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SUSTAINABLE SURFACE TRANSPORT

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Maritime Transport Coordination Platform

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CONTENTS

| | | |
|----------|--|-----------|
| 1 | INTRODUCTION..... | 6 |
| 2 | PUBLISHABLE EXECUTIVE SUMMARY..... | 6 |
| 3 | DISSEMINATION AND USE..... | 8 |
| 4 | ANNEX A: MTCP STUDY REPORTS EXECUTIVE SUMMARIES..... | 9 |
| 4.1 | D2.1-1: MARITIME INSURANCE FOR 3 RD PARTY LIABILITY | 9 |
| 4.2 | D2.1-2: IMPACT OF MARITIME STATE AID..... | 10 |
| 4.3 | D2.2-1: PORT STATE CONTROL EFFECTIVENESS REGARDING MARITIME LABOUR STANDARDS..... | 16 |
| 4.4 | D2.2-2: EU COASTGUARD COORDINATION SERVICES: PHASE 1..... | 20 |
| 4.5 | D2.2-3: EU COASTGUARD COORDINATION SERVICES: PHASE 2..... | 23 |
| 4.6 | D2.3-1: EU GRADUATE AND MASTERS PROGRAMMES FOR SEAFARERS | 25 |
| 4.7 | D2.3-2: SUPPLY AND DEMAND OF EU OFFICERS/RATINGS AND MANNING LEVELS..... | 28 |
| 4.8 | D2.1-3: PORT DATA EXCHANGE | 32 |
| 4.9 | D2.1-4: DESK STUDY ON GOODS FLOWS IN EUROPE (MOS 2005-2013)..... | 36 |
| 4.10 | D2.1-5: INTERMODAL LOADING UNITS | 38 |
| 4.11 | D2.1-6: BENCHMARKING SERVICE PERFORMANCE..... | 40 |
| 4.12 | D2.2-4: ENVIRONMENTAL TRANSPORT LEGISLATION | 45 |
| 4.13 | D2.3-3: SAFE MANNING LEVELS OF MERCHANT SHIPS | 49 |
| 4.14 | D2.1-7: IMPACT ASSESSMENT ON SSS PROMOTION PROGRAMME MID-TERM REVIEW..... | 51 |
| 4.15 | D2.1-8: GOODS FLOWS IN EUROPE II..... | 56 |
| 4.16 | D2.1-9: TONNAGE MEASUREMENT STUDY | 59 |
| 4.17 | D2.1-10: SPC EXPANSION FEASIBILITY STUDY | 60 |
| 4.18 | D2.3-4: CERTIFICATION OF TRANSPORT LOGISTICIANS & TRANSPORT FREIGHT INTEGRATORS..... | 61 |
| 5 | ANNEX B EXPERT GROUP STUDY RECOMMENDATIONS..... | 64 |
| 5.1 | EXPERT GROUPS DELIVERABLE D4-1; A TO G..... | 64 |
| 5.2 | EXPERT GROUPS DELIVERABLE D4-3; A TO G..... | 65 |
| 6 | ANNEX C EXPERT GROUP ANNUAL REVIEW..... | 67 |
| 6.1 | EXPERT GROUPS DELIVERABLE D4-2; A TO G..... | 67 |
| 6.2 | EXPERT GROUPS DELIVERABLE D4-4; A TO G..... | 68 |

1 INTRODUCTION

This Final Activity Report provides an overview of the execution of the MTCP Project. Section 2 provides this overview in the form of a publishable Executive Summary.

This report together with the MTCP Final Management Report form MTCP Deliverable D1-14 'Final Report'.

2 PUBLISHABLE EXECUTIVE SUMMARY

The Maritime Transport Coordination Platform (MTCP) commenced on April 13th 2004 – and ended on April 12th 2007. The MTCP was supported by Directorate G, Directorate-General for Energy and Transport (DG Tren) Unit G3 / Motorways of the Sea and Intermodality the Commission under the Sixth Framework Programme, Priority 6 – Sustainable Surface Transport.

The MTCP was commissioned to provide policy support to DG Tren. Its mechanisms for providing this support included a Maritime Sector Observatory (MTSO), provision of short term experts, eighteen short policy relevant studies and seven expert groups offering support within different aspects of the maritime arena.

MTCP comprised 22 partners representing a broad spectrum of expert maritime organisations and companies within Europe. British Maritime Technology Ltd was the Coordinator supported by three Principal Partners, Det Norske Veritas AS, the Dutch Ministry of Transport, AVV Transport Research Centre and the World Maritime University. The other contractors were;

| | |
|--|--|
| Seafarers International Research Centre, University of Cardiff (SIRC) | France Développement Conseil (FDC) |
| Sociedad de Salvamento y Seguridad Marítima (SASEMAR) | Institut Français de Navigation (IFN) |
| Lyngsø Marine A/S (LMA) | The Alliance of Maritime regional Interests in Europe (AMRIE) |
| SSPA Sweden AB (SSPA) | Gemeentelijk Havenbedrijf van Antwerpen (Antwerp) |
| Sequoyah International Restructuring N.V. – S.A. (Seq) | Institute of Shipping Economics and Logistics (ISL) |
| Autoridad Portuaria De Gijon (PAG) | National Technical University of Athens (NTUA) |
| D'Appolonia (DAP) | LogIT AS (LogIT) |
| Stichting RAND Europe (RAND) | Gdynia Maritime University (GMU) |
| MarineTech South Ltd (MTechS) | |
| METTLE Groupe SARL (METTLE). | |

The Project was delivered through five work packages (WPs). WP 1 covered project coordination and quality.

WP2 ideas for short policy related studies were developed by both the MTCP partners and DG Tren. DG Tren identified the most useful studies to undertake and eighteen of these studies were then conducted by the MTCP partners. The studies conducted were;

- D2.1-1: Maritime insurance for 3rd party liability
- D2.1-2: Impact of maritime state aid
- D2.2-1: Port state control effectiveness regarding maritime labour standards
- D2.2-2: EU coastguard coordination services: Phase 1
- D2.2-3: EU coastguard coordination services: Phase 2
- D2.3-1: EU graduate and masters programmes for seafarers
- D2.3-2: Supply and demand of EU officers/ratings and manning levels
- D2.1-3: Port data exchange
- D2.1-4: Desk study on goods flows in Europe (MOS 2005-2013)
- D2.1-5: Intermodal loading units
- D2.1-6: Benchmarking service performance
- D2.2-4: Environmental transport legislation
- D2.3-3: Safe manning levels of merchant ships
- D2.1-7: Impact assessment on SSS promotion programme mid-term review
- D2.1-8: Goods flows in Europe II
- D2.1-9: Tonnage measurement study
- D2.1-10: SPC expansion feasibility study
- D2.3-4: Certification of transport logisticians & transport freight integrators.

Annex A presents the Executive Summaries of each of these studies.

WP 3 was dedicated to providing an access mechanism to expertise, information and knowledge in the maritime transport sector. This was delivered through a Maritime Transport Sector Observatory (MTSO) platform, <http://www.maritime-transport.net/mtso/index.php>. The MTSO also acted as a depository for the MTCP studies and provided basic information on the background and operation of MTCP. A mechanism whereby DG Tren could request the provision of maritime sector experts to support their short term needs was also incorporated within the MTSO. Although this mechanism was not called upon during the course of MTCP, DG Tren used this work package to sub-contract a body of experts to support the European ShortSea Network.

WP 4 provided seven expert groups covering; Human Resources & Maritime Education & Training; Technology & Equipment; Marine Market, Operations & Logistics; Security, Safety & Risk; Environmental Impact & Management; Traffic Management & Transport Information; & Institutional Workings & Regulation Enforcement. The expert groups produced four key deliverables - two annual reports on status and forecasts in their subject areas and two separate sets of recommendations for policy support studies. The titles of the policy support studies proposed by the Expert Groups in their two separate reports (deliverables D4-1 A to G and D4-3 A to G) appear in Annex B. An overview of the areas of relevance identified as part of the two status and forecast reviews (deliverables D4-2 A to G and D4-4 A to G) appears in Annex C. A final workshop on the Common Maritime Space was also supported by the expert groups.

Stakeholder engagement was conducted through WP5. However a refocusing of MTCP during period 1 weakened this link and little stakeholder engagement was conducted. A draft dissemination plan was prepared but not taken any further. External stakeholders were however involved in the final Common Maritime Space workshop.

3 DISSEMINATION AND USE

A draft dissemination plan was developed within MTCP but as a result of refocusing was not taken to a final version. The reports produced by the short policy related studies were delivered to DG Tren (their customer). The reports and their Term of Reference were all classified as public and made available for public downloading via the MTSO.

4 CONCLUSION

During its three years the MTCP has provide a flexible coordination platform offering support to DG Tren. It has undertaken 18 short policy relevant studies. It's Expert Groups considered emerging issues within their specialised areas and studies focussed towards policy support.

A MTSO was developed and partially populated, access was provided to both the public and the Commission. The MTSO hosted the MTCP studies that could be accessed by both the public and the Commission.

5 ANNEX A: MTCP STUDY REPORTS EXECUTIVE SUMMARIES

5.1 D2.1-1: Maritime insurance for 3rd party liability

Third party liability insurance is not compulsory, though compulsory insurance is being introduced in some regions (e.g. Japan).

The majority of craft will have third party liability insurance. Uninsured ships are a potential problem but one that is not considered by the insurers as likely to be significant – particularly amongst seagoing ships. However, compulsory insurance may be welcomed by the marine insurers as a tool to influence quality – though there are several caveats including the policing and enforcement issues.

The P&I Clubs provide the vast majority of third party liability cover in the marine sector. Of these the vast majority of ship owners are entered within a mutual P&I Club and member of the International Group of P&I Clubs; 85% to 90%+ for ocean going ship types are entered with the International Group Clubs, dependent on sector. The thirteen Clubs in the International Group provide third party liability insurance for an estimated 98% of the world's ocean going tanker fleet.

Other liability cover providers predominantly cater for niche clients – ship types, trades.

The P&I Clubs form an integral part of the marine industry.

The P&I Clubs provide a flexible cover suited to their Members' needs and adaptable to changes in legal and commercial framework. They have a service based ethos. The product extends beyond pure insurance cover to include claims handling, legal and technical advice through to a full-scale emergency response assistance.

The concept of Mutuality underpins the service ethos and is a fundamental part of the P&I Clubs' ability to provide the range and magnitude of cover, both within individual Clubs and amongst the International Group. It is their mutuality that makes the P&I Clubs fundamentally different from commercial insurers.

The mutual system and pooling of Club resources within the International Group permits the P&I Clubs (of the International Group) to provide cover of up to \$2 billions (maximum to the reinsurance) or an ultimate level of about \$4 billions. This cover is open to every Club within the Group and far exceeds anything provided under other forms of insurance.

Quality of ships and shipping operations has been a factor considered by the P&I Clubs for several years. A system of monitoring, vetting, inspecting and training has been developed in order to track and influence quality of operations. The quality of the system, and the scope of the quality assessment, varies from Club to Club, however.

Within certain liability categories, such as oil pollution the P&I system works as a complementary part of the international regime. For oil pollution the compensation limits have recently been raised. An optional third tier Supplementary level of compensation is likely to cover all foreseeable pollution costs in a major incident. Other lower levels may be debatable.

The funding of the new compensation regimes is the cause of much debate with oil producers in particular questioning the balance over the long term between themselves and insurers. The P&I insurers themselves may be willing also to see this reviewed in order to continue the perceived equitable process seen to date.

5.2 D2.1-2: Impact of maritime state aid

The study examines – via a UK case study – the impact of some MSAs that have been operated during the period from 1997 to 2004. However, its primary purpose is to suggest a monitoring and assessment mechanism to improve the quality of the Commission’s assessment of MSAs under the 2004 Guidelines. (This could then be used, if required, to conduct an historical analysis). In this manner it should then be possible to determine the on-going benefits of the MSA regime to the European maritime sector and the necessity (or otherwise) for its continuation after 2010. Approach Adopted and Constraints. The approach adopted was determined by a variety of constraints and a number of key assumptions were made.

Theoretical Observations. A number of theoretical observations were made in relation to aspects of the study. These are reported in Annex 5.

Consultations. Consultations took place with a limited number of maritime administrations in key Member States and with some national and European-level industry and trade union organisations. A list of those consulted and of other sources of information is found in Annexes 3 and 5.

Current Position of Maritime State Aids

2004 Guidelines Revision. The 2004 revision of Maritime State Aids (MSAs) – based on the premise that there remain distortions in the international market for shipping which justify derogation from the strict prohibition of state aids under the competition policy of the Treaty – introduced changes in the previous 1997 Guidelines to remove ambiguities, to extend the coverage to domestic vessels used in international activities, and to establish improved monitoring and assessment procedures. Commission Storage of Data of Member State's Schemes. The current position on maritime state aids (MSAs) is that information on the various schemes is held only in the form of the notification of the aid scheme(s) when they were introduced and notified to the European Commission (DG Tren) for approval. This notification information is held only in the language of the Member State concerned on the database of the General Secretariat of the Commission. It is of course also held, when formal approval of the scheme(s) is given by the Commission, on the O.J. database. For some reason this latter information seems not to be stored in a separate database by DG Tren.

Categorisation of State Aids by Type. A variety of MSAs is deployed by Member States and may be classified by type as follows a) direct aids to shipping, and b) indirect aids to shipping. This very broad classification is not of great use in attempting to assess the economic impact of the disparate schemes.

Intended Economic Impacts of Maritime State Aid

Overall Purpose. Under the 2004 Guidelines, and indeed under the 1997 Guidelines, the broad intended impacts of MSA schemes are to halt and if possible reverse the earlier decline in the EU merchant fleets and to promote the EU merchant seafarers profession and the employment of seafarers. The 2004 Guidelines introduced a further broad objective, namely to support the other maritime cluster industries linked to shipping (excepting shipbuilding and ship repairing).

Categories of State Aids by Impact. The categories by impact are: aids which promote, directly or indirectly, European flags; aids which promote the European seafaring profession, and aids which indirectly promote the maritime cluster.

The Maritime Cluster

Cluster Approach. The shipping industry is the specific target for most MSA schemes, as is the employment and welfare of seafarers. However, the economic benefits are, in practice, spread beyond the shipping industry, benefiting other industries in the so-called maritime cluster.

