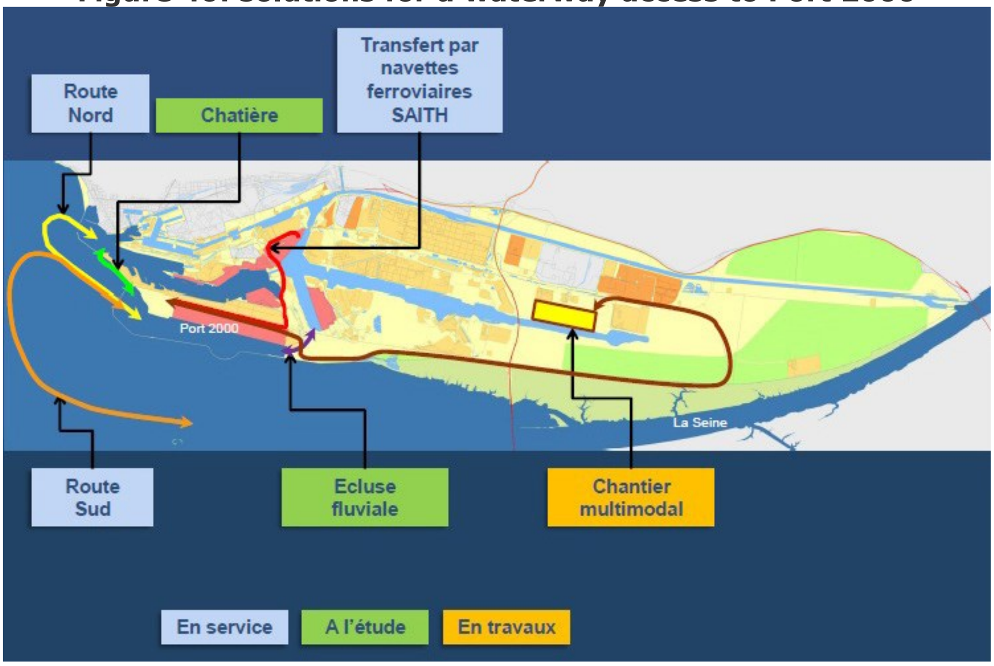
Source: Annexe 10: economic study by SETEC International

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	o	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 flúvio-marítima

Fundos Disponíveis nas instalações do sistema portuário comercial do continente				
Portos	Locais	Fundos Disponíveis Atualmente m (ZH)	Fundos a Disponibilizar m (ZH)	Ano Previsto de Disponibilização
Setúbal	Barra / Canal Principal de Acesso Marítimo (Fundos à maré)	12,7	15/16	
	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 Líquidos 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 Líquidos	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.

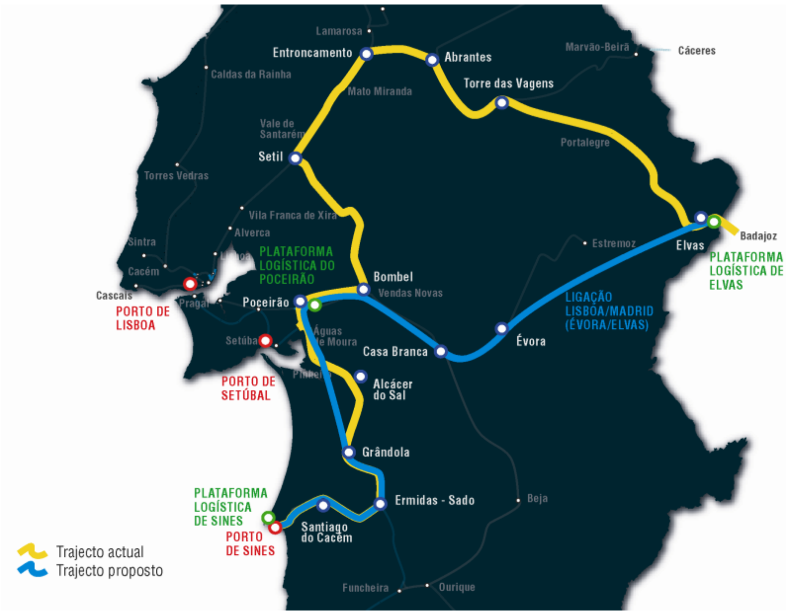
The study uses quantitative data from the Portuguese rail infrastructure manager (REFER) and from Sines Port Authority (APS) as basis, complemented by national statistics (INE) namely from border crossing freight traffic in road rail modes and other sources (Spanish Portuguese Border Observatory, etc.)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

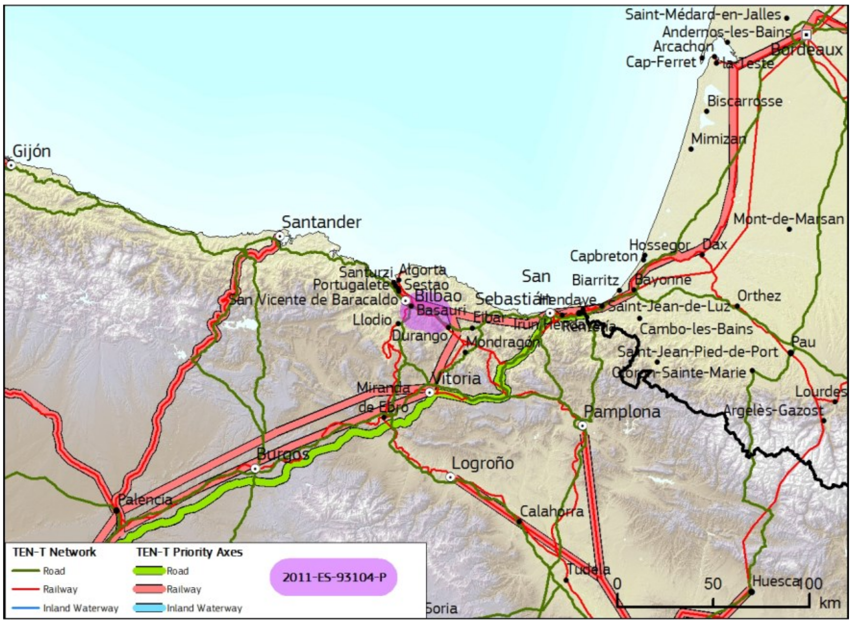
TEN-T funding

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.

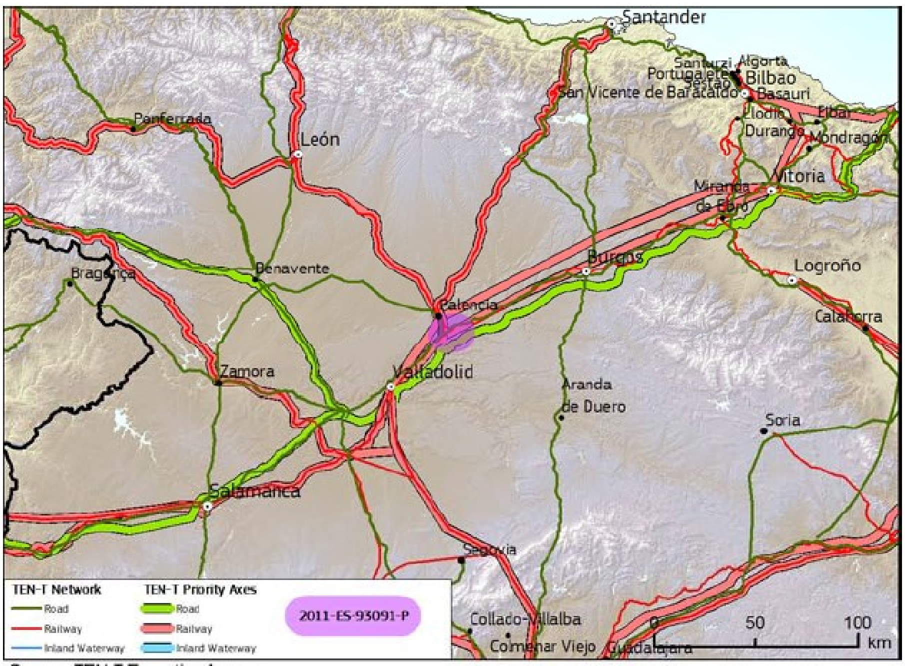
The third project will address the construction of a 4.60 km track bed at Durango-Amorebieta/Etxano sub-section including five viaducts and three tunnels. The subsection works will allow a maximum speed of 250km/h, which will allow time travel reduction. The total cost of the project is 41.890.000 Euros,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

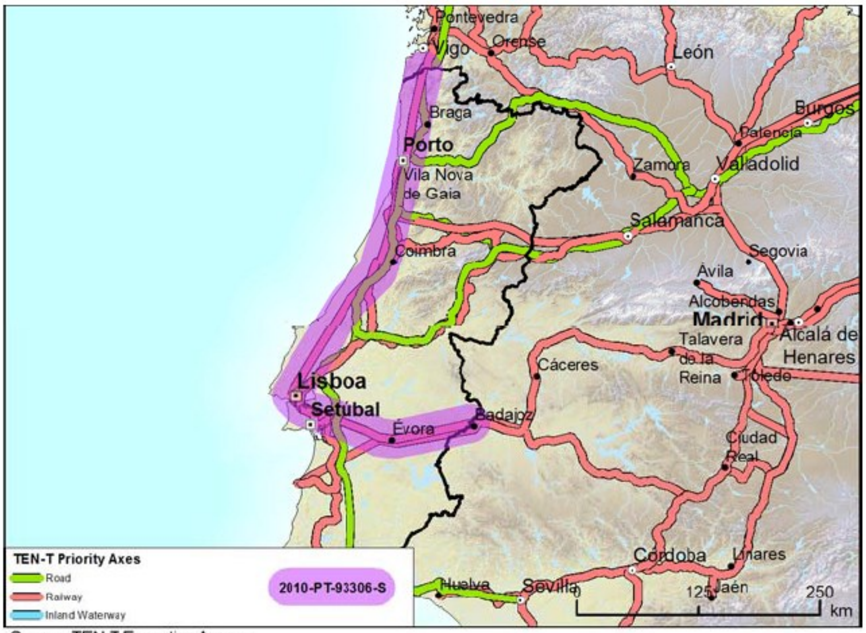
The total cost of the project is 50.000.000 euros and the EU financial support will go up to 5.000.000 euros.

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

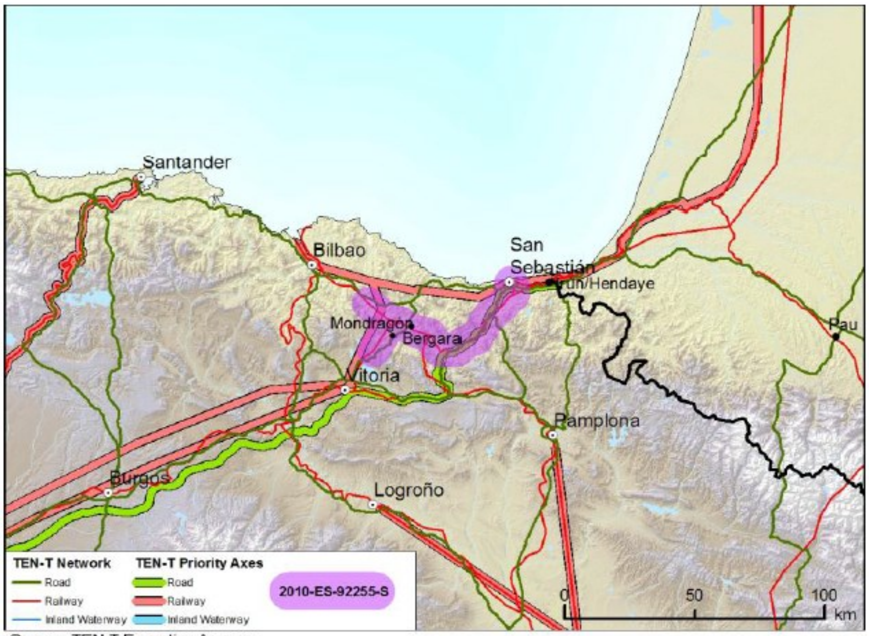
This project aims to support the public private partnership (PPP) programme through the production of studies that contribute to the selection of the axes to be implemented and to support the contracting process for the rail infrastructure. It is part of the Priority Project 3, the High-speed railway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

