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Title: **Motorways of the sea: a new infrastructure for Mediterranean countries<sup>3</sup>**

**§ 1. The European context**

The European Union White Paper “European Transport Policy for 2010: time to decide” (September 2001) made projections of a 45% freight traffic increase in 2010. Today, in the absence of a proactive policy towards intermodality, all incremental traffic demand will be absorbed by road, nowadays already representing over 75% of the share of land transport in Europe, railways covering only 13%.

The present context shows how the transport field is facing a growing conflict: on the one hand the increasing demand for mobility (both passengers and freight) and on the other hand the increase in congestion, the poor quality of services, the damages to the environment, the citizens’ safety at risk and the isolation of some peripheral regions.

Road carries 44% of freight and 79% of passenger transport, with an annual increase of the car fleet of 3 million new vehicles per year in the European Union. The consequences are saturation of industrialised urban regions (i.e. Ruhr, Randstad, Ile de France, northern Italy, southern England), increasing pollution (road transport accounts for 84% of all CO<sub>2</sub> emissions from transport) and unsafe roads.

What about the rail alternative? Considering the above, rail would be the obvious choice, but the lack of space and financial resources for building new infrastructures together with a growing concern by environmental groups against any type of new infrastructure (even rail!) are reducing the chances of rail taking its part in facing the transport challenge: there is no doubt that transport and energy will represent the real challenges for the next generations.

Rail share is shrinking: between 1970 and 2005 it fell from 10% to 6% for passenger and from 21% to 8% for freight. The average speed of the international transport of freight by rail is 18 km/h and every year 600 km of tracks close, compared with the increase of the road (+1200 km/year).

Moreover, the European railway system suffers of poor interoperability among different national railway systems not only in terms of hardware (i.e. rail gauge), but also in terms

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of software (traffic control and signalling). Rail companies assign priority to passengers (particularly commuters). So far, in spite of large investment, no substantial modal shift of freight from road to rail was attempted. Notwithstanding the efforts, rail share of freight traffic is decreasing all over Europe.

If we take into consideration the waterborne transport alternative, the situation appears to be quite different. The geography of Europe makes it possible to envisage efficient sea alternatives to most point-to-point connections: only 5 EU member States out of 25 (+2 in the near future) do not have ports in their homeland, but are served by efficient waterways. It must be stressed out that some connections are even shorter by sea than by road and, for island countries (Malta, Cyprus) and island regions (such as Sardinia and Sicily for Italy, Corsica for France, Crete for Greece) the maritime service is practically the only solution to avoid isolation.

Nowadays, notwithstanding the fact that Short Sea Shipping carries 41% (including solid and liquid bulk) of intra-Community goods transport, Europe is facing a continuous growth of road traffic for freight distribution, since the growing demand is for general cargo.

The European Commission introduced the concept of Motorways of the Sea (MoS) in the above mentioned transport White Paper, underlining how it can represent “a real competitive alternative to land transport”. In recent years, after the Essen list (1996), the White Paper (2000), the High Level Group (2003) and the introduction by Karel van Miert of MoS in the list as Project 21, the MoS have become one of the 30 priority projects of the TEN-T Network (2004).

Short Sea Shipping services may play a key role in the next future also combined with maritime feeder services (particularly in the Med area). Moreover, in the scenario of a “Wider Europe”, which plans an extension of MoS services to the EU’s neighbours (as set out by a high-level group in December 2005, under the coordination of Mrs. Loyola De Palacio, former EU transport commissioner), the EU countries will be linked to Northern Africa, the Black Sea and potentially also to the Red Sea beyond the Suez Canal.

## **§ 2. Motorways of the Sea: a priority project for the EU**

MoS provide a more efficient, more cost-effective and less polluting freight transport; they reduce road congestion on key bottlenecks across Europe, provide better and more reliable connections for peripheral regions and play a role in making Europe’s economy stronger and more sustainable. It may help if we report the EU definition of MoS:

*“The trans-European network of motorways of the sea is intended to concentrate flows of freight on sea-based logistical routes in such a ways as to improve existing maritime links or to establish new viable, regular and frequent maritime links for the transport of the goods between Member States so as to reduce road congestion and/or improve access to peripheral and island regions and States. Motorways of the sea should not exclude the combined transport of persons and goods, provided that freight is predominant”* (30.04.2004 EN Official Journal of the European Union L 167).

