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# Atlantic



Second Work Plan of the  
European Coordinator

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*Mobility  
and Transport*

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This report represents the opinion of the European Coordinator and does not prejudice the official position of the European Commission.



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## Acronyms and Abbreviations

ATL	Atlantic Corridor	PR	Progress Report
BMVI	German Ministry of Transport	PT	Portugal
CBA	Cost Benefit Analysis	PU	Public
CEF	Connecting Europe Facility	RALP	Rhine Alpine Corridor
CF	Corridor Forum	RFC	Rail Freight Corridor
CNC	Core Network Corridor	RIS	River Information System
DE	Germany	RRT	Rail-Road Terminal
DG-MOVE	Directorate General for Mobility and Transport (European Commission)	SESAR	Single European Sky ATM Research Programme
EC	European Commission	SSS	Short Sea Shipping
EIB	European Investment Bank	TENtec	Information system of the European Commission to coordinate and support the TEN-T Policy
ERTMS	European Rail Traffic Management System		
ES	Spain		
ESTAT	Eurostat		
ETCS	European Train Control System		
ETIS	European Transport policy Information System		
EU	European Union		
FR	France		
GDP	Gross Domestic Product		
GHG	Greenhouse Gas		
GIS	Geographic Information Systems		
GPSO	Grand Project du Sud-Ouest		
HAROPA	Le Havre, Rouen and Paris Ports		
HSR or HS	High Speed (rail)		
INEA	Innovation and Networks Executive Agency		
ITS	Intelligent Transportation System		
IWT	Inland Waterway Transport		
IWW	Inland Waterway		
KPI	Key Performance Indicator		
LNG	Liquefied Natural Gas		
MED	Mediterranean Corridor		
MoS	Motorways of the Sea		
MTMS	Multimodal Transport Market Study		
MS	Member State		
Nat	National		
NSMED	Nord Sea Mediterranean Corridor		
NUTS	Nomenclature of territorial units for statistics		
O/D	Origin / Destination		
OPT	Operation Programme of Transport		
PaP	Pre-arranged path		
PPP	Public Private Partnership		

## Towards the Atlantic work plan

The new TEN-T Guidelines (Regulation 1315/2013) re-defined the priorities for TEN-T deployment, setting up of nine multimodal core network Corridors led by a European coordinator and the creation of the Connecting Europe Facility as financing instrument.

This work plan has been elaborated in accordance with the provisions of Regulation (EU) No 1315/2013 which establishes Union guidelines for the development of the trans-European transport network (the Regulation). The concept of core network Corridors rests on three pillars: modal integration, interoperability and the coordinated development of its infrastructure.

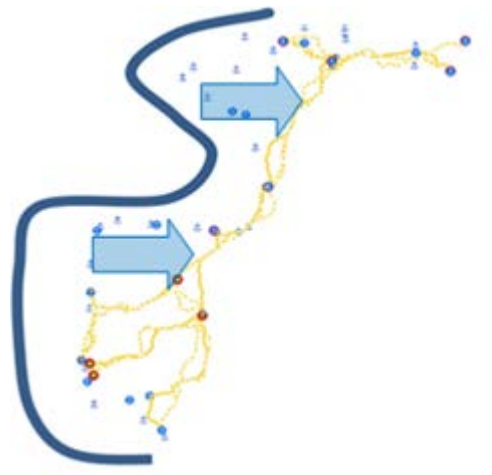
The Atlantic Corridor, as defined in its alignment by EU Regulation 1316/2013, connects Europe's South-Western regions towards the centre of the EU, linking the Iberian Peninsula ports of Algeciras, Sines, Lisboa, Leixões (Porto) and Bilbao through Western France to Paris and Normandy (up to the port of Le Havre) and further east to Strasbourg and Mannheim. It covers rail, road, airports, ports, rail-road terminals (RRTs) and the River Seine inland waterway.

The Corridor has an outstanding maritime dimension given its positioning in the crossroads of global shipping routes, which should be further exploited, namely through the deployment of Motorways of the Sea (MoS) and Short Sea Shipping (SSS) along corridor ports (and feeder ports).

The inland backbone of the corridor delivering transport efficiency and sustainability is constituted by the Atlantic Rail Freight Corridor, still endowed with large capacity on various sections.

Beyond exploiting the two parallel mono-modal routes (Motorways of the Sea and Rail Freight Corridor), the Atlantic corridor, in line with TEN-T objectives, aims at better connecting transport modes, and therefore at linking these two components, through an enhanced modal integration.

Accordingly, the Atlantic coastline and all its Core and Comprehensive ports and logistic platforms ought to be seen as feeding / served by the corridor.



The Atlantic CNC connects and overlaps with four other corridors, with which synergetic relations should be promoted:

- Mediterranean, with a common section Algeciras - Madrid.
- North Sea Mediterranean, with connections in Paris and a shared section between Metz and Strasbourg.
- Rhine Alpine and Rhine Danube, both with a connection in Mannheim and Strasbourg.

Maintaining links with the studies being carried out on these four adjacent corridors is thus of utmost relevance for the Atlantic Corridor.

### The Atlantic Corridor goals

The strategic goals of the development of the Atlantic Corridor are enhancing modal integration (thus rebalancing the current modal split, highly dependent of road for the

inland component), further exploiting the maritime connectivity, and addressing railway interoperability, including by a gradual track gauge change to UIC standard on the Iberian Peninsula. This would eventually connect seamlessly the ports of Algeciras, Sines, Lisboa and Leixões to France and Germany. Within this framework, the need to solve the current bottlenecks and missing railway links is still critical.

Objectives and opportunities identified in the 2014 work plan are depicted in the figure below. Currently, studies are being developed to identify the key activities towards their achievement. Particular attention is devoted to the priorities stated by TEN-T guidelines: cross-border, bottlenecks, interoperability and multimodality, as well as to financing issues.

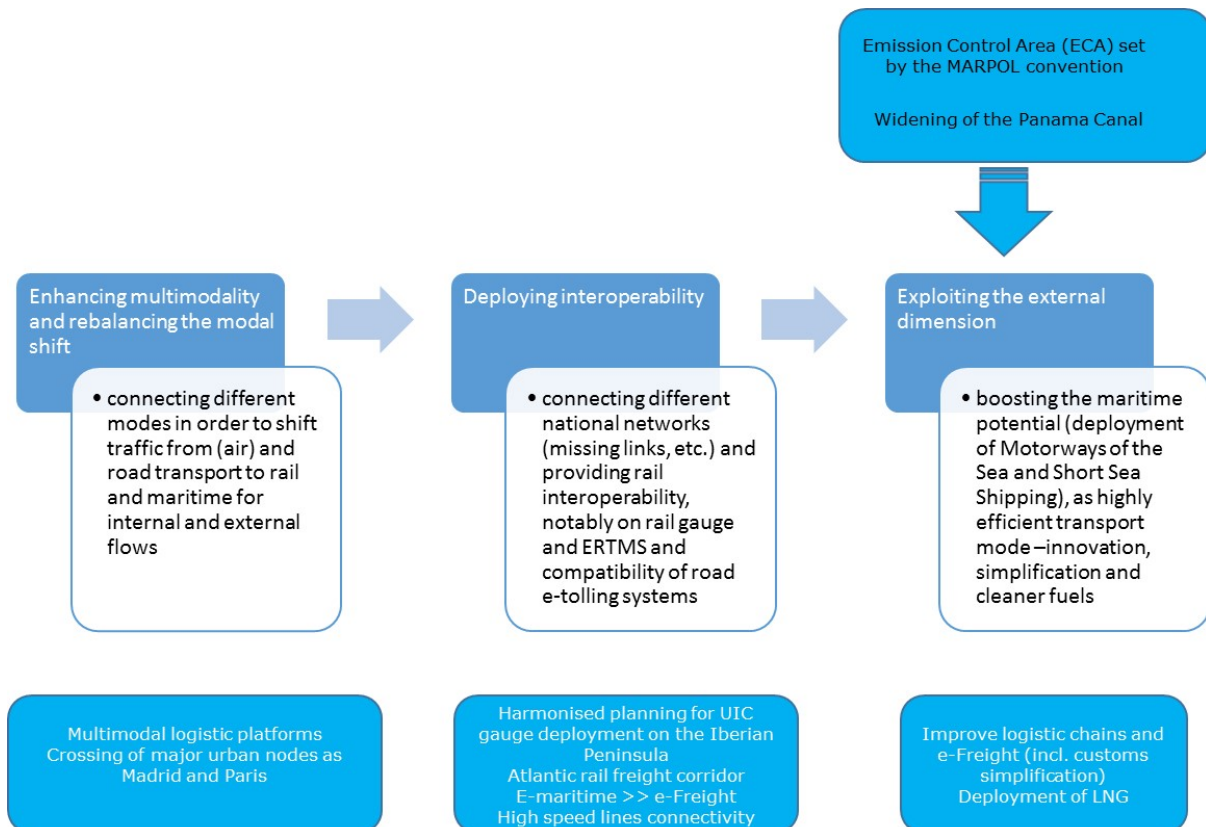


Figure 1: Atlantic Corridor main objectives

## Atlantic Corridor activities

### Corridor Fora and Working Groups

In 2014, four Corridor Fora have been successfully held.

Restarting activities in September 2015, after the approval of the first Work Plan, three Corridor Fora and four Working Group meetings were also promoted, highlighting, in particular, two novelties: a working group dedicated to the cross-border dimension held in Bordeaux and another on ports, inland waterways and logistic facilities, bringing together in the Paris core node the stakeholders from two corridors - Atlantic and Nord Sea Mediterranean.

As in 2014, Corridor Forum stakeholders fall into four main categories:

- Member States (MS) – Transport Ministries.



- Infrastructure Managers (IM) – for each mode of transport. Rail-road terminals' stakeholders started to be involved in Forum activities from the 7<sup>th</sup> meeting onwards.
- Corridor Regions (CR) – equivalent to NUTS2 regions.
- Atlantic Rail Freight Corridor.

The 2<sup>nd</sup> Working Group meeting on Regions along the Atlantic CNC was held in Brussels on the 30<sup>th</sup> of September, followed by the 5<sup>th</sup> Corridor Forum meeting on the 1<sup>st</sup> of October. They were marked by a look-back exercise, focusing on the outcomes of the CEF Call 2015, and a forward-looking component, in which the contractor addressed the planning and objectives of the work now being initiated.

The Working Group meeting on the cross-border dimension took place on 28<sup>th</sup> – 29<sup>th</sup> October in Bordeaux. The first day of the meeting was devoted to infrastructural projects and planning for overcoming the borders between Portugal, Spain and France along the Atlantic Corridor with the second day being focused on the actors on the ground: Rail Freight Corridors, Regions & intra-regional cooperation, logistic platforms & ports. A Ministerial session with the signature of contracts for newly funded CEF projects was held in advance to the Working Group meeting.

The 2<sup>nd</sup> Working Group meeting on Ports and Inland Waterways and 6<sup>th</sup> Corridor Forum meeting took place on the 10<sup>th</sup> and 11<sup>th</sup> of December. An overview of the developments of the corridor work over the last months, focusing particularly on introducing the process to define common and corridor specific KPIs, were done together with the presentation of elements that are part of the corridor mapping exercise. Other main relevant topics discussed refer to governance issues, notably: update on the WG on cross-border; feedback from the Ports WG and an overview of the structured cooperation groups (Portugal-Spain and Spain-France).

A Joint Working Group on ports, inland waterways and logistics of the Atlantic Corridor and North Sea – Mediterranean Corridor was held in Paris on the 9<sup>th</sup> and 10<sup>th</sup> March, bringing together the stakeholders for both corridors. Three main topics were discussed: integration of networks in urban nodes for sustainable logistics, financing of transport infrastructures with best practices of blending and pooling, large ports and their role in modal integration. Several examples of sustainable urban logistics in the biggest urban node of the two corridors, as well as innovative projects contributing to decarbonising transport were presented. A debate on project financing, with specific focus on blending, (i.e. mixing funding and financing) from long term infrastructure investors took place, with the involvement of the EIB. The cases of Calais, Dublin ports and Spain's fund for port accessibility were presented, the latter being an effective example of pooling which allows for the financing of smaller projects. In the second day, a visit to Le Havre showed the new challenges and potential role of a major port in the corridor.

On the 15<sup>th</sup> March, the 7<sup>th</sup> Corridor Forum meeting took place, counting for the first time with core rail-road terminals stakeholders. The agenda included the presentation of a final set of harmonised Key Performance Indicators (KPI), including the corridor-specific ones and the draft corridor mapping exercise (as discussed with Member State representatives). In addition, the following steps of the corridor's development were discussed; the consultants' consortium also introduced the subject on the multimodal transport and of multimodal platforms along the corridor, according to the Coordinator's challenge raised during the 6<sup>th</sup> CF meeting. On the Governance issues, Portugal, Spain and France provided an overview on the update on structured cooperation. The progress since the end of last year was not entirely achieved, but both WG expressed the intention to continue the collaboration efforts. Progress on the RFC Atlantic was briefly presented, showing, in particular, the new rail information system available for the RFC – the Customer Information Platform (CIP) and Train Information System (RNE-TIS) – which





were shown in real-time. Moreover, the new communication team was introduced and TEN-T days and Issues Papers planning exchanged with participants.

In order to ensure a harmonised launch of the corridor, several coordination meetings have taken place, as well as international events, bilateral with Member States (with missions to Paris, Madrid, Lisboa, Berlin and Oporto) and joint meetings with key stakeholders. Moreover, a close coordination with the Rail Freight Corridor, notably in the establishment of main milestones, as is the signature of the Germany corridor extension, has been maintained, as well as enriched by the presence of RFC Manager Director in all the Atlantic Forum activities.

### **Technical support**

The European Coordinator and the Member States in the Corridor Fora are supported by a consortium of consultancy companies contracted by the European Commission. In its essence, the contractors for the new studies keep the same composition as in the 2014 studies, with TIS.pt (Portugal) as team leader, INECO (Spain), EGIS (France), endowed with M-FIVE (Germany), BG Ingenieurs (France) and Panteia (Netherlands) also as partners.

### **2015-2017 corridor studies**

The new studies build upon the work carried out in 2014. As before, the process is guided by regular Corridor Forum (CF) meetings and Working Group meetings. The meetings of the Corridor Forum are used to receive feedback on draft results, to get further input and to validate consolidated results. Overall, studies aim to provide technical support to the European Coordinator to develop the corridor Work Plan.

The work is taking stock of the results of the 2014 study, further developing the set of the projects identified at this stage along the corridor, and paving the way for an updated corridor work plan addressing all the elements foreseen by Article 47 of EU Regulation 1315/2013. Elements such as economic impacts of individual projects at corridor level, synchronised implementation of projects, notably cross-border ones, environmental impacts (e.g.: noise and greenhouse gas emissions), cohesion, job creation<sup>1</sup>, innovation and innovative financing require further developments.

The studies should also provide the European Coordinator with the basis for quantifying the benefits lost if a project is not carried forward. Thus, it is necessary to provide frameworks for estimating the likely impacts of a project, and the network benefits arising from projects applied in combination.

Topics such as (1) innovation deployment; (2) impact of climate change on existing infrastructure; and (3) impacts of corridor deployment on GHG emissions, noise and other negative environmental impacts of transport will be object of specific analysis along corridor studies.

Such a wide approach also benefits and feeds the ongoing consultation exercises in the so-called "Issues Papers" of European Coordinators, which aim at stimulating and supporting forward-looking transport policy solutions along topics of multi-modal and efficient freight logistics, intelligent transport systems, innovation - including alternative fuel infrastructure -, urban nodes and cooperation with third countries, whose projects may broaden the range of potential cases for the use of new financial schemes.

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<sup>1</sup> already object of analysis in the study on "Costs of non-implementation of the TEN-T network"

Innovation in the context of the Atlantic corridor is extremely relevant for its external dimension, with three key issues arising as priorities for deployment and further derivation of transport and economic/strategic consequences:

- concerns that the long-term security of supply and the compliance with the two Emission Control Area (ECA), set by the MARPOL convention and to which the Atlantic coastline is directly connected, will lead to an enhanced Liquefied Natural Gas (LNG) deployment and, complementarily, to Shore Side Electricity development in ports: based on the pilot cases already present, an adequate planning for LNG deployment should be prepared for the Atlantic corridor in view of 2030 targets, from which economic analysis can be evaluated;
- boosting the maritime potential through innovation and simplification, notably by progressing on the systems and procedures to evolve e-maritime towards e-Freight and increasing the efficiency of the logistic chains using maritime transport (i.e. digitalization of freight transport), fields in which the Atlantic is already well advanced;
- the implementation of the so-called standard (UIC) gauge requires substantial works at the rail networks, which offers the opportunity to implement ERTMS as well. Therefore, the plans for ERTMS implementation will be looked at in detail.

Moreover, e-mobility corridors or road interoperability (as being deployed in ITS corridors with wide involvement of corridor countries) have a high innovation content in the Atlantic Corridor.