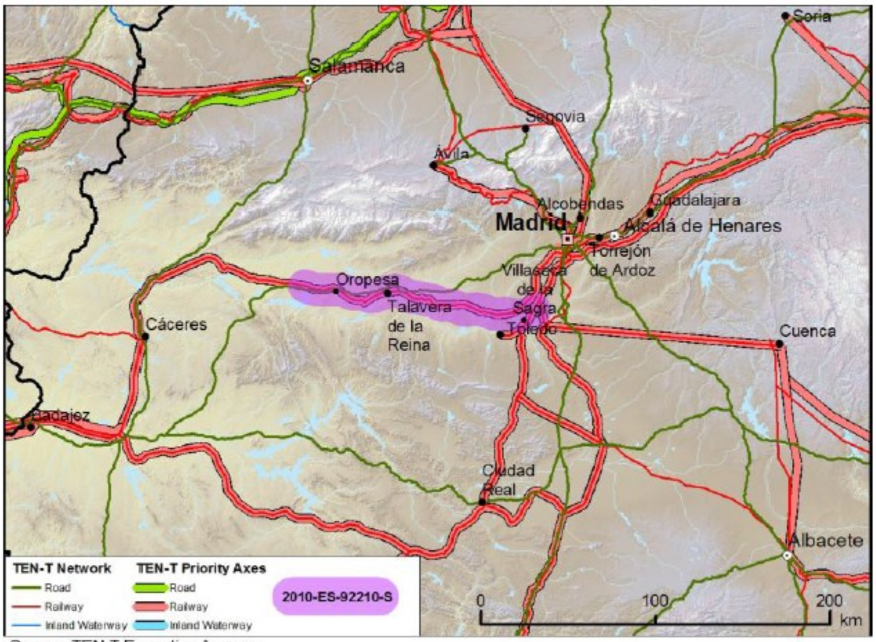
- Draft of the design studies for a 17km high speed track bed for three subsections: Elorrio-Elorrio (3.7 km), Elorrio-Bergara (4.5 km) and Mondragón-Bergara (8.8 km).
- Draft of the electrical supply equipment for the Vitoria-Bilbao-San Sebastian high speed line

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:

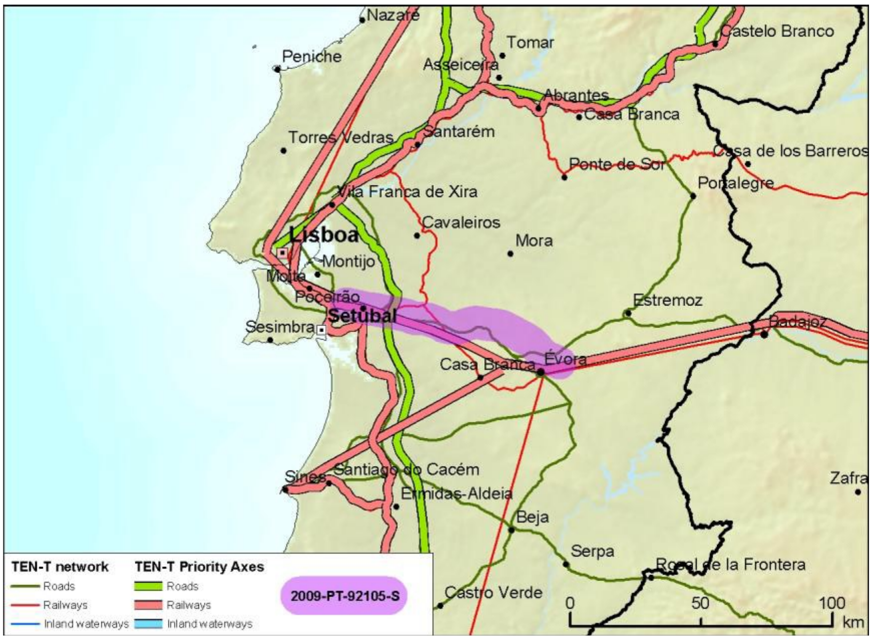
- The first 8 activities focused on the technical design study for the track bed
- The 3 remaining activities addressed geological and geotechnical studies, support for project management and a fauna study.

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

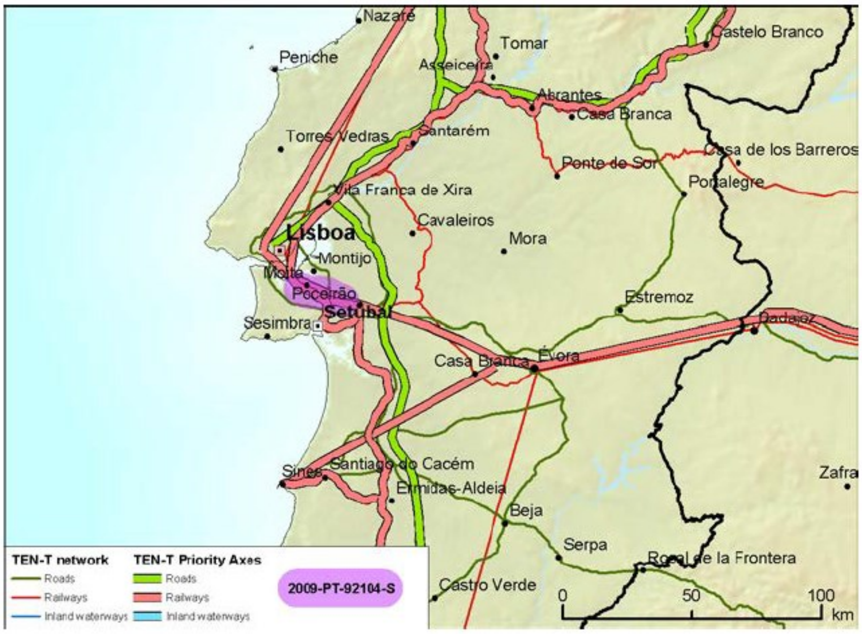
This project has been cancelled

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

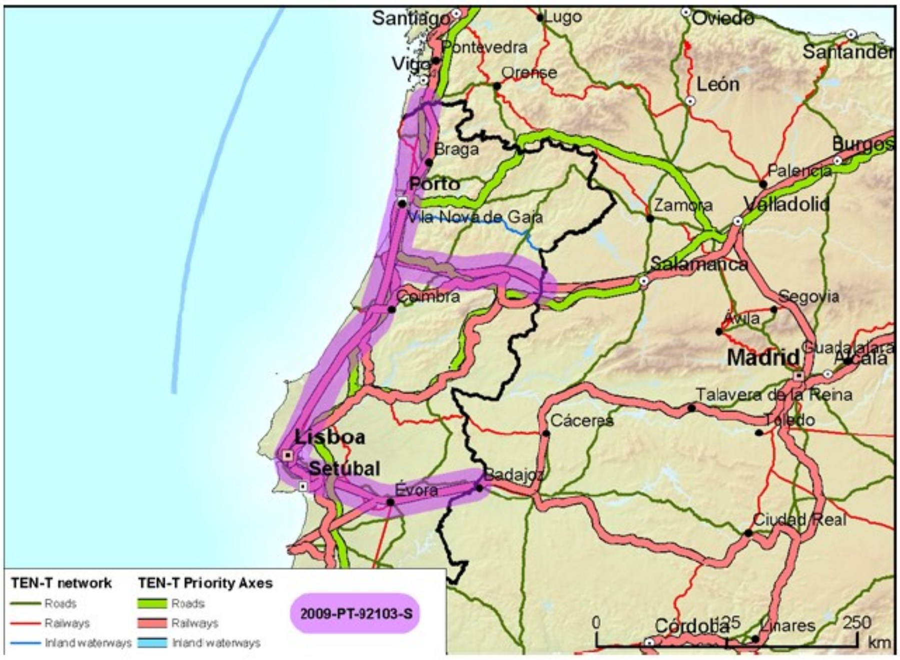
The project entails the development of the technical design studies for the section Moita - Poceirão, which has a total length of 20 km.
This project consists of the detailed definition of the technical works that are needed for the construction of the infrastructure. It is part of the Priority Project 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

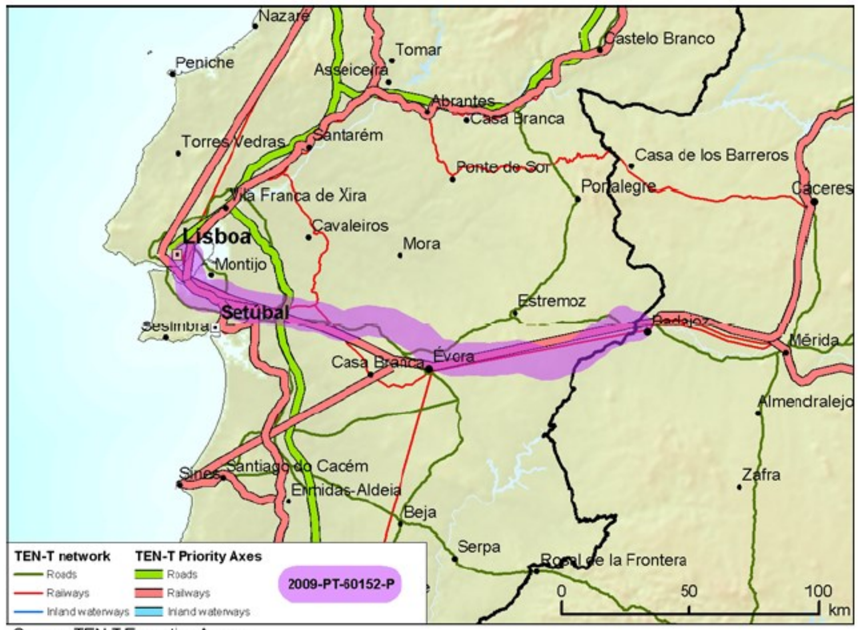
The activities foreseen play a key role in the scope of the execution and co-ordination of the planning, construction, contracting, funding, supply and operation of the Portuguese high-speed rail network.
The specific activities comprise the following studies:

- 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.



Source: TEN-T Executive Agency

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.

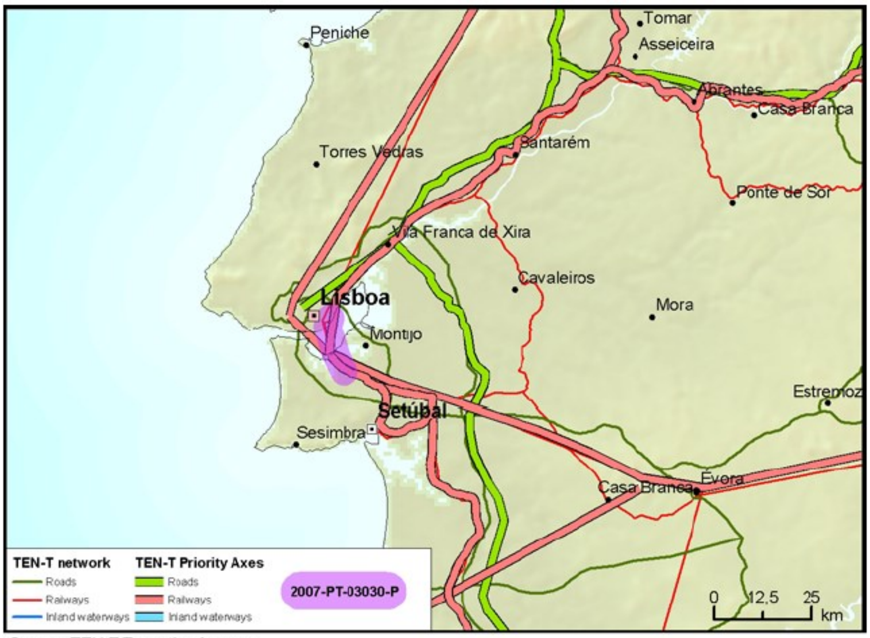
Studies and works in the high speed railway axis of South-West Europe (PP3) - Lisbon-Madrid Axis: Third Tagus Crossing (TTC)

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.