Review of E.U. Cluster Studies. Considerable research has been carried out during the past decade in defining the maritime clusters in a number of EU countries and across the EU, and in determining the economic linkages between either the shipbuilding or the shipping industry as the core/prime mover in the maritime industrial cluster and the other industries such as shipping services, ports and port services, etc.

Cluster Industries. The designation of maritime cluster industries can vary widely, running from ship-building and equipment industries to maritime academies and colleges. One problem with such a wide range of industrial coverage is that not all EU countries will have all of the industries concerned. Moreover, the larger the coverage then the larger the impact and the more likely that less relevant economic impacts will be included in the measurement of economic impact.

Cluster Definitions. In this study the cluster must be defined so as to exclude shipbuilding and ship-repair and some indirect commercial activities around ports, e.g. catering.. This exclusion is not for solely for economic reasons, but because state aid to the shipbuilding and ship-repairing industries is not governed by the MSA rules, but by separate Directives of DG Competition. For this reason these industries *were excluded a priori by the terms of reference of the study*. However, as indicated in 3.3 above, there is further economic justification for the exclusion and for selecting the shipping industry as the core cluster sector. A specific definition of the cluster for maritime state aid purposes was then made.

Cluster Impacts. Having defined the maritime cluster for the purposes of this study and, indeed, for the purposes of assessing MSA then it is necessary to indicate what economic assessment/measurement techniques will be used to determine the key relationship between the shipping industry and the other maritime cluster industries. In practice these will be based on the primary research carried out in a number of EU countries that have applied (admittedly in differing ways) cluster analysis to the maritime sector of their economies. Instead the Finnish maritime cluster was ‘deconstructed’ and used as an exemplar for the Assessment and Monitoring Framework tool.

Economic Impacts of Maritime State Aid

Impact Pathways and Assessment. Measuring the impacts of the multiplicity of MSA schemes is not a simple matter. There are both procedural problems and data sourcing and processing problems. Notwithstanding these problems it is possible in principle to estimate the economic impact attributable to MSA. This is done on the basis of deriving some of the relationships involved, e.g. that between the turnover of the maritime cluster and the shipping industry, and making adjustable assumptions about others, i.e. that between the cost of state aid and the shipping industry turnover. The Excel spreadsheet format used will enable analysis to be simplified. Aids to Promote European Flags. The main corporate MSA schemes are of the tonnage tax variety, and these schemes are flag-neutral. Hence, these schemes do not directly promote European flagging. Nonetheless, the aid does appear to have a substantial indirect benefit to European flag fleets, plus those vessels which are managed and controlled from the EU countries concerned. Separating out these two impacts is not possible. There is also a correspondingly greater benefit to other maritime cluster industries, via the impact pathway from shipping turnover to these industries.

Aids to Promote EU Seafarers Profession. There are few MSA schemes which are specifically directed at seafarers themselves, either at their employment or at their

employability (training aids). However, both aids to reduce payroll taxes and those aimed at corporate tax reduction (tonnage taxes) will have a positive impact on seafarer's employment, via their impact on shipping turnover. It is also the case that, via these MSA schemes impact on the maritime cluster turnover, that *future* employment opportunities for seafarers will be enhanced.

Aids which Support Maritime Clusters. While none of the MSA schemes are specifically directed at the maritime cluster, the secondary impact through the multiplier impact on the cluster industries from the shipping industry turnover will support the development of the maritime cluster, even with the restrictive definition of the cluster for MSA purposes.

Monitoring and Assessment of State Aids

The Need. Currently, statistics relating to the increases in fleet size and to the employment of seafarers are reported to DG Tren each 3 years and at the end of the Guidelines period. An assessment is then made, on the basis of these figures, that MSA is justified. However, no attribution of the specific economic impact of MSA schemes is made at EU level. It does not appear that any such impact measurement is made at national level. As indicated above there are inherent difficulties in so doing. Nonetheless, it is crucial if Member States and the European Commission are to continue to provide and to authorize the provision of MSA that it should be properly justified. Suggested Approach. The aim has been to provide a methodology which – while providing an accurate assessment of the impacts of the maritime state aid at a relatively sophisticated level – is also capable of providing an assessment procedure which is not unduly onerous in terms of the work to be done by national authorities and maritime industry organisations. This procedure can enable benefit/cost ratios to be established which can be made more robust over time by further studies in Member States to improve the validity of the relationship parameters. Assessment and Monitoring Framework. The Assessment and Monitoring Framework (AMF) mechanism will be in the form of an Excel spreadsheet which will be able to be completed by Member States. Potential Difficulties. Notwithstanding the fact that – in the absence of a full econometric study – it has been necessary to make some 'heroic' assumptions, the AMF mechanism may still be regarded as relatively robust, and, importantly, capable both of manipulation for analytical purposes and of evolution into a more accurate measure of the attributable, economic impact of MSA.

Implementation Approach

Reporting Mechanism. Implementing the proposed assessment and monitoring mechanism (AMF) should be a relatively simple matter both for Member States who will have the responsibility for completing the Excel spreadsheet forms and for the Commission who will have the responsibility for using the AMF to assess and to monitor national MSA schemes in the context of the Guidelines. This is particularly important as certainly for a period of 3 years the suggested economic evaluation of MSA schemes will be **supplementary** to existing reporting requirements from Member States.

Periodicity. As the intention is to provide an on-going picture it is proposed that the submission of information via the new AMF mechanism is done annually.

DG Tren could have an annually updatable assessment profile of all maritime state aid schemes throughout the European Union. This will enable its 3-year review and its 6-year revision of the Guidelines to be accomplished more easily and more accurately.

Conclusions and Recommendations

Conclusions

The study conclusions reflect the view that - to ensure that maritime state aids are in line with the purposes and objectives set out in the 2004 Guidelines - there is a need to assess and continuously monitor (on a rolling annual basis) the benefit/cost ratios of the various approved aid schemes (and the assessment of proposed new MSAs). Hence, it is proposed that a new *supplementary economic* assessment and monitoring framework mechanism should be established, in addition to the current review and revision mechanism. The study has established what appear to be broadly acceptable benefit/cost relationships. The inclusion of secondary maritime cluster benefits is correct, notwithstanding the fact that some the benefits (e.g. in terms of jobs created) may accrue to the financial services industries which are likely to be peripheral to seafarers' occupational roles. However, there are modifications to some of the national schemes which would enhance the benefits seafarers secured from MSAs (one of the objectives of the 2004 Guidelines). In particular, to secure an enhanced benefit to the quality and total employment of EU seafarers, it would be useful to tie tonnage tax schemes (as is done in the UK) to cadet training and to extend this linkage to cover professional development throughout the working lifetime of EU seafarers. It is not, however, recommended that there should be any formal employment links built into MSA schemes. On the question as to whether MSA schemes should qualify for EU approval only if they have a national flag linkage for all vessels, the study concludes that such a linkage would be unnecessarily restrictive and may militate against the number of ships and shipping operations controlled from within EU Member States.

Recommendations

The principal recommendation arising from the study is that it is necessary and possible, in principle, to introduce a new monitoring and assessment mechanism for maritime state aids.

R.1. It is proposed that the AMF mechanism should be operated in the form of an Excel spreadsheet, covering all MSAs and their primary and secondary economic impacts, assessed against the costs of the aid schemes. This will assist in ensuring that the various national MSA schemes represent a cost-effective approach to securing the objectives set out in the MSA Guidelines, revised in 2004.

R.2. It is proposed that - unless and until the suggested new system is proven and capable of being used by all EU maritime countries - the new scheme should not replace

the current monitoring procedures, even if these are viewed as being less than perfect. The current and the new reporting systems should run side by side – on an experimental basis – for the time being, and at least until after the review in 2007.

R.3. It is proposed that the AMF mechanism should be operated on an annual basis as a monitoring mechanism, once it has been established in a robust form.

R.4. It is proposed that the European Commission should use – once validated – the AMF mechanism to establish a database and evaluation mechanism covering all national maritime state aids.

R.5. It is proposed that further work should be commissioned in all Member States that have not already done so to establish both maritime cluster relationships and to evaluate, via econometric studies, the economic impact of maritime state aids. The cost could be shared between the Member State and the European Commission.

5.3 D2.2-1: Port state control effectiveness regarding maritime labour standards

This report presents the results of a study who consists of two separate tasks. One task is to study the enforcement of maritime labour standards on board ships and port State control practises in this respect. The second task is to study involvement of humans in maritime accidents.

Task 1: Implementation on maritime labour standards on board ship through port State control

The objective of task 1 is to examine the implementation on maritime labour standards on board ship through review of common port State control practise and findings in European ports.

Interviews were conducted in France, Sweden, Denmark, Spain, Greece, Latvia, Estonia, Norway and Malta. This selection of countries appears adequate and represents a sample of countries in the North, South and West of Europe as well as some new Member States. Since SIRC had recently concluded a comparative analysis of port State control regimes in the United Kingdom, Russia and India, information related to the UK was also taken into account in the analysis.

The inspections are carried out in accordance with Council Directive 95/21/EC of 19 June 1995, as amended, and the procedure as described in the Paris MoU agreement. The EU member countries and the member of Paris MoU have implemented these requirements into their national legislation. All the countries included in the scope of this study has confirmed that they apply the Paris MOU inspection procedure with respect to port State control of working and living conditions onboard ship, which includes the ILO “Inspection of labour conditions on board ship: Guide-lines for procedure”.

An inspector entering the ship for an initial inspection will check relevant certificates and documents. If there is “clear ground” for believing that the condition of a ship or its equipment or its crew does not meet applicable convention requirements, a more detailed inspection may be carried out. Complaints received will be investigated. If the general condition of the maintenance onboard the ship seems to be good, the inspection may be limited to the reported deficiency. If the inspector’s general impression is that the vessel is substandard, he should proceed with a more detailed inspection. Examples on “clear grounds” for more detailed inspection of working and living conditions are given in the Paris MoU agreement.

It is sometimes suggested that there may be major cross-national differences in inspection practice between those administrations (such as Greece) where inspectors are under military discipline and those administrations (such as Sweden) where inspectors are civil servants. Such differences were not reported at interview with port State control officers. Equally, the accession countries formally follow the same port State control methodology as the other Paris MoU countries.

It is widely accepted that enforcement of labour standards is not normally an inspection priority. As one UK inspector put it: ‘the emphasis on inspections tends to focus principally around prevention of major accidents, safety of the ship and pollution prevention to minimise loss of life, rather than to prioritise on crew living conditions, etc’. Priority would only be given to labour standards in the instance a crew complaint (and these are rare because of job insecurity), or in the case of the recently ended 2004 Concentrated Inspection Campaign (CIC) on Selected Items in Relation to Living Conditions.

There is a high degree of congruity in formal inspection procedures between the different Paris MoU countries (all reported following exactly the same procedures for selecting target ships, for example).

The routine coverage of labour standards in inspections is of course only satisfactory if it leads to *enforcement* of these standards. A great majority of respondents reported some difficulties in *enforcement* of labour standard. Although detentions for labour deficiencies were reportedly uncommon, it would be erroneous to think that labour standards were ignored: a common strategy of inspectors was not to detain ships on the basis of deficient labour standards, but rather to detain ships for deficiencies in ship standards and to list the deficiencies in labour standards, not as detention items, but as deficiencies to be rectified before the ship left port.

A clear majority of the inspectors in the MTCP interviews answered ‘No’ to the question: ‘Do you believe the regulations are adequate for dealing with the problem of labour standards?’ Several respondents specifically mentioned the problems in respect of fatigue/working hours. Others mentioned the lack of unambiguous standards of cleanliness.

The MTCP fieldwork was only a scoping study and needs to be further developed. It is recommended to carry out a larger scale study to address some of the more detailed recommendations given in this report.

Task 2: Analysis of accident investigation reports in European waters the last 15 years.

It is commonly said that 80% of accidents are caused by humans. The objective of task 2 is to gain further insight the causes of accidents with respect to the role of the human by analysis of accident investigation reports in European waters the last 15 years.

The objective was to evaluate the role of the humans in maritime accidents, to identify the most common direct or indirect causes to human-related errors and marine accidents.

The study includes analyses of 16 accident investigation reports from the last 15 years in Europe. Although the number of reports is limited, valuable information was obtained which gives indications of further actions with regard to improvements in accident reporting and analyzing as well as human actions in accident/incident situations. The results are also consistent with other similar studies.

The most dominant immediate/direct causes leading to the accidents or to the severity of its consequences are

- Incorrect navigation or ship handling
- Failure to follow rules and regulations

These two causes can be found in more than 80% of the studied reports. Individuals play a role in most (all?) navigational accidents.

One finding is that actions by individuals are a factor in almost all accidents. However, the accident investigation reports are in several cases not very clear and distinct on the human factor contributions. In many cases it is evident that actual human errors caused the accident, especially in navigation accidents, in other cases the human factor is hidden in actions (or non-actions) by management on shore and others not directly involved in the actual operation of the ship. An important observation is also that the actions (or non-actions) of operators and management in critical situations had an impact on the severity of the hazardous occurrences.

Very few, if any, investigation reports specifically describe the use of a scientific human factor approach to investigation of the accidents. But often we find that people by acting differently, for example earlier or more or organised in the emergency situation may have reduced the damage or the number of lives lost.

The following recommendations are made:

- It should be considered to recommend regular and repeated training of ships' officers on handling of emergency situations in interaction with the shore side emergency organisation. A study to investigate the feasibility of this proposal is recommended.
- The IMO guidelines on safe manning should be reviewed and improved to ensure that masters can fulfil his duties. STCW 95 requirements on provisions bridge lookout should be reviewed.
- It should be considered to extend Vessel Traffic Services (VTS) systems to include active or even mandatory advice on how to navigate the ships in congested fairways, vulnerable sea areas and other areas needing protection.
- A simple and direct method for operational use in accident investigations should be introduced.

It is recognized that the proposed actions needs further study to be fully justified.

5.4 D2.2-2: EU coastguard coordination services: Phase 1

This document comprises MTCP's final report on phase 1 of DG TREN's tasking in respect of potential EU Coastguard Coordination Services. Relative to the earlier drafts (reference MTCP 2.2.17\001R.doc Rev 0, dated 23 July 2004 and Rev 1 dated 10 October 2004), this final version incorporates changes in response to comments received on 30 July 2004 and 9 December 2004 from Mr Gilles Bergot of DG TREN.