Around European coasts, the sea is a largely unexploited resource for transporting goods and passengers. Not only does sea transport provide an effective alternative to bypass natural barriers, such as the Alps and Pyrenees on journeys between Italy, France and Spain, but it also provides shorter and quicker routes to Europe’s most peripheral regions. MoS are key sea routes between EU Member States, offering regular and high-quality services that, combined with other transport modes, provide an efficient alternative to road-only transport. Through the trans-European transport networks (TEN-T), the EU is now supporting the development of motorways of the sea in four key corridors around



the new TEN-T corridors. In other words, MoS are the natural extension of land corridors, wherever they connect a port with a significant traffic potential.

This approach requires a new vision in transport planning, involving wide-ranging partnerships of public and private players (not only ports and shipping operators, but also land-based transport operators, trucking companies, forwarders, freight consolidators, logistics companies). A major change in thinking is required, so that individuals consider the entire logistics chain – from the factories where goods are produced, to the final consumer – as a whole.

### § 3. The EU role

#### § 3.1 Research activity

The research on trans-European transport networks intends to support the evaluation and implementation of the investment programme, including the development of tools and methodologies to assist the planning and funding of infrastructures, and the demonstration of innovative technological and operational solutions for traffic management and intermodality.

Table 1 - The main research lines of the EU TEN-T Network

<b>Research line</b>	<b>Short Description</b>
<i>Interoperable European networks</i>	Identify organisational strategies to improve interoperability and develop innovative technologies for freight terminals and combined transport.
<i>Managing traffic and navigation</i>	Develop speed management systems for road transport, European systems for traffic management in air, rail and waterborne transport, and promote the Galileo Program.
<i>Evaluating trans-European networks</i>	Assessing regional and economic impacts and barriers to implementation, and developing strategic tools and methods for forecasting traffic and environmental impacts.
<i>Interconnecting multi-modal networks</i>	Identifying new solutions for freight terminal operations, seaport-hinterland connection and pre- and end-haulage.
<i>Developing trans-European networks</i>	Assessing the potential of dedicated freight railway networks and inland waterways, providing guidelines on the implementation of public private partnerships, and assessing alternative developments for pan-European corridors.

#### § 3.2 Making the MoS concept a reality: European financial support

The 2004 revision of the guidelines for the trans-European transport networks (TEN-T) included, as previously mentioned, the development of four motorways of the sea corridors as one of 30 priority projects, which receive the bulk of EU funding under TEN-T.

Work is now under way, and initial allocations of EU funding have been made already available. Using TEN-T funding, the Commission is supporting the elaboration of master plans for the development of motorways of the sea in the Baltic Sea, Atlantic Ocean and Mediterranean Sea. In Italy, RAM (see § 4), as already said, prepared the infrastructure Master Plan that has been inserted in the DPEF 2005-2009 document (Financial and Economics Programming Document of the Italian Government).

Cohesion and structural funds are also available to help specific regions to develop their transport infrastructures, and particularly improve links to and from the more peripheral regions of the Union.

The Marco Polo programme provides start-up subsidies to get specific intermodal services up and running.

The motorways of the sea concept is about breaking down the barriers between transport modes, organising and making better use of our existing transport resources. It can provide a real alternative, taking traffic off roads and improving the cohesion of the Union. Its success, fundamentally, does not depend on massive investment, but on the various stakeholders making real efforts to work together. With TEN-T support, the EU aims to make this happen.

The EU financing capacity devoted to infrastructure investment will rise, for the 2007-2013 period, up to 750 Million € for the Marco Polo Programme and 1.800 Million € for TEN-T. These represent a considerable increase compared to the resources dedicated to the same programmes in the previous financial period 2004-2006 (between Marco Polo and TEN-T from 30 to 120 million € /year).

#### **§ 4. Motorways of the Sea: a great opportunity for Italy**

If the geography of Europe is particularly adaptable to MoS, this is even more true for Italy, which is located at the centre of the Mediterranean sea, and belongs to 2 of the 4 European MoS corridors defined by Karel van Miert (western- and eastern-Mediterranean corridors). It can be said, with a slight overstatement, that it may be difficult to design a MoS line in the Mediterranean without touching an Italian port.