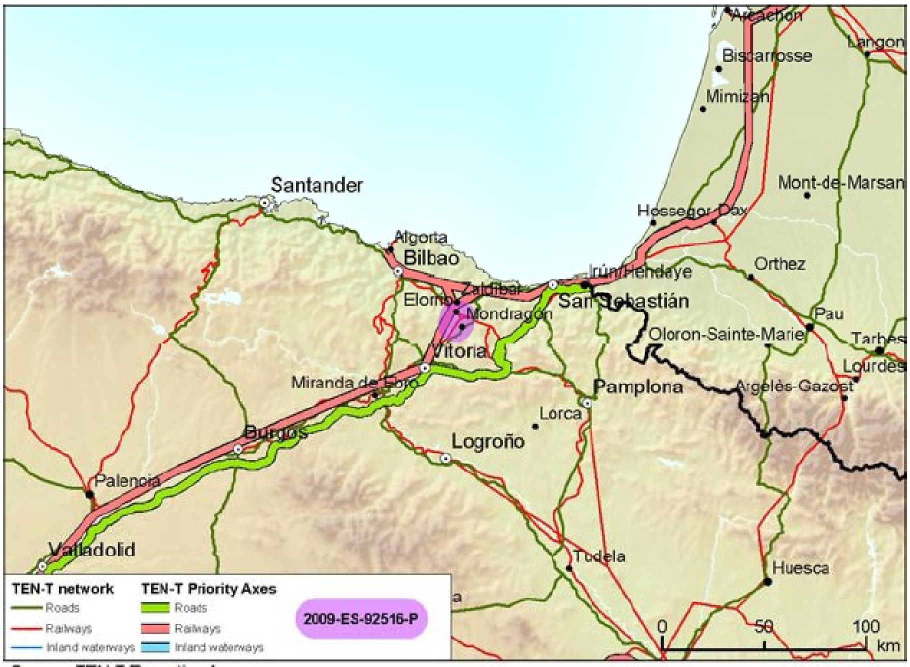


Source: TEN-T Executive Agency

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:

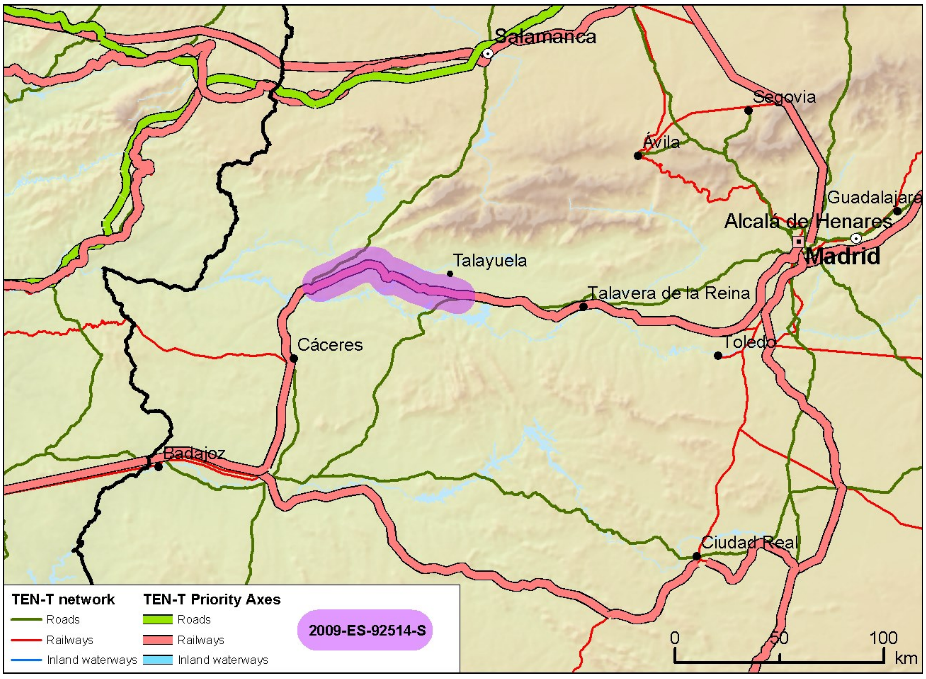
- Construction of 4.44 km of track bed, including 3.62 km of tunnels
- Construction of 0.32 km of viaducts
- And 0.50 km of track bed on surface.

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

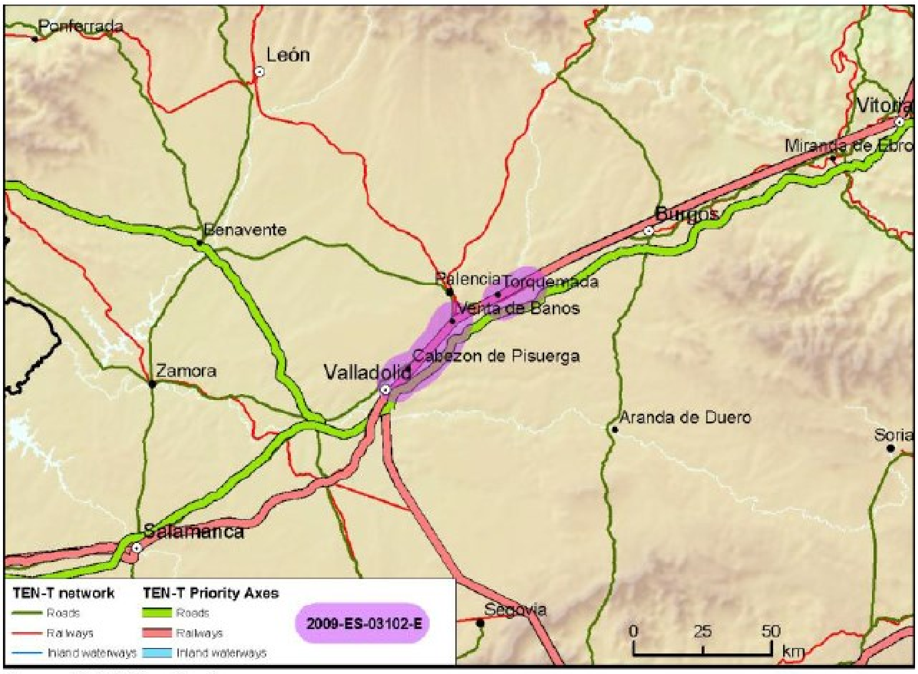
Completed Action

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)



Source: TEN-T Executive Agency

Start date: May 2009
End date: June 2012

Completed Action

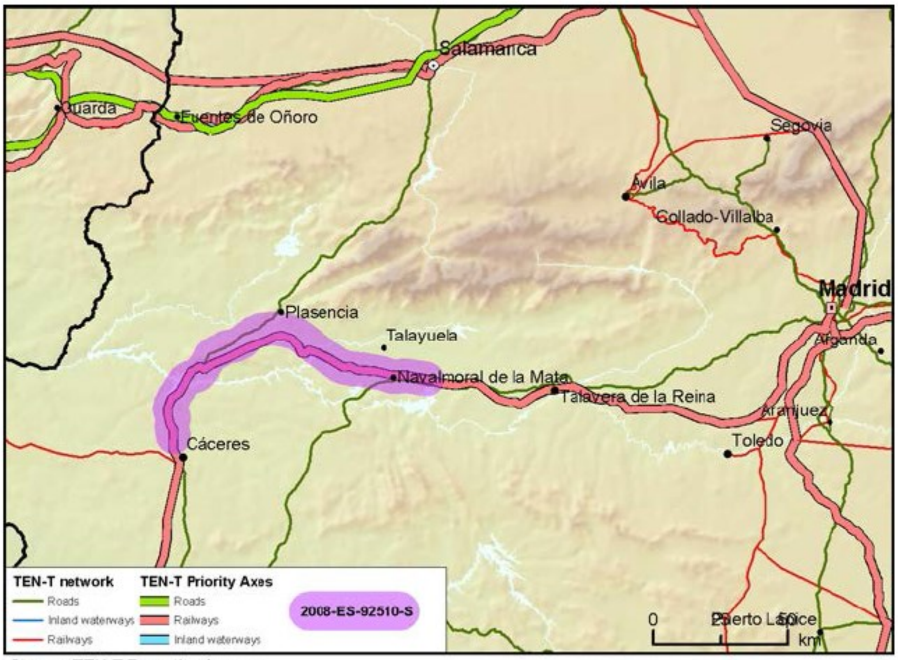
This action is part of Priority Project 3 (High-speed railway axis of south-west Europe) and comprises a key element for the corridor which connects the Madrid-Segovia-Valladolid high- speed line with the Basque country high-speed line and is focused on the track bed works on three different subsections:

- 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)



Source: TEN-T Executive Agency

Start date: January 2008
End date: February 2010

Completed Action

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

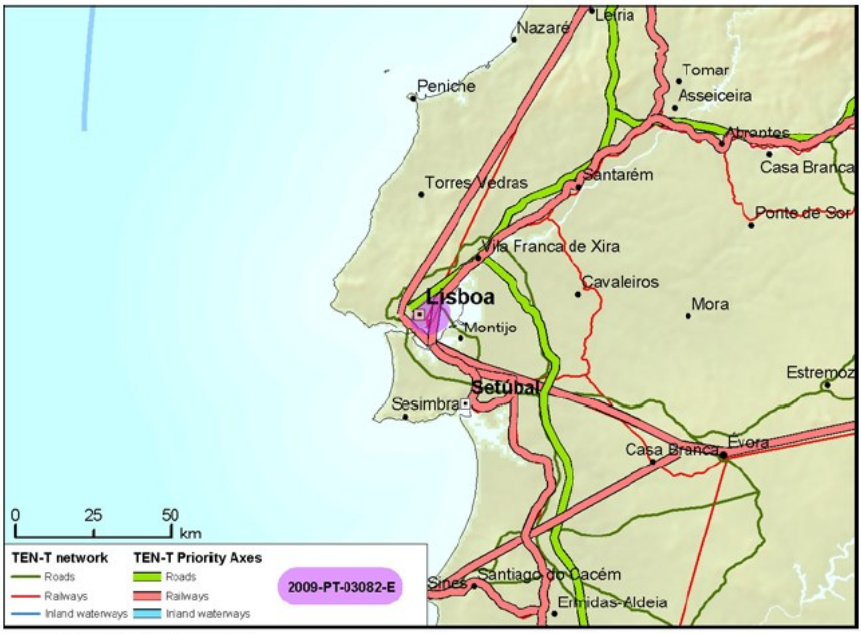
- The pre-design study for cartography and geotechnical studies of the Talayuela-Cáceres sub-section.
- The design studies of the sub-sections between Grimaldo and Cáceres

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.



Source: TEN-T Executive Agency

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)

Source: TEN-T Executive Agency

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").

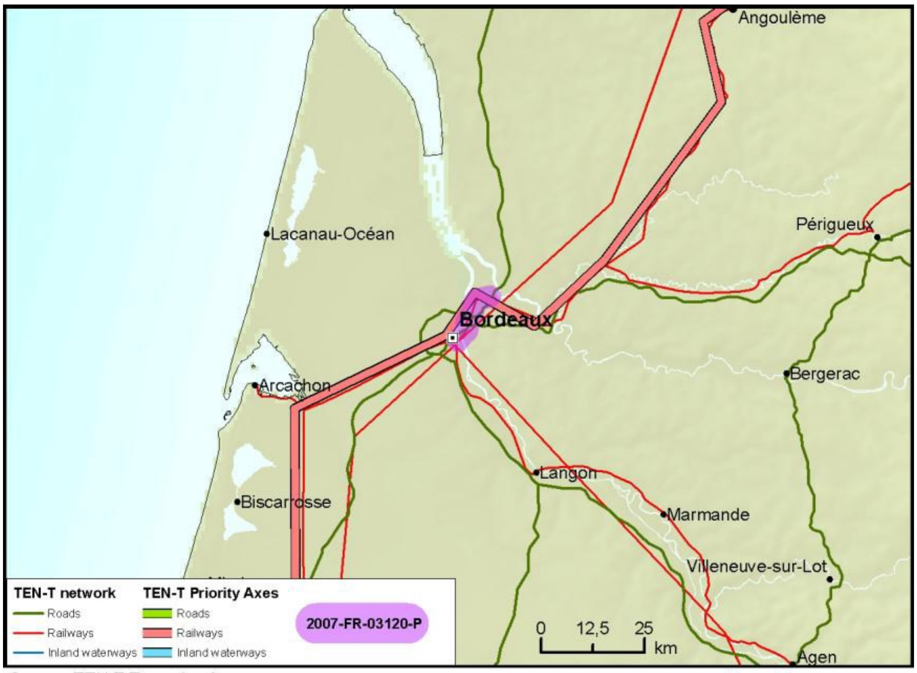
Activities also include the preparation of the public hearings, which include environmental studies, specific studies on compensation and the consultation of local bodies and population.