Phase 1 of DG TREN's tasking comprises a Feasibility Study on Long-Range Ship Monitoring and Data Transfer, covering in particular:

- Long-range ship-to-shore transmission of information concerning maritime safety and pollution prevention for integration into SafeSeaNet; and
- Electronic processing of ship and cargo data including tracking, harmonization of cargo manifests, container bay-plans and possible integration with other services (such as customs, etc), within a European maritime data exchange system.

Draft terms of reference were provided to MTCP, these being subsequently modified and discussed at a kick-off meeting held on 5 May 2004. Following this kick-off meeting, MTCP proposed a scheme of work to fulfil DG TREN's expectations. Work commenced on 8 June 2004, coincident with DG TREN's agreement to the scheme of work. Preliminary findings from the study were discussed with DG TREN at a review meeting held on 16 July 2004. In addition, a summary of the outcome of phase 1 was presented to DG TREN staff during the MTCP seminar held in Brussels on 25 November 2004.

The report is laid out as follows. Information requirements are discussed in Section 1, and candidate systems for long-range information transfer are discussed in Section 2. In Section 3, criteria have been established for comparing the different candidate systems, and conclusions drawn regarding suitability for the intended enhancement of the EU's SafeSeaNet system. Conclusions of the study are set out in Section 4.

It is an underlying premise of the study that enhancement of the EU's SafeSeaNet system is desirable in order for EMSA and national competent authorities properly to monitor vessels in the European waters for which they are responsible, and therefore that AIS messages should be transmitted using a communication system which exceeds the range of VHF. Thus throughout the report, care is taken to differentiate between automatic identification of ships (AIS) and long-range identification and tracking (LRIT).

In particular it should be noted that the International Maritime Organization (IMO) use the phrase “LRIT” to mean simply the provision of the same information as AIS by ships beyond the range of VHF, for identifying and tracking ships at sea on a global basis. However, this report focuses on the EU’s desire to augment the utility of ship-to-shore information by extending the transmitted message beyond the basic AIS content, so as to enhance SafeSeaNet. To distinguish this extended message content envisaged by EU from the basic long-range message being discussed at IMO, reference is therefore made to “limited LRIT”, meaning the IMO’s long-range AIS.

The conclusions of the study can be summarised as follows:

- The amount of information transmitted by the vessel should be limited. Transfer of large datasets should be done via the shore.
- In order to enhance the usefulness of the SafeSeaNet system, more information concerning the vessel and its operations should be exchanged.
- A single window application within a port, region or country may serve as a primary capturing point for most of the required information.
- Access should be via a single data access layer at a European level, to safeguard the consistency of information provided to users.
- Given the importance Europe attaches to monitoring safety during the entirety of a vessel’s voyage, the EC should define requirements for communication technologies and seek to harmonise these with other international bodies, including the IMO.
- In this regard it is noted that:
 - Inmarsat C, currently in widespread use for GMDSS and general maritime communication purposes, can be adapted but only for limited LRIT functionality.
 - In the future, the European Galileo-SMS system is a candidate for LRIT communications and its development should therefore be carefully specified.
 - The Orbcomm system is being developed by USCG for security rather than safety purposes, but complementary development by EC could be beneficial.
- As currently conceived, only positioning is possible with Galileo. If Galileo is selected for European identification and tracking purposes, it would be necessary to extend its functionality to Galileo-SMS.
- IMO originally favoured LRIT information being limited primarily to issues of security. In ongoing IMO discussions, Member States therefore need to stress the importance of safe navigation in European waters.
- Proper measures should be taken in respect of information security, including data encryption and authentication of both supplier and user.

Within the scope of this study, it has not been possible to draw a clear-cut conclusion regarding the respective merits and demerits of the three candidate satellite systems mentioned above, ie Inmarsat C, Galileo-SMS and Orbcomm. This situation results partly from the fact that Galileo and Orbcomm are under development, but it also reflects differing opinions amongst the experts in the field. It is therefore concluded that the EC should not engage in selecting communication technologies, but rather should define and specify the requirements for such technologies such that vessel operators are able to choose a specific technology based on its compliance with the specifications.

5.5 D2.2-3: EU coastguard coordination services: Phase 2

This document comprises MTCP's final report on DG TREN's tasking in respect of a potential EU coastguard coordination service (reference: MTCP 2.2.17). The objective of the tasking is to compile an inventory of coastguard assets and ways of operating, to inform the Commission's consideration of such a coordination service for Member States' coastguards.

Information gathering has been split into two stages. An interim draft report (reference: MTCP 2.2.17\02R.doc Rev 0, dated 15 July 2005) covered the first stage which focused on identifying the responsible organisations in each Member State for each different coastguard mission, and establishing their status, remit and arrangements for cooperation. A second draft report (reference: MTCP 2.2.17\03R.doc Rev 0, dated 28 February 2006) extended the scope of the interim report to include results from the second stage of information gathering which focused on coastguard assets and their deployment.

A draft final report (reference: MTCP 2.2.17\03R.doc Rev 1, dated 21 August 2006) embodied amendments in response to DG TREN's comments dated 22nd June 2006, together with information from those Member States which had not previously responded to the questionnaires. This final report is largely unchanged from the August 2006 draft final version, but has been produced in response to DG TREN's request for the Parts 3 and 4 questionnaires to be included, together with a clarification regarding some of the information contained in Annex 16.

The information gathering process has made use of questionnaires, web searches and electronic communications with appropriate organisations in the twenty maritime Member States. Obtaining responses to the questionnaires from several countries has been particularly time consuming, and at the time of writing the earlier draft reports, information was not available from some Member States. However, responses were subsequently received and the information was included in the final draft report.

Preliminary conclusions, based on the information gathered, have been drawn and can be summarised as follows:

- The arrangements amongst Member States differ widely and there appears to be no “model” way of providing coastguard services.
- These differing approaches (in terms of the number and type of organisation involved, the division of responsibilities, and anticipated changes in some countries) are likely to have two complementary consequences:
 - That it will be difficult to establish a unified coastguard organisation throughout the maritime Member States of Europe; but

- That a European coordination service for Member States' coastguard organisations could prove beneficial.
- A pan-European coordination service could also be beneficial in respect of international cooperative coastguard arrangements and the collection and dissemination of shipping information.

5.6 D2.3.1: EU graduate and masters programmes for seafarers

Ship to Shore Career Paths

- Master Mariners, Chief Engineers and other seafarers seeking employment ashore within the maritime industry typically look to three distinct fields:
 1. Maritime related Administrations and Authorities.
 2. The Maritime Industry (*Shipping Companies, Offshore Industry etc*).
 3. Maritime Education and Training Institutions.
- The key to a successful career shift ashore is dependent on and focuses on obtaining the right transitional education and qualifications. Depending on the type of job the mariner is pursuing, this will require either specialized training (on the job training, short course/diploma study) or an advanced degree such as a Master of Science (MSc).
- In considering the development of a European Masters programme for former seafarers, it should be noted that those seeking employment in the areas where an advanced degree is not required would potentially find their opportunities for advancement or sector mobility increased if they did possess a higher degree. Programme development should therefore concentrate on incorporating a variety of common elements from a number of maritime sector jobs to offer the graduate the broadest range of employment and advancement opportunities.
- The current practice between seafarers wishing to come ashore is to develop their own route by considering very limited choice of higher degrees offered by higher education institutions. These courses although allow some seafarers to be admitted, but they have at large been developed for University graduates.

The Current Job Market

- The seafarers' industry, technical and managerial experience make them not only well suited for a range of shore side maritime sector jobs, but in many cases this experience is a prerequisite for obtaining many of these jobs. These include Marine and Technical Superintendents, Ship Surveyors, Fleet Managers and Training Managers. The seafarer's experience, especially that of top rank officers like Masters and Chief Engineers, would, at the very least, enhance most other maritime sector jobs as well. To further examine this concept, a 'single day snapshot' of advertised maritime sector jobs is included as Appendix A.

Review of Existing Programmes Within the EU

- Appendix B is presented as an overview of EU PG programmes meeting established criteria. This overview is taken from an electronic catalogue that has been compiled using Microsoft Excel. The electronic version includes extended contact information and correspondence received from various program directors as well as hyperlinks to the institutions' websites and a collection of electronic prospectus and course information where available.
- In general, all courses identified had the common characteristics of being Master's level programmes that had residency requirements, accepted international students and were taught in English. All programmes used the lecture format as the primary teaching method, supplemented by field studies and research projects. All programmes maintain at least a European recognized accreditation and include internal quality monitoring programmes.
- It is strongly recommended that the European Commission publish an online catalogue, similar to the one produced for this study. Presently, the extent of information contained in this catalogue is not easily available to EU seafarers. One suggested location for the catalogue is the Maritime Transport Sector Observatory (MTSO) website currently under development as part of MTCP. It is recommended that the Human Resource and Maritime Education and Training Expert Group develop the framework and content and work with MTSO for implementation. It is further recommended that the MTSO advertise its existence in industry publications such as Lloyd's List and others to ensure the widest possible dissemination to seafarers.

European MSc Common Framework

- A flexible and competitive EU MSc programme structure would be a part time program that runs over two years. Based upon the current standards and practices of the academic community and the industry, the primary mode of delivery would be via classroom lecture supplemented by field study and research assignments. Some modules or courses would certainly lend themselves to distance learning, which would reduce residence periods.

The content of an EU MSc programme should focus around *Maritime Management and Safety*. Maritime Management is an element common to a majority of the currently available postgraduate programmes. Maritime Safety is an important area presently lacking in many of the available programs. Combined, these elements are consistent with providing the graduate with the broadest range of employment opportunities. The following specific elements should be considered and potentially developed as core courses of the programme:

- Maritime Law and Conventions,
- Maritime Economics,
- Logistics and Supply Chain Management,
- Maritime Finance and Maritime Safety.

- Other required and elective courses would follow that might include topics such as ship (or port) operations and management, Maritime Security, Ship Brokering and Chartering, Contemporary Maritime Issues and Maritime Technology, just to name a few.
- The proposed programme should not only be competitive with other European programmes, but also be recognized and even admired Worldwide.

Program Implementation

- The initial coalition of five Universities has been identified as Gdynia Maritime University, The Technical University of Catalonia, The Norwegian University of Science and Technology, Universities of Strathclyde and Glasgow, and the World Maritime University.
- The Universities will hold an initial meeting during 2005 to agree upon a “Parent” University for the programme and Draft a curriculum development and programme implementation schedule.

5.7 D2.3-2: Supply and demand of EU officers/ratings and manning levels

1. This report documents the findings of phase one of the EU Seafarer Supply and Demand Study. Phase one was conducted as a pilot study on a limited number of Member States to evaluate available data and methodologies and then make revisions as necessary in support of phase two which is planned as an EU wide study.

2. Accurate analysis of EU seafarer supply and demand is dependent upon the amount and accuracy of data provided by the Member States. In the conduct of phase one, one of the greatest challenges encountered was obtaining accurate and complete data. Some of the administrations appeared not to give the study a very high priority resulting in little or no provision of data. For administrations that did provide solid data, a large variance in the type of data extractable was clearly seen. As an example, data on certificates of competency issued during the past five years was requested. Some of the Member States could provide the data, others could provide only partial data, not provide data more recent than 2002 or not provide the data at all. It is noteworthy that this same problem was highlighted by three other major studies on seafarer supply and demand conducted during the past five years. BIMCO/ISF in 2000, OECD in 2003, and the UK in 2004 conducted these studies.

3. Relevant findings from studies conducted by BIMCO/ISF in 2000, OECD in 2003, and the UK in 2004 are detailed in section 3. Highlights of these findings include:

- OECD Officers are an ageing workforce with 40% over 50 years old. This has the present effect of offering a stable and mature workforce for the maritime industry. However, as these seafarers retire, there are not as many OECD officers to take their place. Many shipping companies argue that they will be replaced by other Officers from Eastern Europe, India and Asia, however current analysis indicates relatively few of these officers remain at sea after the age of 50.
- The primary marine manpower suppliers have shifted, and continue to shift, from traditional countries in North America and Europe, and Japan, to Eastern Europe, India, and the Far East. One reason for this is that officers from these countries are typically paid 50% less wages. This trend may have significant impact in the EU because many of these Eastern European suppliers of less “expensive” seafarers are now (or may be in the future) part of the EU. This in turn may set a precedent for severe wage differences within the EU, or necessitate serious wage reform if An EU norm is desired.
- Experienced seafarers are vital to the maritime community ashore and even required to fill certain jobs such as in fleet management.
- Global Officer supply was estimated at a 4% deficit in 2000 and is expected to continue to fall to a 12% deficit by 2010. Rating supply exceeded demand by 27% in 2000 and is expected to continue to grow to 30% excess by 2010.

- Reduced manning levels due to more automation in newer ships and other factors have helped to keep demand for officers and rating fairly static in the past. Growing legislation affecting working hours and training may increase the demand slightly in the coming years.
- Wastage in officer training could be improved to help provide more officers. In 2000 it was estimated that 30% of officer trainees fail to complete their training.
- Improvement in recruiting would also aid in maintaining a stable officer supply. The UK estimated the number of UK officers would stabilize if they could intake an average of 1000 cadets per year vice the 604 noted at the time the study was done.

4. Data from maritime colleges was not collected for phase one, the primary focus being on data collection from Maritime Administrations.

5. Data was collected from selected shipping companies in Denmark, Sweden and the UK via a questionnaire. Section 4.1.3 provides the data obtained from this questionnaire that was conducted as test of response quality and distribution methods.

6. From the collective data we find that there are a total of 47,130 seafarers (EU and Non EU Seafarers) working on National Flag Ships from a total of 86,261 available EU Seafarers. From this figure it can be inferred that at least half of the available EU Seafarers are not employed on EU Flag Ships.

7. Issuance of Certificates of Competency for Masters, Chief Officers, Chief Engineers and 2nd Engineers have remained fairly stable during the past five years except for a noticeable increase in CoC issues from 2000 to 2001. The most probable explanation for this spike was the implementation of new CoC requirements under STCW 95. This resulted in the need to issue new CoCs and endorsements that met these requirements not later than February 1, 2002.

