



**PRIORITY 6
SUSTAINABLE SURFACE TRANSPORT**

MTCP

Maritime Transport Coordination Platform
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**WORK PACKAGE 2.1
QUALITY & EFFICIENCY**

**TERMS OF REFERENCE THE REALISATION OF MOTORWAYS
OF THE SEA**

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INITIAL
TERMS OF REFERENCE
FOR A DESK STUDY ON GOOD FLOWS IN EUROPE FOR A PRE-
DEFINITION OF MOTORWAYS OF THE SEA

I. Objectives of the study

The scope of the assignment is to prepare a comprehensive study on goods flows in the European Union and towards our neighbour-relevant for road, rail, maritime and inland navigation transports. The study shall give indications where Motorways of the sea could be set up throughout Europe. Transport demand and goods flows shall be projected under alternative growth forecasts. Links in the Mediterranean and the Black Sea should receive appropriate attention. The study should seriously take into account already existing work and build heavily on this.

II. Scope of the study

1) Description of the current trade and goods flow patterns

The aim of this chapter is to present the demand for transport services, with special emphasis on road and maritime transports. The chapter should include a description of the current trade and goods flow pattern in volume and weight, divided on different categories of goods and transport corridors. A special section should be devoted to an account of the current flow pattern for unitised cargo. Separate account should be given for intra-EU trade, extra-EU Trade and trade within the individual countries.

The chapter should present the transport system in the EU, with an intermodal approach. An overview is expected of the relevant maritime and intermodal transport corridors and rail and road traffic systems.

2) Supply of maritime transport

The aim of this chapter is to present the supply side of the maritime transport sector. The supply of maritime services will focus on goods transports. Pure passenger services will not be covered by this report. The chapter will also give a picture of the tonnage structure, which has an important impact on the requirements on infrastructure in ports

- Supply of regular maritime services (container and, if relevant other market segments).
- Supply of Ro-Ro and Lo-Lo services either dedicated for individual companies or services with open access. Pure passenger lines should not be considered.
- Vessels calling ports (ship types, sizes, age structure, ice class etc.)
- Description of the port sector in the EU, with emphasise on international seaports category A (TEN-A ports).

3) Forecast on EU trade, goods flows and the demand of transport services for the years 2010 and 2020

When making the forecasts on EU trade, goods flows and the demand of maritime transport services, it should be assumed that the decided high-priority TEN-T projects are implemented.

4) Indications where Motorways of the sea could be set up throughout Europe

Taking into account what is above, the report should give indications where Motorways of the sea could be set up throughout Europe and designate the best candidate Motorways of the sea ports /clusters of ports.

III. Expected results, conclusions

It is not expected that the study presents a thorough and undisputable overview of origins and destinations in Europe. Rather, there should be a robust analysis, allowing indications for options for setting up motorways of the sea. The study should allow strategic choices to be made for high potentialities for motorways of the sea g.

The contractor shall submit the final report in English in six weeks to two months not later than 15 May 2005, in both paper and electronic versions. A draft final report shall be submitted in writing no later than 30 April 2005.

The report should be accompanied by presentation material to be used for a final visual presentation for the Commissioner to the Transport Ministers in the upcoming Motorways of the sea conference that shall take place in Brussels.

IV. Method

The study shall comply with the conditions of the contract to which these Terms of Reference are attached.

The study shall mainly be based on desk research.

The contractor shall gather the necessary data and information from sources outside and inside the European Union institutions. The contractor shall carry out the relevant analyses of that data and draw justifiable conclusions or make justified evaluations. The contractor shall present the data in an understandable format in which the main issues shall be clearly listed.

The contractor shall review the recent literature within the relevant field and fully exploit the outputs of former studies carried either at international, European or national level, e.g.:

- The World Bank study on "Trade and Transport Facilitation Audit of the Baltic States (TTFBS)", 30 November 2004
- Final Report of the TEN-STAC Project funded by the European Community on "Scenarios, Traffic Forecasts and Analysis of Corridors on the Trans-European Network", 2004
- French Ministry for Transports Feasibility study on "A Short Sea Shipping line of general interest between a port on the French Atlantic coast and a port in North of Spain", 2004
- "Franco-Spanish Observatory Annual Statistics 2004"
- "IMDO-Ireland Study on "Irish Short Sea Shipping Inter-European Trade Corridors", 2004
- Italian study on Motorways of the Sea in the Mediterranean
- Any other relevant material

V. Budget

Approximately € 30 000, - at rate costs + 20% overhead, corresponding to about 50 person days

VI. Team

The participants will be selected based on the following criteria:

- Experienced researcher or practitioner within the relevant field.