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:

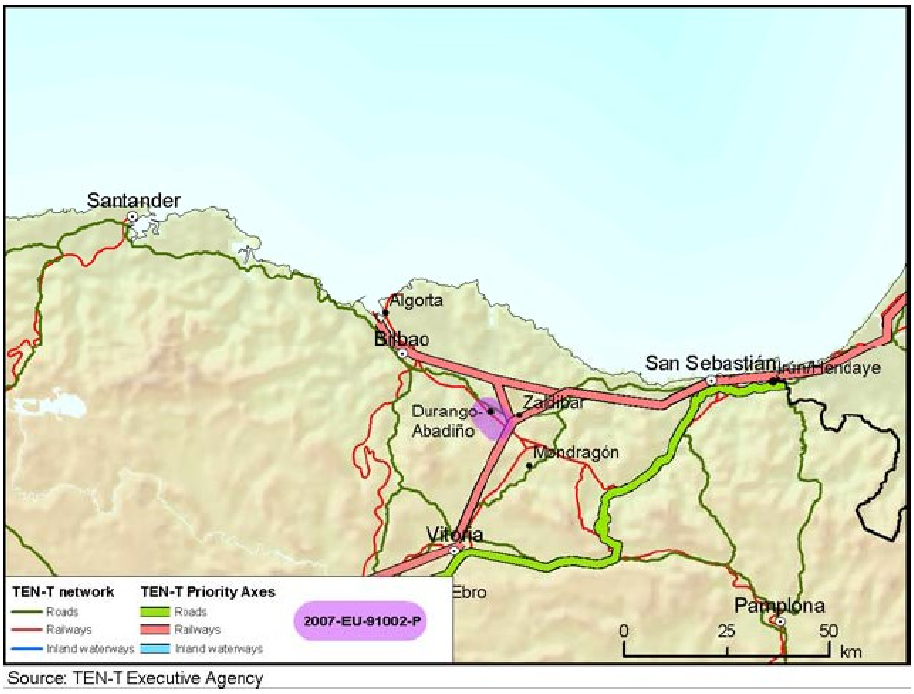
- works for the finalisation of four tracks between the Saint Jean station and the old station of Benauge (4x2 km);
- studies and works on the four tracks between the old station of Benauge and Cenon (4x3 km);
- studies related to the removal of two level crossings located between Cenon and the connection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

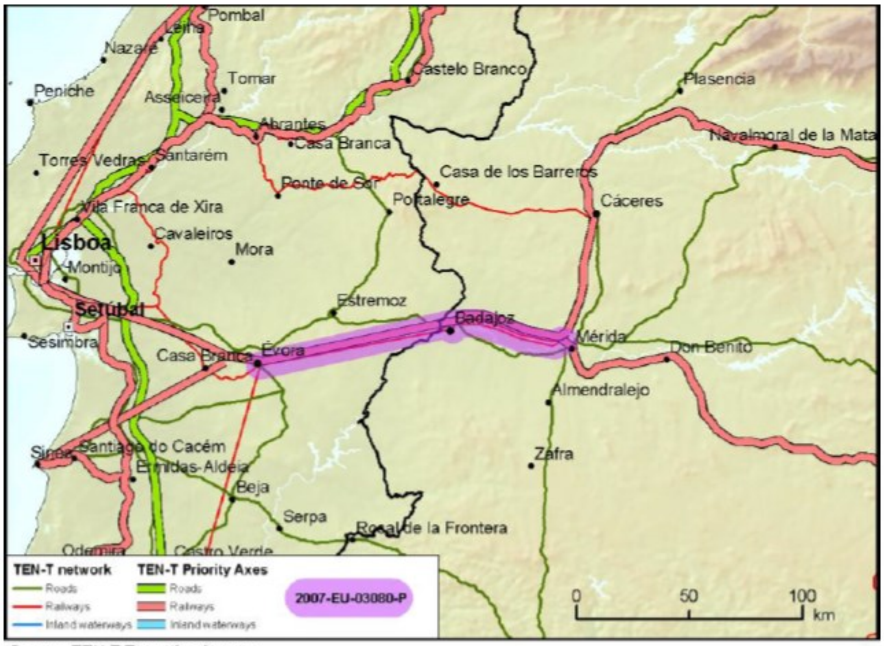
Administrador de Infraestructuras Ferroviarias (ADIF)

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)



Source: TEN-T Executive Agency

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.

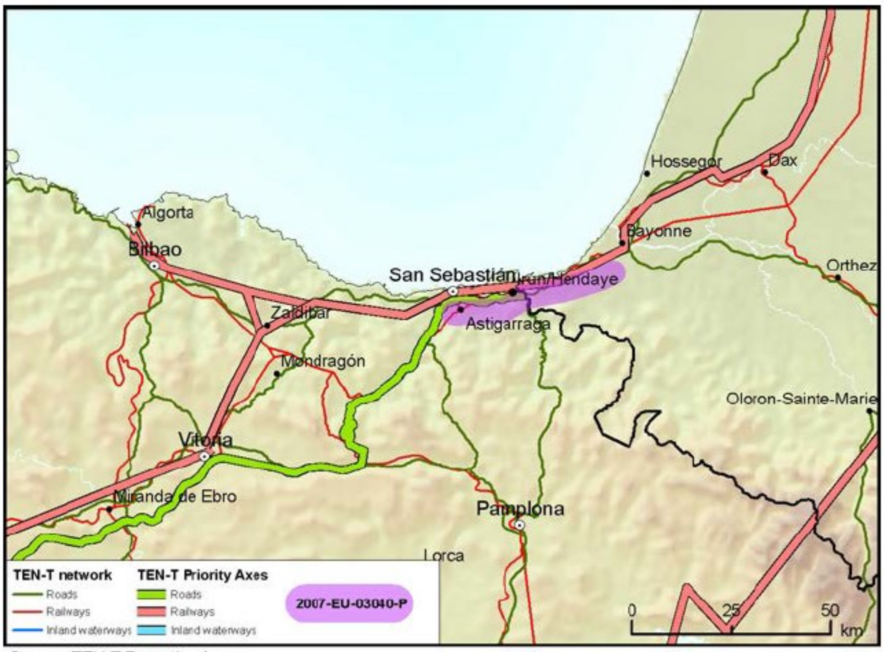
[2] The Spanish part is expected to be fully achieved by the 31st of December 2015.

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)



Source: TEN-T Executive Agency

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.

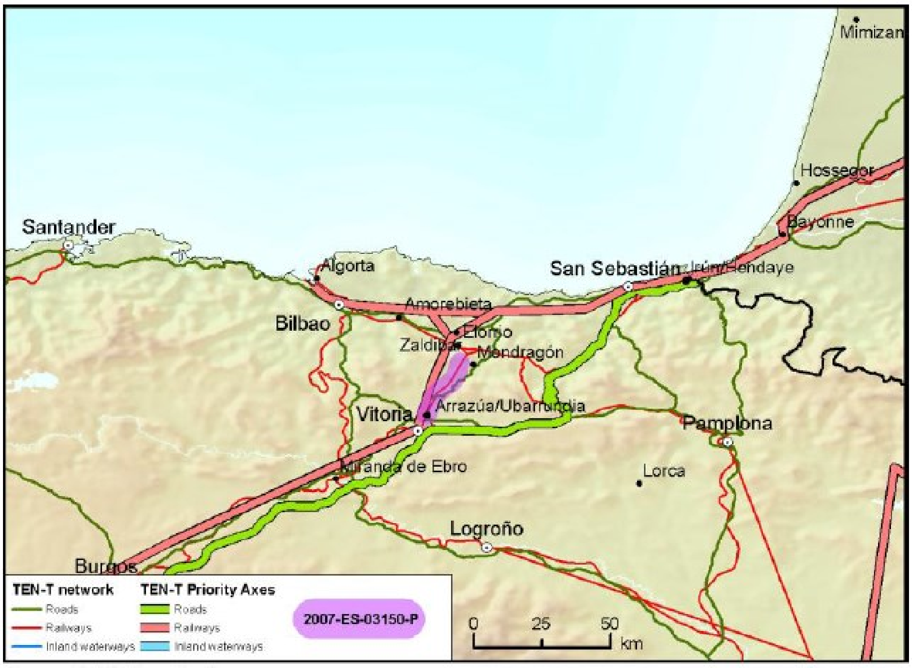
It is part of the High Speed Railway Line Paris-Madrid (Atlantic branch of Priority Project 3), focused on the French-Spanish cross-border section Vitoria - Dax.

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)



Source: TEN-T Executive Agency

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

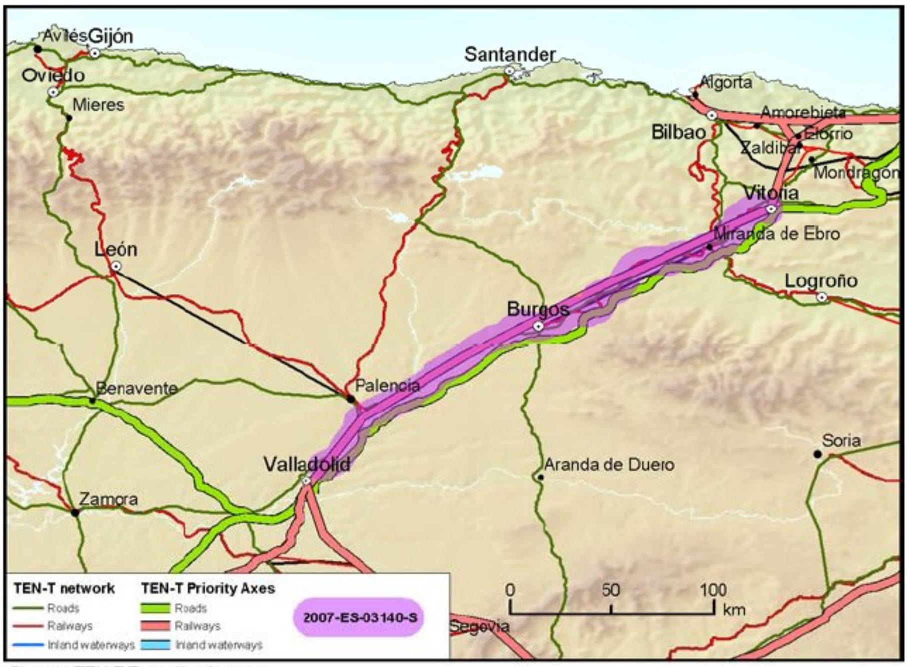
The works will include a series of viaducts and tunnels. Particularly out of the 24.1 km which makes the total length of the railway, 4.5 km are viaducts and 9.8 km are tunnels. The total cost of the project is 273.340.000 euros, while the EU financial aid is 26.759.986 euros.

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)



Source: TEN-T Executive Agency

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

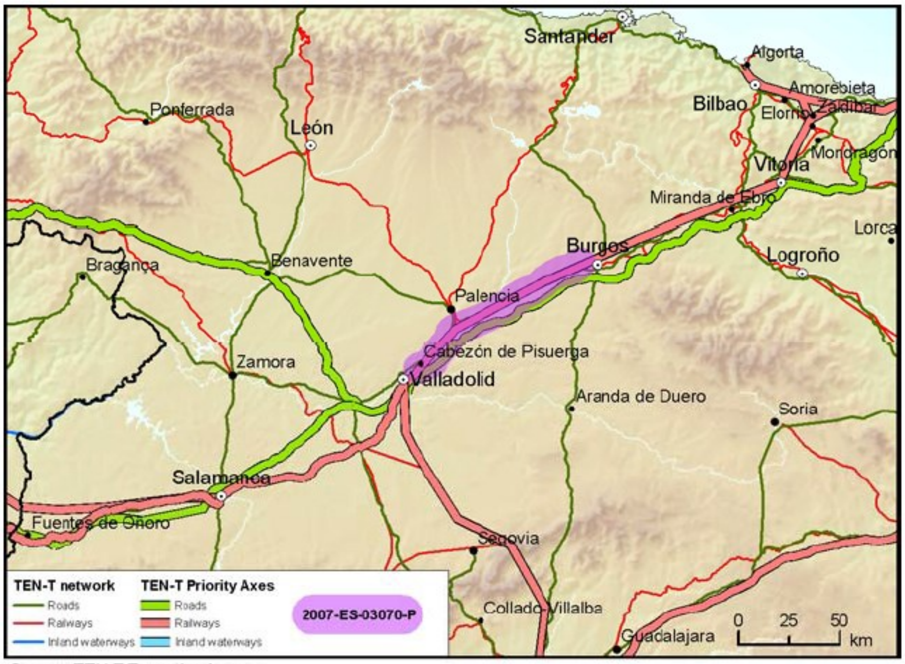
The total cost of the project is 29.300.000 euros while the EU financial support is 14.650.000 euros.