8. 2nd Officers and 3rd Engineers appear to have a distinct (although slight) negative slope since 2000. In general, these are the entry-level ranks in most European countries and new certificates for these ranks are issued almost exclusively to those graduating from Maritime Training Institutes. The slight downward trend then, may correspond closely to dropping graduation levels from EU Maritime Training Institutes. This will be explored further in phase two.

9. Senior Officer certificates far exceed those of junior officers. Taking 2004 as an example, 2224 new Masters CoCs were issued while only 1469 entry level Navigation CoCs (2/O + 3/O) were issued. This suggests an inverted rank pyramid that also indicates the overall supply of EU Officers (at least from the phase one Member States) will decrease as older officers retire.

10. Only Denmark and Sweden were able to report on the yearly intake of officers on national ships. Their total came to 1499.

11. Data from various shipowners/operators indicated that for approximately 2060 EU Officers employed, and average of 81 or 4% retire or take up employment ashore each year and 119 or 6% new officers are hired.

12. Comparing the number of An EU Member State's national officers working on their national ships, to the number of non-nationals (including EU and non-EU officers) was done by comparing the number of revalidation CoCs issued (to nationals) to the number of endorsements issued (to non-nationals). Of the combined totals, Denmark issued 82% revalidations and Sweden 68%.

13. Examining manning level data, it is interesting to note that for Product Tankers and Feeder Container Ships, the three countries providing data (Sweden, Denmark and Cyprus) were similar (but not exactly the same). The biggest difference was observed in the Ro-Ro Passenger Vessel in which Cyprus required 22 personnel to Denmark's 14 and Sweden's 13.

14. None of the Member States that replied indicated any intention to alter their current manning levels although they said reviews may be required in light of developing legislation in the areas of security and work hours.

15. Common factors identified among Maritime Administrations in the issuance of minimum manning certificates included: Vessel size (<500 GRT, other ships), Vessel Type (tanker, passenger, cargo), Vessel Power Plant (Steam, Diesel), Level of Automation (Attended/Unattended Engine room), Number of Passengers (if applicable), Voyage Area & Duration (International, Restricted, Middle) and Crew fatigue levels at sea in accordance with STCW 95, Section A-VIII/I.

16. Countries noted that they typically receive an application for a manning certificate from a company that includes the company's recommendation. They then review the request in accordance with their guidelines and appropriate legislation for approval.

Phase Two Implementation

1. It is strongly recommended that for phase two DG TREN mention the study to each of the Member States and request they provide MTCP with a specific point of contact to assist in the data collection. Outside of this study, it is also recommended that DG TREN continue with initiatives to establish a central EU seafarer database that was also suggested by METNET.

2. A short Maritime Training Institute questionnaire is being developed for use in phase two. The IMO Compendium of Maritime Training Institutions (CMTI) can be used as a resource to insure all applicable Maritime Training Institutions within the EU are contacted.

3. The phase one study showed that accurate and relevant statistical and commentary information could be obtained from Ship Owners and Operators via the developed questionnaire. The primary problem encountered was how to best define the survey

population and obtain a representative sample set. Questionnaire distribution methods and follow-up also present significant challenges in obtaining responses that can be interpreted with a sufficient level of confidence. Collection of this data itself should actually be the subject of a separate study. Suggestions for obtaining a representative sample would include an exhaustive search of all EU companies meeting defined criteria and then selection of a random sample group from the whole. Alternatively, a more arbitrary sample set could be developed with input from various EU Shipowners Associations.

4. In phase two, the yearly intake of officers should be expanded to cover the same 5 year period as the CoC data to see if a trend is seen.

5. Insufficient data was collected during phase one regarding number of officers required to man national ships. During phase two, a specific data request should be added to the Maritime Administration questionnaire. This may be supplemented by an independent ship registry search.

6. Further detailed analysis of seafarer numbers and their impact on the industry, current balance of seafarers in member states and forecasts on the growth of the seafaring population will be addressed in phase two when a more complete data picture is presented. However, given the identified challenges in collecting uniform data from the Member States, it is not expected that this analysis will be in anyway conclusive.

7. For the phase two manning level study, the sample ship types will be specifically defined and copies of actual ship's manning certificates will again be requested.

Expert Group Review and Conclusions

The MTCP Expert Group on Human Resource and Maritime Education and Training met to review this study on 7 March 2005. During that meeting, it was generally agreed that given the study's limited time and available resources, the scope of the complete study (including Phase Two) is too large to provide the desired insight into the key issues. The group suggested that in lieu of a Phase TWO study, the study instead be broken up into studies that might provide more detailed and accurate information. These studies would include 1) a look into how EU Maritime Administrations maintain seafarer data and what data each can provide. 2) A detailed survey of Ship Operator/Owners taken from an actual representative sample set of a determined population to yield answers that could be interpreted with a high level of confidence. 3) Conducting the Manning Level Study separately.

5.8 D2.1-3: Port data exchange

The purpose of this study is to make an inventory of the different administrative (non-commercial) information systems in use in EU ports, their compatibility with each other, and their compatibility in relation to the exchange of administrative data between ports and port users.

In order to allow us to obtain a clear view of the situation concerning data-collection and distribution of messages and on the type of messages used towards the relevant organizations within and outside the port environment, and to reach as many ports as possible it was decided to work with a number (2) of questionnaires to be answered by a number of ports. Additional sources such as the ongoing Marnis project (notably Cluster 1 “Maritime information management”) have been consulted and the results of these projects have been implemented when relevant.

Knowing in advance that ports in general are reluctant to publish the way they are acting, a sufficient quantity of ports had to be addressed; a number of 50 ports have been selected and have been addressed. The selection of ports was based on three major criteria:

- All member States should be involved.
- At least 1 port per Member State.
- The ports should have a minimum of 1 Million Cargo Tonnage per year.

The major results of the questionnaire indicate the following:

- The way the exchange of information between the different parties in a port is organised is very much dependent on the size of the port. The smaller the port the lesser the exchange of data is automated and standardized. The use of fax and telephone is still very popular in those ports.
- Bigger ports use standard messages (type IMO-EDIFACT) and often have a single window approach towards parties representing commercial users (ship’s agents, freight forwarders). In those cases the exchange of data in the port happens often in XML message formats.
- The exchange of data towards the NCA (National Competent Authority) does not happen automatically but only on demand by those authorities (dangerous goods, waste and statistical information).
- The use of the IMO-FAL documents is not widely used and often are intended to be deployed without having a defined implementation plan.
- Only a few member states have a national single window approach, where only Finland has a single window system (PortNet) serving both the vessel related data exchange and the cargo related data exchange. The system incorporates not only the network intended for ports and ship’s agents but also supports the SafeSeaNet (SSN) network, including AIS.

- Other member states such as Sweden do have an intermediate solution (operated by the Swedish Maritime Administration) that handles the Pilots on a national basis (and some other services).
- In the bigger ports (having a strong IT organization) the single window concept is very popular in order to facilitate the work to be done by parties representing commercial users (the entry of documents by the ship's agents). The use of those single windows is restricted to the port itself and is considered to be a marketing tool for the port to attract commercial operators.
- The linkage between the SSN and the port networks is rather limited and the exchange of data happens when requested by the national authorities.
- The availability of the Internet is being exploited more and more and allows leapfrogging by the smaller ports to facilitate the exchange of data between the parties engaged in port processes.
- The exchange of electronic messages between ports is practically non-existent.

What kind of recommendations can we derive from the study?

- The further development by the different ports of a single window solution should be encouraged; it makes the administrative work less time consuming, control on safety and security will be more effective, and the quality data exchanged will be improved.
- Smaller ports shall be supported by the regional/national centres (such as NCA's) in order to facilitate the exchange of information related to safety and security by providing them with a national single window solution made accessible via the Internet.
- In order to respect the competition between ports the already achieved work in the ports (in the area of IT) should be sustained. Interconnection to the regional/national centres should be implemented without delay (all ports interconnected to the NCA's).
- All NCA's on a European level should be interconnected (via Internet) and exchange of data including the vessel's voyage plan should be established.
- Ports should be able to interconnect via those networked NCA's.
- A European centre of competence should be established (e. g. under control of EMSA) taking care of issues beyond control of the national authorities or individual European member ports.

When creating a single window portal serving the European ports on a regional/national level (per member state or a group of member states), one should take in consideration the following additional remarks being the result of the detailed analysis performed on the answers of the different port authorities and studies on the single window approaches either on a national level or on a port level:

- Privatization of the ports does not help in creating a harmonized data exchange strategy.
- Many of the questionnaire results indicate an existing information flow catered towards a B2B environment especially in the bigger ports already having an IT infrastructure of the single window type.

- In the context of the EU policy towards competition and the internal market it is this B2B environment that stimulates competitive positioning of the EU ports in relation to their port customers.
- Ports treat this strategic positioning as critical towards their future success and due to these strategic stakes are hesitant to open up their infrastructure to their competitor ports (within or outside the same country).
- What stands out, as a common denominator is the sharing and exchange of information on subjects such as Security and Environment regulations. These data exchanges are required and enforced by international maritime law and international trade regulations.
- When reviewing and/or listing results and recommendations based on our obtained questionnaire results we conclude that, in case the EC wants to create a European-wide information portal, it should focus on these type(s) of data exchange as this would respect individual port's competitive positioning. In short we advise to focus on B2G instead of B2B types of data exchange.
- By providing a preset data structure by which each individual port can upload / provide the required B2G information (Security, Waste, Dangerous goods, etc.) it will offer the EU a platform for obtaining historical data and implementing compliance and risk analysis mechanisms as well as a viable data exchange platform to its ports (messages such as BERMAN or IMO-FAL1, IFTDGN, WASDIS). Staying away from B2B information requirements will provide willingness and cooperative attitudes from the ports themselves.

In brief, our analysis draws the following key conclusions:

Current state of port data exchange:

- A wide variety of systems is used with data exchange between ports almost non-existent;
 - Although the standard EDIFACT messages are widely used the smaller ports rely often on non standard message formats, exchanged by email and (still) fax;
- EDIFACT is a standard but message implementation guidelines shows many local differences;
- The communication between ship's agents and any authority in case of clarifications is often done via telephone - this indicates the need for human relationship between parties – problems in messages are solved in a local correction loop;

Single-window solutions:

- We should clearly address the main aspect of single-window solutions, which is their 'frontend' character;
- It is the user's side of such applications (the 'front-end') which enables ship's agent to communicate with a single system which facilitates his administrative task;
- Local approaches to single-window solutions fit local requirements and practices, and are important to set up local quality control and improvement;

Strengthen the use of SafeSeaNet:

- We need to intensify the dataflow through the SafeSeaNet network in order to support the 2nd level monitoring by a central EU entity.
- Currently only voyage information is being exchanged in full, while other information (DG, waste, etc.) is only accessible through a kind of index retrieval system.
- The monitoring role related to voyages along multiple ports could be strengthened to proactively inspect consistency of waste declarations etc.

Port-to-port data exchange:

- Is practically non-existent today;
- Only useful when a group of ports want to implement a sea motorway, in which case there is tight integration between the ports involved, and both commercial and navigational information may be dealt with in an integrated manner – aimed at avoiding any delays because of information bottlenecks and supporting highly frequent and fast short sea links.

5.9 D2.1-4: Desk study on goods flows in Europe (MOS 2005-2013)

Scope:

- To simulate roughly a potential for additional inserted MOS links between different port regions

Set-up:

- Link additionally to the existing land and sea links selected port regions with RoRo and LoLo lines which have a higher (daily) frequency.
- Not any port capacity restrictions applied.
- The transport demand consists of international good flows excluding oil.

Measured effects:

- Transport demand for the MOS and possible modal shift effects on road transport

Limits and benefits of the applied European Freight Model - STAN model

- The simulation was carried out on a strategic level.
- Linking whole coastal regions with highly efficient sea links is a rough interference into the balanced and calibrated model which causes large modal and route choice effects
- The EFM Stan model is able to both simulate the route and modal choice simultaneously.
- The model is based on three components.
 - trade matrices on a NUTS 2 level,
 - the infrastructure network of major land and sea links as well as the transfers between them and
 - the cost functions on the links and transfers, which enables the EFM STAN model to simulate the whole European transport system in a cost optimised scenario.
- The year of the trade volumes tested is 2003. All goods are included except crude oil.
- All simulated flows represent the potential for all trade relations able to use the specific links. E.g. Baltic States volumes include large Russian transit volumes, Ireland also includes UK transit, French volumes also include Belgian and Dutch transit volumes etc.

Baltic Sea Cases

- Southern Jutland (DK) and German Baltic Sea coast to Baltic States
 - East-West road transport volumes are transferred to sea. However, the simulated MOS also get volumes from existing SSS links.
- East Sweden and Poland
 - Only limited potential modal shift from road with 0,8 bill tkm/year. One reason is the already existing dense SSS network.
- German Baltic Sea coast - Finland
 - Already dense SSS networks limits transferable volume. Simulated MOS links gain volumes because of a comparable high frequency and capacity.

Atlantic / North Sea Cases

- Ireland - Spain/Portugal
 - Potential for RoRo is evident, but there is almost no potential for container services. Attractive Irish MOS seem to attract considerable volumes for the UK market too.
- France - Spain
 - While the MOS from the French Channel coast seems to be able to attract more volumes in total, it however would manage only app. 50% of tonnekms shift for road transport compared to the French Atlantic coast MOS.
 - The impact of the French Channel MOS on oversea container movements seems to be considerable.
 - The longer sea haul from the French Channel coast seems to be less attractive for trucks and trailers using such a link.
- Belgium/Netherlands - Portugal
 - Large potential for container potential and also surprising high potential for RoRo even on the long distance. Also some Spanish volumes are attracted.

Western Mediterranean Cases

- Spain - North Italy
 - Large potential for the simulated MOS services.
 - However, modal shift potential from road is limited.
 - The volumes on the simulated links compete strongly with existing sea transport.
- France - Italy
 - Large potential for MOS RoRo services
 - Very limited potential for LoLo services
 - Modal shift potential from road is limited

Eastern Mediterranean Cases

- Western Italy - Greece
 - No relevant potential for this MOS can be identified
- Trieste/ Slovenia - Greece
 - Strong competition of the inserted MOS links with existing Adriatic lines. MOS are able to shift additionally 1,8 billion tkm to sea. Additional volumes seem very unbalanced. LoLo services seem more feasible than more additional RoRo lines.
- Malta - France
 - No RoRo potential can be identified. LoLo potential originates from Malta's role as a containers transshipment port.
- Cyprus - Italy/ Greece
 - All indicated potential volumes originate from existing SSS links.