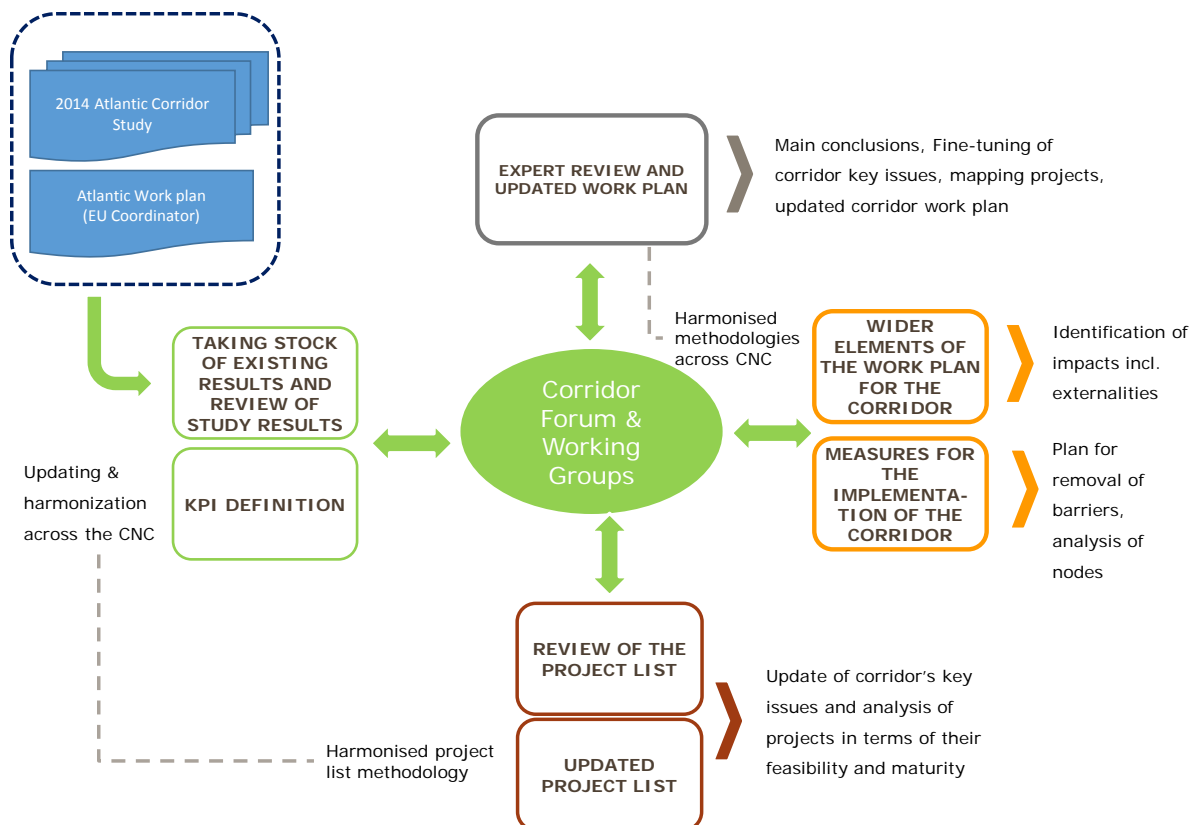


Figure 2: Main blocks of the Corridor studies approach

### Main Conclusions of the 2014 Study and Fine-tuning the aspects not fully covered



The Atlantic Corridor is characterised by an outstanding maritime dimension which is not yet fully exploited. Critical factors hindering interoperability and the seamless connection of modal networks lead to a situation of an unbalanced hinterland modal split, hindering the growth of the most efficient modes for long-distance transport.

Important critical issues were identified at corridor level, largely related to the rail infrastructure, and notably:

- the missing link between Évora and Caia in the border Portugal-Spain;
- different track gauges,
- electrification missing / mismatches
- and limited train lengths.

Moreover, improvements in landside access and last mile connections to ports are needed, with the majority of existing bottlenecks being related to rail. The interconnecting nodes are also affected by limitations, thus artificially broadening the role and market share of roads. Airport connectivity with TEN-T rail is also limited.

The IWW section (Seine river) reaches higher standards in its key parameters than the minimum levels set from Regulation (CEMT Class IV); some local bottlenecks were identified on locks and port access, that can be addressed by projects currently under evaluation.

LNG availability at Ports might limit the role of some Atlantic corridor ports in the near future, if a proper plan is not rolled out, exploiting the potential of the existing LNG terminals along the Atlantic coastline. It is worth noting that Member States are already envisaging efforts in this domain (i.e. Portugal and Spain are working together in a project which is developing the LNG plan).

Furthermore, the need for an overall planning for Rail-Road terminals, notably in the Iberia Peninsula, was also standing out as a critical issue.

Acknowledging those limiting factors, the 1<sup>st</sup> Work Plan referred that “the achievement of these objectives requires building-up a shared knowledge base and putting in practice trans-governance at corridor level” and suggested as priority areas of improvement for the ATL corridor:

- Harmonised planning for UIC gauge deployment on the Iberian Peninsula, proposing the set-up of a cross-border working group<sup>2</sup>;
- Addressing an overall interoperability plan for the Atlantic rail freight corridor;
- LNG deployment outlook;
- Overall corridor analysis, including the monitoring and revision of the market study, notably addressing the Corridor’s contribution to curbing GHG emissions and the Corridor’s overall impact on growth and jobs;
- Comparative analysis on logistic platforms (primarily, but not exclusively, rail-road terminals): structure, services, competitive factors and best practices.

Moreover, a number of areas for further analysis had already been noted in the 2014 Work Plan and are currently being addressed, such as:

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<sup>2</sup> It is worth noting that the setting up of a joint working group at technical level between ES and PT as well as between ES and FR had already presented the progress of respective developments in the working group meeting on cross border dimension (Bordeaux, 30 October 2015).



- Core network branches connected to the corridor (additionally to corridor components)<sup>3</sup>;
- Corridor overlaps and networking synergies, focusing on specific contributions<sup>4</sup>;
- Evaluation of potential demand (as resulting from corridor opportunities) to feed the existing market analysis<sup>5</sup>;
- The Corridor's contribution to curbing GHG emissions and the Corridor's overall impact on growth and jobs.

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<sup>3</sup> Core ports in North-West Spain (Gijón/A Coruña), in the South-West (Huelva) and Canarias (Las Palmas/Tenerife), Nantes-Saint-Nazaire, Douro river and Seine-Sud.

<sup>4</sup> For instance, synergies with NSMED include the Paris node (notably IWW and rail access and crossing), the link between the Seine and the Canal Seine-Scheldt, to be seen as a whole, but also the evaluation of serving the Luxembourg logistic hub from Metz along the NSMED corridor by rail to/from the Atlantic Coastline and the Iberian Peninsula, in cooperation with the Atlantic RFC. Moreover, an example of networking synergy with the Atlantic Corridor is the Minho line focusing on its specific position in the hinterland of the port of Leixões and in their importance to the economic relations between this port and the Minho region (PT) with and Galicia (ES), and notably with the core ports in North- West Spain above mentioned.

<sup>5</sup> Dedicated Market Analysis is not included in the scope of current studies, however studies are being revamped with new elements

## Characteristics of the Atlantic Corridor

### Corridor alignment

The corridor's alignment is defined by Regulation 1316/2013 in its annex as follows:

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



**Figure 3: The Atlantic corridor and its nodes**

The Paris – Rouen - Le Havre branch is three-modal, involving rail, road, and the Seine – IWW; the connection links the North Sea to the Corridor.

The corridor does not have a road component in Germany.

The Atlantic Corridor has 4 cross-border sections:

- DE-FR: Metz – Mannheim (Forbach-Saarbrücken)
- ES-FR: Vitoria-Dax (San Sebastián – Bayonne)
- PT-ES: Évora-Mérida
- PT-ES: Aveiro-Salamanca



## **Compliance with the technical infrastructure parameters of the TEN-T guidelines (including KPI's analysis results)**

Key Performance Indicators (KPIs) are being used within the 2015-2017 Core Network Corridor (CNC) studies to assess and monitor the evolution of the corridors and the potential effects of individual projects or groups of projects upon infrastructure interoperability and performance. A common or 'generic' KPI framework has been developed for all nine corridors, in order to permit comparability across the whole network.

This approach includes generic indicators (applying across all corridors), and corridor-specific indicators which are tailored to individual circumstances. For the Atlantic corridor, two corridor-specific KPIs with a subset of measurement methods, were defined, which reflect strategic issues at corridor-level:

- the progress in terms of rail interoperability, notably for UIC gauge deployment, and,
- the specificity of the Atlantic maritime dimension, which can be seen as almost a sea corridor-wide route parallel to the land corridors.

The assessment of compliance presented below refers to the status of infrastructure as in the 2014 studies, taking into consideration recent developments whenever they affect the results. Core network sections which were not yet operational have not been considered in the compliance analysis.

### **The Atlantic Railways Network**

The core railway network covers an extension of 7616 km, of which 5666 km (74%) are in operation. Important stretches of the corridor are under construction, such as the Y Basque, Tour-Bordeaux or Remilly - Strasbourg (opened the 3<sup>rd</sup> of July). Works are expected to start before the end of 2016 for the missing link Évora-Caia in the border PT-ES.

Due to the withdrawal of the only Core Network Section linking Grândola with the Core Port of Sines, following the outcome of the environmental studies, it shall be acknowledged that the only possible rail access to the Port of Sines takes place through the existing TEN-T rail line Sines-Ermidas do Sado-Grândola (in Portugal), although belonging to the comprehensive network. It was therefore necessary to include it in the network analysis for the sake of consistency with the Core Network methodology, and to ensure the achievements of the Corridor's objectives.

High speed passenger lines belonging to the corridor include the following stretches in Spain: Madrid-Córdoba-Antequera, Madrid-Valladolid-Venta de Baños, and Venta de Baños-Burgos-Vitoria (under construction), Madrid-Extremadura (under construction), the Y Basque (under construction); in France, the corridor high speed component is represented by the GPSO (planned), Tours-Bordeaux (under construction), Tours-Paris-Strasbourg (LGV Est) and Metz (Saarbrücken)-Mannheim. The Y-Basque will therefore ensure gauge continuity for passenger flows from Germany towards Spain.

Regulation 1315/2013 established several infrastructure-related parameters: gauge, electrification, train length, axle load and line speed as well as ERTMS in operation. Mixed lines are considered for compliance with the whole set of freight-related parameters. The assessment of compliance for 2014 is performed only for the corridor sections in operation.



### Electrification

Core rail network complies with the electrification criteria in 87% of its extension. Sections still not electrified are located in both cross-border connections Spain to Portugal (both with works ongoing), on the non-electrified section of the conventional railway Bobadilla-Algeciras (planned to be ready before 2030) and in France for the Gisors – Serqueux section (the electrification project has received CEF funding and is planned to be ready before 2030)<sup>6</sup>.

Although just 13% of the core network is not electrified, various types of voltage (25 kV AC in Portuguese network and 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) coexist, requiring the use of multi-tension rolling stock or changing locomotives at borders, thus reducing transport efficiency. It should however be noted that ongoing electrification of cross-border sections in Spain is at 25 kV, adopting the same standard as in Portugal and in high-speed lines in Spain and France.

### Track gauge

Harmonised planning for UIC gauge deployment on the Iberian Peninsula represents one of the key actions established in the 2014 work plan; the start-up of an intergovernmental cross-border working group on interoperability is a major step in the right direction.

Currently, only 56% of Atlantic core railways dispose of a standard European gauge. Planned interventions will allow extending this coverage to nearly 74% by 2030, connecting all border crossing in UIC gauge.

### ERTMS

Overall, ERTMS implementation in the corridor is very low, with just 7% of the rail network fulfilling the criteria. The Work plan on ERTMS provides further information on this aspect and targets to be achieved.

### Line speed > 100km /h for freight lines

Line speed above 100 km/h for freight lines is accomplished on 96% of the corridor extension. Currently, non-compliant sections are present in France (Motteville – Montérolier-Buchy and some short links in the Paris and Bordeaux nodes), in Spain (Bilbao - Puerto de Bilbao) and in Portugal (sections connecting the core ports of Leixões and Lisboa). It is expected that interventions planned will ensure a generalised compliance by 2030 with few punctual exceptions; for the remaining cases, mostly in urban areas, a careful assessment of costs and benefits for the corridor arising from their removal have to be assessed case-by-case.

### Axle Load

The Corridor is fully compliant in all its extension (on its freight component) with minimum axle load of 22.5 tonnes.

### Train Length

The compliance rate with the 740-m train length on rail freight lines equals 57%, therefore representing a clear limiting factor for freight operation in the Iberian Peninsula, notably in Spain. Currently, the maximum freight train length in the Spanish Atlantic Corridor sections is 550 m and it is reduced to 400-420 m in several stretches, e.g. in the Badajoz-Aljucén section. In Portugal, all sections connecting to the core ports as well as the “Beira Alta” line are non-compliant.

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<sup>6</sup> Additionally, interoperable catenary isn't available between Bordeaux and Bayonne: catenary renewal is planned at short and medium term.



Ongoing and planned interventions along the network will ensure full compliance of this criteria by 2030. Despite the fact that all the French and German sections comply with these criteria, timetable related / operational restrictions may have influence on the possible train length.

#### Other limiting factors

Loading gauges limit the size of wagons and containers that could be conveyed on the railway sections. Along the corridor, different loading gauges coexist, acting as a constraint towards a harmonised rail network and impacting on rail freight performance. Some tunnels between Paris-Bordeaux-Spain border and Paris - Metz do not meet loading gauge requirements (B+) for rolling motorways and for transport of high cubes containers. Therefore, for the deployment of rolling motorways services, the use of the line through Saintes and Niort is at this time mandatory. In addition, some single track and non-electrified sections on this line constrain operation performances and service level. Works for the enlargement of tunnels cannot start before the achievement of the new line between Bordeaux and Tours, due to an important passenger transport along the line.

Although the track gradient is not included in the requirements for core network rail by 2030, sections of the corridor in Portugal<sup>7</sup> and Spain<sup>8</sup> present relatively high gradients (maximum values) which might constraint trains weight and length or require multiple traction.

Being the deployment of UIC gauge a strategic issue, corridor specific KPI's were defined to closely follow the progress, as presented below.

Mode	KPI	Unit	2014	2020	2030	2050
Rail network	Core Nodes connected in UIC gauge*					
	Freight	Nr	8	9	17	19
	Passengers		12	13	15	19
	Border crossing points connected in UIC gauge	Nr	1	2	4	4
	Cross border extension connected in UIC gauge					
	Freight	index	100	105,7	166,8	
	Passengers	(km year x) / (km 2014) x 100	100	120,7	181,8	

#### **The Atlantic IWW Network and the Inland Ports**

The Seine River, comprising the whole sections Le Havre – Paris, is the only inland waterway integrating the Atlantic Corridor.

North of Paris, the Corridor is linked with the planned Canal Seine-Scheldt, included in the North Sea – Mediterranean Corridor.

<sup>7</sup> i.e. Pampihosa- Guarda - 20,7‰, Sines – Ermidas Sado - 20‰, Contumil-Leixões - 15,6‰

<sup>8</sup> i.e. Bobadilla-Algeciras - 24‰, Fuentes de Oñoro – Salamanca - 18‰, Madrid-Ávila - 18‰, Vitoria-Irún (notably Alsasua-San Sebastian) -18‰





The Seine river section, included in the Atlantic Corridor, already reaches higher standards than the minimum established by Regulation (EU) 1315/2013, with only a partial completion of RIS implementation along all sections to be achieved (ongoing activity). Although the Seine is compliant from Paris to the sea, there is an issue of low bridges in Paris limiting the height of container barges. This issue can't be solved due to the historic value of Paris bridges.

In spite of this, several local bottlenecks were identified, notably on locks and port access, and a set of measures were planned to address those critical issues. It is worth recalling that the broader TEN-T includes, within the NSMED corridor, the navigable waterway from Paris via the Seine/Oise and Scheldt 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 has been an important point identifying common projects and synergies.

This section includes three core network ports; Le Havre, Rouen (which are both Sea and IWW ports) and Paris, presented as HaRoPa ports. Other inland ports in the Atlantic are Bordeaux, Strasbourg, Metz and Mannheim. In total, the corridor counts with seven inland core ports.

With regard to inland waterways, ports are already compliant with the minimum criteria established in the Regulation. All ports are connected to IWW class Vb and to the rail network.

Nevertheless, there are still critical limitations in those inland connections, such as the electrification of the Gisors-Serqueux rail stretches connecting the ports of Le Havre and Rouen, or the IWW connectivity to the new Port XXI in Le Havre, which are being addressed in ongoing and planned projects.

The availability of clean fuels, currently limited to Mannheim, is being object of several studies and works and compliance might be achieved before 2030.

### **The Atlantic Maritime Infrastructure and Motorways of the Sea**

The maritime dimension is of utmost importance in the Atlantic Corridor. The joint throughput of the 8 core seaports in the Atlantic (Algeciras, Sines, Lisboa, Leixões, Bilbao, Bordeaux, Le Havre and Rouen) reached more than 259 million tonnes in 2014, with an overall magnitude of more than 350 million if considering the seaports along the Atlantic front. The importance of complementarity between the seaports along the coastline (core and comprehensive) must be stressed, in synergy with the deployment of maritime links through Motorways of the Sea (e.g.: Atlantis MoS project) that can help tackling inland bottlenecks and provide energy-efficient transport operations.

Intra corridor maritime flows (country level) represented, in 2014, nearly 120 million tons, clearly demonstrating the importance of ports in the Atlantic.



The connection of ports with other modes, in particular rail (and inland waterways) is critical to guarantee the capacity for freight traffic to and from the economic regions along the corridor and to promote port competitiveness and strengthen hinterland connections. The main limiting factors and bottlenecks in the port areas, which need to be overcome for further growth, relate to three main issues: capacity, connectivity and multimodality. Several projects in the corridor work plan address these bottlenecks.

Many ports are operating near capacity, thus facing the need to expand their facilities and upgrade port infrastructure and maritime accesses to cope with the expected growth in demand. The ports sector is showing fairly consistent growth expectations. This is 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 is expected to be continued in the future due to the Panama Canal widening.

#### Connection to rail

Although all ports in the corridor are connected to rail, improvements in land access and last mile connections to ports are needed: both in Portugal and Spain, the upgrade of rail connections and rail freight terminals to allow 740 m trains to access the ports is critical. Similarly, as previously stated, electrification is missing along the railway line connecting to the Core port of Algeciras (the largest seaport by volume in the corridor), as well as the section Gisor-Serqueux serving the Core port of Le Havre.

