



**CONCERTED ACTION
ON SHORTSEA
SHIPPING**

**Contract No.
WA-96-CA.95/186**

**Public Final Report
Volume 1: Executive Summary**

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**prepared for:
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CONTENTS

CONTENTS.....	2
1. INTRODUCTION	3
2. OBJECTIVES	4
3. WORKPLAN AND DELIVERABLES.....	5
3.1 WORK BREAKDOWN STRUCTURE.....	5
3.1.1 <i>Workpackage A</i>	5
3.1.2 <i>Workpackage B</i>	6
3.1.3 <i>Workpackage C</i>	7
3.1.4 <i>Workpackage D</i>	7
3.1.5 <i>Workpackage E</i>	7
3.1.6 <i>Workpackage F</i>	8
3.1.7 <i>Workpackage G</i>	8
3.1.8 <i>Workpackage H</i>	9
3.1.9 <i>Workpackage I</i>	10
3.1.10 <i>Workpackage J</i>	10
3.2 DELIVERABLES	11
4. MAIN ACCOMPLISHMENTS OF THE ACTION.....	12
4.1 INTRODUCTION	12
4.2 STATE OF THE ART STUDY AND DATABASE.....	12
4.3 TERMS OF REFERENCE FOR PILOT PROJECTS	14
4.4 SSS FLOW STATISTICS	16
4.5 VARIOUS DISSEMINATION/EXPLOITATION ACTIVITIES	18
5. CONCLUSIONS.....	20
6. ACKNOWLEDGMENTS.....	21

1. Introduction

This Executive Summary is Volume 1 of the Public Final Report of the Technical Secretariat of the Concerted Action on Shortsea Shipping, or contract No. WA-96-CA.95/186 (“the SSS-CA project”). The initial contractual period of the project has been the period 1/4/1996 to 31/3/1999, subsequently amended to end at 31/4/1000.

The Technical Secretariat of the SSS-CA project has been managed by the following 4-partner consortium:

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Volume 1 is organized as follows: Section 2 describes the objectives of the project. Section 3 describes the workplan and deliverables of the project. Section 4 describes the main accomplishments of the project. Section 5 presents its conclusions.

In addition to Volume 1, which provides an executive summary of the project, major deliverables of the project provide full detail of all work achieved. These deliverables correspond to additional volumes of this Public Final Report, as follows:

- Volume 2: State of the art study, part I.
- Volume 3: State of the art study, part II (listing of database contents – see webpage)
- Volume 4: The concerted action’s views on terms of reference for SSS pilot projects.
- Volume 5: Requirements as regards SSS statistical data (final).
- Volume 6: Advanced technologies to better collect SSS data.

- Volume 7: Results of all projects monitoring.

2. Objectives

The Concerted Action on Shortsea Shipping played an important role in the Commission's Waterborne Transport Research programme (DGVII - 4th FP). Its objectives were defined as follows:

- setting up of a discussion platform and knowledge network of R&D in SSS
- co-operation, co-ordination and consensus building
- compiling the state of the art in this (broadly defined) area,
- contributing to the co-ordination of relevant research and other related work,
- defining 'pilot projects and demonstrators',
- discussing criteria for interoperability and SSS logistical efficiency,
- identifying the key focal areas shortsea shipping future development,
- performing a comprehensive analysis of SSS statistical data, and
- providing the wide exposure and dissemination of the results of the action.

The plan for achieving these objectives called for a broad European representation to the action, an effective scientific and technical leadership, a sound management plan and schedule, and above all, the commitment of all participants to contribute and help make this action a success.

Representation was open to all EU countries and other countries associated with the research programme (according to the association protocol). In fact, fourteen (14) countries- all EU countries except Austria and Luxembourg, plus Norway- participated. The action had funds to reimburse up to two representatives per member country per meeting, according to the Commission's rules for travel.

As per the rules for waterborne transport concerted actions, the representatives of each participating country contributed input, advice, and other expertise to the action. Such input typically represented information coming from the specific country (e.g., relevant research carried at the national level, suggestions for pilot projects, etc.). In addition to nominated regular action participants, several "observers" were invited to action meetings, representing organizations with an interest in shortsea shipping. Such organizations included ECSA, ESPO, EFIP, and FEPORT.

3. Workplan and deliverables

3.1 Work breakdown structure

To accomplish the above objectives, there have been ten (10) main workpackages (or tasks) to the work of the Technical Secretariat. Their description and allocation among partners are as per the following table.

Work-package	Description	Partner No.
A	Compile state of the art study. Additional input would be solicited from other sources.	1
B	Monitor area 6.1 DGVII projects, provide scientific & technical advice on other projects, provide technical coordination of action	1
C	Provide input for state of the art of information/ telecommunications (telematics) projects related to SSS. Information on DG XIII related activities.	3
D	Provide input for state of the art of shipbuilding/ engineering projects related to SSS. Information on DG XII related activities.	4
E	Write 'terms of reference' for pilot projects, demonstrators, and integrative studies.	1
F	Write final report of action, including technical input for action's brochure.	1
G	Provide administrative support for action meetings: Organize meetings, book rooms, write & circulate agendas & minutes, administer travel reimbursements, administer fund for integrative studies. Produce action's brochure.	2
H	Requirements as regards SSS statistical data	1
I	Use of advanced technologies to better collect SSS data	1
J	Provide administrative support for statistics group meetings. Book rooms, administer travel reimbursements.	2

Additional information on these workpackages is provided below.