Work programme

Goods flows in Europe for a pre-definition of Motorways of the Sea

Scope

A call for proposal for Motorways of the Sea (MoS) will be launched in April within TEN-T. Several initiatives are underway, especially from France, Spain and Italy. Other countries seem to be more hesitant, perhaps due to uncertainties regarding the concept and the selection process. Building on the corridors indicated till now, the Commission needs a first quantitative assessment of the transfer potential and its geography to promote the interest of the Member States and to assist in the evaluation of the proposals which are expected.

Objective

Motorways of the Sea (MoS) shall be part of the TEN-T. In consequence they must provide robust corridors catering for the need of a number of O/D relations. As any motorway system they can have several exits/entrances, but they have to be developed around relations which are able to generate the required minimum demand in order to motivate the investments. A Motorway of the Sea should promote cohesion within the Union and make maritime transport competitive to road transport. This requires a special attention to the development of trade with high value and “unitisable” cargo.

The aim of the study is to give indications where MoS could be set up throughout Europe based on trade development till 2010 and 2020 between the EU member states as well as trade with neighbouring countries. A focus on the development of unitised cargo and the relation LoLo/RoRo is a further objective.

Expected results

The study is expected to result in a high level presentation of major findings and conclusions underpinned by references and results developed underway. Based on a number of cases (4-6) the presentation shall demonstrate the potential of moving freight from a road corridor to a competing Motorway of the Sea and the type of improvements in service and/or reduction in user costs which would be necessary to achieve the transfer. The price for reaching different levels of shift from road to sea could then be calculated. Assuming that the report will be presented in MS Powerpoint, the following slides/ results could be envisaged:

1. International trade development within EU total and per aggregated commodity group (especially unitisable cargo).
2. Transport demand for 2003 (actual) and 2020 (simulated) distributed on the transport networks in tonkms in total and per mode.
3. Change in modal and route split from 2003 to 2020 without and with the Motorway of the Sea. The result will be presented in deltas (in tonkms) comparing the base scenario (2003) with the outcomes for 2020.
4. The potential of the following Motorways of the Sea will be illustrated
 - Baltic Sea
 - The Atlantic Arc and the Channel
 - Western Mediterranean
 - The Danube corridor
 - The Rhine corridor
5. The transfer potential towards the Motorways of the Sea will be assessed through changes in the cost and performance levels on the sea links that will improve their relative competitiveness.

Methodology

The study will be carried out by using BMT's "European Freight Model STAN¹". The model has been used (and calibrated) in many commercial and regional studies mainly in the northern parts of Europe. During an ongoing study for the Commission on infrastructure security (J4) it has been expanded to incorporate the south of Europe and the trade flows across the Mediterranean and towards Northern Africa.

The EFM-STAN model that will be used to calculate both a changed route and modal split is based on a cost optimisation model. All major road, rail, sea, inland waterway links and the transfer nodes are attributed with parameters such as capacity and certain costs per tonne to use them. The costs change if a link becomes congested (volume delay function). Through numerous iterations the model calculates an optimal distribution of transport flows, which means a cost minimised scenario. The distribution in such a scenario provides an insight into very likely distribution under the previously made assumptions.

The transfer potential towards the Motorways of the Sea will be assessed through changes in the cost levels on the sea links. Increased capacities on the sea links, increased frequencies in the transfer nodes and reduced transfer costs will increase the relative competitiveness of the sea links vs. the competing land links. Increased capacities and frequencies will also minimise quality costs for using the sea links which are due to waiting times. The average speed of the sea links will not be subject to changes. Since the model simultaneously calculates a likely modal and route split, all transport modes stand in competition to each other. That also includes the competition between road and sea, but also between rail and sea.

The magnitude of the changes needed in order to result in a substantial transfer from road to sea will be discovered by testing more or less ambitious levels of improvements of relative competitiveness. Thus it will be possible to illustrate and to assess the costs for achieving the transfer.

¹ The model is described in the appendix

Time plan

- 25.04.05 A first draft of results with one motorways scenario will be delivered for further discussion
- 20.05.05 Final delivery of the total set of slides illustrating the simulated modal shift. .