Moreover, rail connection to the port of Sines (third port in volume in the corridor and the first in terms of rail share for container hinterland traffics) is currently done through the comprehensive sections Sines – Ermidas -Grândola, in a single track line, limited train length and 20 ‰ gradient. Building a new line has been rejected on environmental impact ground; in order to ensure a satisfactory inland connection of the core port of Sines it is therefore critical to enhance the existing line to the required performance parameters and interoperability.

#### Connection to IWW

All French ports have an inland waterway connection, class Vb. The port of Leixões also has an indirect connection to the inland waterways of the Douro river (class IV), however, in regards to cargo, these are not exploited to their potential, namely due to existing navigation bottlenecks along the Douro River (core IWW but not in corridor), which are being addressed in ongoing projects. Additionally, the port of Lisbon is studying the navigability of the Tagus estuary to Castanheira do Ribatejo.

#### Availability of clean fuels

LNG deployment is taking place along the corridor with several projects running, but actual compliance is just 13%.

Viability studies for the availability of ship to shore electricity are also ongoing. Moreover, the National Action Plans under the Clean Power Directive will contribute to a more concrete evaluation of compliance by 2030.

#### Availability of at least one open terminal

Article 22.1.b) highlights that ports should ensure that at least one terminal is open and there is no discriminatory access. All ports currently meet this criterion.

#### Facilities for ship generated waste

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



## Motorways of the Sea

The MoS development is particularly relevant to the Atlantic Corridor, though its potential is not yet fully exploited. Nevertheless, a reasonable number of successful MoS and SSS regular lines from the Atlantic ports are already in operation, as noted in 2014 Work Plan.

Benefitting from CEF funding, new MoS projects involving Atlantic ports have started in 2014:

- The new Atlantis MoS project, funded under the CEF 2014, connecting the ports of Leixões, Brest and Liverpool, brings the subject of port communities and common single windows to the forefront in order to support the launch of new MoS services (RoRo & LoLo) between these 3 ports / countries. It includes preparatory studies (e.g. rail connections, ICT) in each port and their hinterland, governance scheme, legal platform and innovative financial tools in support to MoS services
- The Med-Atlantic Ecobonus project, funded under the CEF 2014, is a feasibility study between the Ministries of Transport of Spain, France, Italy and Portugal. It aims at analysing the viability of a new coordinated incentive scheme to demand for Motorways of the Sea, to favour of sea-based routes and with clear environmental benefits. A feature of the study is to achieve consensus in scope and financial terms among the involved MSs, EC and stakeholders in the Atlantic and West Mediterranean markets.
- Sustainable LNG Operations for Ports and Shipping - Innovative Pilot Actions (GAINN4MOS), focus on LNG deployment from studies, plans, construction drawings of LNG retrofitted prototype vessels and bunkering stations at core ports. In Portugal, the Port of Leixões (as well as the island ports of Madeira and Azores), together with private corporations, are involved in the studies for, respectively, a port tugboat, two Ropax and a General cargo vessel. Furthermore, a LNG break bulking station for truck loading services will be set up at the LNG terminal in Nantes Saint-Nazaire.
- STM Validation Project, aiming to further test and validate the concept of Sea Traffic Management (STM) already defined in previous TEN-T projects, involving corridor MS.
- The CORE LNGas Hive, including studies and pilot actions to develop LNG infrastructures in the ports of the corridor (including also ports in a wider influence area) and to establish the Spanish national plan as foreseen in the Directive 94/2004, in articulation with Portugal.

Additionally, from CEF 2015, new MoS projects have been awarded, as it is the case for Gijón- Nantes and Vigo-Nantes.

Since March of 2016, the study on the TEN-T MoS Horizontal priority is developed with workshops on the three key priorities established: environment, integration of maritime transport in the logistics chain and human element, safety and traffic management.

The progress of MoS studies and a close articulation between corridor work plan and MoS Detailed Implementation Plan notably in view of guaranteeing consistency of analysis for the ports, particularly considering its global business and flexible character, will be closely followed.

## The Atlantic Road Infrastructure

The Atlantic Corridor is characterised by the high quality of the existing road network, 99,8% of which fulfils the TEN-T class requirements (motorways or express roads). The exception to this accomplishment is the cross-border stretch ES-PT through Vilar Formoso, expected to be upgraded in short term on both sides of the border.

Actions for road LNG deployment in the corridor are currently ongoing, and it is expected that the actual compliance rate for LNG and electric charging will increase soon, ensuring the accomplishment of the target by 2030. Availability of electric charging along the



corridor is also being planned: nevertheless, electric charging is available at large scale in urban nodes as well as along the main cities crossed by the corridor.

Moreover, interoperability of tolling systems is not yet fully achieved at corridor level. Some projects are addressing this issue.

### **The Atlantic Rail-Road Terminals**

The planning of the Atlantic rail-road terminals was one of the important topics addressed in our 7<sup>th</sup> Corridor Forum meeting. While the present situation is characterised by a very low modal share of rail along most of the corridor, and notably for long distance transport across the Pyrenees, the increase of rail traffic expected (already triggered by the Rail Freight Corridor) leads to a situation where further development of efficient RRT is needed.

As pointed out in the 2014 Work Plan, bottlenecks are mainly relevant for intermodal connectivity, of both road and rail, the latter being largely affected in Spain (and Portugal) as a consequence of limits on train lengths.

Moreover, additional rail-road terminals in the Atlantic Corridor are being defined, in order to take stock of the Corridor development, and to fully exploit the progressive deployment of UIC gauge network in the Iberian Peninsula.

RRT planning elements along the corridor have been discussed, focusing on the need for a common evaluation framework, so that the potential for these terminals can be assessed in relation with possible implementation of services between terminals, and between terminal and ports.

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.

In what concerns the compliance analysis, four KPIs were established in relation to Regulation: Capability for Intermodal (unitised) transshipment, 740 m train terminal accessibility, electrified train terminal accessibility and Availability of at least one freight terminal open to all operators in a non-discriminatory way and application of transparent charges. Until now, this assessment was not evaluated in detail.

### **The Atlantic Air Transport Infrastructure**

Airport infrastructure on the Atlantic Corridor is extremely important, with seven core airports ensuring international and intra-European connectivity. Due to long distances, in particular for Spain and Portugal, the vast majority of intra-EU passenger journeys takes place via airplane.

Four of the airports are considered main airports, notably Paris-Charles de Gaulle (the 2<sup>nd</sup> EU Airport), Madrid-Barajas (6<sup>th</sup> EU airport), Paris-Orly and Lisboa. As such, they are subject to the provisions of Art 41(3) of Reg. 1315/2013, which require them to have connections to both TEN-T road and rail and, where feasible, to include a high speed rail network, by 2050. Bordeaux, Porto and Bilbao are other core airports on the corridor.

Among the larger airports – Paris-CDG, Paris-Orly and Madrid-Barajas – only the first is currently connected to high speed rail (as well as with a suburban train connection to Paris - RER B); Paris Orly is connected to Paris with a suburban rail connection: the "Orlyval" links the airport to the RER B; Madrid-Barajas airport is linked through commuter rail ("Cercanias" line C1) and fast metro connections. Lisboa and Porto have metro connections, while no rail connection exists for Bordeaux and Bilbao airports.



Paris, Madrid and Lisboa airports are required to have a connection with core rail network by 2050, which is already planned through the foreseen new high speed UIC access from Chamartin railway station to the airport in the case of Madrid.

The compliance perspective on the alternative fuel availability in airports by 2030 is not clearly defined yet, although a feasibility study or specific information for the 2030 horizon is developed. Moreover, airports already have alternative clean fuels available for airport ground services and in airport parking stations. However, this deserves to be addressed more closely in the ongoing analysis.



## Results of the Multimodal transport market study (MTMS)

The transport market study has been developed by consultants in 2014 on the basis of existing trade data and recent modal market analyses, developed by different stakeholders and largely supported on the detailed data available at NUT 3 level from ETISplus databases. The study has been carried out with a macroeconomic multimodal approach, considered as the first step towards an accurate estimation of the impact of the completion of core network and the Atlantic Corridor on the transport market.

The starting point was to present a consistent approach for 4 interrelated corridors, and not just for the Atlantic corridor, referring to same data bases and scenarios. Then, two specific approaches of the "transport market" corridor have then been privileged,

- the international exchanges, with possible focus upon traffic at border points of the corridor;
- observations of densities of traffic on some points along the corridor and, in particular, to those with risk of congestion, taking into account also national traffic, including local traffic, for freight and passengers, with several node improvements already present in the projects foreseen along the corridor, in order to improve global performances of the corridor.

In doing so, maps of densities of traffic along the Atlantic corridor were indeed results of the European traffic assignments upon the TEN-T network, using the "lost decade" European socio-economic scenario, and expected TEN-T infrastructure<sup>9</sup> investments. But not all the new alternatives to road transport for services could be introduced and, in particular, Rail Motorways<sup>10</sup> and MOS services, as well as direct services from Spain and Portugal to Northern Europe, from/to RRT terminals.

The fundamentals of MTMS remain unchanged, being however important to take stock of them as a baseline scenario which does not include the development of ad-hoc policies heading towards a modal re-balance.

New studies have been made available since the definition of the first phase of corridor studies. For France, there are more updated projections at national level; in the case of Germany, remarkably, the Federal Transport Infrastructure Plan for 2030 has been adopted by the Federal Cabinet on the 3<sup>rd</sup> of August 2016. In addition, projections related to the evaluation process of large projects, with common references for socioeconomic and transport context, have been made available.

Concerning RRT, State and Region of Ile de France carried out a study for the development of combined transport platforms and rolling motorways terminals, starting from a diagnosis of limited offer of intermodal services as regards potential of transport.

At corridor level, among the regular publications of the Atlantic RFC, the CID (Corridor Information Document) is issued every year. In addition, several studies were carried but not yet published, notably:

- Impact of infrastructure investments upon rail operation performances;
- Development of Rail Motorways

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<sup>9</sup> With possible evolutions of operating cost for modes.

<sup>10</sup> These are supposed in national studies to generate important transfers from road to rail along the Atlantic corridors.



- Impact of Atlantic port's development on international rail freight traffic

In Spain, the national Plan for transport for the period 2012-2024, PITVI, has been approved in May 2015. The German Federal Transport Infrastructure Plan (BVWP) for 2030 builds on an analysis of expected goods flow for defining the Federal Government's transport infrastructure investments. Demand data is available in the form of OD matrices for two time slices: for 2010 and 2030.

Three transport modes are considered: rail, road and inland waterways. Furthermore, it allows for an analysis of intermodal transport chains and a detailed analysis of goods categories, which are based on NST2007. Data for 2010 is calibrated against official statistics, especially the German Transport in Figures ('Verkehr in Zahlen', ViZ).

**Table 1: Flow of goods to Germany, by mode, forecast for 2030, Bundesverkehrswegeplan 2030**

1000 t	Train	Truck	Waterways	Total
Paris	18	641	7	666
West France <sup>11</sup>	244	1,482	5	1,732
East France <sup>12</sup>	613	9,666	2,790	13,070
Spain	552	3,078		3,630
Portugal		600		600
<b>Total</b>	<b>1,428</b>	<b>15,467</b>	<b>2,802</b>	<b>19,697</b>

Source: own compilation based on BVWP 2030

## Evolutions in the corridor profile

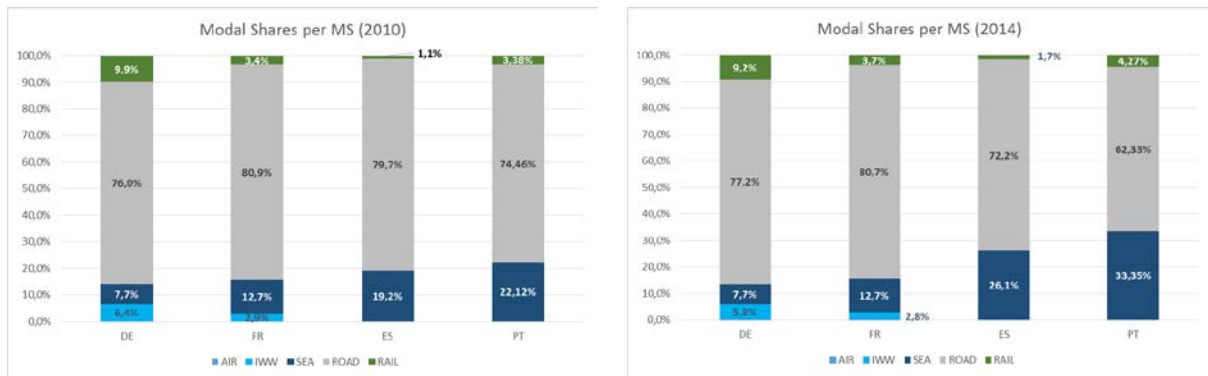
From 2010 to 2014, population in the corridor regions has seen a very moderate growth from 54 million to 54,5 million, with German corridor regions decreasing almost 8%. GDP has increased 1,5% in average, with German corridor regions showing 8% and France 5,3% increases, while Spain decreased 4,2% and Portugal decreased 5%. Employment on the corridor regions shows a global decrease of 5% (German regions growing 5% while French corridor regions decrease 2%, Spanish regions 10% and Portuguese regions 8%) from 2010 to 2014.

The full update of the analysis of corridor flows at regional level was not possible in the short time frame of current studies, but an analysis of modal shares at MS level and between corridor countries already shows interesting patterns.

From 2010 to 2014, road traffic has reduced significantly in Portugal and Spain (though still being the predominant mode), with very positive results on the modal shares for maritime and rail, while in Germany and France shares remain rather similar although, in Germany, both IWW and rail modes shares decreased while road increased.

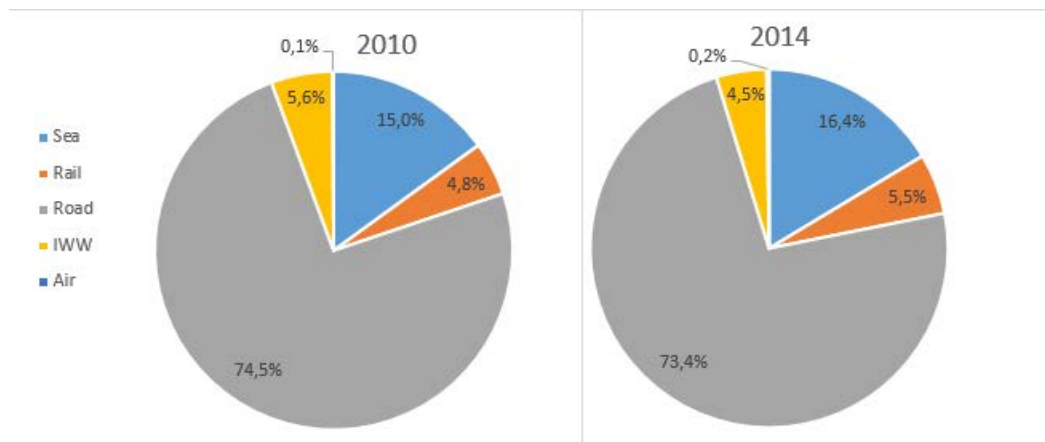
<sup>11</sup> "West France" includes the Hexagon Sud-Ouest, Normandie/Centre and Ouest

<sup>12</sup> "East France" includes Metz/Moselle, Strasbourg/ Bas Rhin, Nancy/Lothringen Süd/West, Picardie and Champagne/Ardenne



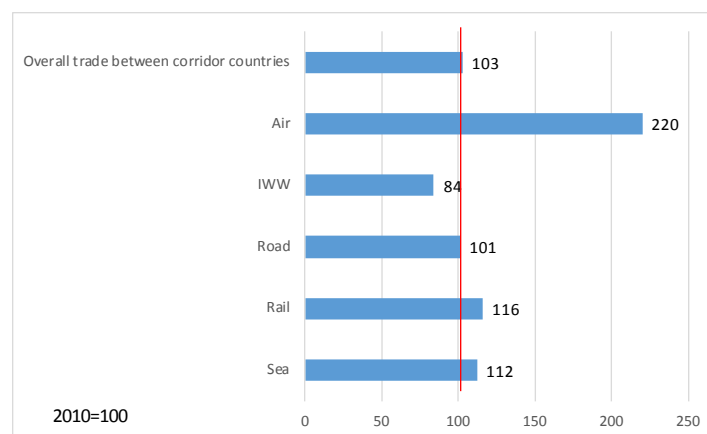
Source: Eurostat, Goods transported, by type of transport (2010 and 2014)

Globally, trade exchanged between the corridor countries has slightly increased from 156,7 to 160,7 billion tones. Although just representing nearly 0,2% of total flows between corridor countries, the air freight flows had more than duplicated in the period. Road freight grows at a lower rate than other modes and globally reduces its share from 74,5% to 73,4% with both rail and sea increasing their shares to 5,5% and 16,4%, respectively.



The data examined refer to global trade exchanged between the four corridor countries, thus also including flows from other core network corridors, notably Mediterranean and NS Mediterranean as well as sections within countries not belonging to the CNC.

The figure below highlights the behaviour of each mode between 2010 (index=100) and 2014.



Source: Eurostat



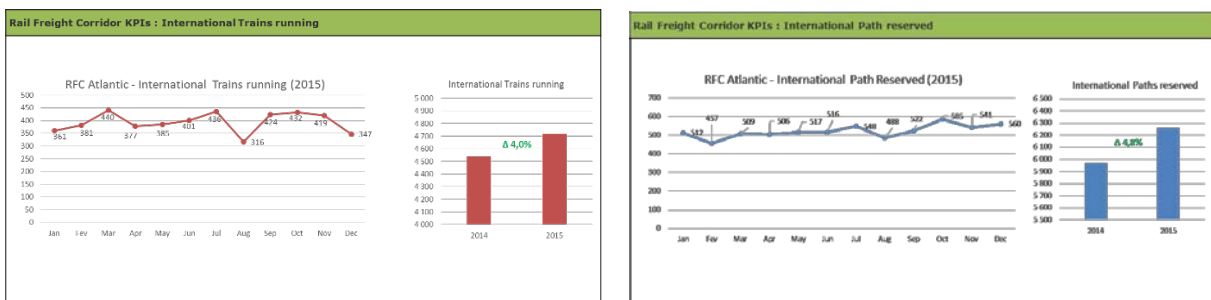


Specifically for rail, it is remarkable the trend of the international flows between Portugal and Spain, which almost duplicated from 2010 to 2014, but also those between Spain and France, with an increase of more than 30%<sup>13</sup>. The positive trend for rail freight in this period, which is not yet benefitting from the ongoing and planned infrastructure works (i.e. interoperability) and services (i.e. Rolling Motorway), gives a good sign for the Atlantic corridor.