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)



Source: TEN-T Executive Agency

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)

Source: TEN-T Executive Agency

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:

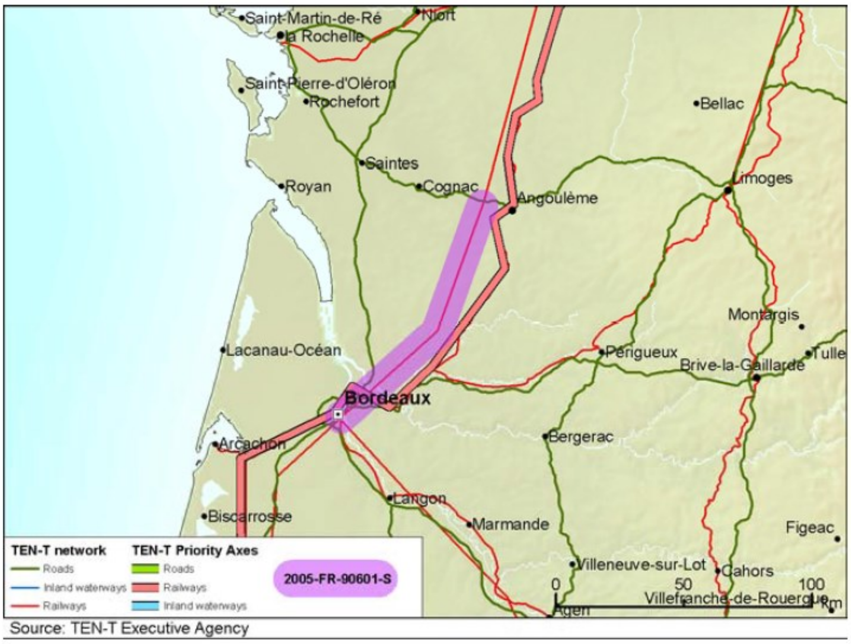
- West section (Bergara - Ezkio/Itsaso): 14km
- Central section (Ezkio - Itsaso - Tolosa): 20km
- East section (Tolosa - Hernani): 32km

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)



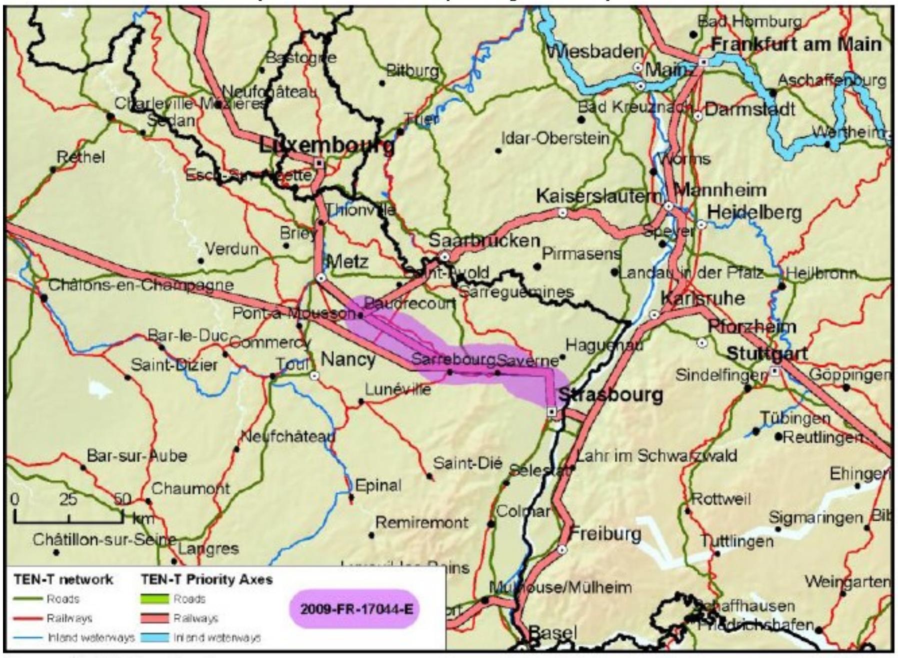
Start date: June 2005
End date: December 2009
This project has been completed

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)

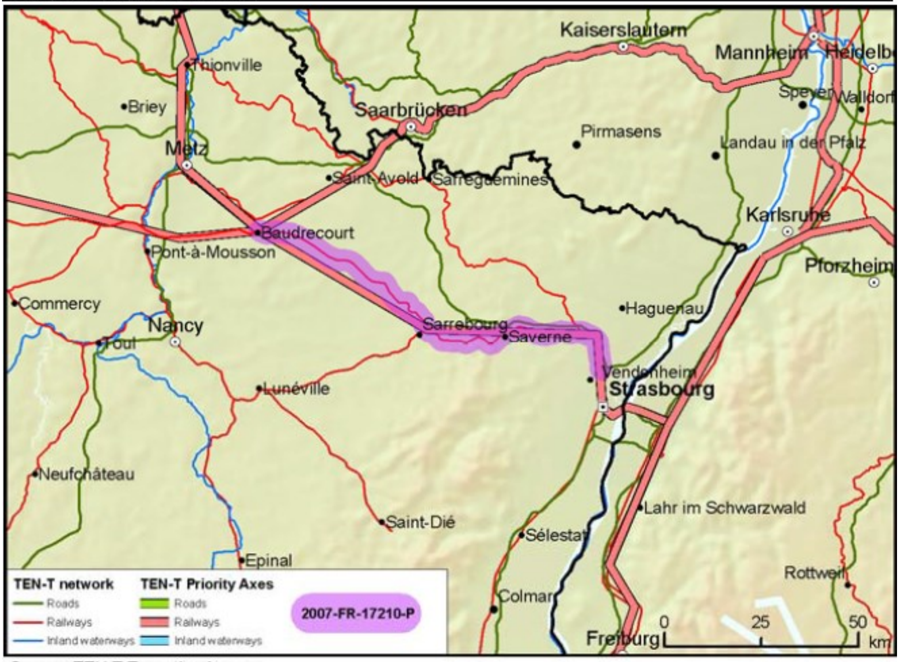


Source: TEN-T Executive Agency

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.

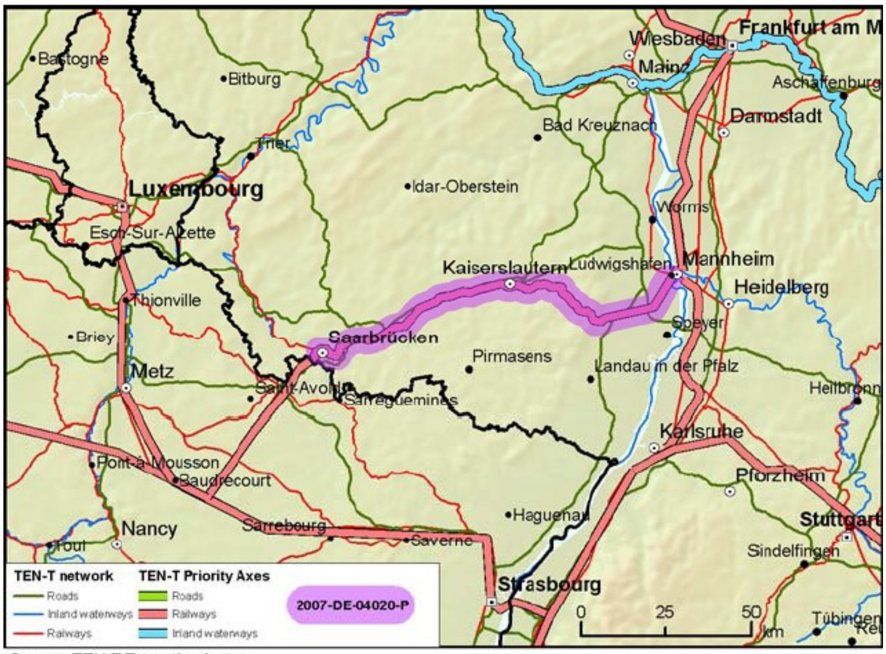
Activities covered by the funding decision have include: general earthworks, bridges and tunnels (including the 4 km long Saverne Tunnel under the Vosges), re-connecting road and other communications links cut by the line, drainage and hydraulics, other engineering work on the line and associated project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

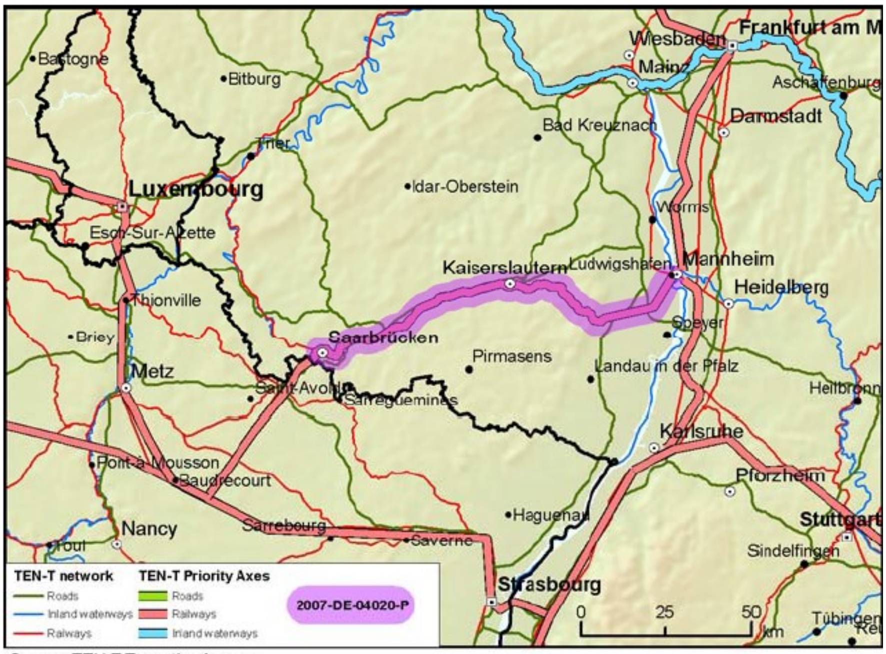
2- Conducting detailed preliminary design works, preparing building permits files as well as procurement files for the construction of 3 new train stations: Champagne-Ardennes (in Bezannes), Lorraine TGV (in Louvigny), and Meuse TGV.

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

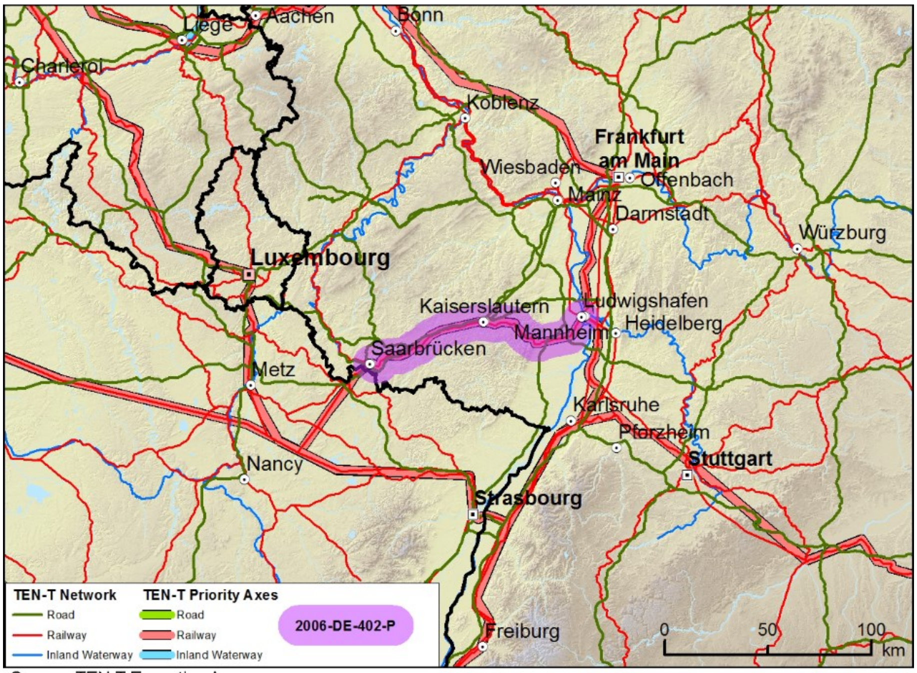
This project aims at reducing an important bottleneck on the rail section between Saarbrücken at the Franco-German border and Ludwigshafen. It is part of the Priority Project 4, the east-west European railway axis from Paris to Budapest, via Eastern France and further to Southwest Germany.
Works will 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

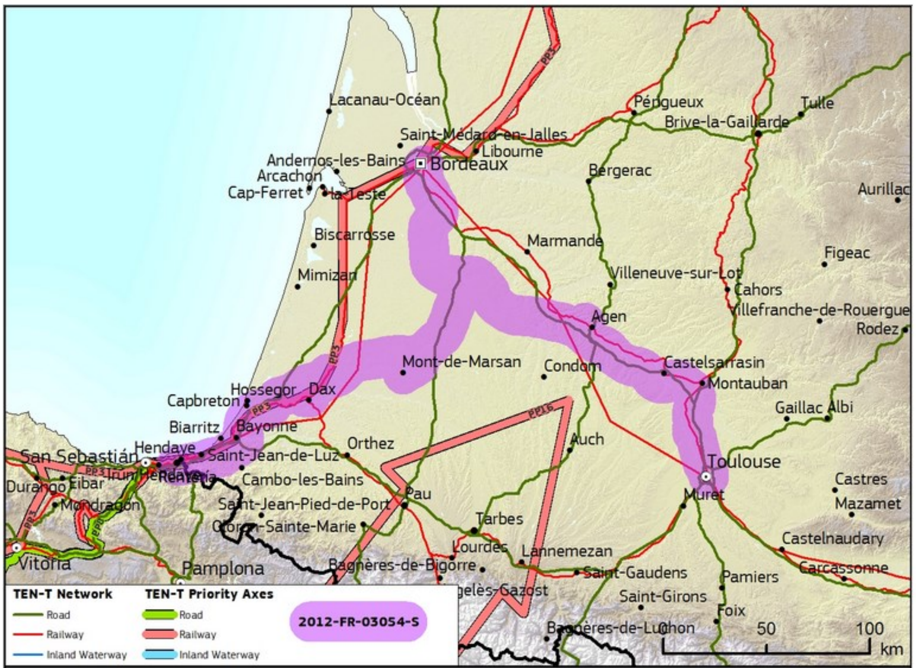
Completed Action

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)



Source: TEN-T Executive Agency

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.