5.10 D2.1-5: Intermodal loading units

- The trade among all European countries, including relevant parts of Russia, has been constantly growing in the past decade. The trade volume was 1,265 Billion tons in 2003 – excluding crude oil, but including other bulk. The annual trade volume within Europe is expected to grow by 45% from now until 2015. The development of trade volume is mainly driven by increasing trade between western European countries.
- The trade volumes of non-bulk goods amount to 1,130 billion tonnes in 2003. The growth potential is 56%, which is even higher than for the goods when bulk is included.¹
- The forecasts for 2015 include bulk and non-bulk trade volumes of all European countries. Even though bulk and non-bulk goods are systematically mixed in the commodity groups of SITC₂, it is possible to derive a commodity classification from the three digit SITC code - in which clearly bulk and non-bulk goods are separated.³
- The total transport work by truck is expected to grow at a higher rate than for rail. Available forecast results differ in growth potential depending on which market segments are covered. The border crossing long distance transports will grow at a range of 75% (international road) and 26% (international rail)⁴. For the whole transport market, also including domestic and short distance transport, the forecast is in the range of 29% (road) and 8% (rail)⁵.
- Additional trade volume resulting from the enlargement of the EU from 15 to 25 countries is expected to be limited compared to the overall trade flow within Europe. The total volume of these countries' trade is just too small, compared to western European countries, to have a major impact on the development.
- Short Sea Shipping container vessels are divided into two groups: 1) The vessels that essentially provide feeder services to the intercontinental carriers. These vessels are built to carry only ISO containers. 2) The vessels that are mixing feeder with other intra-European transport. These are equipped for handling Euro containers in addition to ISO boxes.
- Vessels carrying containers on inland waterways essentially work without cell guides and immediately accommodate pallet-wide containers.
- Even though there is little statistical information available to support it, it seems that pallet-wide containers are here to stay. A wide variety of actors report that the use of pallet-wide containers for intra European transport is increasing, with the exception of a few short sea shipping routes in and between Italy and Greece.
- Commercial actors (GESeaco, Cronos, and Geest North Sea Line are examples) have been developing their own pallet-wide containers.
- In Asia, even the large intercontinental carriers are beginning to accommodate palletwide containers. Hence, there seems to be a pressure also here for “opening up” the larger vessels to accommodate both ISO and pallet-wide containers. When this is the case, then the feeder shipping companies will have to open themselves to pallet-wide containers also.

- Since road transport is a requirement in door-to-door operations and since trailers can accommodate a higher payload than EILUs (more than 10%), then the EU Commission should evaluate the possibility of increasing the axel weight for those trucks that are transporting EILUs in order to avoid giving trailers unnecessary competitive advantages.

- There are two classes of “opponents” to the EILU standard:

1. Those that perform intercontinental container transport (and associated feeder operations) focussing on transporting the 15 million ISO containers that are deployed around the globe. Vessel designs, cell guides, etc. are tailored to the dimensions of the ISO containers. Accommodation of palletwide containers will require investments.

2. Those commercial operators in Europe that already have invested extensively in pallet-wide containers. Their motivation seems to be that they wish to avoid any standardisation, ensuring that their boxes will not be accepted as an EILU.

- The use of pallet-wide containers is obviously increasing, and rapidly. Currently there is no standardisation effort recorded for pallet-wide containers. If this continues, then a flurry of different designs will emerge (even stronger than now). It seems that there is a need for pallet-wide container standardisation, as proposed by the EU Commission. If the Commission aims at such standardisation, then time seems to be of essence, such that the process can be taken under control. One possibility for an international cooperation to standardise pallet-wide containers is to establish cooperation with China and South Korea.

¹ This trade forecast is measured in tonnes. Dominating bulk growth comes from Russia.

² Standard International Trade Classification

³ Thus it is possible to exclude bulk the items wood, coal, crude oil and oil products and iron ore. Such bulk commodities are not suitable for intermodal transport. Of course, there is a grey zone of bulk cargo, both break bulk and liquid bulk, which is transported inside intermodal loading units, especially ISO containers and tankcontainers. To investigate their relation towards an increased containerisation was not possible inside this study.

⁴ BMT Transport Solutions GmbH forecasts

⁵ DG TREN forecast

5.11 D2.1-6: Benchmarking service performance

In general, **benchmarking** goes beyond competitive analysis by providing an understanding of the processes that create superior performance. It first identifies the key areas that need to be benchmarked and the appropriate criteria. It then sets out to identify best practices world-wide and to measure how those results have been achieved.

A **Performance Indicator** is a tool enabling the effectiveness of an operation or of an organisation to be measured or an achieved result to be gauged or evaluated in relation to a set objective. As far as possible the Performance Indicators should be defined as exact measures with an associated absolute value.

Chapter 2 describes the characteristics of the transport modes and introduces further technical terms used in the study. The overview of relevant Benchmarking Projects includes summaries of ADVANCES, INTERMODA, IQ, REALISE, RECORDIT and TRILOG.

The extraction of Key Performance Indicators from these and other research projects follows in chapter 3. The analysis of the PIs in the FTA Study, INTERMODA, IQ, TRILOG as well as sets of PIs defined by different Dutch interest groups show that the PIs have not only to be adapted to the object of Benchmarking but also to the organisation using them.

Chapter 4 provides the selection of Key Performance Indicators for a Benchmarking across the modes of transport:

Finally selected Key Performance Indicators:

| Key Performance Indicator | Definition | Key Figure |
|---------------------------|---|-----------------|
| Transport costs | Total freight cost to the customer | € per load unit |
| External costs | Costs to the public because of emission of noxious gases | € per tkm |
| Time | Average total time of regular service including transport, handling and waiting | Hours |
| Delay | Average time resulting from delays, additional to total transit time | Hours |
| Availability | Minimum time required between booking and start of transport | Hours |
| Flexibility | Reaction to special requests of customers and reaction to hold-up transport | Ranking |
| Safety | The risk of financial damage expressed by insurance premiums and security fees | € per load unit |

| | | |
|-------------|----------------------|------|
| Regulations | Framework conditions | n.a. |
|-------------|----------------------|------|

Regulations and political issues are not a straight PI. Their knowledge for the mode and specific route to be benchmarked is a precondition for every benchmarking exercise. The second part of the chapter provides more background information for the application of the individual PIs. Special attention has been paid to the section on technical standards and regulations. Finally, reasons are given for the exclusion of some PIs which were used in other studies or proposed by the group of experts.

The small-scale demonstration in chapter 5 applies the KPIs on three routes Hamburg – Minsk, Duisburg – Hull and Milan – Madrid. In each case a table has been created which combines the eight KPIs with all the modes available on the routes. As far as possible by desk work, calculated or estimated key figures regarding cost and time are used to show the practicability of the proposed approach. Where key figures are not readily available sources of information are mentioned.

The selection of the KPIs, their definition and application in Route 1 was then discussed with experts (see annex) who gave their general approval to the findings. Additions and corrections in detail are already included in this final version.

Conclusions

The first aim of the study was to show if it is possible to create Performance Indicators for a Benchmarking across the modes. Moreover, the main conclusions of the study should focus on the role of SSS: What would be, in such a benchmarking, the relative position of door-to-door short sea shipping in relation to other multi-modal or uni-modal modes door-to door, and: What are the areas where short sea shipping might need to increase its performance and what could be done for short sea shipping to allow it to perform better in the comparison?

An interpretation of the not always complete and partly estimated input into the tables showing the three routes leads to some interesting results which are clearly within the expectations:

The positioning of short sea shipping across the routes

| KPI | Transport Costs | External Costs | Total Time | Punctuality | Availability | Flexibility | Safety | Regulation |
|--------------------------|--|----------------|----------------------------------|---|---------------------------------|-------------------|------------------------|------------|
| Key figure | € per km | € per km | hours | hours | hours | ranking | € / unit | ranking |
| Route 1 Baltic Sea | Low costs for container by SSS | Low emission | Longest time. Roro better | Depends on end haulage | Roro good cont. by SSS slow | Inferior to truck | Lower liability limits | 0 |
| Route 2 North Sea | SSS in any form less expensive than road including short ferry | Low emission | Truck 24 hrs. SSS 48 to 72 hours | Better for SSS if terminal al capacity sufficient | Truck and ferry better than SSS | Inferior to truck | Lower liability limits | 0 |
| Route 3 Mediterranean | Advantage of SSS small because of | Lower emission | Truck only faster with 2 drivers | SSS less affected by motorway | Roro good cont. by SSS slow | Inferior to truck | Lower liability limits | 0 |

| | | | | | | | |
|--|---------------|--|--|------------|--|--|--|
| | short sea leg | | | congestion | | | |
|--|---------------|--|--|------------|--|--|--|

Transport cost:

SSS has the lowest costs were the route is long enough and if the container is used. In UK trades lolo ships and longer roro routes are less expensive than truck transport using shorter ferry routes. Driver-accompanied trucks are nearly always most expensive. Short distance sea routes are never less expensive than road transport because port costs make the total transport costs per sea mile more expensive than road costs. Trailer handling costs are comparable low, but handling charges for containers are often higher than the ship costs.

While the handling of roro units is normally performed very fast and at low costs (at least in North Sea and Baltic Sea ports) the handling of containers is often too expensive and the round trips and port times of short sea ships or inland barges take too much time.

A final calculation of the external costs is still to be made, but the energy requirement to move a container in the water is a fraction of the energy required by trucks. Only fast ferries would make an exception.

For the major part of all consignments cost is the decisive factor for the modal choice. Another factor is reliability which can also be complied with by SSS. Often the decision to use the truck is only owed to convenience or a too late start of transport planning. Rising energy prices leading to increasing transport costs will teach shippers to learn to plan earlier which allows them to use SSS more often.

Time:

Conventional ships and container ships need always much more time than road transport because of longer terminal times and lower frequency of ship departures. Roro shipping can be competitive if there is no uninterrupted land route like between the UK and the Continent. Ship transport parallel to the coast is always slower. Roro ships have an advantage when a leg of the total route can be made by sea where the driver can take his legal rest or when another driver continues from the port of destination. Such a combined transport can have cost and time advantages if a second driver is saved.

The existence of both shorter routes and longer routes proves that shippers or forwarders have different requirements. Good examples are routes like Rotterdam or Zeebrugge to Hull in competition to Calais – Dover or Lübeck to Trelleborg or Malmö in competition to Puttgarden – Rödby or to the fixed link via Denmark

Punctuality:

Punctuality of ships is not the problem. They can better plan their time of arrival than land transport modes. The problems can arise in congested ports. The more important issue is that sea transport in most cases needs pre- and end-haulage and there disruption can happen even if the sea leg was accomplished in time. A benchmarking of this PI requires the gathering of information on the specific routes over a longer period.

Availability:

Booking and supply of a truck is faster than the preparation of the complete chain in combined transport. A roro transport should also be available in relatively short time under consideration of the frequency of the ferry / roro vessel. The planning of a logistic chain including train, container terminal and container sea transport with its lower frequency is more time-consuming. The start of the pre-haulage depends on the start of the main run.

Flexibility:

Reaction to special requests of customers and a reaction to hold-up of transport is always easier for a truck driver. If train or ship operators are more flexible depends on the companies.

Safety:

A disadvantage of sea transport is the lower liability limit. In addition, since the implementation of the ISPS Code, international sea transport has become a few Euros per load unit more expensive because of ISPS fees.

Regulation:

There will always be more technical standards and regulations to obey in any form of combined transport compared to the exclusive use of the truck. SSS needs normally the truck for pre- and end-haulage. Roro transport seems to have a medium ranking.

Such a small-scale demonstration is not sufficient to present all the detailed key figures which are needed to value the Performance Indicators. As soon as all the required data are asked from transport and terminal operators, their agents or forwarders, the results regarding costs, times and ranking of remaining KPIs can be stated more precisely.

Short sea shipping suffers under a mixture of disadvantages and prejudices because of which potential customers prefer other modes.

- Inefficient customs procedures, over-complex paper work and high costs
- Simplified manifest procedures for intra EU shipping are not used
- Lack of interoperability in intermodal chains (e.g. lack of uniformity in intermodal loading units, lack of logistics management, difficulties in organising intermodal chains and the price of door-to-door shipping);
- High port fees
- Inflexible time-consuming working schedules, not only in smaller ports
- Priorities given to overseas ships entailing waiting times for short sea vessels

A full application of the KPIs could help to prove or dispel these prejudices.

Regarding the three questions asked in chapter 1.1 it can be stated at the end of the study:

- It is feasible to benchmark transport performance across the modes.
- Performance Indicators have been selected as tools for such a comparison.
- The application of these Performance Indicators is possible. They work in any region and for any mode. The careful application should show detailed results which can assist to specify and mitigate the disadvantages of short sea shipping.

There will always be two different types of shippers, the majority which looks for low cost transport and the remaining looking for fast transport. The ideal mode of transport respectively the ideal route for both is seldom the same. SSS can often offer the less expensive alternative and it is still the mode with the best chances for optimisation of services.

Recommendations

One proposal for improving the performance of SSS is the introduction of dedicated short sea container terminals. They have the disadvantage of parallel systems for European and feeder container shipping and cannot take so much advantage of economies of scale. But

- They don't have the problem of priority being given to deep sea ships.
- They could use faster, less expensive, size optimised container cranes.
- Ships not suffering delays could offer optimised, faster round trips.
- Smaller ships in shuttle services (not calling at too many other ports) have shorter port times and can offer a higher frequency.
- Port and ship operators could focus one pallet-wide European containers and other load units for compatible ships.

An alternative to dedicated short sea container terminals are combined ro-ro and container terminals which could enjoy the economies of scale, speed up container transport and make ro-ro transport less expensive.

Proposals for further studies are:

- The application of the new Performance Indicators, with detailed research for key figures, on other routes, e.g. routes proposed for Marco Polo subsidisation.
- The development of an average cost index per mode in European seas and/or an average transport time index for selected routes.