2010					2012					2014					Evolution 2010-2014					
	DE	FR	ES	PT		DE	FR	ES	PT		DE	FR	ES	PT		DE	FR	ES	PT	
DE																				
FR	1 737	2 295	607	0	1 734	2 385	611	20	0	1 680	3 139	684	0	0		-3%	37%	13%		
ES	617	310		399	767	379		529		806	402		829			31%	30%		108%	
PT	0	0	459		21	0	501			0	0	867						89%		

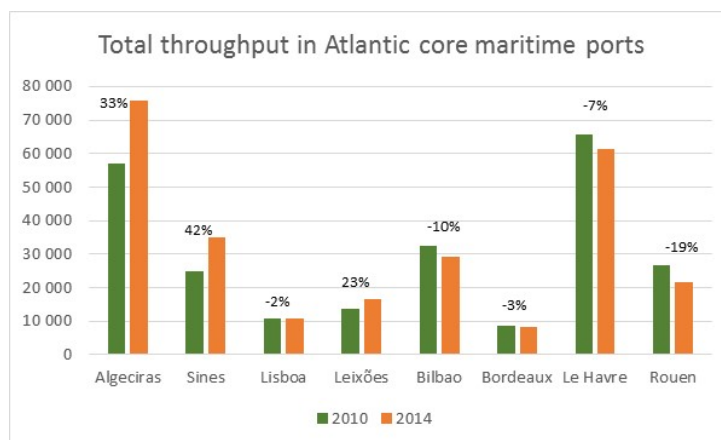
Source: Eurostat

Looking at the international freight traffic, as monitored by the Atlantic Rail Freight Corridor in 2014 and 2015, we can also observe that the number of international trains running increased from 4539 to 4719 (4%), while the number of international PaPs reserved increased from 5973 to 6291 (4,6%). It is worth noting that this monitoring is performed in the Portuguese/Spanish border and in the Spanish/French border, and only from 2017 onwards will it start to be monitored also on the French/German border of Forbach/Saarbrucken.



Source: Atlantic Rail Freight Corridor, 2015

For the maritime mode, a sharp increase was observed in 2014, when the total freight volume passing through the core ports increased by 8%, reaching 259 million tons (239 in 2010), supported by the growth of Algeciras, Sines and Leixões, with other core ports losing traffic, as well as in 2015, when provisional data show a more sustained trend for the Atlantic Ports, bringing the total output close to 300 MT (291 MT).



<sup>13</sup> Noteworthy, this increase concerned not only the Atlantic corridor; it also affects sections not belonging to CNCs as well as parts of the Mediterranean corridor (Spain-France)

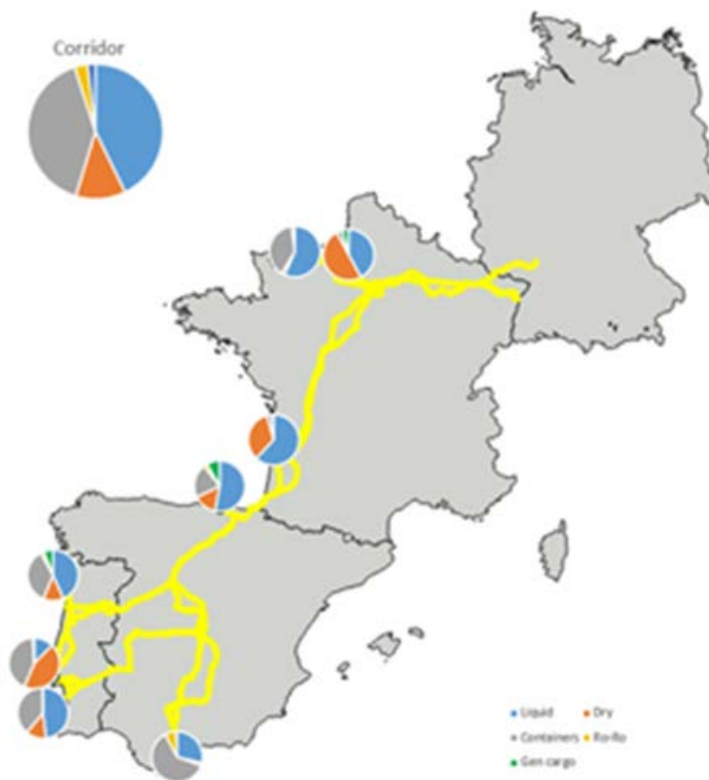
Source: Eurostat, 2014

The next figure highlights the breakdown of traffic per type in the Atlantic ports in 2014.

Liquid bulk traffic represents 43% of the total traffic serving local refineries by pipeline or serving petrochemical industries close to the port areas, representing the major type of traffic for Bordeaux, Le Havre, Bilbao, Leixões and Sines.

Dry bulk traffic (12%) mainly concern cereals, coal imports and steel production. Ores or building materials are also relevant for Atlantic ports. Other General Cargo traffic has an important role in Bilbao, Leixões and Rouen and Roll on Roll off traffic for Algeciras, Bilbao and Le Havre, though, together, these two represent only 5% of total Ro-ro traffic in the Atlantic ports.

Container traffic (40% of total) in the Atlantic CNC ports is mainly captured by Le Havre, Algeciras and Sines, all ports with a strong transshipment profile.



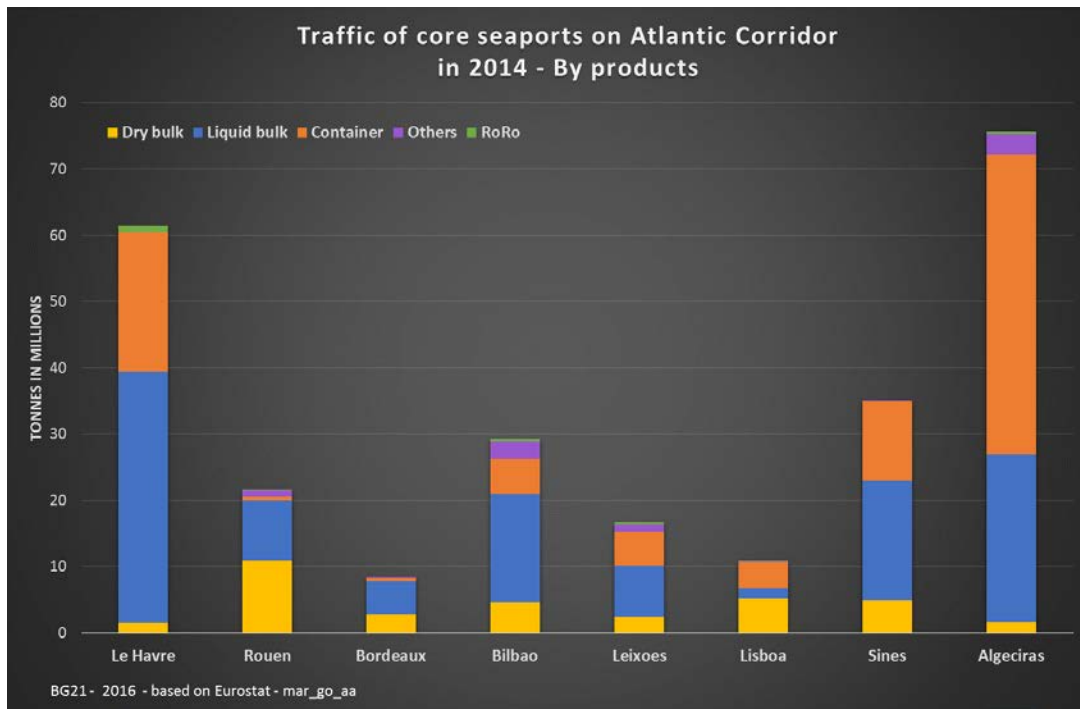
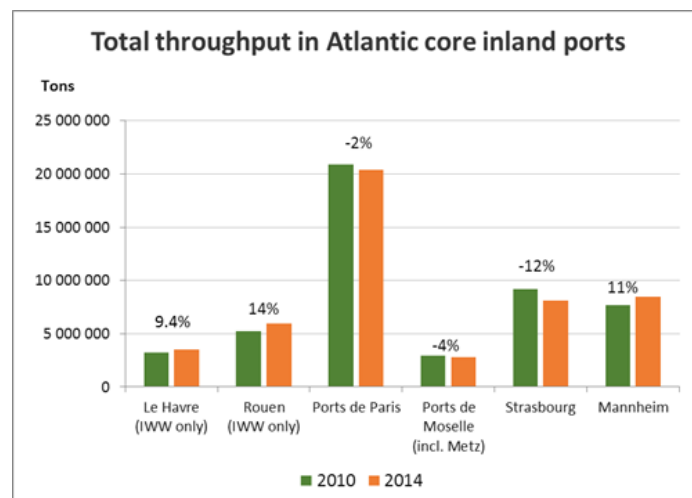


Figure 4 - Traffic flows per product, 2014

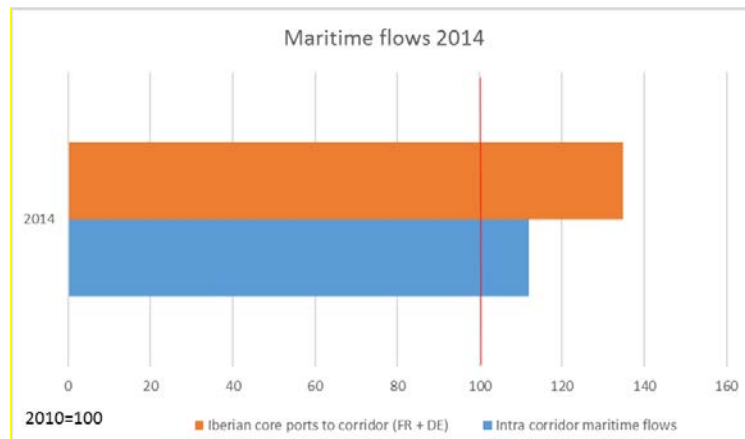
The maritime transport of container development is important for the evolution of traffic along the corridor, with a rail market which is already fairly well structured within the Iberian Peninsula for services to/from ports, including relations between Spain and Portugal.

With regards to the inland waterways, in 2014, freight traffic on the Seine River has reached 230.000 TEUs.

Total inland ports throughput amounts to 49.6 million tons and has been stable between 2010 and 2014 with a change of -1% over 3 years. This hides differences between ports. The two ports showing the highest growth in inland traffic over this period are the ports of Rouen (+14%) and Mannheim (+11%), Le Havre (+9,4%). Data for other ports reveal minor decreases in traffic at Ports de Paris (-2%), Ports de la Moselle (-4%) and Strasbourg (-12%).



As shown, intra corridor maritime flows had grown at a good pace from 2010 to 2014 (23,5 Mt to 26,3 Mt), being this trend particularly remarkable when looking to the flows from the Iberian core seaports towards France and Germany, as presented in the next figure. Worth noting that intra corridor maritime flows were collected as one of the corridor specific KPI, i.e. selected KPI highlighting strategic issues for the corridor, as it the case of its maritime dimension.



Source: Eurostat

### Progressing with MTMS

A study developed in 2015 for the RFC on the “Impact of Atlantic ports’ development on international rail freight traffic” showed that rail traffic represent a hinterland market share of 12% (13 MT), with the highest share observed in Portugal (19%), Spain (10%), and the weakest in France (8%), and that, on the whole Atlantic Corridor, rail pre post haulages concern mainly dry bulk and container traffic (5 MT each of them) which covers the two thirds of its market. General cargo and liquid bulk are both secondary markets with traffic between 1 and 2 MT for each of them. The main container rail services are operated in Sines (2 MT), where the handled volumes permit economies of scale and intermodal services development, despite the high transshipment rate. Le Havre and Bilbao reach nearly 1 MT and, to a lower extent, Algeciras, Leixões and Lisboa dispatch 0.5 MT on rail intermodal services.

However, for reasons of flexibility and ability to adapt more quickly to the demand of freight clients, the main origin-destinations in volume on the short distance are captured by the road mode, due also to the barrier existing in cross-border railways. The deviation potential remains significant for mid or long distance destinations, where the rail is already positioned or could benefit from multi-client intermodal services for containers and trailers (Algeciras, Le Havre). Together, long distance (over 400km) potential market amounts, as a whole, to 10.6 MT, of which 17% are from/to French Ports, 26% from/to Spanish Ports and 56% from/to Portuguese ports. On this market, rail currently captures 53% of French ports tonnages, 32% of Spanish ports, and only 23% of Portuguese ports.

For the Atlantic corridor it must be kept in mind that major changes are indeed expected since:

- for the base year, alternative modes do not perform very well against road due to major interoperability problems;
- part of these problems are expected to be solved with major investment projects for alternative modes, including development of new techniques such as Rail Motorways and MOS services, while others can be overcome with operational arrangements between infrastructure managers and with innovative administrative tools;



- and that the relative importance of very long distance international transport along the corridor, compared to the existing situation in other corridors, calls, in addition, for innovative organizational solution opportunities, with the development of transport hubs and multimodal logistic platforms.

For instance, the Traffic Market Study (TMS), realized by the RFC in 2014/2015 showed a high demand level for new rolling motorway services on the Atlantic corridor of 2 million tons per year (equivalent to 4000 trains) by 2020 and 5,877 million tons (10000 trains) by 2030. In this respect, the ongoing study "Feasibility Study of Rolling Motorway Service on the Atlantic Corridor at Short, Medium and Long Term" for the Rail Freight Corridor, will bring further insights on its potential, notably between Spain and Portugal.

However, starting new maritime routes / services, and choosing alternative routes between corridors, have to be examined in their complexity:

- In a simulation of new maritime routes, it is difficult to use a buffer technique along a corridor, as it requires a more direct approach at the network level with, in a second step, an analysis of the impact upon the corridor market.
- In the same way, after a definition of a multimodal corridor market for rail, IWW and road, it is necessary to investigate the possible impact of the evolution of performances within other corridors, which might impact choice of alternative routes in relation to the choice of alternative modes.

Ports' traffic projections, as well as MOS developments, are indeed part of the MoS "horizontal" study working in relation with corridor studies. For the appraisal of MTMS of the Atlantic corridor, in relation with maritime services, it is first important to start from a segmentation of the maritime market, pointing out segments which are more dependent upon land routes competition, and in particular segments which can attract road transport.

The maritime transport of container development is important for the evolution of traffic along the corridor on the maritime side. For instance, the study for the Atlantic RFC forecast for maritime and railway traffic, shows that a global moderate growth of 2%/year could be expected, assuming a stagnation of liquid bulk traffic and a rise of container, dry bulk traffic, and a marginal share of general cargo traffic forecasts. This trend is even more contrasted when looking at rail traffic development, as container rail services of the Atlantic ports should grow, as a whole, by 10%/year until 2020, dry bulk services by 5%/year, general cargo by 4%/year, and liquid bulk would remain stable. Improving ports accessibility in Portugal, Spain and France, within the corridor, will help the promotion of such traffic, using alternative modes such as rail and IWW in the northern part of the corridor<sup>14</sup>.

Market studies of MOS services have been launched with regard to the Atlantic corridor, and such services have been introduced in the market studies of the GPSO rail project pointing out a potential modal shift for road to MOS services, and complementarities between alternative services such as combined transport services and rail motorways services with MOS services; the results of the study depend upon hypotheses concerning the performances of MOS services, their overall cost, the type of service (mixed with passengers or not), and transit performances in ports.

The corridor's added-value will also be influenced by its potential to improve the logistics chains to/from the EU in the global framework. When assessing this potential, two additional key elements also need to be considered:

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<sup>14</sup> As presented in the joint meeting in Paris for ATL and NSMED corridors, with expected results of Amsterdam/Marseille corridor study.



- The deployment in the near future of LNG as maritime fuel in the North Sea-Baltic and North America's East coast, following the establishments of ECAs according to the MARPOL convention (operational since 2015), being noted in particular the effects in terms of competition that might affect the port of Le Havre, the only Atlantic port included in a ECAs.
- The enhanced role of the Atlantic area following the opening of the new Panama lock system and, gradually, the growth of the polar route between the Far East and the North Sea.

While this set of factors call for enhanced capacity on ports, ensuring adequate inland connections for long-range transport, to the rail freight corridor, and to inland waterways, where available, is critical to be improved.

Taking into account interrelations between corridors in the MTMS for the Atlantic corridor is already a first step towards a comprehensive corridor planning, but it is also a requirement for a good appraisal of the market situation and the market projection of the corridor market. The importance of such interrelations is clearly relevant for corridors crossing the Pyrenees, although the Atlantic corridor is more isolated in the western part of Europe as compared to other corridors in the centre of Europe. For Pyrenees-crossing, Madrid and southern Spanish regions can choose alternative routes towards northern Europe, depending upon the evolution of relative performances of the Atlantic and Mediterranean corridors. Therefore, in order to define a perimeter of an MTMS (Multimodal Transport Market Study) for the Atlantic corridor, it is important to confront existing studies along the corridor, so that each study brings complementary elements for the implementation of multimodal transport policies. Two examples can be given:

- the development of an intermodal terminal in the region of Paris, which could not only contribute to stimulate modal shift for long distance traffic generated by the Paris region, but also for the traffic along the corridor, with the East/West and North/South as the main "hubs", as stressed in the discussion about RRT developments for the corridor during the 7<sup>th</sup> Corridor Forum meeting.
- the promotion of intermodal services for long distance relations across the Pyrenees and towards Germany and northern Europe since:
  - Traffic projected within German Plan does not show much difference between growth of rail and road traffic
  - But this is not the case for studies focusing on cross-border traffic between France and Spain, which project significant changes of modal share for rail<sup>15</sup>: from around 3% in 2010, this modal shift should grow around 12%, depending upon scenarios.