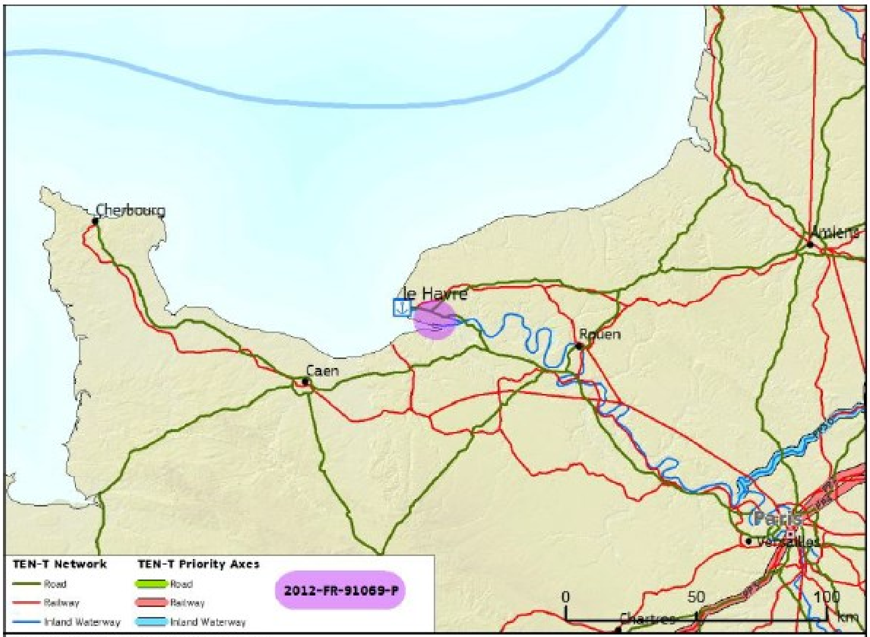
The action is designed to obtain the public interest declaration (DUP), and is therefore a key stage in the project before its implementation.

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.



Source: TEN-T Executive Agency

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.

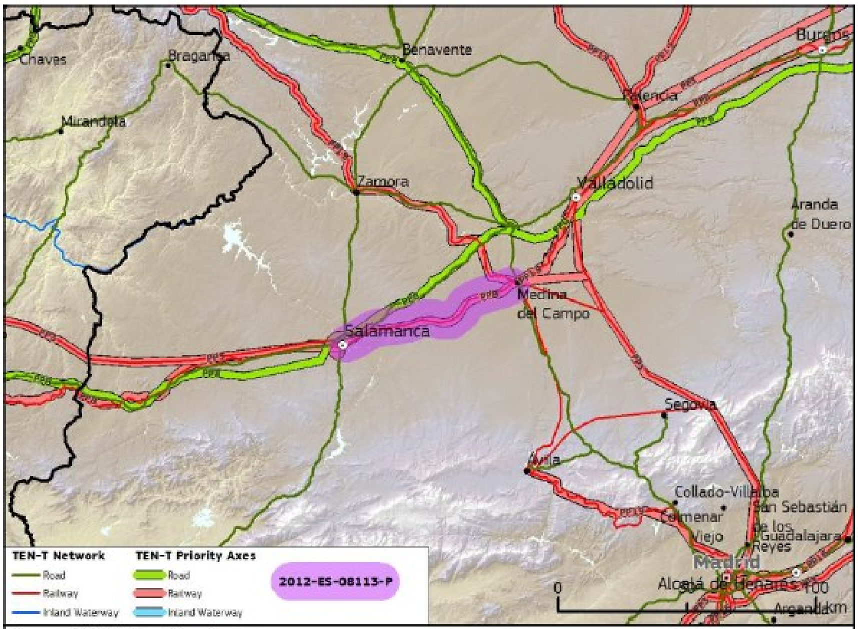
The Action aims to connect the multimodal terminal

- 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)



Source: TEN-T Executive Agency

Start date: February 2013

End date: December 2015

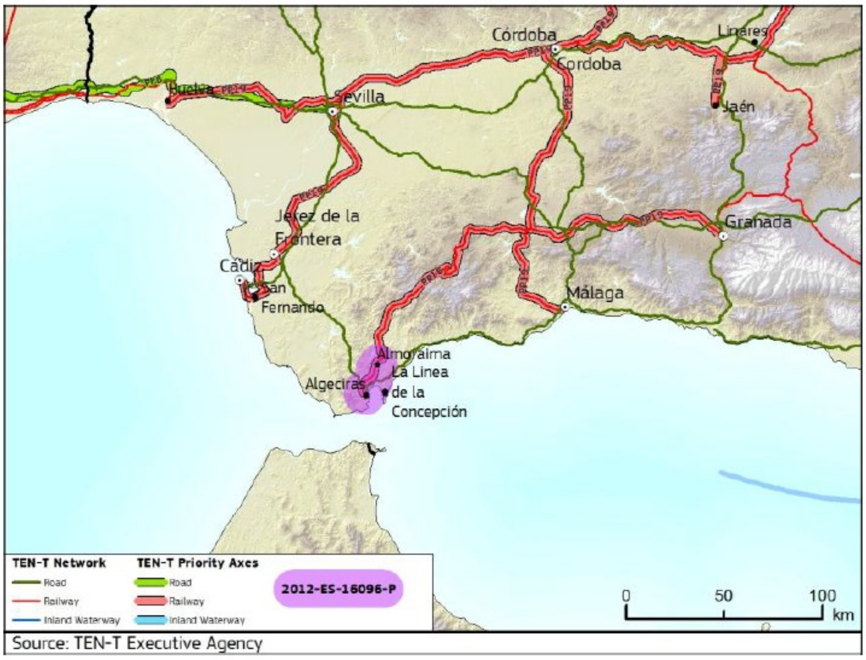
The Action consists of works for the implementation of 25 kV electrification, energy facilities and services on the 71 km-long Medina del Campo-Salamanca section, belonging to the Salamanca-Portuguese border-Lisbon conventional railway line, part of PP8 (Multimodal axis Portugal/Spain-rest of Europe).

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

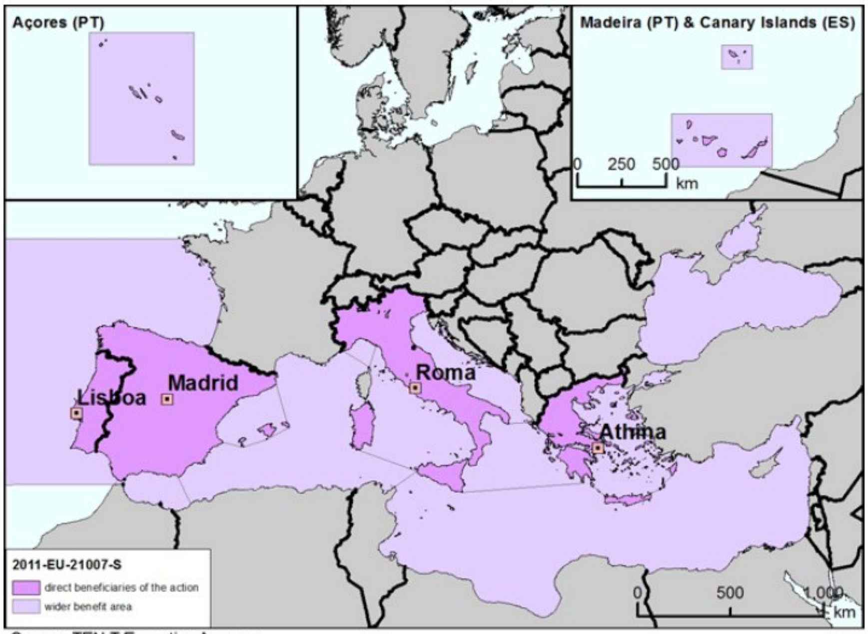
The majority of the works were completed by the end of 2009 and TEN-T officers were able to confirm through their on-site visit on September 2009 that the objectives of this project were achieved.

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.



Source: TEN-T Executive Agency

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.

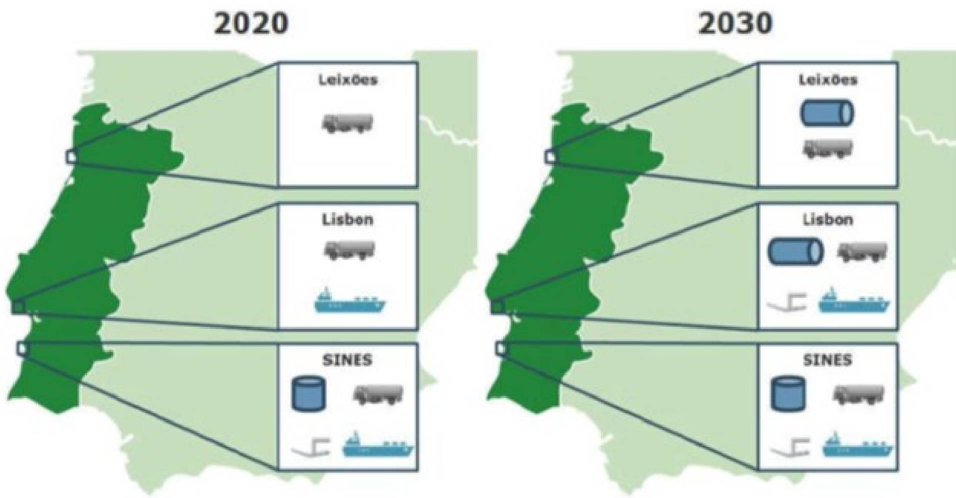
The development of a LNG master plan has clearly identified, at the level of the basins from the Mediterranean, Black Sea and North Atlantic (reasoning for the Azores and Madeira Islands involvement), that it is outmost importance to develop the scenarios for 2020 and 2030. Whereas, taking into account 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)

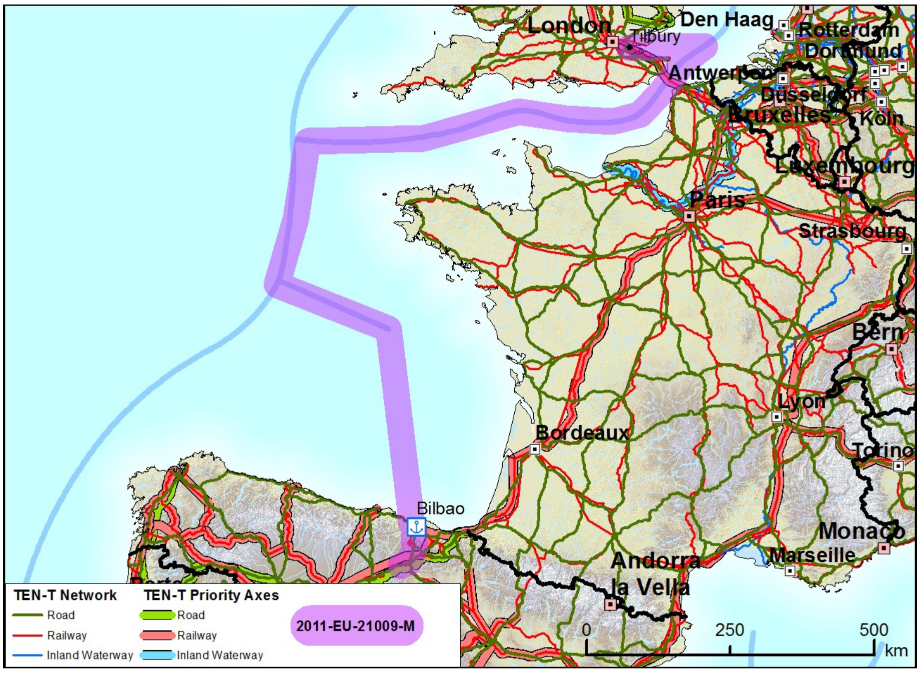
Intermodal corridor from Bilbao

(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.