3.1.1 Workpackage A

Workpackage title: State of the art study

Workpackage leader: Partner No. 1

Starting events/inputs: First action meeting

Objectives: Compilation of state of the art study

Description of activities and technical approach

Input to be solicited from action participants and other sources on the following:

1. National research programmes or studies, either privately or publicly funded.

2. EU research programmes or studies.
3. Demonstration projects.
4. Technology development projects in related areas (ISC, VTMISS, ECDIS, EDI, shipbuilding, ship design, cargo handling, etc).
5. Policy studies.
6. Regulatory studies.
7. Any related publication.
8. Other.

Outputs and deliverables: Report (see deliverables no. 1,2,3)

Duration/Schedule of workpackage: 2 months (after date of contract signature).

3.1.2 Workpackage B

Workpackage title: Monitor DGVII projects

Workpackage leader: Partner No. 1

Starting events/inputs: Action kickoff

Objectives: Monitor area 6.1 DGVII projects, provide scientific & technical advice on other projects, provide technical coordination of action

Description of activities and technical approach

Area 6.1 DGVII projects to be monitored included the following:

- E-EIS
- ASDSS
- EMMA
- IPSI
- EUROBORDER
- SPHERE
- BOPCOM
- MARNET
- INTRASEAS
- PROSIT
- INFOLOG
- ARCDEV
- INSPIRE

The Commission has included in the contract of each of the above projects the obligation to attend at least one action workshop per year and to give presentations during the workshop, as well as to answer Coordinator's queries on the project.

Outputs and deliverables: Report and presentations (see deliverable no. 1)

Duration/Schedule of workpackage: 48 months.

3.1.3 Workpackage C

Workpackage title: DGXIII activities

Workpackage leader: Partner No. 3.

Starting events/inputs: Action kickoff.

Objectives: Provide input for state of the art of information/telecommunications (telematics) projects related to SSS. Information on DGXIII related activities.

Description of activities and technical approach

- 1) Input to state of the art solicitation to be provided for information/telecommunications (telematics) projects related to SSS.
- 2) DGXIII (transport telematics) projects to be ‘monitored’ throughout the duration of the action.

Outputs and deliverables: Report (see deliverable no. 1)

Duration/Schedule of workpackage: 48 months.

3.1.4 Workpackage D

Workpackage title: DGXII activities

Workpackage leader: Partner No. 4.

Starting events/inputs: Action kickoff.

Objectives: Provide input for state of the art of shipbuilding/ engineering projects related to SSS. Information on DGXII related activities.

Description of activities and technical approach

- 1) Input to state of the art solicitation to be provided for shipbuilding/ engineering projects related to SSS.
- 2) DGXII (industrial materials technologies) projects to be ‘monitored’ throughout the duration of the action.

Outputs and deliverables: Report (see deliverable no. 1)

Duration/Schedule of workpackage: 48 months.

3.1.5 Workpackage E

Workpackage title: ‘Terms of reference ‘for pilot projects.

Workpackage leader: Partner No. 1.

Starting events/inputs: State of the art study, input from participants.

Objectives: Write ‘terms of reference’ for pilot projects and demonstrators

Description of activities and technical approach

Shortsea shipping pilot projects and demonstrators were a crucial element of the Commission's Waterborne Transport Programme, planned for the 3rd call of proposals in 1996. The purpose of these projects was to provide a framework for the validation and assessment of innovative concepts in shortsea shipping, and, possibly, pave the way for their full scale implementation in the future. The role of this action with respect to pilot projects and demonstrators was to help the Commission define the terms of reference for all these projects .

Outputs and deliverables: Report (see deliverable no. 3)

Duration/Schedule of workpackage: 3 months.

3.1.6 Workpackage F

Workpackage title: Final report

Workpackage leader: Partner No. 1

Starting events/inputs: Next to last meeting.

Objectives: Write final report of action.

Description of activities and technical approach

All activities and results of the action to be described in this final report.
Separate technical input to be made for action's brochure.

Outputs and deliverables: Report (see deliverables no. 6, 7).

Duration/Schedule of workpackage: 5 months.

3.1.7 Workpackage G

Workpackage title: Administrative support

Workpackage leader: Partner No. 2.

Starting events/inputs: Action kickoff

Objectives: Provide administrative support for action meetings and produce action's brochure.

Description of activities and technical approach

1) Provide administrative support for action meetings, that is:

- Organize meetings.
- Book rooms.
- Write & circulate agendas & minutes.
- Administer travel reimbursements.
- Administer fund for integrative studies.

2) Produce action's brochure.