## Capacity issues

The main problems relating to capacity and line saturation at corridor level lie particularly in the important volume of works and maintenance period planned by the IMs along the whole corridor and the crossing of the capital cities (Paris, Madrid and, to a far lesser extent, Lisboa) resulting in low-priority and capacity constraints for freight trains in crossing the urban nodes. The lack of continuity on high-speed networks also affects passenger flows on the Corridor.

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<sup>15</sup> although the modal share is still much lower than the objectives of EU policy for such long distances, well above 1.000 Km



More specifically,

- 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; in fact, capacity issues are located on access routes to the *Grande Ceinture Ferroviaire*.

This is of the utmost importance since three branches of the corridor meet at Paris connecting the node 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.

On the Paris-Le Havre branch, railway freight traffic suffers from the saturation of the current main line along the Seine. In the future, maintenance works and the increase in passenger traffic will reduce capacity allotted to freight. The new Serqueux-Gisors routing, in addition to the traditional Le Havre-Paris route, is an essential asset to develop the Port of Le Havre and its access to inland areas, however, the level of performance of this alternative route must be improved. Therefore, the section between Gisors and Serqueux ought to be upgraded and electrified, and a direct rail connection is needed at the Serqueux junction. The projects related to this line are progressing with consultation processes ongoing.

- In the case of Madrid's node, as for Paris, freight transport and commuter services share the tracks in several lines, although there are some exclusive stretches for freight or commuter trains ("Cercanías"). Being the second more populated metropolitan area in the Corridor, it 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) and three freight terminals (Abroñigal, Vicálvaro and Dry Port of Coslada).

Several actions aimed at solving 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.

Concerning terminals, the outstanding projects impacting on the corridor are: the planned development of the Madrid-Vicálvaro and Abroñigal Multimodal platforms, and the standard gauge connection of the node conventional network.

Developing works in the line Atocha-Chamartín (new HS tunnel Atocha-Chamartín, UIC gauge tunnel, length 8.2 km) will improve the operation model of both stations in Madrid, as they will go from having a terminal configuration to being transit stations. This action is therefore solving a key bottleneck for long-distance passenger traffic.

- In Lisboa's node, freight traffic connects to the *Cintura line*, a highly saturated line where three main suburban lines converge.

An overall study planning on the rail infrastructures and services in the node is foreseen.

Studies for the Lisboa multimodal platform including the revamped terminal on the South bank (Barreiro) are ongoing; its results could lead to a potential concentration of main freight services in the south bank of Tagus, where rail has enough capacity available to cope with additional flows (but where last mile connections to the port will be necessary) thus reducing the pressure of freight transport in the urban node.

In addition to these issues referring to urban nodes, several sections along the North line connecting the two urban nodes in Portugal (Lisboa to Porto) are saturated, imposing frequent limitations on services offered, both for passengers and freight. While several projects are targeted at minimizing those bottlenecks, an overall planning for this stretch of the corridor, in the context of the overall interoperability programming, is needed.

Moreover, capacity is limited due also to restrictions to the operation of long freight trains in the rail network, rail-road terminals and port rail access, notably in Spain and Portugal. The need to run shorter freight trains decreases the efficiency of rail and



maritime transport. Several projects and works ongoing or planned to allow longer freight trains along the corridor will contribute to solve some of capacity bottlenecks.

In addition, several sections of the corridor are double track without banalisation system and single track lines limiting the available capacity and hindering timetabling. However, additional considerations on the evolution of rail traffic are needed to identify bottlenecks among these single-track sections. High gradients and single lines should be evaluated on a case by case basis, taking into account the costs and benefits of upgrading.

Notwithstanding these considerations, the corridor appears to dispose, in the short-to-medium term, of capacity to cope with expected growth with regard to the number of tracks. In addition, the proposals to the Rail Freight Regulation to allow RFC to manage PaP from national freight flows from ports (which for the Atlantic are the majority of traffic from ports) would contribute to manage existing capacity in a more efficient way.

Another important constraint is the gauge of tunnels north of Bordeaux, not sufficient for Rolling Motorways. A single non-electrified track line through Saintes has to be used, increasing the operating cost, as long as the works for increasing the gauge of these tunnels is not achieved.

Seaports are actively developing facilities and programmes to enhance their efficiency (digitalization, extended gateways, single windows, etc.) and to develop multimodal hinterland connections; however, in several cases, enhancing capacity both for terminals and storage areas is called for to cope with increasing international traffic (i.e. Leixões). Ports' capacity is also conditioned by the necessary adaptation of infrastructure and superstructure to comply with larger ships' requirements: access channels and berths, quay length and strength, yard size, crane height and width are the most relevant limiting factors.

Ports' forecasts within the corridor typically indicate expectations of throughput increase in the magnitude of 30% from 2010-2030. The success of these forecasts will largely depend on solving bottlenecks and missing links on hinterland connections, notably on the rail infrastructure and logistic facilities.

This includes direct rail access to the quays, smooth interconnections with the railway network outside the port and canals linking berths with inland waterways.

This consideration is particularly true for the ports of Algeciras and Sines, whose improvement of rail connections allows for additional opportunities to transfer flows to the Atlantic Corridor, capturing a share of the traffic from Asia to Europe, which currently goes through the northern ports.

The current cross-border railway infrastructure between Spain and France represents a major bottleneck, leading to the need to adapt the trains from the Iberian and French railway networks (axle change, transfer of the load...). The future Y Basque and GPSO connection will allow for a direct connection to the line Bordeaux – Tours – Paris, and this will push a qualitative leap for cross-border rail traffic. Between the Spanish border and Bordeaux, available capacity will last until 2030, and maybe beyond that date, if one takes into account the fact that improvement in traffic management will be also achieved on the conventional lines.

On the Spain-Portugal borders (beyond the missing link of Évora-Caia, on the south connection, expected to be operational by 2021), limited train lengths and lack of electrification (with both issues being addressed in ongoing projects) can be mentioned.



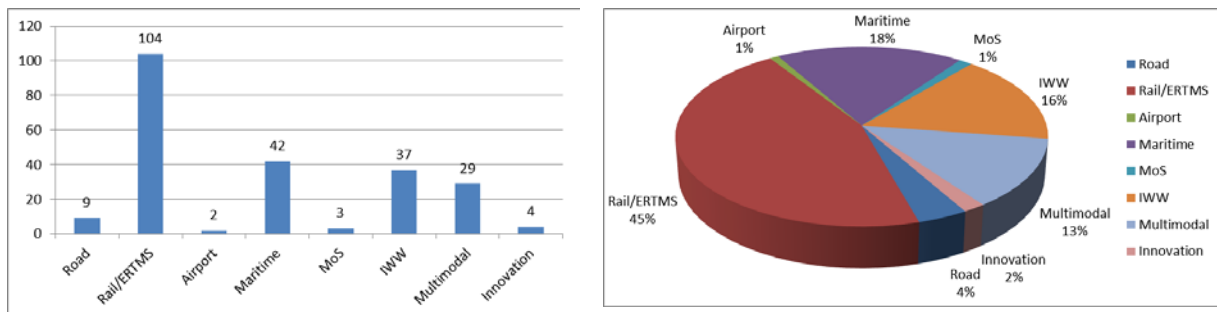
## The identified planned projects (infrastructure and studies based on the mapping exercise)

A Corridor mapping exercise has been performed defining with the stakeholders a set of projects at different stage of maturity along the corridor. The Atlantic set of projects enlists 230 projects belonging to CNC.

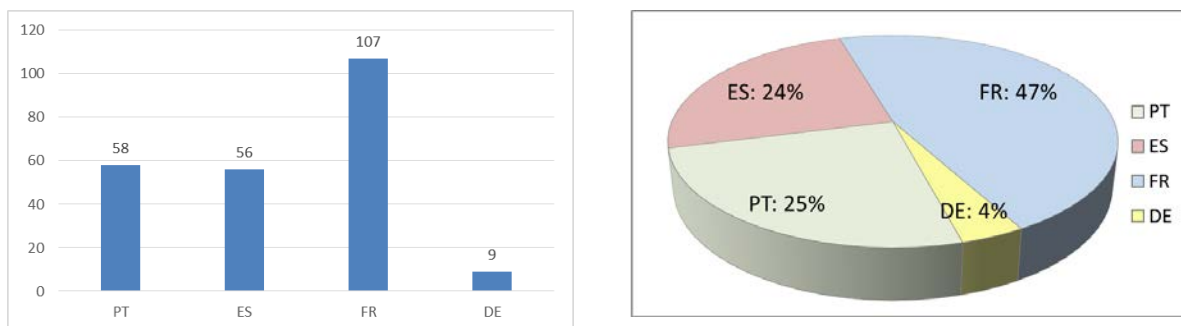
Additionally, 63 other projects corresponding to network branches connected to the corridor have been included due to their influence for the Corridor itself, as already pointed out in the 1<sup>st</sup> work plan.

22 horizontal projects affecting the ATL Corridor have also been identified, but their data is not considered in the evaluation results of the Atlantic Corridor.

The 230 projects are split per category as follows:



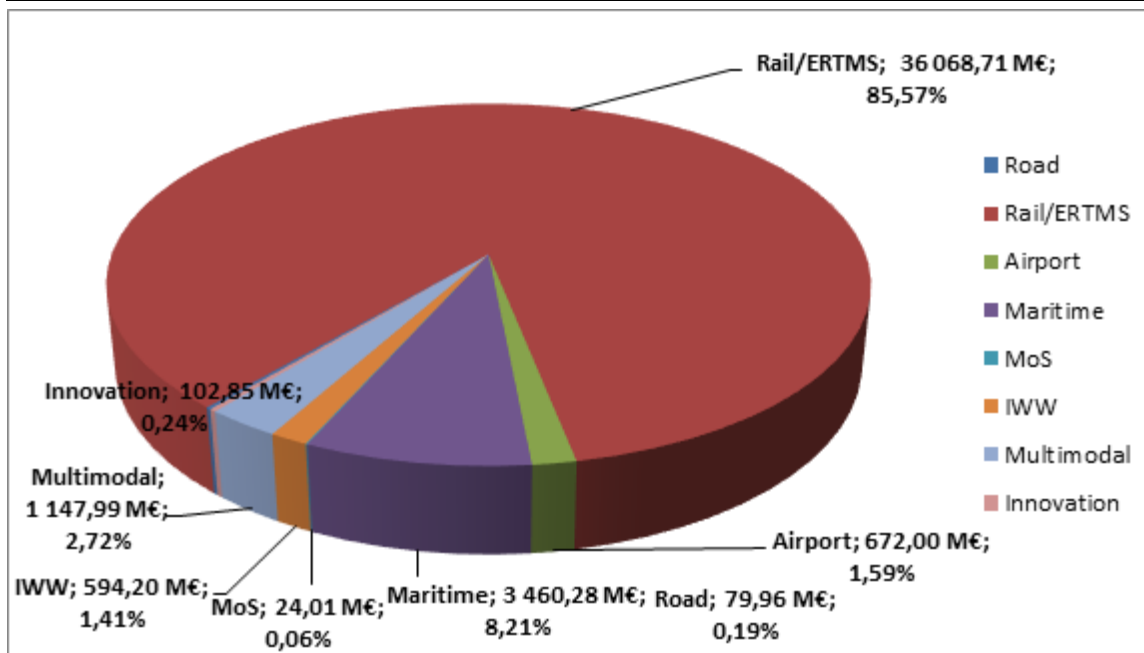
The split of these projects per Member State is shown below:



The number of projects depends on the level of aggregation of actions included. In certain cases, due to the complexity of the works and different schedules and/or due to the mix of financial sources, projects have been split.

Overall, the total cost of the planned projects amounts to 42 150 Million € (available cost data for 74% of the projects).

As expected, rail (including ERTMS) represents 86% of the total costs. Projects on the maritime domain represent about 8%, while intermodal projects, notably inland connections to ports, are almost 3%, and nearly 1,5% refer to inland waterway projects. Innovation and MoS represent about 0,3% of the costs in the Atlantic. The small share of projects belonging to this category results from the fact that those projects are predominantly horizontal. Therefore, they do not refer to a specific CNC and, consequently, costs do not appear in the chart.



Remarkably, 31 of the 230 projects (13,5%) have a cross-border dimension; 21 refer to last mile sections. Furthermore, 29 projects were marked as intermodal, while 40 of them address actual or future capacity bottlenecks (with some overlapping between these categories).

In the following sections, projects tackling the critical issues of the Atlantic Corridor are highlighted, mode by mode.

## Rail & RRTs

In the rail network belonging to the corridor, there is a single missing link between Évora and Caia in the border Portugal-Spain. The railway connection Sines/Elvas project aims at addressing this issue through the “Évora-Caia Section” project (phases 1 and 2).

Some cross-border railways sections lack electrification: the “Salamanca – Fuentes de Oñoro Electrification, signalling system” projects as well as the “HS line Madrid-Extremadura” projects approach this problem.

In addition, electrification is lacking in strategic sections for freight transport along the corridor. This constraint is tackled by the following projects: “Bobadilla - Algeciras. Conventional rail line. Electrification 25KV AC”; “Modernisation of Serqueux-Gisors line”, and “UIC Gauge - Aveiro line” between Caia and the Port of Aveiro.

There are generalised restrictions to the operation of long trains (740 m) for freight transport in the rail network, rail-road terminals and port rail accesses in the Iberian Peninsula.

The outlook of the Iberian Peninsula is positive since several projects are tackling these constraints at both sides of the border (15 in Portugal and 11 in Spain).

The most relevant ones in Portugal are along the Rail connection Aveiro-Vilar Formoso - Aveiro-Mangualde stretch; on the central corridor Sines/Elvas, the Évora-Caia Section, the Road and Rail Accessibilities to the new Lisboa South Bank Terminal.

Some outstanding cases in Spain concern the Madrid - Algeciras conventional line (San Cristobal - Villaverde bajo - Pitis railway freight track), the Implementation of UIC gauge in Madrid node to Vicálvaro and Abroñigal RRTs and the enhanced Bilbao Port land accessibility and rail connectivity.



In France, the following projects stand out for their added-value to the Corridor: the new mix-HSL line between Bordeaux and Spain (GPSO), the increase of tunnel gauge for RoMo services, the implementation of banalisation system (IPCS) in different sections of the network.

A meaningful set of projects mapped along the Atlantic Corridor deal with Rail-Road Terminals (RRT: 6 in Spain, 2 in Portugal and 4 in France), highlighting an effort towards new generation logistic platforms and a shared focus on multimodality.

Among these, it is worth mentioning the CALLSSIBA project aiming at deploying a cross-border logistic single window, involving several Portuguese ports that would have a common port community system and a logistic platform in Spain, providing all the operators along the logistic chain with integrated information and traffic management, simplification of administrative procedures, optimised schedules and flows, cargo tracking and tracing and multimodal and interoperable electronic system.

## IWW

In the Seine River some local bottlenecks, notably on locks and port access, were identified. Examples of projects that address those issues are: "Lengthening of the Méricourt lock (Seine-Scheldt inland waterway)"; "Modernisation of the Poses dam (Seine-Scheldt inland waterway)" or the "Upgrade and availability improvement of Tancarville locks". Moreover, for inland waterways projects, it is worth mentioning its corridor splitting: Downstream Seine in the Atlantic, Upstream Seine in the other sections of the Core Network, Seine Nord – Escaut canal included in NSMED corridor.

Tackling these issues will increase reliability of navigation on the Seine. The doubling of single locks and the lengthening of smaller second locks will offer alternatives to barges in case of incidents, while reducing waiting time at locks under normal conditions. Renovated dams and locks will also decrease the risks of incidents occurring in the first place. Finally, remote control of locks from headquarters will improve efficiency of waterway operations. The sum of those various local improvements will boost traffic fluidity on the basin, at the junction between the Atlantic and the North Sea Mediterranean corridors, improving IWW competitiveness and promoting multimodality.

## Seaports

Projects concerning last mile connections to ports are highly relevant for the functioning of the transport system in the corridor. Several projects mapped in the Atlantic corridor focus on the improvement of land access and last mile connections to ports, especially related to rail access but also to road connections. Some examples are: "Road and Rail Accessibilities to the new Lisboa South Bank Terminal"; "Algeciras Bay Port land accessibility and connections with the hinterland"; "Bilbao Port land accessibility and connections with the hinterland. Road"; "Upgrade Port of Rouen rail network"; "Increasing capacity at the Port du Rhin station-Upgrading rail access to the port-Rail access to the port from the German network" a part of these projects will be further speeded up with the new financial instruments currently being developed in Spain by ICO and Fomento Ministry with the contribution of EFSI. Worth mentioning as well as implementation projects related with the deployment of the e-Freight solution in the Atlantic corridor, as it is the e-Impact project being implemented in the ports of Lisboa and Leixões.

As seen above, container rail services of the Atlantic ports should grow as a whole by 10%/year until 2020, dry bulk services by 5%/year, general cargo by 4%/year and liquid bulk would remain stable. Therefore, improving ports accessibility in Portugal, Spain and France within the corridor is a necessary condition to promote the usage by such traffic of the rail mode in its hinterland traffic.