5.12 D2.2-4: Environmental transport legislation

The problem

The present study investigates the problematic implementation of EU environmental law on the protection of natural habitats and surface waters in the field of waterway and port-related plans, projects and activities. The below analysis of the existing policy and legal frameworks, current implementation practice, contentious cases, policy integration initiatives and unresolved legal problems reveals that waterway and port authorities and private investors encounter tremendous difficulties in complying with applicable environmental obligations. Frequent disruptions of new projects increasingly jeopardise the achievement of national and EU transport policy objectives which presuppose the provision of additional waterway and port capacity in order to cope with growing demand and support a modal shift as well as economic development. The prevailing malaise is mainly caused by (i) the fact that both natural habitats and potential waterway and port development areas are scarce and in many cases overlap geographically and (ii) the undeniable ambiguity of the Birds, Habitats and Water Framework Directives.

Main findings

Under the EC Treaty, the European institutions are under a duty both (i) to ensure the protection of the environment and to promote sustainability of economic development and (ii) to develop a transport policy and trans-European transport networks. The use, maintenance and improvement of waterway infrastructure and port facilities is subject to compliance with international and EU environmental rules, esp. the EU Birds, Habitats and Water Framework Directives. Several legal instruments adopted within the framework of EU transport policy, such as regulations and directives on liberalisation, presuppose the availability of adequate waterway infrastructures and port facilities. Under the TEN-T Guidelines, the EU supports concrete projects for the improvement of waterways and ports. EU modal shift and state aid policies further contribute to the provision of adequate facilities for maritime and inland waterway shipping. Moreover, international law guarantees freedom of navigation in marine areas including inland waters, and obliges States to carry out maintenance and in some cases improvement works in international waterways. As a result, environmental policy and law potentially conflict with policy and law pertaining to transport and esp. the provision of waterway infrastructure and port facilities.

The EC Treaty obliges the Community to integrate environmental protection requirements into inter alia its transport policy. Such integration is effectively implemented in the TEN-T instruments, which make Community support and funding for TEN-T projects dependent upon compliance with environmental rules. State aid decisions and modal shift instruments refer to environmental requirements and objectives as well. As a general rule, transport policy requirements appear to be less well integrated into environmental policy than vice versa. Under the Habitats and Water

Framework Directives, waterway and port-related plans and projects are subject to several economic and environmental tests and can only be implemented on the basis of strictly conditional derogations. As waterway and port development areas very often overlap with nature conservation areas, waterway and port policies de facto enjoy the unenviable status of being mere derogations from environmental policy. In practice, the priorities of waterway and port policies are increasingly determined within the framework of environmental policy rather than transport policy. Yet it has to be noted that the Water Framework Directive acknowledges the need for flexibility and policy integration and pays specific attention to navigational uses of watercourses. Within the framework of the Common Implementation Strategy for the latter Directive, shipping and port stakeholders are fully involved. Specific guidance on best practices and legal aspects in the field of hydromorphological impacts is forthcoming. Finally, apart from policy integration at EU level, it seems reasonable to expect that EU environmental measures would at least be coordinated and reconciled with international requirements regarding the use and management of international waterways.

Available case law shows that many, if not most, legal disputes relating to the application of the EU Birds and Habitats Directives – and at least most of the causes célèbres – involve waterways and ports. The Dibden Bay, Deurganckdok, WCT and Second Maasvlakte cases make abundantly clear that the impact of the Birds and Habitats Directives on major waterway and port projects can be tremendous. The application of these Directives has led to severe delays and even the cancellation of projects. The Cockle Fisheries case shows that even routine maintenance of waterways and ports can become subject to a prior environmental assessment under the Habitats Directive. Next, it appears that national and EU authorities and courts tend to apply and interpret the Birds and Habitats Directives rather rigidly vis-à-vis waterway and port-related interests. The European Commission and both European and national courts are particularly reluctant to accept economic considerations to justify exemptions from designation and protection obligations. Further, legal uncertainty prevails even in cases where the project was well prepared by public authorities and where the European Commission itself gave a favourable opinion, as in the case of the Second Maasvlakte. The latter case shows that national courts may produce judgments that are totally unpredictable. As a result, it becomes increasingly difficult for competent authorities to comply with the requirements arising under the Birds and Habitats Directives. Also, there is an imminent risk that divergent interpretations may distort competition between EU ports. Next, the TEN-T status of a plan or project appears hardly to influence its assessment under the Birds and Habitats Directives.

Over the past years, the Commission has taken or supported numerous useful initiatives for a better integration of nature and water protection objectives and waterway and port policies. These initiatives have strengthened the environmental awareness of waterway and port authorities and have contributed to a substantial greening of their policies over the past decade or so. Next, these initiatives may enhance awareness of the economic importance of waterways and ports among environmental authorities and NGOs. Finally, they offer guidance on best practices and therefore they contribute, albeit to a limited extent, to creating more legal certainty. Nonetheless, the initiatives referred to

have not prevented recourse to the Birds and Habitats Directives to substantiate NIMBY-inspired litigation and have certainly not ensured a sufficient degree of legal certainty and policy integration.

From an analysis of remaining legal problems relating to the implementation of the Birds, Habitats and Water Framework Directives, it emerges that there still exist serious legal barriers to policy integration. The implementation process of the Birds and Habitats Directive is an example of an almost total lack of policy integration. Transport policy objectives did not come into play at all during the designation of protected natural habitats; stakeholders were hardly consulted, suffered economic losses and were not compensated. To this day, transport policy priorities, TEN-T status of waterways and ports and pre-existing international and national legal regimes of waterways and ports are, as a rule, ignored when the ‘imperative reasons of overriding public interest’ of a plan or project to be realised in a protected zone are assessed under the Habitats Directive. Waterway and port-related projects have encountered numerous legal difficulties including severe delays, resulting in additional economic and environmental damage, and, at least potentially, in competitive distortions. The main causes of these difficulties are (i) the fact that both natural habitats and potential waterway and port development areas are scarce and that they often overlap and (ii) the fundamental ambiguity of the provisions of the Birds and Habitats Directives. For these reasons, there exists an urgent need for additional waterway and port-specific guidance instruments. The invaluable Common Implementation Strategy notwithstanding, numerous legal problems have also been identified in relation to the Water Framework Directive. These may lead to further disruptions of waterway and port-related projects in the near future.

Policy recommendations

It is recommended that the Commission consider additional initiatives aimed at better integrating relevant environmental and transport policies.

First, we have formulated recommendations for a clearer definition of policy objectives. These include:

- increasing the awareness of integration problems
- defining two-way integration as a key objective of waterway and port policies
- addressing specific environmental issues in future waterway and port policies.

Second, the present study contains elaborate recommendations for a better implementation of the existing legal framework. These include:

- exchanging knowledge and building legal capacity
- recommending consultation at the designation stages under the Birds and Habitats Directives
- providing additional general guidance on the Birds, Habitats and Water Framework Directives
- providing waterway and port-specific guidance on the Birds, Habitats and Water Framework Directives

- linking TEN-T and other statuses of waterway and port plans and projects to environmental assessments.

Third, we have made recommendations for a reinforcement of the legal status of waterway and port development. These include:

- attaching a legal status to the forthcoming EU Network of Inland Waterways
- creating Portus 2010, a Coherent EU Network of Strategic Port Development Areas that should:
 - reserve sufficient port expansion areas for unhindered future development while respecting environmental requirements
 - provide tools for a proper economic assessment and risk management of port plans and projects
 - be an instrument for a better integration of transport and environmental policies
 - introduce a strong legal status for port expansion areas
 - form a guarantee for commercial adaptability and managerial flexibility
 - provide a basis for just compensation of port authorities
 - support strategies for the management of non-socioeconomic values of waterways and ports
- linking TEN-T and other statuses of waterway and port plans and projects to environmental assessments
- considering amendments to the proposed Marine Strategy Directive
- taking opportunities to clarify the Birds, Habitats and Water Framework Directives
- inserting a provision on waterways and ports in the EC Treaty and introduce an Infrastructure Impact Assessment Report.

The study comprises a tentative timetable for recommended actions.

5.13 D2.3-3: Safe manning levels of merchant ships

Manning of merchant vessels has changed dramatically over the past 4 decades. Crew size of a typical merchant ship of around 15000 DWT on international trade, has decreased from around 45 to around 15. These relatively large reductions in manning levels reflect decades of technological development and organisational change in the shipping industry. Automation, FoC, more reliable and efficient equipment, transfer of tasks from shipboard to shore base have contributed to reduction in manning levels.

In recent years, we have also noticed concern being raised over safety of operation as well as social impacts of reduction in manning levels. Numerous studies have been carried out, some mentioned in this report, which link reduction in manning to increased levels of workload and responsibility, fatigue of, and social isolation of seafarers.

This study set out to:

1. Assess current national legislations/policies and practices in EU Member States.
2. Conduct three case-studies to examine if policies in item 1 are implemented in the way they are claimed.
3. Provide a theoretical basis for establishing safe manning

Items 1 and 2 above were carried out through two sets of questionnaires, developed and validated by WMU and AMRIE. Data collection in general was a major problem and the research team had to follow up the questionnaires with numerous phone calls to collect and present the analysis in this report.

Item 3 was carried through a literature review which included a look through optimum manning regimes in other sectors of maritime industry.

The findings of item 1 can be summarized as follows:

All member states have individual approaches with regard to the determination of safe manning levels. The only consistency is that a majority of administrations requires that ship owners submit a manning proposal for their ships. Standard tables or catalogues on safe manning are not used in the majority of member states. No administration, except MCA (UK), provided us with a template or sample manning scales. Safe manning levels are determined mainly based on internal experience gathered over the years in the individual administrations.

Waivers and exemptions are granted in many member states. This is granted usually in relation to specific technical installations/equipment that allows for a reduction of manning in many member states. There are attempts from the industry to have some kind of influence on the determination of safe manning levels. This is not only true with regard to waivers and exemptions in relation to technical installations and equipment. It is therefore surprisingly that standardised manning levels in the EU are not perceived as beneficial by all member state administrations.

The findings of item 2 can be summarized as follows:

The findings of the survey on issues related to item 2 confirm the findings and observations made during the survey on item 1. This applies specifically to the lack of uniformity in the determination of safe manning levels. In the case studies numbers of officers ranged from 2 to 5 for Master and Mates and from 1 to 5 for Chief Engineer and Engineer Officers. This is a result of the unilateral interpretations of the IMO guidelines. It is also based on different backgrounds, experience and history of determination of safe manning levels in the different member states. Some member states have very elaborate national legislation, whereas others are interested in receiving advice.

The findings of item 3 can be summarized as follows:

Item 3 is intended to back-up the study results with an essential literature review on the factors that affect safe manning. All in all 23 different factors have been identified starting from trading area(s) and reaching to the preservation of applicable occupational health and safety and hygiene standards on board. These factors have been listed, background information was provided and the implications on the manning levels have been explained.

Based on the findings of the three items above the research team recommends that:

1. Taking into account the findings of this study, DG TREN to consider launching a major programme to analyse in depth the situation aimed at the harmonization of the minimum level of manning for merchant ships and the proposition of new EU legislation on the subject complementing the existing Council Directive 1999/63/EC on working time of seafarers.
2. Absence of a harmonized approach may be reduced through the adoption of EU legislation on the basis of the IMO resolutions on Safe manning of Ships.
3. To direct Maritime Administrations to store and provide data when requested by research teams working on behalf of the EC.

5.14 D2.1-7: Impact assessment on SSS promotion programme mid-term review

In the context of its 2003 Programme for the Promotion of Short Sea Shipping (PPSSS) DG TREN is required to consider the impact of its proposed Mid-Term Review of the Programme. In line with its policy, the Commission must prepare an Impact Assessment. The Commission's Strategic Objectives 2005-2009 states that "We should make policy choices that ensure that our various objectives are mutually reinforcing. Actions that promote competitiveness, growth and jobs, as well as economic and social cohesion and a healthy environment reinforce each other. These are all essential components of the overarching objective of sustainable development, on which we must deliver". MTCP has been requested to conduct an analysis of the draft Mid-Term Review and alternative approaches to provide support to the Commission in its preparation of the IA.

In the PPSSS the Commission presented 14 specific actions to enhance the mode and overcome problems that hinder its development. In its proposed Mid-Term Review it will analyse and evaluate the progress achieved under the 2003 Programme and consider whether complementary or new actions will be needed. A draft version of this document (section 11) is the basis for this study.

The context of this study is specifically the impact of the information reported in the mid-term review. It is not the purpose to assess whether the Transport White Paper (2001) accurately analysed the problems associated with sustainable transport solutions to support the EU's future economic growth, nor to judge whether the promotion of short sea shipping is correctly an element in that solution. Nonetheless conclusions can only be drawn after some review of the PPSSS itself and its constituent parts.

In the 2003 PPSSS the issues to be tackled were identified as:

- It has not yet fully shed its past image as an old-fashioned industry;
- It involves complex administrative and documentary procedures;
- It requires enhanced port efficiency;
- It needs new advanced technological solutions for ships, ports, loading units and telematics networks.
- Industry (shipping and shippers) need convincing.

The fourteen actions were designed to deal with some of these difficulties and to introduce new initiatives, such as Motorways of the Sea, to facilitate the development of new, more efficient intermodal services employing short sea shipping legs. This report provides a commentary on each of the 14 actions and discusses their impact on short sea shipping promotion.

Generally shipping's growth has kept pace with road. For example, the report concludes that:

- EU-15 1970-2002: road growth 181%; sea 166%
- EU-15 1995-2002: road growth 22%; sea 17%
- EU-15 1995-2002: road growth 25%; short sea shipping 25%
- EU-25 1995-2004: road growth 35%; sea 31%

Thus if shipping holds its own, over a period such as 2006 to 2013 shipping will grow under a *business as usual* model by around 320 billion t-km. and estimates made during the MTCP project suggest that the potential modal shift could translate to an added growth to shipping of around 20%

The Marco Polo II programme is targeting essentially all of this potential and it is reasonable to conclude, therefore, that the objective of the short sea shipping promotion programme is to help facilitate an extra 20% growth in short sea shipping. The actions of the programme are partly involved in the mechanism of delivering this growth (through Marco Polo and Motorways of the Sea financing) but mostly in improving the probability that this will occur (encouraging efficiencies, promoting benefits).