Start date: October 2011
End date: December 2014

Beneficiaries
Port of Tilbury (London) Ltd

Port of Bilbao Authority

Source: TEN-T Executive Agency

"IBUK" Intermodal Corridor focus on:

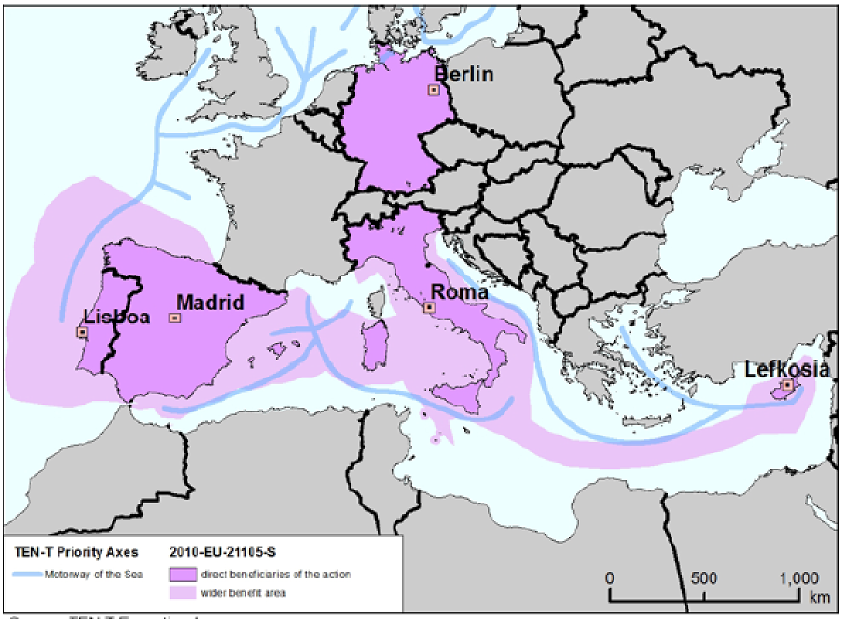
- **Rail infrastructure for a new Port-Railway logistics terminal in El Prado, Spain**
- Infrastructure at the Port of Tilbury to ensure efficient handling of freight
- **The development of an innovative Information Technology system, the "Intermodal Corridor Community System**

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.

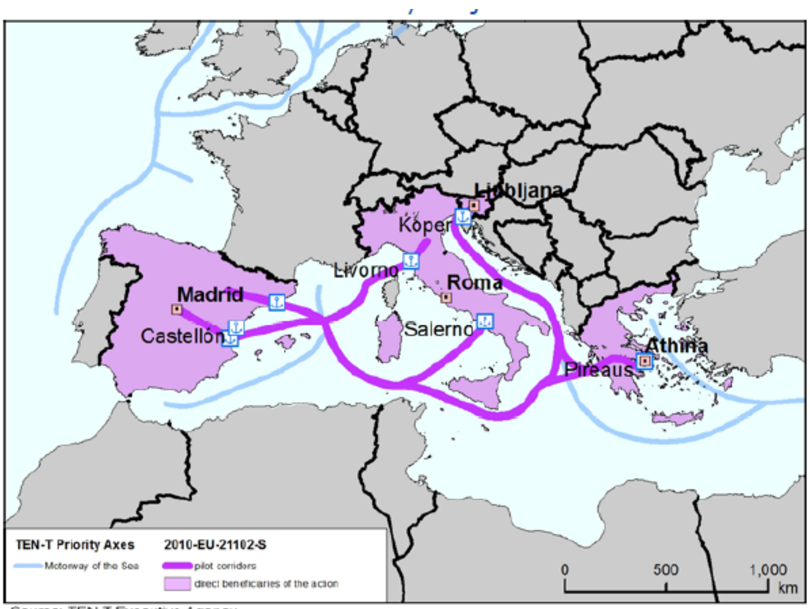
This pilot system called middleware MIELE, has interact with IT systems already in place in the e-maritime and e-freight domains. Portugal together with other European member states (Italy, Germany, Cyprus and Spain) are active partners in the MIELE project. Results of MIELE are strong contributors towards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

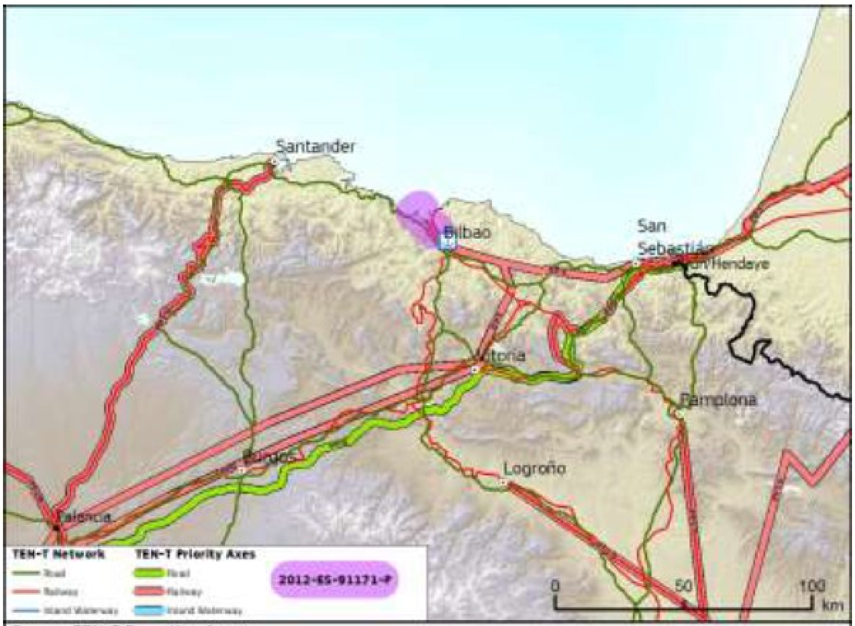
- 1stly – Ro-ro services connecting EU ports to each other. These routes are also called the EU authorised regular services. The conflicts surround the freight transferred between terminals inside the customs area and terminals outside the customs area.
- 2ndly – Container services being carried out 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



Source: TEN-T Executive Agency

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)

Source: TEN-T Executive Agency

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.

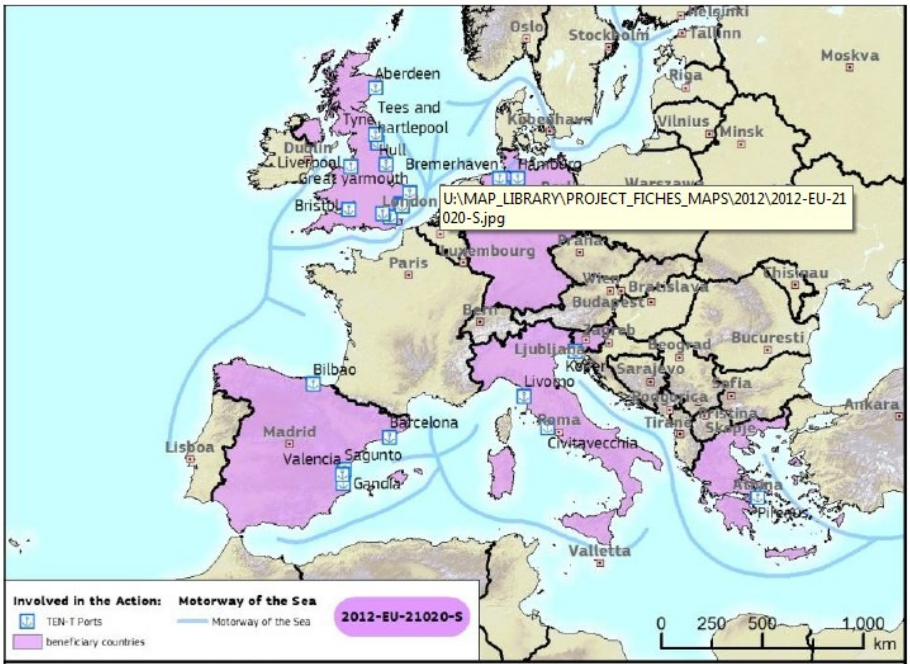
The expected results are:

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)



Source: TEN-T Executive Agency

Start date: July 2012

End date: December 2015

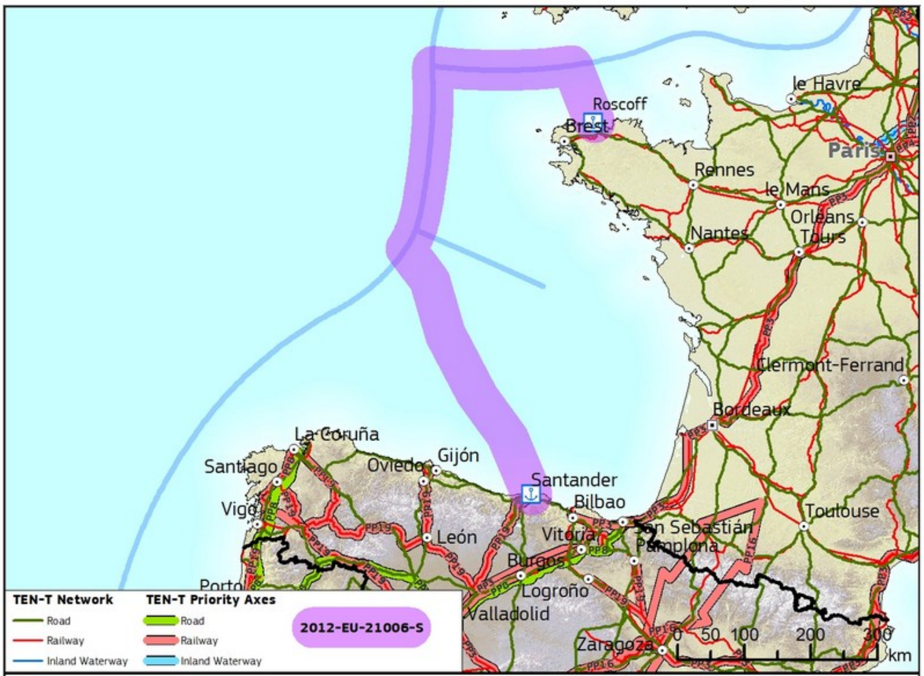
Overall objective of AnnA is the adoption of the National Maritime Single Windows and electronic data transmission for the fulfilment of reporting requirements for vessels entering and departing European ports in accordance with Directive 2010/65/EU. The objective of the Action is to gain consensus between 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)



Source: TEN-T Executive Agency

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

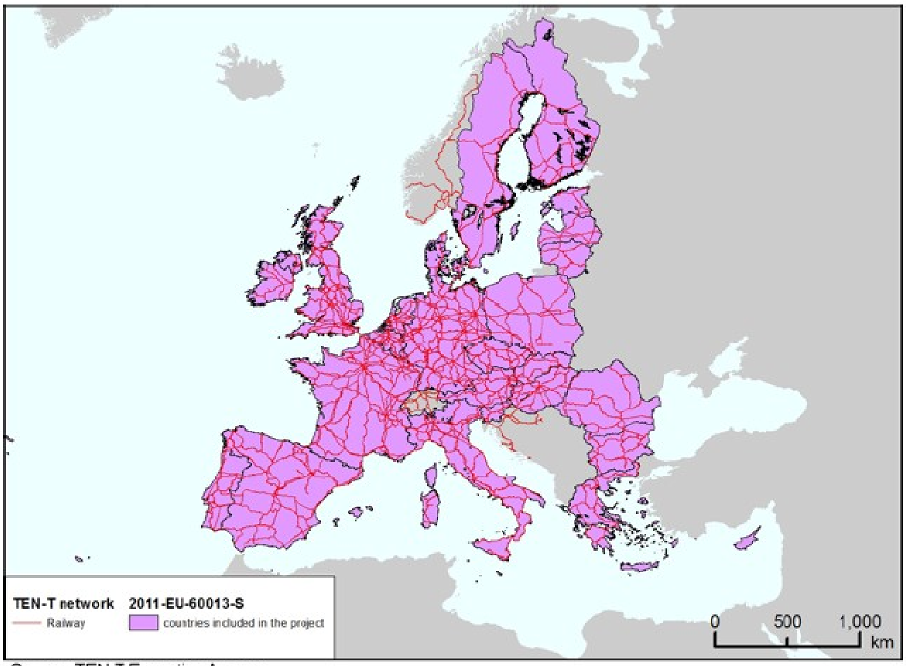
Facilitating and speeding up ERTMS deployment