Additionally, planned actions for the maritime access to ports and port terminals will substantially increase their capacity, e.g.: the “New Container Terminal of the Port of Leixões”; “Terminal XXI Capacity Expansion Project in the Port of Sines”, “Developing and upgrading port maritime infrastructure in Algeciras Bay Port: La Galera (Passengers), Juan Carlos I, Campamento (keywalls & jetty and breakwater), Isla Verde and Tarifa expansions”, “Developing new port infrastructure and upgrading (Central Breakwater) in Bilbao Port”, the “Third phase of “Port 2000” container terminal” in Port of Le Havre; or the “Improvement of vessel access to the Port of Rouen”, which are critical to answer to the expected traffic growth. As an example without the new container terminal increasing draught from 12m to 14m to accommodate an increase of vessel size, almost 40% of the world fleet cannot be received in the port of Leixões. It is worth noting that these investments are expected to gather significant private involvement, turning them into potential candidates for Innovative Financial Instruments.

## Road

As far as roads are concerned, the most remarkable actions included in the mapping exercise of the projects along the Corridor address two main issues: continuity of highways and progress on e-tolling compatibility.

- On the first issue, the project “Completion of missing link in cross-border PT/ES (Vilar Formoso) - motorway with a new alignment, bypassing Vilar Formoso village”, in the Portuguese side of this cross-border motorway section, and the “Construction of the motorway A-62. Section: Fuentes de Oñoro - Border ES/PT”, in the Spanish side, will complete the last kilometres that do not comply with the motorway criteria.
- In order to achieve a better interoperability between Spain and France in the motorway network, the “Expansion of acceptance of VIA T in France road” project is included among the projects contributing to develop the Atlantic Corridor, widening the compatibility of e-tolling systems at corridor level. It is worth remembering that there is no road component in Germany at corridor level.

Some road projects related to urban nodes are also worth noting, as, for instance, the “Project of realignment of road traffic in the accesses to Madrid”, in the Madrid node.

## Airports

There is a bundle of projects linked to airports and air mode, among which we can mention: “Lisboa airport upgrade” and “Porto airport upgrade”, both targeting airport infrastructure, environmental performance as noise.

Paris, Madrid and Lisboa airports are required to have a connection with the core rail network by 2050, which is already planned in the case of Madrid, through the foreseen project “High Speed Rail Access to Madrid Barajas Airport (Chamartín - Barajas) and renewal of side-tracks in Chamartín Railway Station”, in a multimodal scope, while Paris Charles de Gaulle complies with the requirement.

The compliance perspective on alternative fuel availability in the airports by 2030 is not clearly defined yet at project level, being concerned projects only address studies, highlighting a low technological maturity of the issue, which might evolve in the future following the recent agreement to involve the Air sector in the implementation of the “Paris” process on curbing GHG emissions. The assessment undergoing on urban nodes will contribute to further evaluate last mile connections in airports.

## Railway interoperability

The historic differences in track gauge between the Iberian Gauge (1668 mm) and the UIC Gauge (1435 mm) are addressed by the “Y Basque High Speed Rail (mix line)”; several other projects along the Corridor contribute to this objective and/or address other TEN-T and technical parameters preventing interoperability; among these projects it is worth quoting the “Rail connection Aveiro-Vilar Formoso”, “Railway connection Sines/Elvas”, “HS line Madrid-Extremadura”, “Medina del Campo - Fuentes de Oñoro Implementation of UIC” and “Algeciras-Bobadilla”. Overall, with these projects’ implementation, the Iberian branch of the corridor will increase its interoperability, with the exception case of the North line, as already noticed. Most important, the cross-border sections will be interoperable or ready to become fully interoperable not only in terms of gauge but also of electrification and train length. Polyvalent sleepers will, finally, be the technical solution to be adopted to prepare the Portuguese network<sup>16</sup> for the UIC track gauge. The figure below highlights the sections in Spain already with polyvalent sleepers and to be upgrade to UIC.



As noted in previous sections, other interoperability parameters such as electrification or the 740 m freight train length will reach full compliance against the planned and ongoing projects. The criteria for 22,5 tons per axle load is already fulfilled at the corridor level.

As far as signalling is concerned, “Full deployment ERTMS/ETCS - Lisboa-Porto”; “Évora-Caia–ERTMS”; “Conventional rail line Madrid-Alcázar-Córdoba-Algeciras. Implementation of ERTMS”; “ERTMS deployment on the Longuyon- Basel line”; “ERTMS deployment on the corridor (Excluding HSL SEA and HSL EE) by 2030 (France)” are some of the projects addressing ERTMS implementation at the corridor level. Several of the ERTMS

<sup>16</sup> The third rail option is left to circumstantial cases if technical and economic analysis demonstrates to be a more cost-efficient solution.



implementation projects are planned for a horizon beyond 2030. Nevertheless, it is worth noting that all cross-border sections are included in the set of projects to be implemented until 2030.

In December of 2014, the European ERTMS Coordinator started a consultation with Member States about the ERTMS implementation of the Core Network Corridors, with the aim of reviewing the current European Deployment Plan (EDP) of 2009. This activity launched a close dialogue with the Member States; the Coordinator had numerous bilateral discussions with high-level representatives of the Transport Ministries and Infrastructure Managers. This review process has been closed and the new EDP will be part of the Work Plan for ERTMS 2016. The reviewed ERTMS deployment plan shall be then subject to a Commission adoption procedure, to be finalised by the end of 2016.

### **Other Elements (Resilience, Environmental Issues)**

Three aspects are to be analysed in this section:

- Improvement of local environment (pollutants)
- Mitigation of climate change
- Resilience/adaptation to climate change

Often, projects addressing environmental issues generally cover more than one of these aspects (especially the first two present substantial synergies). These issues are covered in a variety of projects concerning infrastructure and services. Some significant projects are outlined below, organised according to the aspects they primarily address:

- Improvement of local environment (pollutants): “Improving the environmental performance of the Port of Leixões and develop its environmental certification process.”; “Restoring the environmental continuity with the construction of fish passes on the downstream Seine (Seine-Scheldt inland waterway)”;
- Mitigation of Climate Change: “Clean fuels stations along core network” in Portugal; “Implementing clean fuels in all ports (Spain)”;
- “Action Plan for LNG in Portuguese Ports (study and pilots) and Further Implementing Actions”;
- “Alternative fuels facilities (bunkering/storage facilities)” in HAROPA ports; or “PEEPOS green transport: development of alternative fuel facilities (LNG/NGV/electricity) for ship bunkering and road transport” in the Port of Bordeaux

Moreover, it is worth referring to several MOS projects addressing LNG deployment and study related to on-shore electric supply.

Innovation projects targeting the deployment of clean fuels and simplification, such as those targeting LNG facilities and logistic single windows, are particularly relevant to boost the maritime potential as a highly efficient transport mode. Furthermore, these are also two issues where the Atlantic can be seen as the frontrunner of innovative solutions for further replication in other corridors. A more detailed analysis on the three elements and their impact / potential for cross-fertilisation/replicability will be further developed in the next Work Plan.

### **Contribution of the mapped projects to corridor KPI**

Overall, the set of the projects identified so far along the Atlantic Corridor leads to a high degree of achievement of KPIs. However, it should be noted that the analysis assumes that these projects will be concluded by 2030 and addressing one or several of compliance criteria will contribute to the KPI achievement.

As mentioned in previous documents, KPIs should be continuously monitored at the corridor level; as such, as far as more information on the projects currently mapped



becomes available (as, for instance, CBAs and/ or technical descriptions), KPIs should be updated. This means that a KPI considered in current analysis as 100% achieved by 2030 could, in subsequent iterations with more information, return a lower compliance rate. Moreover, it should be noted that projects with a planned end date close to 2030 are projects with a low maturity level and also unsecure financing, which could lead to delays in the project, meaning that the KPIs presented might have lower compliance rates when compared to the figures presented in the next tables.

## Rail

The analysis of the set of projects regarding contributions to rail parameters (electrification, track gauge, ERTMS, axle load, train length, line speed, axle load and train length) shows that a good progress can be expected until 2030.

Rail KPIs	2015 status	2030 planned
Electrification	87%	100%
Track Gauge = 1435 mm	58%	74%
ERTMS	7%	89%
Line speed >=100km/h	96%	100%
Axle load >=22,5t	100%	100%
Train length 740m	57%	100%

The following projects are highlighted as with biggest contribution for KPI:

- Works on missing link Évora-Caia
- Electrification of Medina del Campo – Salamanca – Fuentes de Oñoro (ES/PT border), High Speed Rail Line Madrid – Cáceres – Badajoz (ES/PT border), Upgrading of Serqueux-Gisors rail line and electrification of Bobadilla - Algeciras.
- For track gauge (i.e. full implementation or preparation for) the works on rail connection Aveiro-Vilar Formoso and Fuentes de Oñoro-Medina del Campo, railway connection Sines/Badajoz and its continuity to Madrid (Madrid – Extremadura – Badajoz), the Y Basque and Madrid-Algeciras.
- For train length, particularly in Spain and Portugal, several projects are addressing this issue.
- For ERTMS, the most relevant projects are: the ongoing works in Saarbrücken-Mannheim, the deployment of interoperable new lines (LGV SEA for passengers, GPSO for mix traffic on the branch Bordeaux-Spain), ERTMS deployment along the common section with the North-Sea-Med corridor in France; in Spain several projects concern ERTMS (Upgrade of on board ERTMS, Conventional rail line Madrid-Alcázar-Córdoba-Algeciras. Implementation of ERTMS, Upgrade of all Spanish High Speed Lines to version 2.3.0.d. of ERTMS (ETCS+GSMR) 2nd Phase, ERTMS deployment on sections on the Atlantic Corridor in Spain except Madrid node - Phase 1 and Phase 2, ERTMS deployment in Madrid node (common for ATL-MED), and, complementarily, ERTMS deployment on Madrid and Barcelona commuter lines. In Portugal, projects on the ERTMS implementation in Beira Alta line, and in Sines-Badajoz line have been analysed in corridor mapping exercise.

The North line connecting Lisboa to Porto in Portugal remains in Iberian gauge (exceptional case), an issue that can't be tackled with the line in full operation. An overall planning for the North line is still pending. ERTMS implementation in this line is planned for a horizon beyond 2030.

## Road

The analysis of the projects foreseen in the corridor for road development shows that these would in principle, lead to full compliance with the infrastructure parameters



"KPIs") by 2030, particularly those related with the availability of clean fuels once, as frequently highlighted, there are just a few kilometres on the border PT-ES that do not accomplish with the criteria for motorways.

Road KPIs	2015 status		2030 planned	
Motorway /Express Road	99%	●	100%	●
Availability Clean Fuels				
Electric	12%	○	100%	●
LNG	12%	○	100%	●

The deployment of a corridor for electric mobility linking PT-ES-FR (already announced as selected to be funded in CEF 2015) and the LNG /CNG corridor, already ongoing, are highlighted as key projects.

### IWW

The Seine river section, included in the Atlantic Corridor, already reaches higher standards than the minimum established by the Regulation with only a partial completion of RIS implementation along all sections to be achieved, which will be achieved before 2030.

Nevertheless, several projects mapped will contribute to better performances, notably in terms of increasing reliability of navigation on the Seine, at the junction between the Atlantic and the North Sea Mediterranean corridors.

IWW KPIs	2015 status		2030 planned	
Class IV IWW	100%	●	100%	●
Draught (min 2.5m)	100%	●	100%	●
Height under bridges (min. 5.25m)	100%	●	100%	●
RIS implementation	75%	◐	100%	●

### Seaports

The analysis of the projects mapped for seaports shows that several projects on port-rail connection have a special focus on train lengths, electrification and UIC gauge, allowing for more reliable rail operations from ports (as seen before, all ports are already connected to rail, but those connections present several bottlenecks now being addressed).

Seaport KPIs	2015 status		2030 planned	
Connection to rail	100%	●	100%	●
Connection to IWW CEMT IV	100%	●	100%	●
Availability clean fuels	13%	○	100%	●
Availability of at least one freight terminal open to all operators in a non-discriminatory way and application of transparent charges	100%	●	100%	●
Facilities for ship generated waste	100%	●	100%	●

Several LNG projects are planned in the Atlantic ports, leading to 71% compliance by 2020 and 100% by 2030. It should be noted that several projects for LNG deployment along the maritime ports are still classified as studies, with full deployment solutions to be depicted in the National Action Plans foreseen by November 2016. Nevertheless, full compliance is expected before 2030. Also worth noting are several proposals for MoS





involving ports from the Atlantic corridor and the targeting deployment of clean fuel facilities. Still on ports and MoS, several projects addressing issues related with ports and storage capacities as well as deployment of logistic single windows. Nevertheless, the need to have an overall planning a network for LNG fuelling at core ports of CNC Atlantic stems out as triggering factor to attain the “KPI” targeted for 2030 (complementary projects with shore-side electricity can contribute in addressing the environmental impact of shipping in ports – although not prefiguring availability of alternative (cleaner) fuels.

### Inland Ports

As happening with seaports, inland ports also fulfil a majority of the compliance criteria, although, as previously highlighted, bottlenecks are present. Besides projects targeting the improvement of inland connections (rail, road and IWW), the projects with higher contribution for the KPIs are those targeting the deployment of clean fuels.

Inland Ports KPIs	2015 status		2030 planned	
Connection to rail	100%	●	100%	●
Class IV waterway connection	100%	●	100%	●
Availability clean fuels	14%	○	100%	●
Availability of at least one freight terminal open to all operators in a non-discriminatory way and application of transparent charges	100%	●	100%	●

### Airports

Four of the Atlantic airports are considered main airports, notably Paris-Charles de Gaulle, Madrid-Barajas, Paris-Orly and Lisboa – Humberto Delgado and, as such, they are subject to the provisions of Art 41(3) of Reg. 1315/2013, which require them to have connections to both TEN-T road and rail and, where feasible, to include a high speed rail network, by 2050. Bordeaux, Porto and Bilbao are other core airports on the corridor.

Airport KPIs	2015 status		2030 planned	
Connection to rail (2050)	25%	◐	75%	◑
Availability of at least one freight terminal open to all operators in a non-discriminatory way and application of transparent charges	N/A	○	N/A	◐
Availability of clean fuels	N/A	○	N/A	◐

Currently just the Paris CDG airport is compliant. The projects mapped includes the new high speed UIC access from the Chamartin railway station to the airport, in the case of Madrid, as well studies for improving connections at the Paris Orly airport. At this stage, there is no study or plan foreseen in Lisboa in relation to the connections with the core rail network.

The compliance perspective on the alternative fuel availability in airports by 2030 is limited. Most airports already have clean fuels available for airport ground services and in airport parking stations, but no projects were identified yet in relation to clean fuels for aviation.

### Corridor compliance maps by 2030

At corridor level, the aggregation of the information provided by the Stakeholders in the mapping exercise of the projects along the corridor allows for the drawing of



geographical-based compliance maps for 2030 for rail and for IWW, considering the following stages of implementation:

- Green: compliant (status of 2015)
- Green dotted: works ongoing, compliance expected
- Yellow: works still to start, compliance expected
- Yellow dotted: works foreseen but delayed, compliance doubted
- Red: works not yet planned / agreed for completion

The map for rail refers to an aggregate result considering four compliance criteria: track gauge, electrification, axle load and speed. An aggregate result in this context means that if one of the criteria is not accomplished, then the section is non-compliant. Given the specificity of different track gauges in the corridor, a map for gauge compliance is also presented.

The map for IWW brings together the Atlantic, NSMED and Rhine Alpine corridors and considers the following four compliance criteria: CEMT class, RIS, draught and height under bridges. As noted above, the key issues are related with the height of bridges in Paris, an aspect that can't be currently solved due to historical value of bridges.