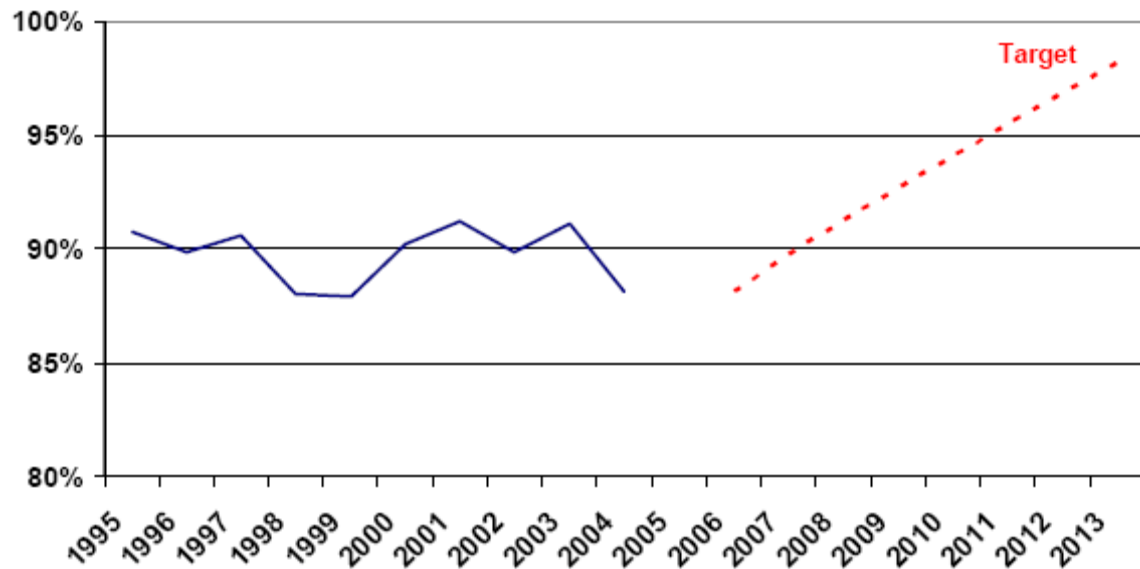
The SSSPP can therefore be considered a facilitating agent targeting around:

- 70 billion t-km of modal shift
- €5 billion of economic activity
- Employment of between 40,000 and 90,000 people

The purpose of the programme is not to create economic growth, nor employment directly. Indeed if modal shift is efficient then total transport costs (and employment) may reduce. However, this would promote greater sustainability and provide some capacity for extra economic growth to be accommodated.

To date the impact of the programme is difficult to judge. Against the modal split targets now being set a trend is yet to materialise (below). This is not necessarily a judgement against the actions to-date, but can be indicative of the time scale of effect and probably an indicator of the considerable work still to be done.

EU-25 Modal split - ratio sea:road



The impact of a mid-term review document itself may not be high, unless it can be seen as creating a road map and clarifying the forward vision. In the context of economic, environmental and social impact the review must be judged on:

- The effect of publishing it or not as a status document
- The reporting of material not otherwise available
- The introduction of new measures
- The possibility of an alternative publication and associated practical actions.

The report considers the economic, environmental and social aspects separately and summarises in tabular and traffic-light form the impacts of the actions to date and those proposed for the future. Most aspects are judged to have neutral to slightly positive impacts which have been further summarised in the table below, where the potential to improve short sea shipping appears in the upper half and the influence of the actions is represented in the lower half.

| | Small future potential | Medium future potential | Significant future potential |
|------------------------------------|------------------------|-------------------------|------------------------------|
| Actions | 1,5,6,9,10,14 | 2,7,8,11,12,13 | 3,4 |
| New Measures | 1 | 12,13 | 4 |
| Strongly positive influence | | 2,7 | 4 |
| Slightly positive influence | 10 | 8,12 | |
| Neutral or small effect | 1,5,6,9,14 | 11,13 ↑ | |
| Slightly negative influence | | | 3 ↑ |

Four options of approach at this mid-term point have been considered:

- Abandon PPSSS
- Continue existing PPSSS without review and further actions and communication
- Publish mid-term review as per draft version
- Produce enhanced communication document and attendant actions

It is concluded that the promotion programme for short sea shipping is an important element in the Commission policy towards more sustainable European transport of freight. It is comprised of some elements which are discharged through the programme itself and others which have a significant existence independently of the PPSSS (e.g. Marco Polo, Motorways of the Sea, environmental and customs actions led from outside DG TREN). The strength of the programme should lie in its total effect being cohesive and effectively greater than the sum of its individual parts.

It is concluded that the activity of the programme is incomplete but its *raison d'être* remains valid in support of the overall European transport policy. It would seem vital that the programme, its rationale and its detailed actions, should be communicated effectively and persuasively to stakeholders who buy, invest in, supply and regulate Europe's transport services. Because success will come from investment in improved services and from changed purchasing behaviour, the programme must rely principally on influencing and facilitating rather than regulating. Thus high quality communication is required to make a compelling case.

It is concluded that a positive impact can and should be achieved through a mid-term review communication. This report recommends that such a communication is an enhanced version of the draft mid-term review, including a more strategic overview and greater clarity on the actions (especially the new measures) being taken. It is recommended that the approach described in Option 4 is adopted. In addition to the written communication, option 4 also identifies some additional marketing,

presentation, information, data-base and workshop activities to deliver the objectives of the programme.

5.15 D2.1-8: Goods flows in Europe II

The core element of this study is the simulation to estimate the potential transport demand on selected sea links. The simulations have been carried out using a freight flow simulation model (EFM Stan) which works under cost minimisation algorithms. A number of 47 ports has been selected through a multi criteria selection exercise, resulting in a list of ports ranked by size, location and function. Some ports which are situated close to each other in the same country have been aggregated into port regions. In between all 4 pre-defined Motorways of the Sea (MOS) areas¹ these ports and port regions have been connected via new additional single MOS- links in the model. The new MOS links have been tested regarding their transport demand and their impact on the overall modal split for the years 2004 and 2010.

A standard set-up was applied for every of the simulated MOS links to have a comparable result within this study. The set-up for all the simulated MOS links;

- the links are additional links (additional to the recent supply),
- their frequency is one departure per day per port,
- their capacity is calculated as a multiplication of a standards vessel type (RoRo 1800 lane-metres, LoLo 500 TEU)² times the number of vessels needed on the link to sustain a daily frequency. The length of the link determines the number of vessels needed, thus also sets the capacity on the link.
- the speed of the links (block speed from port to port) is the same value as for all other RoRo resp. LoLo links.
- all costs elements, transshipment costs, operative and quality costs are the same as for all other RoRo resp. LoLo services in the region.
- each potential MOS link has to connect two EU member states and the ports/ port regions should have a minimum road distance of 500 km between each other. This criteria was necessary to apply to keep the number of simulated cases within the limits of this study.
- ports resp. port regions have been connected via new additional MOS links only within their MOS area given the limits of the study.
- each additional MOS link consists both of a truck ferry link (RoRo) and a container link (LoLo) in both directions.

This study indicates the potential transport demand for MOS service between ports and port regions, where no services or very limited services are existing at the moment. This study focuses on potential freight flows and modal shift effects. Cohesion aspects can not be simulated in the same way, and are accordingly included in the study through the port selection scheme only.

Two matrices have been used per simulated year; a regionalised European non-bulk trade matrix, in which all European regions trade with each other and a regionalised oversea container matrix, where all European regions trade with oversea nodes (e.g. USA, Asia). The first one is attributed to the simulated RoRo links, the container matrix is attributed to the LoLo links.

1 Baltic Sea, Western Europe, Western

The overall results of the simulations show, that there is an evident demand for Motorways of the Sea in Europe. There are however differences regarding the potential transport demand for new MOS links, depending on what regions and what transport chains are linked to each other. Some of the simulated new RoRo links are able to mobilise some 5 mill tonnes / per year, some LoLo links (containers) show even a potential of a volume close to 10 mill tonnes per year. Despite the promising potential transport demand volumes, utilisation rates of the simulated services are not always indicated as sufficient. This indicates that the chosen standard set-up including the setting of one departure per day per direction is in some cases too much.

The separation in simulating RoRo and LoLo links individually also contributes to the low utilisation rates. Synergies between the simulated RoRo and LoLo services seem one possibility to improve utilisation rates – but only there, where for both types of transshipment and vessels a potential transport demand is evident.

Most of the simulated MOS links are able to reduce the transport work on road. A number of simulated MOS links are also able to shift additional transport work towards rail transport. The calculated modal shift effects regarding the transport work on road, rail and sea modes - before and after the insertion of the additional MOS links - differ depending on the case.

In the Baltic Sea area the links indicating the strongest potential freight flows (under the above mentioned selection criteria) are

- Göteborg - Klaipeda
- Port Region Southern Finland (Helsinki, Turku) - Aarhus
- Port Region Southern Finland - Port Region Baltic Northern Germany (Rostock, Lübeck, Kiel)

In the Western Europe MOS area the links indicating the strongest potential freight flows are the following tested connections. Since their results are very close, five links are presented here.

- Rotterdam - Nantes
- Bremerhaven - Port Region Southern UK (Southampton, Portsmouth)
- Rotterdam - Dublin
- Hamburg - Zeebrügge
- Port Region Southern UK – Bilbao

In the Western Mediterranean MOS area the links indicating the strongest potential freight flows are

- Valencia - Port Region North Western Italy (Genoa, La Spezia, Livorno)
- Marseilles - Port Region Central Italy (Napoli, Salerno)
- Barcelona - Port Region North Western Italy

In the Eastern Mediterranean it appeared to be more difficult to identify potential MOS links. One reason is that the selection of ports in the Eastern Mediterranean area within this study resulted in a list, in which these port combinations seem not to match very well for the chosen MOS set-up in the simulation, even though they fulfilled the port selection criteria and/or have been selected because of the member state key. Another obvious reason is that shipping in this area – especially in the Adriatic corridor between Italy and Greece, already comes close to frequencies and capacities associated with the MOS concept.

Because of the limited results for most of the links in this region one additional simulation has been carried out between Trieste (as the highest ranked Adriatic Italian port) and the Greek port Patras (even though it is not part of the pre-selected ports). This Adriatic connection appears to be the one with the most potential freight flows in the region. The strongest potential links appear to be;

- Port Region Northern Adriatic Italy⁹ - Patras
- Port Region Northern Adriatic Italy - Piraeus
- Port Region Northern Adriatic Italy – Thessaloniki

In the chosen set-up only a limited additional transport demand potential could be obtained for the islands connections from/ to Malta and Cyprus within this region.

Regarding the impact on the minimisation of truck transport through the sensitive areas of the Pyreneans and the Alps, naturally some Western Mediterranean links and some of the Western Europe links directly substitute Pyrenean transit (e.g. links to Bilbao or between Barcelona and Genoa). For the Alps however the picture is different, since none of the tested MOS links is bypassing the Alps completely. Only a share of the volumes indicated as a potential transport demand on the MOS links originates from Alpine truck transit. The route choice because of links south of the Alpine region has to be further investigated.

The simulations have been carried out for two years, 2004 and 2010. The results for 2010 are to be found in the Annex 7. The results for the year 2010 (with the forecasted 2010 region by region trade matrix as the basis) confirm the results for the 2004 cases. Despite the growth rate of the transport matrix volumes between 2004 and 2010 it is striking that the container transport demand has a much higher rate on some of the simulated LoLo links in 2010 than in 2004. This is the case especially there, where already today the most overseas containers are handled. It has to be further investigated what the reasons for this “overflow” are.

5.16 D2.1-9: Tonnage measurement study

Across the EU Gross Tonnage has been used as the basis of port charges for almost 25 years, with the notable exceptions of the French and Polish ports, who use the product of length, breadth, and summer draft as the basis.

The replacement by the 1969 Tonnage Convention of GRT by GT was not intended to have any impact on port charges and its introduction in no way compelled ports to use GT as the basis for port charges, as may be seen from the example of the French port charges systems. The use of GT appears principally to be ‘convenient’.

The use of GT has, however, introduced, over the years, discrimination and bias in the design and usage of vessels.. This has led, particularly affecting short sea shipping, to inefficiencies and safety problems as a result of the discrimination against high freeboard, high steel content vessels. Hence Ro Ro vessels and open hatch container vessels suffer relatively higher charges and conventional container vessels (including those used for feeder) have the unsafe and inefficient seven-tier stacking of vessels on deck.

Though it may be argued that port charges are not a large element of total voyage costs, at the margin and in the case of short sea shipping they do affect decisions as to which vessels and ports to use on routes and to overall inefficiencies and hence market failure.

Examination of the arguments for changing the IMO Convention are not persuasive (except for the adjustments already being suggested by Germany and Australia). The Convention does not, after all, introduce any legal compulsion to use GT as the basis for port charges and there are other cogent reasons for the use of GT as a statistical measurement system for recording tonnage.

The case for EU action is more persuasive as there is evidence of market failure and discrimination leading to an un-level playing field across the EU. The situation could be remedied by EU action in the context of the new ports policy linked to the necessity of increasing the share of short sea shipping in freight transport and developing sea motorways.

The action to be taken could include options ranging from hard actions (e.g. a Directive to enforce say the French system or the ‘actual displacement ton’ system on all EU ports) to soft action via a Recommendation, including a Code of Good Practice. It may be preferable to adopt a staged approach with, initially, the use of a Recommendation. Resorting to a Directive only if the softer action fails to remedy the situation and that the use of GT appears to be preventing a further substantial increase in short sea shipping.

However, the form of the action to be taken has to be left finally to the European Commission, after consultation with appropriate industry bodies, Member States, and the European Parliament. If the European Commission decides to follow the route of legislative action then this route would necessarily be accompanied by an impact analysis.

5.17 D2.1-10: SPC expansion feasibility study

This report evaluates conditions for extending the scope of Shortsea Promotion Centres into intermodal promotion. It considers if this extension would be feasible and create added value.