The extension of the coast with respect to the mainland has been responsible for an historical projection of the country towards the sea. Therefore it is not surprising that the concept of MoS was first introduced by Ciampi, the former President of Italian Republic, who noticed that while the “Autostrade” (Motorways) were congested, two “Autostrade del Mare”(MoS) were available on both sides of the Italian peninsula. Later the concept was adopted by the EC and MoS became part of the TEN-T network during the semester of Italian EU Presidency.

The European Commission made available two Programmes for financing the MoS:

- TEN-T: since MoS were included, starting from 2004, in the TEN-T Programme, part of the funds can be channelled to MoS, provided that the project requires specific interventions on infrastructure (e.g.: quays, parking areas for trucks, tracks from port to yard, highway turnoffs)
- Marco-Polo: a Programme devoted to services for intermodality, recently extended to MoS. An incentive is offered to shipowners and/or consortia for each tonn x km shifted from road.

In order to be ready to develop the MoS and to take advantage of the EC funding, the Italian Ministry of Transport decided to start a specific Co.Ltd. (RAM-Rete Autostrade Mediterranee), 100% state owned through the public holding Sviluppo Italia. Mission of the company is to support the Ministry, to respond to the EC initiatives, to coordinate with other EC member countries, to promote new lines and services.

The approach is original (no similar company exists in EC countries), and has been instrumental in achieving the following results: a Master Plan has been defined and approved for the development of MoS; two TEN-T projects were started for extending the Master Plan to Eastern and Western Mediterranean respectively, with the cooperation of other Mediterranean member countries; an information system (ACCESS- Advanced Contact Centre for the Enhancement of Shortsea Shipping) for online booking of truck passages on MoS lines, developed with Spain and France and open to other EC and North African countries. Bilateral agreements with North African countries are under way in the framework of the Wider Europe initiative.

Other results are related to promoting new lines and new traffic. The MoS traffic is increasing at a rate of more than 20% per year, and presently more than 1.4 million trucks use yearly MoS services, on 150 regular MoS lines touching Italian ports.

Twenty new Ro-Ro or Ro-Pax ships are on order at national shipyards, and ten second-hand ships are currently been looked for in an effort of increasing by 50% the MoS fleet.

## **§ 5. Investment in the private sector**

Many shipping Italian companies are heavily investing in the acquisition and/or construction of Ro-Ro and Ro-Pax ships, as previously stated.

Some of the 30 new and used ships will be assigned to the existing lines in order to improve their frequency or speed, and some will be reserved to new lines.

The above mentioned investment finalized to MoS services can be estimated around 1700 million of euro in the last 5 years, plus 1200 million for the latest additions.

It is important to point out that the cost comparison between ship and road infrastructure construction: i.e. 1 RO/RO ship costs as much as 1 Km of highway.

At the time speaking, in the Mediterranean area, there are more than 150 MoS lines with origin and destination in the Italian ports. Since 2000, the loading capacity has increased by 103% for Mediterranean services, 137% for Sardinia and 114% for Sicily.

Other fundamental actors in this framework are the road hauliers that, at the time speaking, being extremely fragmented especially in Italy, must put into practice aggregation policies in order to face competition from outside EU.

In fact, in order to facilitate the modal shift from road to sea, a specific incentive was devised for truckers (ecobonus) which returns to the trucker part of the saving in external costs. Part of the financial provision is reserved to restructuring the trucking sector, in the following way. The first phase of MoS development intends to take the trucks off the road, for the reasons we explained above: each driver with his truck will travel on the ship to the port of arrival and afterwards will drive on land up to the final destination (accompanied transport). The second phase of MoS aims at transporting only the trailer: this means that hauliers of different regions should cooperate (i.e. with commercial agreements or consortia) in order to ensure the completion of the supply chain.

Therefore, restructuring the road haulier sector as well as employing information technologies will be essential for the success of MoS.

## **§ 6. Conclusions**

MoS represent a growing issue and constitute one of the valuable answers for Europe development, whose territory is characterized by a limited space for the construction of new infrastructures.

The development of MoS doesn't need big investment (comparing with those for land infrastructures) and in any case the necessary ones are more flexible (i.e. a ship can be moved from one line to another).

The critical points concern the interconnection between the maritime and land networks in the ports, that in Europe are very close or sometimes even downtown important and very crowded city centres.

An increasing use of the maritime alternative will therefore contribute to the absorption of the continuous growth in traffics and the reduction of the accidents risks on the road network, representing a very high price in terms of loss of human beings.

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