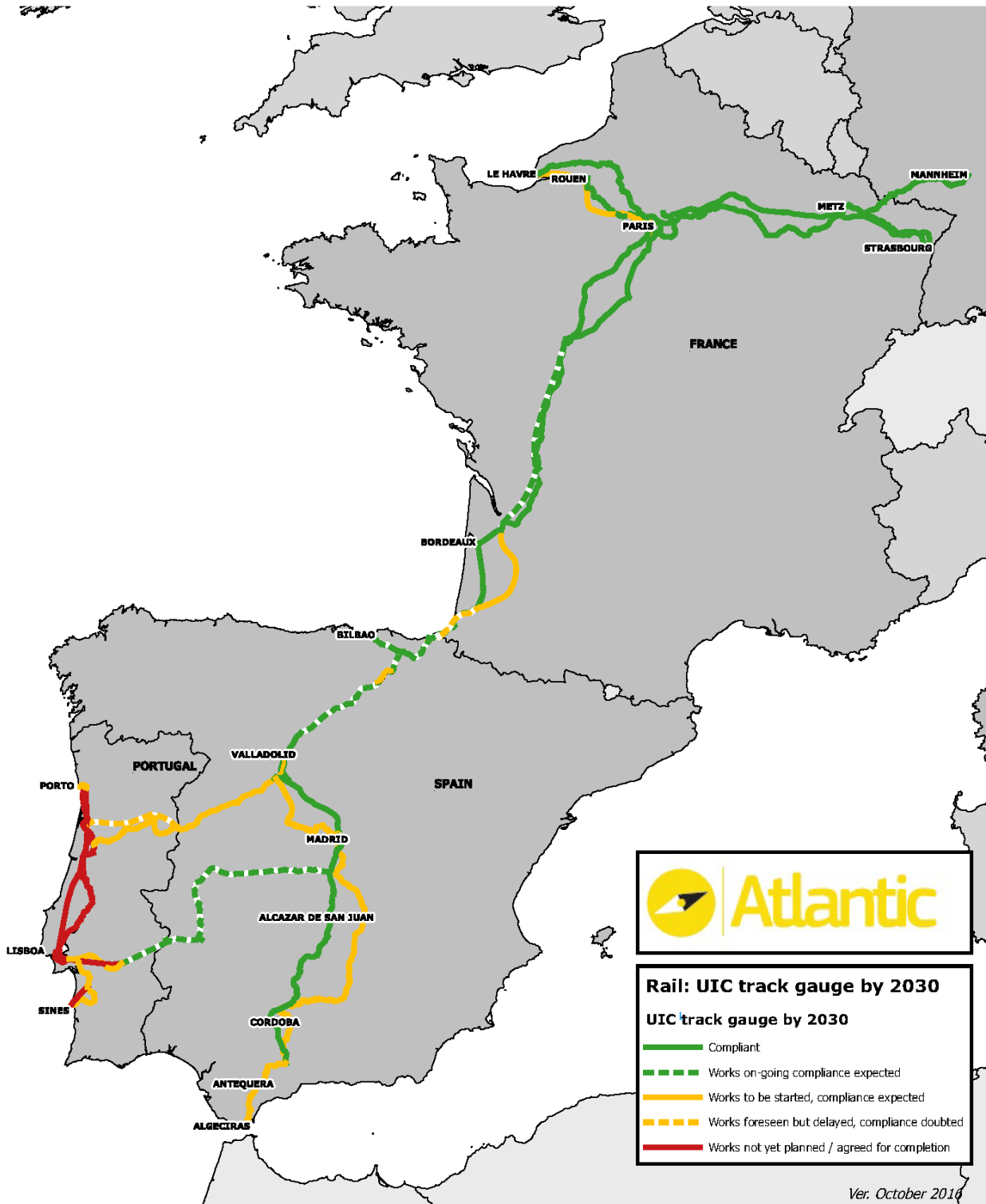


Figure 5 - Rail compliance by 2030: all criteria

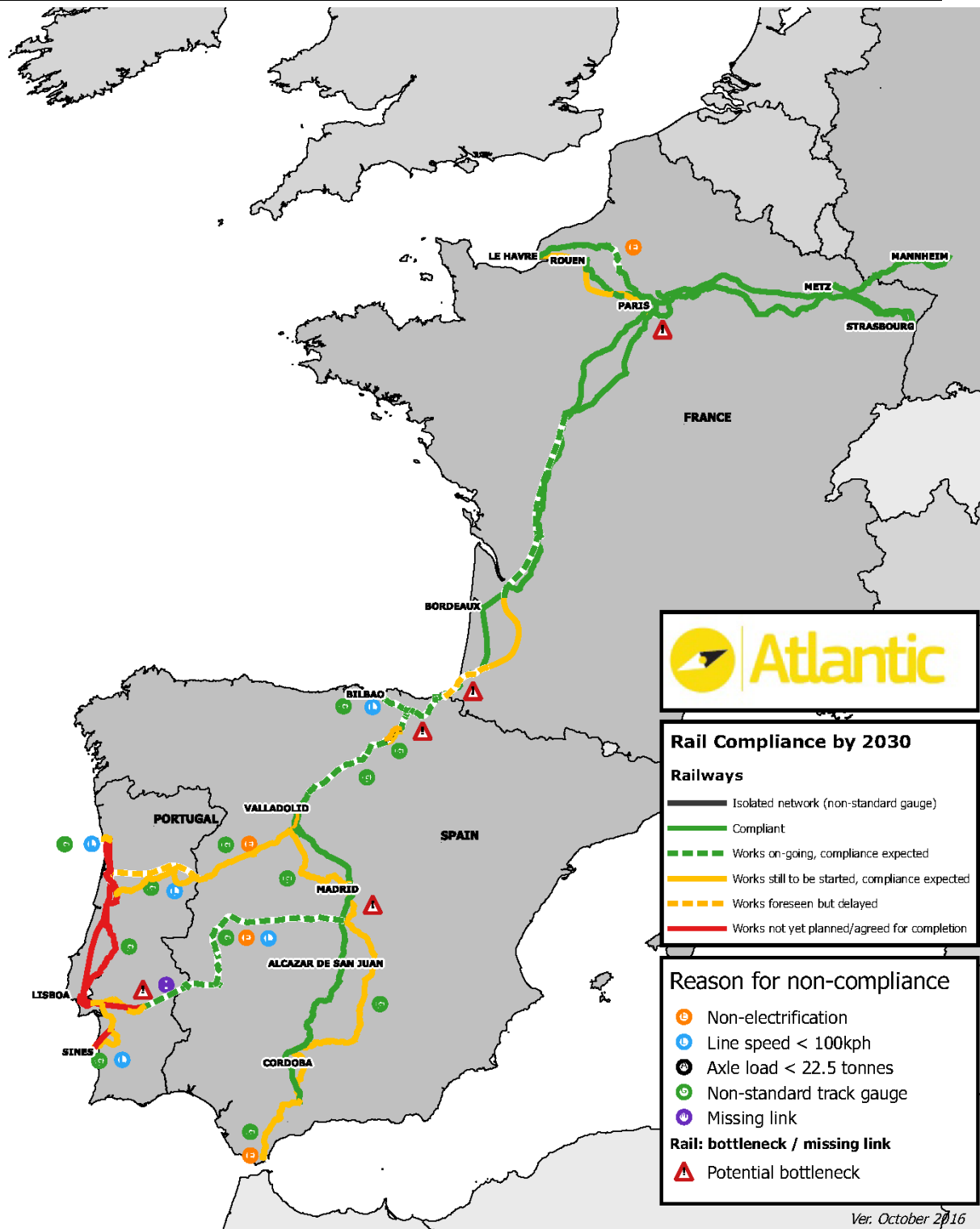


Figure 6 - Rail compliance by 2030: track gauge

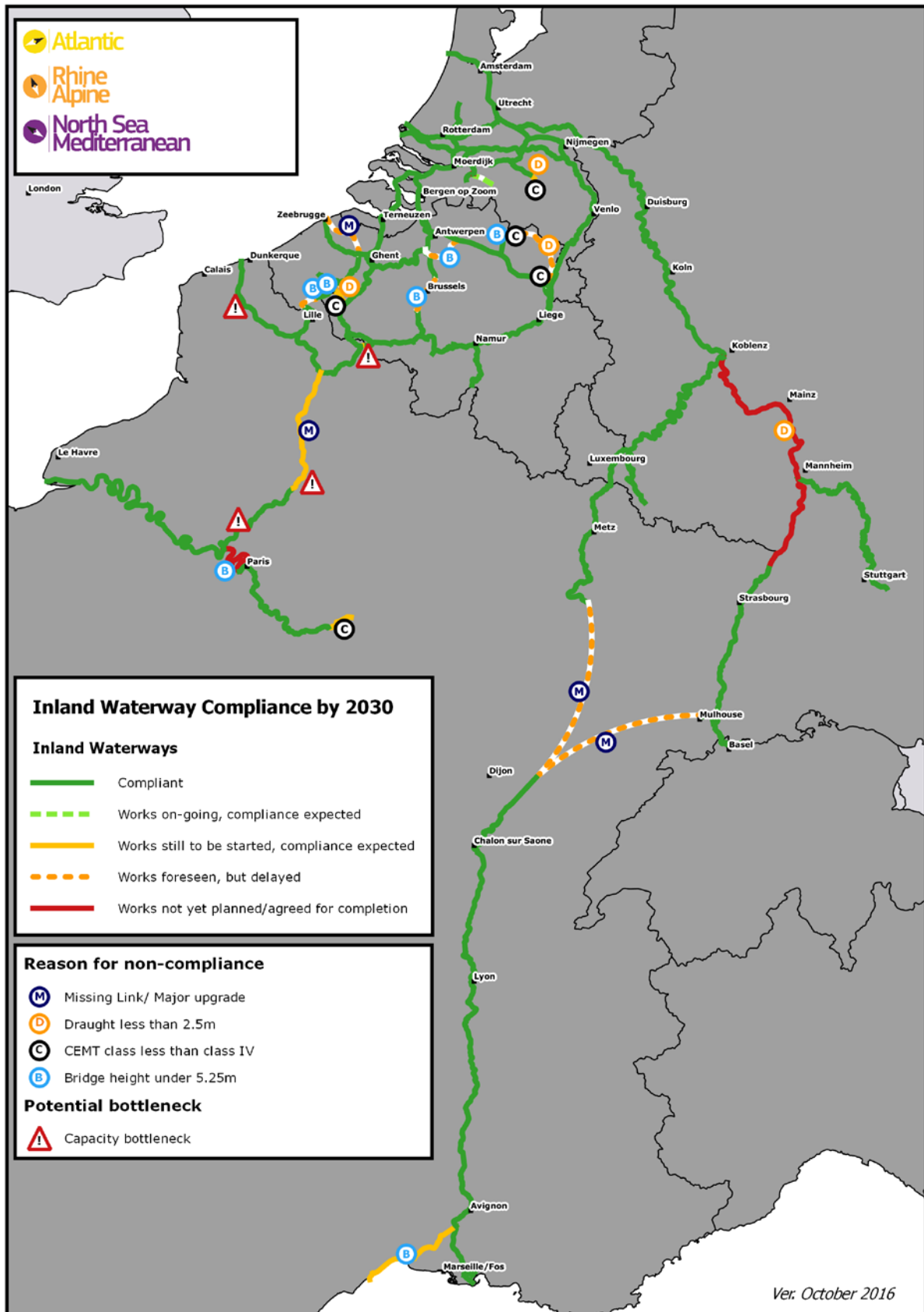


Figure 7 - IWW compliance by 2030: all criteria



## Infrastructure funding and innovative financial instruments

The development of core Network Corridors requires, inter alia, a critical mass of investment to take place within a short time-framework; therefore, a careful exam of the potential financial sources has to accompany the corridor planning. Some key criteria to be appraised are reported in this section of the work plan.

The projects to be developed can be ranked in three different categories from the point of view of funding and financing needs:

- a. For several revenue-generating projects "closer to the market" in terms of development (technological components, including large infrastructure of key European Interest, brownfield upgrade) or service provision (terminals for freight / passengers, enhancement of infrastructure capacity / performances), a substantial component of the project funding can come from self-generated resources (e.g. equity) and financing resources gathered by the project's promoters on the market (e.g. in the form of equity, loans or bonds). The private investors would need to recover their initial costs of capital and receive a reward for the risk born (the higher the risk, the higher the return required).

The project may look at conventional lending from public and private banks, alternative financing from institutional investors (e.g. bonds) and at financial instruments, for instance to cope with the unbalances of cash-flow during its construction and rump-up phases, until a sustainable flow of revenues is secured, to address particular risks and market failures, and to secure lending with long maturity. Financial instruments could be provided in the form of credit enhancing and guarantees (be it a specific legal guarantee or a financial guarantee to ease access to financing).

- b. Hard-infrastructure, green-field, risky, long-term projects such as the majority of cross-border railway connections, as well as inland waterways' navigability improvements, might require a substantial public support through public funding, even if innovative approaches can apply to the project's development and/or to specific components of the investment. Public funding can be structured in different ways (also depending on the budgetary constraints of the public authorities) such as a lump sum subsidy (grant), fiscal incentives, operational deficit coverage and availability payment schemes.
- c. In a variety of intermediate cases, the project will require a more limited funding component in order to reinforce its financial viability – these projects could be supported through a blending of funding (e.g. grants) and financing.

In this respect, beside the national budget, the funding contribution can effectively come from the EU centralized managed funds, such as the Connecting Europe Facility (CEF), and from decentralized managed funds, such as the European Structural and Investment Funds (ESIF), while the financing resources may come from the EU's financial instruments, such as the CEF Debt Instruments and financial products available under the European Fund for Strategic Investment (EFSI).

For all these 3 different categories of projects, public intervention, with different degrees of intensity, is justified on the grounds of the high socio-economic and EU added value that these projects have, and also due to the fact that it substantially addresses the overall public service obligations, the suboptimal investment levels, market failures and distortion due to externalities (positive, for the projects supported, including in terms of



strategic added-value, and negative for competing modes), and therefore calls for the transfer of resources.

When considering the project funding structure in a comprehensive and multimodal setting, the earmarking of revenues and cross-financing solutions, applying the "Polluter-pays" and "user-pays" principles ought to be duly explored.

A project can be fully developed through project financing if the revenue stream (secured by public and/or private funding) exceeds the investment and operational costs. Such an approach calls for a careful risk sharing between the Member States (project management) and private partners.

Notwithstanding the project self-financing potential linked to user fees, a cautious and innovative approach aimed at exploiting the project' life-cycle and clearly defining the responsibilities and risk sharing between project promoters, sponsors and implementing bodies, is more and more needed to deliver projects on time, cost and quality and to fully exploit the potential, while minimising future liabilities on public budgets.

A pre-condition for project financing is a conducive regulatory and legal environment, in order to set the right incentives to enhance the public and private sector involvement in the delivery of infrastructure investment.

It is worth highlighting the following projects along the corridor, supported through innovative financial instruments, for their potential for cross-fertilization:

- A remarkable case of blending - synergic use of funding and financing – for a large-scale green-field project is the Tours-Bordeaux high-speed line (it has also highlighted that a careful approach toward the management of traffic risk is needed in green-field projects)
- It is worth recalling the ad-hoc platform for Spanish port accessibility, pooling several projects and port revenues, with financing by EIB and ICO (ES promotion bank) guaranteed by the EFSI (Juncker Plan financial branch)
- As a general case, several terminals in ports, airports, IWW ports and Rail-roads are being supported (including regional and city-logistics in the Île de France)

Within the Atlantic Corridor, a screening exercise on the set of available projects' has highlighted the following projects for their potential for future development through the Innovative Financial Instruments - the main targets being

- Terminals (Ports, inland waterway ports, airports and rail-road terminals),
- Port capacity enhancement,
- Dedicated connections, e.g.: on High-Speed for passengers to airports.

## Critical issues on the Atlantic Corridor

As noted, several projects, aimed at addressing many of the corridor's critical issues, and whose results are expected to be visible until 2030, have been identified. Amongst those, the completion of the critical missing link in the Portuguese-Spanish border (Évora-Mérida; along the Madrid-Lisboa connection), the non-electrified lines, the longer freight trains on the rail network and the port-rail connections are worth to be noticed.

Nevertheless, many limiting factors still hinder the interoperability and seamless connection of modal networks, reducing intra-modal efficiency along the corridor, affecting notably the most efficient transport modes for long-distance transport and, thus, leading to an unbalanced modal split.

## Rail infrastructure

On the rail component, interoperability, notably related with track gauge, won't be fully achieved by 2030, although critical bottlenecks associated to that lack of interoperability, notably in the French-Spanish border, will be significantly reduced. Moreover, by 2030, all the four corridor cross-border sections will be connected in UIC gauge, electrified (with compatible voltages) and fully compliant with the Regulation's criteria.

Notwithstanding this progress, interoperability will remain a critical issue, with relevant sections of the Portuguese network, such as those in the North line connecting the nodes of Lisboa and Porto, will continue for the next period in Iberian gauge.

Although not a Regulation requirement, it is worth noting the loading gauge of tunnels north of Bordeaux which is limiting the potential for the Rolling Motorways.

Addressing the connection to the port of Sines through the comprehensive network is a critical issue that has to be dealt with in order to ensure the Core Port potential.

## Road infrastructure

Compliance with TEN-T parameters (highways or express roads) is very high within the corridor; in spite of this, compatibility of road e-tolling is not yet fully achieved. The upgrade to motorway of the last stretch between Portugal and Spain in the north cross border is still to be implemented (the costs and details of the project have been mapped).

Deployment of e-mobility and LNG along the corridor is progressing at the studies level, with implementation projects still to start. It is unlikely that the public sector will itself finance all necessary infrastructures (i.e. filling stations) and the same applies to other road requirements, as availability of safe parking areas, being expected that the private sector could take a major role in its implementation. This situation is required to be addressed (taking into account the progress on ITS Directive and National Action Plans) in the context of existing concessions (i.e. in Portugal), as well as against the expectations of private sector on financial benefits as condition for direct involvement.

Anyhow, it is worth noting, again, that, at corridor level, the availability of alternative clean fuels, notably e-mobility, even if not fully implemented along the corridor main route, is already available along its main nodes.

## Seaports

As seen above, the core requirements of the Regulation (EU) 1315/2013 on ports are fulfilled by all the core ports regarding maritime and hinterland transport infrastructure. However, several limitations are present in the interconnection between sea and rail transport: in fact, although all core ports in the corridor are connected to rail, both in Portugal and Spain, the upgrade of rail connections and rail freight terminals to allow 740 m trains to access the ports is needed, as well as the electrification of the railway line connecting to the port of Algeciras and Le Havre, the largest seaports by volume in the corridor. Improving the rail hinterland connections is therefore critical to increase possibilities for modal shift.

The maritime / riverside access to Ports / port terminals is constrained in several cases along the Seine, in Le Havre, Bordeaux, as well as in the current terminals in Lisboa. Besides the infrastructural and structural limiting factors, the deployment of the National Maritime Single Window and limited integration with the inland logistic chain still limit the





role of most corridor ports. Moreover, the limited LNG availability at ports might limit the role of some Atlantic corridor ports in the near future, if a proper plan is not rolled out. Open issues related with port concession, notably in view of enhancing the role of private investments, should also be addressed so as to facilitate rollout plans.

These issues are also addressed in the ongoing "MoS study", with results expected by the summer of 2016, which will contribute to enriching and substantiating additional investment needs.

### **IWW and inland ports**

The Seine river section, included in the Atlantic Corridor, already reaches higher standards than the minimum established by the Regulation (EU) 1315/2013, however, there is an issue of low bridges in Paris limiting the height of container barges. This issue can't be solved due to the historic value of Paris bridges. There are also some local bottlenecks, notably on locks and port access, with a set of measures planned to address those critical issues.

All inland ports are connected to IWW class Vb and to the rail network. Nevertheless, there are still critical limitations in those inland connections, such as the electrification of Gisors-Serqueux rail stretches connecting the ports of Le Havre and Rouen or the IWW connection to the new Port 2000 in Le Havre, which are being addressed in ongoing and planned projects.