A majority of SPCs are willing to extend their activities to shortsea and intermodal promotion. These SPCs point out that they do not have enough resources for this expansion. The current financial position of many of the SPCs is weak. It is uncertain if the expansion of activities would widen the basis of funding. A more stable financial situation and support of authorities as well as business is a precondition for the undertaking of the expanded role for the SPCs.

The main advantage of the SPCs is neutrality and wide coverage both nationally and internationally via the European Shortsea Network (ESN). Neutrality is reflected in the organizational structure of SPCs. Stakeholders do not generally have direct business interests in the field of transport. Neutrality includes also that information provided by the SPCs is available to all. Target groups are not precluded based on their status. SPCs are near to the markets and thus they can enhance dialogue between business and administrations. Co-operation with national administration is stable, because SPCs have liaisons with short sea shipping focal points, contacts generally situated in transport ministries. SPCs provide their services in national languages.

Extension of the activities presupposes dialogue on different levels and between different actors and stakeholders. Each SPC has to negotiate with its national stakeholders, businesses and authorities, in the field of transport. At the European level, there is need for discussion between the ESN and the European Commission, as well as with the existing international intermodal promotion organizations. Expanding the activities of the SPCs requires extension of the SPC's organizational background, so that all modes and new stakeholders would be represented.

5.18 D2.3-4: Certification of transport logisticians & transport freight integrators.

The basic information to inform this study and to carry out the five tasks set out in the terms of reference was obtained from the views of logistics organisations in Europe were canvassed via a questionnaire, followed by structured interviews by telephone. This was supplemented by research carried out using the leads given by interviewees and various secondary sources.

The conclusions of the study are

1. There is a high degree of common purpose among the logistics organisations in Europe.
2. There is concern at the number of initiatives (some still in progress) surveying education and training in logistics and not in communication with each other. There is a need to bring these initiatives together in a coherent way.
3. This present study seems to be unique in that lower level training has also been investigated.
4. Within the logistics community, Transport Logistics is regarded as just one (optional) module within a wider professional logistics qualification. Freight forwarding companies and associations do focus on this area but the courses offered were of short duration, and the courses were accredited at a low level in the national qualifications framework. It is concluded that there is not sufficient provision of suitable education and training for the transport logistics industry.
5. Diplomas, certificates and the like are not mutually recognisable, though much effort is being undertaken by the various education authorities across the EU to achieve a harmonised vocational qualification framework. Some countries are more advanced than others but if the fruits of the Bruges – Copenhagen process are realised in 2010, then there should be a transparent system of qualifications mutually recognised by the member states. This will clearly benefit logistics qualifications
6. At the higher professional levels logistics education and training is currently sufficient and sufficiently uniform in Europe
7. At the lower levels of training and in the domain of transport logistics, logistics education and training is not currently sufficient and sufficiently uniform in Europe. The availability of even short courses in transport logistics varies markedly between member states. In most cases, the national freight forwarding associations have taken responsibility for courses in their own country, but there is not a uniform standard similar to that for logistics professionals.

8. The study has developed a framework for transport logistics which is based for the most part on the ELA standard, but has added to it in areas of transport logistics. In addition, recognising that many freight forwarding and freight integration courses are currently at a lower professional level, a fourth (more junior) standard is recommended (Transport Business Operator). An entry level standard is also recommended to give new entrants or the workforce personnel an introduction to transport logistics and an awareness of supply chain issues.

9. An EU framework for the certification of logisticians could be drawn up based on 2003/59/EC, which is the successor to 76/914/EEC (now repealed)

10. The study has shown that it is feasible to develop a European Quality Label (EQLL) for Logistics which can be applicable over a wide range of companies, from SMEs to large companies. The study proposes a building block approach to the EQLL with building blocks covering commitment to standards, qualified personnel within the company and codes of practice. Companies could attain EQLL at various levels according to the number of building blocks they can commit to.

Recommendations emerging from the study are:

1. DG Tren consults with other directorates general to coordinate surveys of this nature to reduce the likelihood of re-treading the same ground and also to obtain a more fruitful exchange of information.

2. DG Tren organises a meeting or seminar to address the need for separate but complementary professional qualifications in Transport Logistics and invite organisations such as ELA, FTA, CEN and education authorities to take part. The outcome of this meeting would be to set up study groups to follow up the findings of this report.

3 DG Tren adopts a building block approach to quality labelling to enable each service provider to attain a level of quality according to its size.

4. DG Tren sets up a study to scope the size of an organisation appropriate for managing the Euro Quality Label for Logistics. The study should identify the number of posts required in the organisation and their terms of reference.

5. In the time available for this study it was possible only to consult one end user customer concerning the need for Quality Labelling. The views of this customer were forceful and were in favour of quality labelling. A more detailed survey of end user customers (high street retailers) would be useful.

6. The lower level training courses identified in this study were obtained by trawling information available on the internet followed up with telephone conversations with the authorities concerned. This has only been done in any detail in the UK and Ireland, and it is recommended. It should be extended to other countries.

6 ANNEX B EXPERT GROUP STUDY RECOMMENDATIONS

6.1 EXPERT GROUPS DELIVERABLE D4-1; A TO G

YEAR 1: ANNUAL RECOMMENDATIONS FOR THE STUDY PROGRAMME.

GROUP A: HUMAN RESOURCES & MARITIME EDUCATION & TRAINING

- Supply and Demand of European Seafarers – phase II
- Development of a Standardised Seafarers Data-Base to be used by the EU maritime administrations

GROUP B: TECHNOLOGY & EQUIPMENT

- Shortcomings in the interaction regime between Technology, Organisation and Operation
- Reasonable Dependability
- Uptake of New Technology
- AIS – Safety or Danger?
- Why do Ships Keep Running Aground?

GROUP C: MARINE MARKET, OPERATIONS & LOGISTICS

- Liner Conferences
- Port Data Exchange Systems
- Port Information Systems as Regional Logistics Information Hubs
- Motorways of the Seas (MOS) 2005-2013

GROUP D: SECURITY, SAFETY & RISK

- SOLAS V/Reg. 15 – IACS BDEAP
- The usable, Human-Friendly Ship
- The Dangers of Going to Sea
- Regulation and Enforcement

GROUP E: ENVIRONMENTAL IMPACT & MANAGEMENT

- Ballast Water – Treatment Technologies
- Spill Risk Management and Enforcement – Decision Support
- Atmospheric Pollution from Ships – VOC Emissions and Capture
- Ships’ Wash Wake Impact – Code of Practice
- Ships’ Noise Emissions – Guidelines, Standards and Management

GROUP F: TRAFFIC MANAGEMENT & TRANSPORT INFORMATION

- Support for LRIT & LRAIS Information
- Co-operation for Co-ordination of Regional European VTMIS for Security, Safety and Environmental Protection
- Navigation and Traffic Management of High End Users

GROUP G: INSTITUTIONAL WORKINGS & REGULATION ENFORCEMENT

- Financial Securities as a Condition for Entry into a Place of Refuge
- Towards a Better Integration of EU Transport Infrastructure and Environmental Policies and Legislation

6.2 EXPERT GROUPS DELIVERABLE D4-3; A TO G**YEAR 2: ANNUAL RECOMMENDATIONS FOR THE STUDY PROGRAMME.****GROUP A: HUMAN RESOURCES & MARITIME EDUCATION & TRAINING 8**

- Maritime Clusters and Maritime Sector Employment
- The Impact of Current and Emerging National and International Security Practices on Seafarers’ Shore Leave, Duty Travel and Human Rights
- Comparison of Regulatory Approaches to Seafarers’ Accommodation and Living Space

GROUP B: TECHNOLOGY & EQUIPMENT¹²

- Shortcomings in the Interaction Regime between Technology, Organisation and Operation
- Reasonable Dependability
- Uptake of New Technology
- AIS – Safety or Danger?

GROUP C: MARINE MARKET, OPERATIONS & LOGISTICS 21

- Port as Levers to Improve Efficiency of Intermodal Solutions
- The Implications of Using RFIDs in Maritime Container Transport

GROUP D: SECURITY, SAFETY & RISK

- SOLAS V/Reg. 15 – IACS BDEAP
- The Usable, Human-Friendly Ship
- Scientific Review of Intermodal ISPS
- Risk Models for Domestic Passenger Transport

GROUP E: ENVIRONMENTAL IMPACT & MANAGEMENT

- Environmental Monitoring System and Decision Support Tool to Assist Coastal States Monitor and Control their Particularly Sensitive Sea Areas (PSSAs)

GROUP F: TRAFFIC MANAGEMENT & TRANSPORT INFORMATION

- Support for LRIT & LRAIS Information
- Co-operation for Co-ordination of Regional European VTMS for Security, Safety and Environmental Protection
- Navigation and Traffic Management of High End Users

GROUP G: INSTITUTIONAL WORKINGS & REGULATION ENFORCEMENT

- Alternative Instruments for Implementing the Commission’s Sea Ports Policy (in the hypothesis that the pending Port Services Directive Proposal is rejected by the European Parliament)

7 ANNEX C EXPERT GROUP ANNUAL REVIEW

7.1 EXPERT GROUPS DELIVERABLE D4-2; A TO G.

YEAR 1: ANNUAL STATUS AND FORECAST REPORTS

EXPERT GROUP A: HUMAN RESOURCE & MARITIME EDUCATION & TRAINING

- SUSTAINABILITY OF MARITIME SKILLS BASE
- IMAGE OF THE SHIPPING INDUSTRY
- PERFORMANCE INFLUENCING FACTORS
- SOCIAL, WORKING, AND LIVING CONDITIONS
- LOOKING TOWARDS THE FUTURE 'HORIZON SCANNING'

EXPERT GROUP B: TECHNOLOGY & EQUIPMENT

- SHORTCOMINGS IN THE INTERACTION REGIME BETWEEN TECHNOLOGY, ORGANISATION AND OPERATION
- REASONABLE DEPENDABILITY
- UPTAKE OF NEW TECHNOLOGY
- AIS – SAFETY OR DANGER?
- WHY DO SHIPS KEEP RUNNING AGROUND?

EXPERT GROUP C: MARINE MARKET, OPERATIONS & LOGISTICS

- LINER CONFERENCES
- PORT DATA EXCHANGE SYSTEMS
- PORT INFORMATION SYSTEMS AS REGIONAL LOGISTICS INFORMATION HUBS
- MOTORWAYS OF THE SEAS (MOS)

EXPERT GROUP D: SECURITY, SAFETY & RISK

- SOLAS V/REG. 15 – IACS BDEAP

- THE USABLE, HUMAN-FRIENDLY SHIP
- THE DANGERS OF GOING TO SEA
- REGULATION AND ENFORCEMENT- CASE NO. 1: VTS/VTMIS
- SCIENTIFIC REVIEW OF INTERMODAL ISPS
- RISK MODELS FOR DOMESTIC PASSENGER TRANSPORT

EXPERT GROUP E: ENVIRONMENTAL IMPACT & MANAGEMENT

- BALLAST WATER
- SPILL RISK MANAGEMENT AND ENFORCEMENT
- ATMOSPHERIC POLLUTION FROM SHIPS
- SHIPS' WASH WAKE IMPACT
- SHIPS' NOISE EMISSIONS

EXPERT GROUP F: TRAFFIC MANAGEMENT & TRANSPORT INFORMATION

- LONG RANGE IDENTIFICATION & TRACKING
- NAVIGATION OF MARGINAL VESSELS

EXPERT GROUP G: INSTITUTIONAL WORKINGS & REGULATION ENFORCEMENT

- RECENT DEVELOPMENTS IN PARTICULARLY SENSITIVE SEA AREAS AND THEIR IMPACT ON THE FREEDOM OF INTERNATIONAL NAVIGATION
- FAVOURING TRANSPORT MODAL SHIFT IN THE EUROPEAN UNION: OVERCOMING THE OBSTACLES
- LIBERALISATION OF PORT SERVICES: WHAT CAN BE ACHIEVED IN ADVANCE OF, OR IN THE ABSENCE OF, A PORT SERVICES DIRECTIVE
- EU SEAPORTS IN 2030: A LOOK INTO THE LONG-TERM EFFECTS OF EU POLICIES PERTAINING TO PORTS

7.2 EXPERT GROUPS DELIVERABLE D4-4; A TO G.

YEAR 2: ANNUAL STATUS AND FORECAST REPORTS

EXPERT GROUP A: HUMAN RESOURCE & MARITIME EDUCATION & TRAINING

- Sector Overview

EXPERT GROUP B: TECHNOLOGY & EQUIPMENT

- Shortcomings in the Interaction Regime between Technology, Organisation and Operation
- Reasonable Dependability
- Uptake of New Technology
- AIS – Safety or Danger?

4 EXPERT GROUP C: MARINE MARKET, OPERATIONS & LOGISTICS²³

- Integrated services & intermodality
- Port operations
- Maritime navigation
- Commercial services in maritime navigation and ports
- Marine markets
- Short-sea shipping
- Sea Motorways
- Regional aspects
- Maritime shipping quality
- Transshipment technologies

EXPERT GROUP D: SECURITY, SAFETY & RISK

- SOLAS V/Reg. 15 – IACS BDEAP
- The Usable, Human-Friendly Ship
- Scientific Review of Intermodal ISPS
- Risk Models for Domestic Passenger Transport

- Benchmarking Security Measures at Ports

EXPERT GROUP E: ENVIRONMENTAL IMPACT & MANAGEMENT

- Ballast Water Treatment Technologies
- Spill Risk Management
- Marine Anti-fouling Solutions
- VOC Emissions and Capture
- Fuel Economy Improving / Emissions Reducing Solutions - Fuel Catalysts

EXPERT GROUP F: TRAFFIC MANAGEMENT & TRANSPORT INFORMATION

- Long Range Identification & Tracking, AIS, & tracking of Orphaned Ships and Non-equipped vessels
- Navigation of Marginal Vessels
- Distribution of Maritime Information in the creation of a One Stop Shop for VTMIS, Security, Safety, Environmental Protection and Maritime Transport Information

EXPERT GROUP G: INSTITUTIONAL WORKINGS & REGULATION ENFORCEMENT

- Ships Recycling: A new International Legal Development on Posing a Policy Challenge to the EU
- State Aids in the Port Sector: Do we really need an EC Directive?
- Soft Values of Seaports: A Plea for Soft Values Management by Port Authorities
- A preview of the challenges which lay ahead for the European Union in the application of competition law to the maritime sector