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

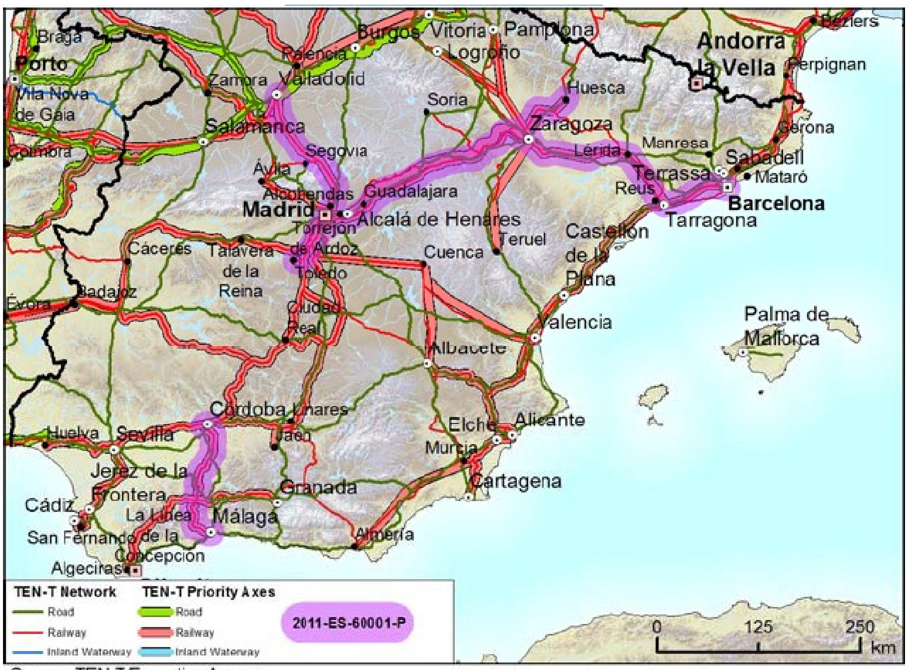
- Nokia Siemens Networks Oy
- Kapsch Carriercom Deutschland GmbH
- Siemens Plc
- Hörmann Funkwerk Kölleda GmbH
- Alstom Ferroviaria Spa
- Selex Elsag Spa
- Union Internationale des Chemins de Fer
- Ingenieria y Economia del Transporte, S.A.
- Frequentis AG
- MER MEC S.p.A.
- Seinalia SL

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:

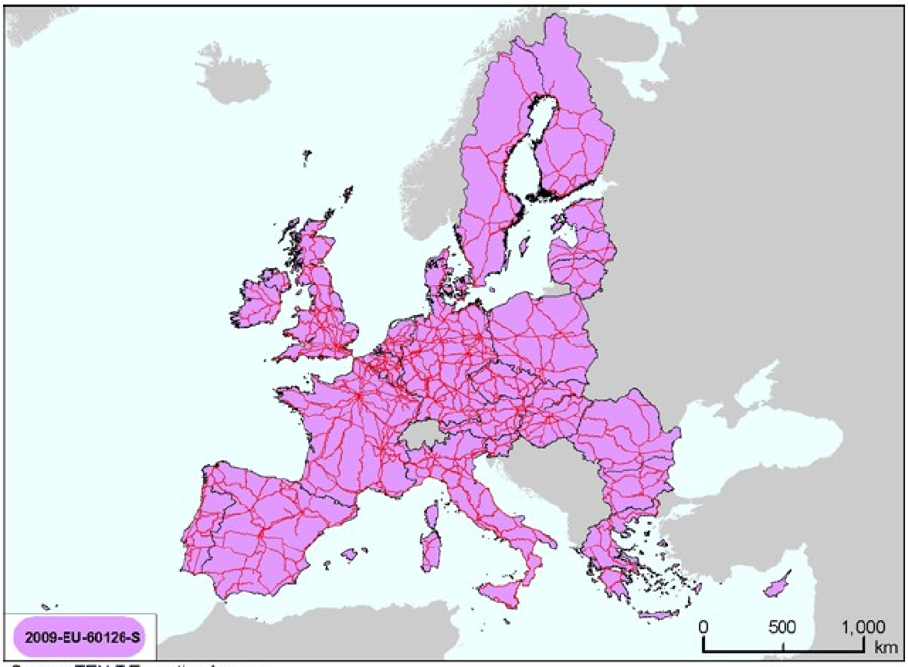
Administrador de Infraestructuras Ferroviarias

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

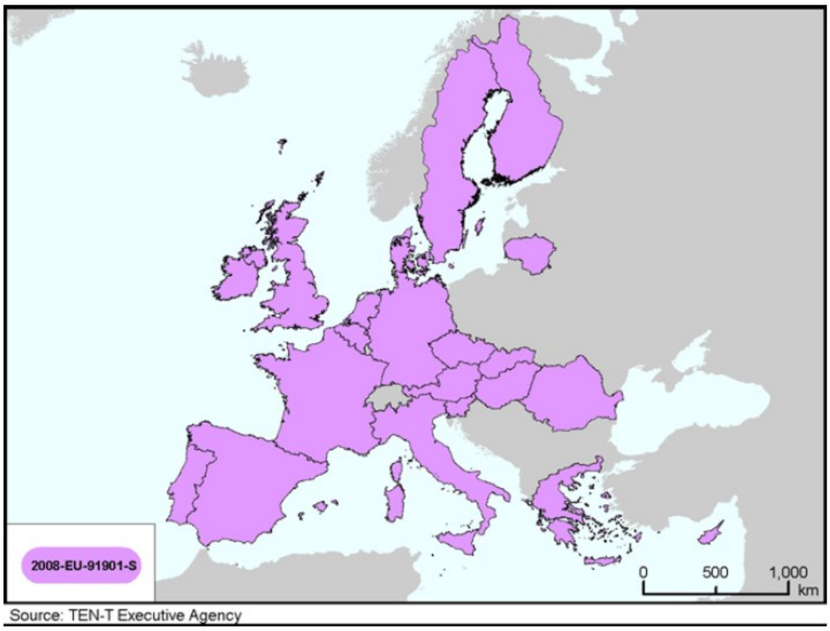
Certain activities of the Action represent the continuation of the activities already started and carried out within the framework of the EU co-funded TEN-T project 2007-EU-60040-P

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.

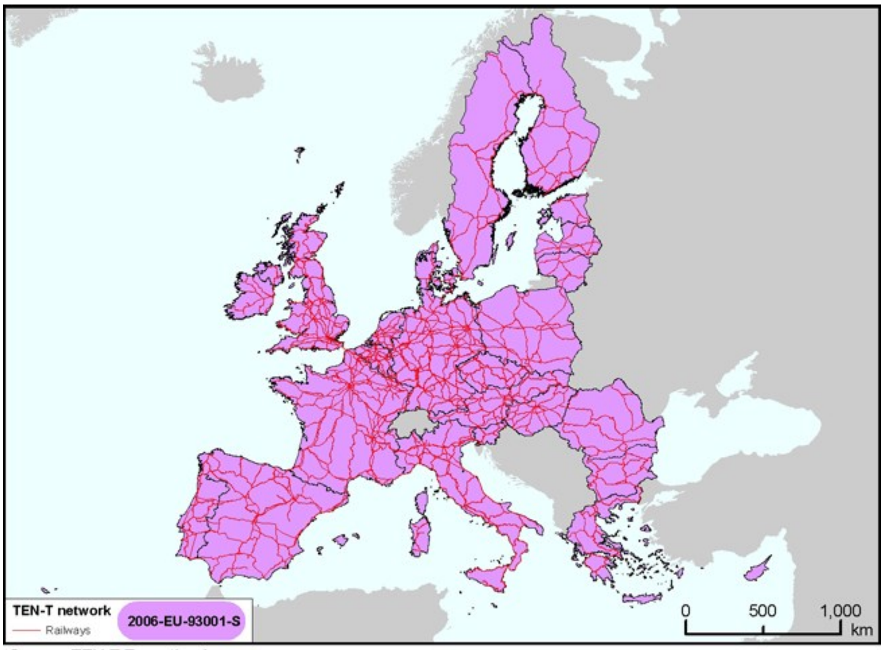
The IPAT will be open and free of charge (or at a reasonable cost) to the public.

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.

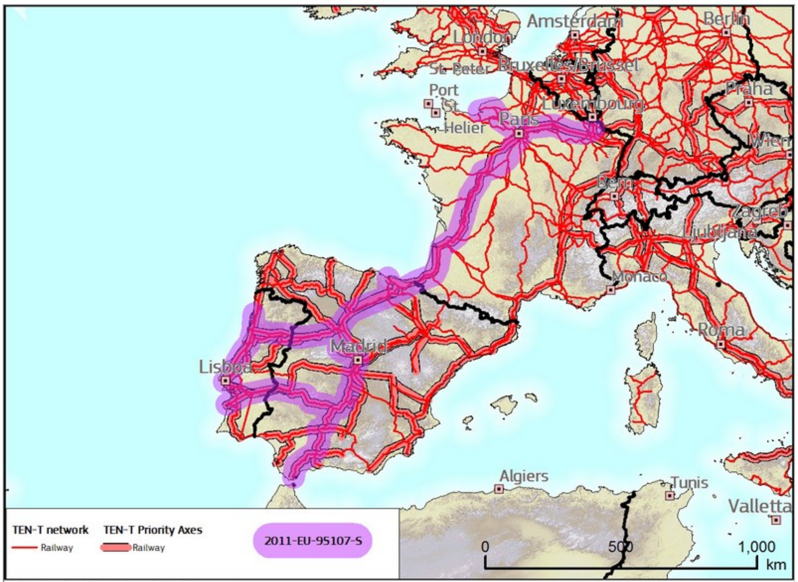
The project encompasses three main groups of activities:

- 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



Source: TEN-T Executive Agency

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.

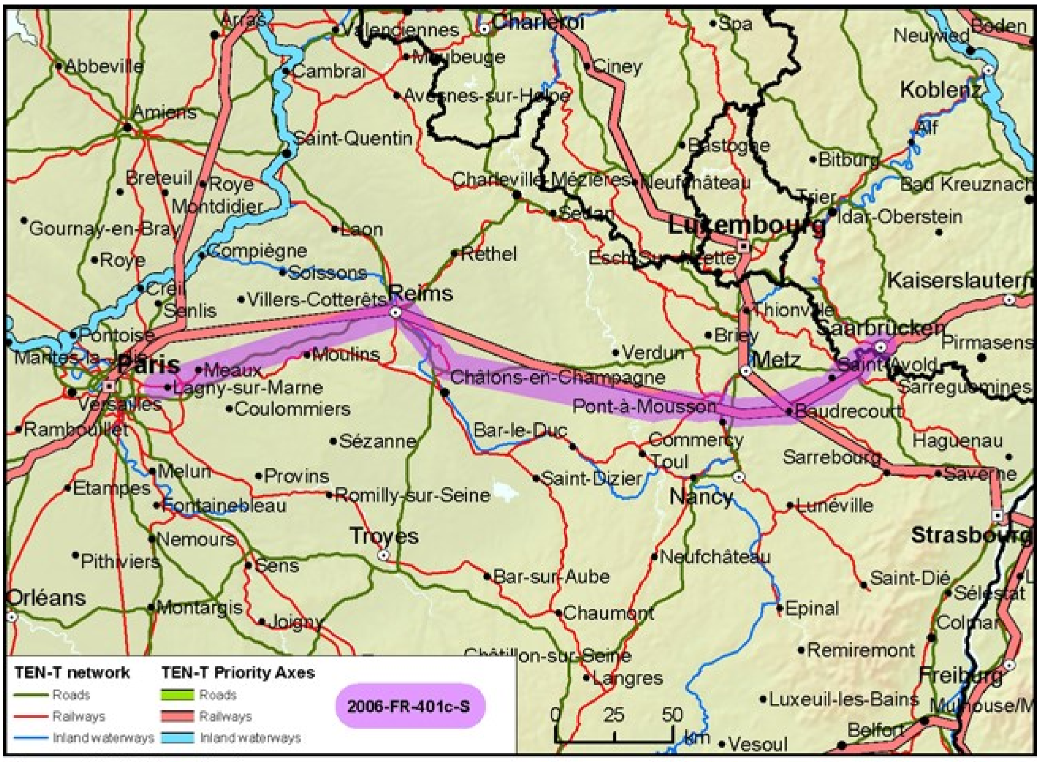
The total project will cost €2,140,000 and the EC's contribution will be 50% (€1,070,000) the remaining 50% will be funded by national budget.

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.