Moreover, as noted before, TEN-T includes, within the NSMED corridor, the navigable waterway from Paris via the Seine/Oise and Scheldt rivers, to connect to the Benelux countries. This is expected to increase waterborne freight traffic related to Paris and the River Seine substantially. Co-ordination between the Atlantic and NSMED corridors is therefore called for.

### **Rail road terminals**

The interconnecting nodes are also affected by limitations, thus artificially broadening the market share of roads.

There is a clear potential for the provision of better multimodal services along the corridor and improvement of multimodal connections; making a seamless transition between modes could further improve this aspect, however an overall implementation, planning and management model for Rail-Road terminals, notably in Iberia Peninsula, stands out as a critical issue, with the core network of terminals still to be deployed, an issue that might be addressed as well in the context of the overall interoperability planning.

Together with the infrastructure related measures, notably through the supply of efficient access by trains with required parameters ( $\geq 740$  trains length, electrified, ...), which is being addressed in several projects, 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 to connect with other modes more efficiently.



## Urban nodes

A key factor for the Atlantic corridor to succeed is to ensure an efficient crossing, for both freight and passengers, of two high-complexity core urban nodes it passes through, i.e.: Paris and Madrid, as above shown.

Moreover, the detailed analysis on urban nodes, which is being performed, will also highlight the multimodal dimension. Indeed, the assessment currently being undertaken will display, for nodal infrastructures such as the airport, ports, rail road terminals and passenger stations, the modal connections, demonstrate where action is needed to connect the respective urban node and the corridor, and where projects are already identified. The “zoom-in” has recently been carried out for the first time.

Additionally, and in particular for port cities in main urban nodes, as are the cases of Lisboa and Porto, and to some extent Mannheim, some attention should be placed towards addressing the pressures of port activities in the urban environment (such as, for instance, limited areas of expansion, emissions and noise, the later particularly relevant in relation to port night operations).



## Recommendations and outlook by the European Coordinator

Following the first Work Plan of the Corridor, the Recommendations have been updated and integrated to take stock of the progress of the Corridor and of the evolution of the Strategic framework.

The strategic goals for the Atlantic Corridor, as formulated in 2014, aim at:

- **Deploying interoperability**
  - Address the missing links and lack of interoperability in the rail sector, notably rail gauge and ERTMS;
  - Enhance and continue progress in terms of road tolling interoperability;
- **Enhancing multimodality and rebalance the modal shift**
  - Contribute to efficient logistics and modal integration, exploiting its multimodal dimension in order to foster a traffic shift from the congested air and road transport to rail and maritime;
  - Favour the deployment of Motorways of the Sea and Short Sea Shipping along the Atlantic Coast;
- **Exploiting the external dimension**
  - Fully exploit its potential for an enhanced international maritime dimension.

Accordingly, recommendations have been regrouped under each goal, with additional sections on connecting other corridors and on developing the Corridor's knowledge base in terms of know-how and governance.

### Deploying interoperability

This objective is pursued in close cooperation with the Atlantic Rail Freight Corridor, which has delivered an impressive increase in capacity (from 17 to 50 international slots or "PaPs"), and has implemented a coordinated approach where all rail infrastructural and equipment work that might restraint the capacity available is coordinated at corridor level and subject to an up-to-date publication.

For cross border sections, one of the goals is to fine-tune maintenance periods on both sides, ensuring more capacity for international traffics, but wide-ranging operational management fine-tuning, triggered by Rail Freight Corridors, is a quick-wins needed to exploit the full available capacity of the corridor, in synergy with the political endorsement the CNC can provide. A specific attention will be paid to this topic in 2016-2017, when the Rail Freight Corridor presents a comprehensive study on barriers to interoperability.

In order to ensure a seamless transport, then, a priority will be the interoperability and capacity on crossing the two core nodes of high complexity, Paris and Madrid, interlinked to other corridors and high-speed passengers and freight flows. For Paris, the issue is twofold: ensure capacity and connectivity both on rail and on the inland waterway. A joint working group with the North Sea-Med corridor has taken place in Paris to trigger discussion on projects and to meet stakeholders to examine best practices and pilot projects that could benefit the node and link it with the Seine-Scheldt system. The two-corridor dialogue proceeds in a systemic way to come with a shared EU vision for Paris node.

In Madrid, a major breakthrough supported by the EU is the on-going connection of the two separated HS branches of the Spanish network in Madrid, through the Atocha-



Chamartin tunnel, supported by the ERDF and CEF call 2014. Now, new services for long-range passenger flows along the corridor are expected to be made available.

### ***ERTMS***

Notwithstanding the on-going review of the European Deployment Plan (EDP) by the Coordinator in charge of ETCS/ERTMS – to be included in the specific Work Plan, in it worth highlighting the bulk of know-how on ERTMS gathered in Spain and the fast pace of deployment in the German branch of the Corridor, where baseline 3 level 2 is planned. Furthermore, on High-speed sections ERTMS deployment is advanced. It will therefore be important to pay attention to other factors determining the actual interoperability and the free cross-border flows of trains, in the framework of the two cross-border cooperation groups of the Corridor Spain-Portugal and France-Spain.

### ***Cross-border missing link***

The missing link Évora-Caia is of the utmost importance being the direct connection to Lisboa, Sines (and Setubal) towards Madrid. This section is the only missing cross-border stretch; besides, representing the second connection between Spain and Portugal for long-distance transport, it is needed to upgrade the current route Aveiro-Salamanca without isolating Portugal; the agreed plan is for a mix (freight-passenger), fast line to start in Iberian gauge, electrification at 25 kV and ERTMS is to be pursued with EU support. The Évora-Caia civil works project has been selected in the framework of the CEF Call 2014, and a project to complete the Spanish section in Extremadura has been submitted to be eligible for the European Regional Development Fund.

### ***Rail interoperability deployment along the Corridor***

Beyond signalling and electrification, a special attention has to be paid to the gauge issue in the Iberian Peninsula, where delivering interoperability means agreeing on the deployment of UIC gauge along the Corridor lines, therefore going beyond the current planning and project listed.

On the branches connecting France to Germany, LGV Est with the entry into operations of the II Phase reaches from this year in high-speed Strasbourg, freeing additional capacity on the traditional line, where ERTMS will have a relatively early deployment (from Metz to Basel) –important to follow-up the project, while the German section between the French border and Mannheim (POS Nord) is being upgraded to allow for faster speed and ERTMS (3.0, level 2) by 2019, thanks also to the support by CEF call 2014.

It will be important to finalise the on-going work of the joint task force Spain-Portugal on interoperability set-up according to the Riga Declaration which is delivering an accurate estimate of costs and benefits of different options to ensure the compatibility with UIC gauge in the Iberian Peninsula, to come with a shared long-term planning.

In the short-to-medium range (by 2019), Vitoria will be the key interconnecting point Iberian-UIC gauge, while capacity is being developed on the French side (which already consists of a double track electrified line compatible for 740-m long trains) it is therefore crucial to develop a plan to fully exploit its potential, also with reference to branch of the RFC feeding the Atlantic Corridor (e.g.: Zaragoza-Pamplona-Vitoria); CEF call 2014 already secured the co-financing for the completion of the Y Basque, the UIC connectivity of S. Sebastian to the French network and the enhancement of the node Irun-Hendaye, together with an improved signalling (without ERTMS) on the Dax- Hendaye section. The detailed studies for the Grand Projet de Sud-Ouest (GPSO) – a mixed, fast interoperable line - have also been supported (CEF 2014), which contributed to the "Declaration d'Utilité Publique" adopted the 2nd.06.2016 for the 1st part of the project (from Bordeaux to Dax/Toulouse), in line with the planned development of the project to be operational in 2027.



The Porto/Leixões – Aveiro – Salamanca - Valladolid route is already operational for international traffic, in spite of steep gradients and lacking electrification on the Spanish side. Its potential is witnessed by the cooperation between Salamanca's logistic platform and Portuguese ports (Aveiro, Leixões). The infrastructure requires seamless electrification (at 25 kV), track (sleepers) upgrading, longer sidings (740-m long trains), and new stretches to bypass steep gradients. The project to upgrade the Portuguese Section (Pampilhosa-Vilar Formoso/ES) according to the above-mentioned TEN-T parameters has been selected in the CEF Call 2015 (Cohesion Envelop for Portugal), while the electrification of the Salamanca-PT section had already received support through the CEF call 2014. Ensuring its smooth implementation and seeking for the co-financing of signalling and ancillary works to make it operational is, currently, the priority. A shorter alternative route from Aveiro to Mangualde has to be carefully appraised for its potential benefits and costs, considering also the works to be carried out on the current route.

### **Enhancing multimodality and rebalancing the modal shift**

Multimodality is an enabler of a more balanced modal split, needed to pursue efficiency in transport, to tackle congestion, and to squeeze the carbon footprint of transport in line with the Paris objectives. That calls for a more active role of multimodal logistic platforms, notably in the Iberian Peninsula.

#### ***The role of logistic platforms***

Building up know how, sharing best practices, involving stakeholders at local and national level from different Member States, with the ultimate goal of including logistic platforms in the Corridor trans-governance, will be a crucial element to succeed in bringing about multimodality.

This effort should aim both at creating attractive logistic platforms (from the business perspective) and to facilitate networking among them - ports and inland logistic platforms, as well as structures serving the main nodes.

Some specific cases need ad hoc solutions for the platforms themselves, their accessibility, or the services provided:

Vitoria, as stated before, will be the interconnecting point of the two gauges for years, and is also a crucial railway node along the main road route from Portugal to France: an adequate logistic platform is urgently needed, with adequate terminals for rail-road and rail-rail swift interconnections.

A further step in this direction will be to seek cooperation with large logistics and productive zones linked to the Corridor - e.g.: Luxembourg, along the North Sea- Med corridor, or Zaragoza, on the Mediterranean one (the Atlantic RFC is a front-runner in these cases) – Zaragoza and Pamplona can be connected through the above-mentioned platform of Vitoria.

Beside inviting these platforms to the Corridor events (and joint corridor meetings), further exams on the barriers to their proper functioning will be developed in the forum; in addition, their involvement in the Terminal Advisory Group of the RFC will be triggered.

#### ***The role of the maritime component***

The maritime connectivity along the Atlantic Coastline has to be seen as a corridor component to be enhanced: in fact, Motorways of the Sea, the de facto maritime component of the Corridor, beyond being a corridor feeder, are already developed among the corridor's ports up to the EU northern coast, but are still not fully exploited, as shown by market research, estimating about 29 million tons of freight flows to be potentially transferred to Motorways of the Sea by 2020.



Rebalancing the modal split calls for supporting Motorways of the Sea development, in cooperation with the European Coordinator, Mr Brian Simpson, focusing primarily on investments, will prove crucial to enhance the intra-corridor and intra-EU maritime component. However, the development of sustainable MoS may involve support to services.

These investments have to be considered in a wide range, from infrastructure (port accessibility both land-side, on which a major breakthrough is expected to take place thanks to the ad hoc fund for Ports accessibility set by Spain with EFSI contribution – interoperable rail and inland waterways - and Sea-side) to terminal efficiency, and to systems and procedures to evolve e-maritime towards e-freight, increasing the efficiency of the logistic chains using maritime transport. Its environmental component, including the deployment of innovative fuels, ought to be taken into the picture. A careful follow-up and best practices sharing in the WG will be ensured in the next years, in order to come to a full deployment of the maritime and logistic single window ASAP.

As discussed in the RFC meetings, whenever a maritime route is defined, it shall be the preferable mode for the connection – the role of Rail transport is to ensure port connectivity to a wide hinterland – therefore ensuring an enhanced modal integration. Therefore, I fully support the RFC proposal to modify Regulation 913/2010 to be entitled to issue mono-country PaPs starting from international ports.

In a wider perspective, the Atlantic coastline and all its Core and Comprehensive ports and logistic platforms ought to be seen as feeding the corridor / served by the corridor, provided the efficiency of the logistic platform previously mentioned.

On LNG, very low oil prices had created an unexpected business case for distilled (low sulphur) fuels. Notwithstanding the absence of an oil peak for a long while, planning LNGT deployment shall be kept high in the agenda, in cooperation with MoS, as encouraging signals are confirming.

### ***Passenger transport: integrating core airports and high-speed***

With regard to passenger transport, the role of airports and high-speed is prominent and already developed, therefore their connectivity to other modes (and between each other) will contribute to the efficiency of transport and the attractiveness of Regions. It must be recalled, however, that larger core airports within the Corridor already at their dispose a rail or light rail connection. The main projects being conceived / implemented to monitor, possibly support, and also scout for financial instruments, are the high-speed connections Chamartin-Barajas in Madrid, and the CDG Express, in Paris.

### **Exploiting the external dimension**

The Corridor is directly connected to the main intercontinental routes and to Africa through Gibraltar, namely Suez – Gibraltar – North Sea, (Far East -) Panama – Europe, West Africa – EU through the Atlantic, and North/West Africa - Europe through the Gibraltar straight.

Its potential to improve the logistics chains to/from the EU in the global framework contribute to the corridor's added-value.

The interconnecting points of these flows are the Core Ports of Le Havre, Rouen, Bordeaux, Bilbao, Leixões, Lisboa, Sines and Algeciras, as well as the ports linked to the corridor through Core Network Sections, as specified in section 2.2 of this work plan.

The corridor's added-value will therefore be influenced by its potential to improve the logistics chains to/from the EU in the global framework. When assessing this potential, the enhanced role of the Atlantic area following the opening of the new Panama lock system ought to be considered.

It will also be important to make the corridor product visible from the external perspective, with a set of operations and destinations (from the border to the final



destination / from the productive areas to extra-EU shipping) that might make it visible and attractive across the Atlantic, as well as with large productive / logistic areas of the Union in the Corridor countries and in neighbouring nodes such as Luxembourg, thus contributing to the efficiency of the internal market. Therefore, visibility shall be expressed in terms of logistic services from the port to the final centre of production / logistics – further thoughts on this shall be developed in cooperation with the WG on Ports, IWW and RRT.

Strong simplification of Custom and Reporting operations, reduction of lag times and inland shipping will be crucial factors for the Union to benefit from the Corridor development in the world-wide scenario.

## Key enablers

- Financing
  - With regard to support for the implementation of more costly projects, not self-standing from a financial point of view due to market failures and distortive incentives (lack of internalisation of external costs and benefits, uneven taxation on energy, etc.), it is crucial to pool a critical mass of resources.
  - A positive example has been the concentration of the Cohesion Policy, and, potentially, CEF resources in Spain and Portugal, following bilateral negotiations, resulting in relatively large amounts of Cohesion Fund and ERDF allocated to the Atlantic corridor – so far, around 3 Billion EUR have been allocated to the Corridor from CEF and ERDF in 2014-2020 (additional 200-300 M EUR of CEF Grants are expected on the Corridor including the quota earmarked for Portugal on the "cohesion envelope" of around 100 M EUR).
  - As previously stated, a wider scope for Project financing shall be pursued, thanks also to EFSI (and clear rules for EU Guarantee in PPPs), to a better regulatory environment in terms of State Aids (widening scope of the Block Exemption Regulation for Ports and Airports), attractiveness, for institutional investors (lower capital requirement for infrastructures). In fact, a Financial Instrument developed with EU (TEN-T) contribution (LGTT) has paved the way for the financial closure of the HSL Tours-Bordeaux PPP (which includes 3.8 Billion EUR of financing component); similarly, the EU fund for Port accessibility triggered by EFSI has a potential worth 1.2 Billion of projects.
  - In this framework, it is worth recalling the importance to improve the projects' financial attractiveness, e.g. increasing project revenues through internalisation of benefits generated at environmental level, cross-financing, adequate project pipeline, better procurement practices on a life-cycle basis.
  - Still, the critical mass of investment needed to complete the corridor (the total cost of compliance with EU parameter can be estimated between 45 and 50 Billion EUR, over 11 of which being on-going projects; a remarkable amount – estimated approximately in 7-8 Billion EUR - is needed to achieve the full rail interoperability in the Iberian peninsula) calls for a certainty in the support also in terms of grants up to 2030, following the successful outcome of CEF Calls. Several projects needed to complete the corridor couldn't be endowed with adequate (or any) EU resource. Therefore, I consider it my duty to promote, from the MFF mid-term review to the budgetary negotiations for the next programming period, an adequate endowment for this successful chapter of the EU budget.



- Corridor governance

Two are the main lines for action to enhance and deepen corridor governance in the next years:

- To deepen and make more systemic the cooperation with the RFC, including on the involvement and enhancement for an enhanced role of multimodal logistic platforms (through the Working Groups on Ports, IWW and RRT as well).
- Cooperation with CNCs: Connecting core network corridors: As previously recalled, it will be notably important to keep structuring the cooperation with the North Sea-Med corridor, with which synergies are to be sought in
  - Paris node (notably IWW and rail access and crossing),
  - the link between the Seine and the Canal Seine-Scheldt, to be seen as a whole,
  - and in serving Luxembourg logistic hub from Metz along the NSMED corridor by rail to/from the Atlantic Coastline and the Iberian Peninsula, in cooperation with the Atlantic RFC

### **Corridor-wide Climate and Environmental appraisals**

An on-going development of the Corridors' Work Plan is to appraise the mutual impact of climate change in the corridor, and to characterise its overall contribution of safeguarding the environment from local pollution and noise.

Due attention will therefore be paid by the next Work Plan in:

- assessing the potential contribution to climate change mitigation (reduction of Greenhouse Gas emissions) of the corridor through a more effective multimodal transport pattern;
- mapping specific needs, opportunities and projects linked to the adaptation to climate change (e.g.: extreme events risk increase, variability of water level and flows in river basins);
- identifying the Corridor and corridor's projects effects on local environment (including biodiversity) and noise;
- highlighting best practices along the corridor that have a potential for cross-fertilisation and replicability for
  - climate change mitigation,
  - adaptation to climate change,
  - reduction of environmental negative impacts / enhancement of the quality of the environment and biodiversity,
  - tackling (rail) noise.





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