Outputs and deliverables: Administrative support/deliverable no. 8.
Duration/Schedule of workpackage: 48 months.

3.1.8 Workpackage H

Workpackage leader: Partner no. 1

Workpackage title: Requirements as regards SSS statistical data

Starting events/inputs: Immediately upon contract amendment.

Objectives: To monitor the developments and trends within the shortsea market and its sub-markets, in order to assess the impact (on the volume of goods carried by SSS in the EU) of certain policy measures.

Description of activities and technical approach

Collect data from all EU/EEA ports concerning cargo carried by maritime transport in general, with a breakdown including shortsea cargo specifically; in terms of volumes expressed in tonnes. The data relating to shortsea cargo would be defined in one of two ways. Either by O/D matrices showing maritime trade within the EU/EEA, or, alternatively, by type of ship.

In parallel, or as an alternative in case 1 proves infeasible, a representative sample of major ports (spread over the Mediterranean, the Baltic, the North Sea, and the Atlantic Arc) could be selected which would report at regular intervals on cargo handled in these ports and carried by shortsea vessels.

The workpackage is to be coordinated by partner No. 1 and is to be performed as follows. First, each participating country is to nominate to the concerted action an expert on statistics. The role of these statistics experts would be to provide input to the workpackage, including data from the corresponding countries. Second, a «core group» of experts from institutions with recognized expertise in the area of statistical analysis of maritime transport flows would be subcontracted with the approval of the Commission to perform the analysis of the workpackage. The core group would appoint a leader, who would be responsible for synthesizing and delivering to Partner No. 1 the technical work of the subcontractors, including material for all the deliverables of the workpackage.

Collectively, the statistics experts, an ex-officio representative of Partner No. 1, and the «core group» would form the «statistics group».

There would be four (4) meetings of the statistics group, all in Brussels. The tickets of the statistics experts and of the ex-officio representative of Partner No. 1 (as many as 15 persons per meeting) would be reimbursed by the special fund for travel in the contract and according to normal Commission rules (see also workpackage J).

The core group representatives and the ex-officio representative of Partner No. 1 form the Statistics Coordination Committee (SCC). Partner No. 1 may call for meetings of the SCC before or after a regular statistics group meeting or before or after a regular SSS-CA meeting.

Outputs and deliverables: There would be three deliverables.

- An interim report (deliverable No. 9), delivered after 6 months from workpackage start, describing progress on the workpackage (up to step 3).
- A draft final report (deliverable No. 10), delivered after 10 months from workpackage start, and
- A final report (deliverable No. 11), delivered at the end of the workpackage.

Duration/Schedule of workpackage: 12 months

3.1.9 Workpackage I

Workpackage leader: Partner no. 1

Workpackage title: Use of advanced technologies to better collect SSS data

Starting events/inputs: Delivery of workpackage H interim report.

Objectives: To recommend advanced technologies that would aid in the collection of SSS data.

Description of activities and technical approach:

As a result of progress in workpackage H (interim report), this workpackage would take a critical look at systems and advanced technologies that are available or are under development with the goal to better collect, standardize, classify, and store SSS data.

Outputs and deliverables: Report (deliverable No. 12).

Duration/Schedule of workpackage: 3 months

3.1.10 Workpackage J

Workpackage leader: Partner no. 2

Workpackage title: Administrative support for statistics group

Starting events/inputs: First meeting of statistics group.

Objectives: Provide administrative support for statistics group meetings.

Description of activities and technical approach

This is a workpackage that complements workpackage G of the action, and aims to provide administrative support for the statistics group meetings, that is:

- Book rooms.
- Circulate meeting announcements and agendas.
- Administer ticket reimbursements.

Deliverables: Administrative support.

Duration/Schedule of workpackage: Ends at last meeting of the statistics group.

3.2 Deliverables

The list of official deliverables follows. In parentheses are the partners responsible for each deliverable. Those deliverables that are included in this Public Final Report are also shown.

- No. 1: Input for state of the art study (partners No. 3 and 4).
- No. 2: State of the art study (partner No. 1)- see also Volume 2.
- No. 3: 'Terms of reference' for pilot projects (partner No. 1)- see also Volume 3.
- No. 4: Project monitoring (partners No. 1, 3, and 4)- see also Volume 7.
- No. 5: Semi-annual progress reports (all partners).
- No. 6: Final report on the action (partner No. 1)- see also Volume 4.
- No. 7: Technical input for action's brochure (partner No. 1).
- No. 8: Action's brochure (partner No. 2).
- No. 9: Interim report on SSS statistics (partner No. 1).
- No. 10: Draft final report on SSS statistics (partner No. 1).
- No. 11: Final report on SSS statistics (partner No. 1)- see also Volume 5.
- No. 12: Report on advanced technologies to better collect SSS data (partner No. 1)- see also Volume 6.

4. Main accomplishments of the action

4.1 Introduction

Overall progress has been according to both the objectives that were set for this Concerted Action *and* with the workplan that was set forth to accomplish these goals. The contract for the Technical Secretariat of the Concerted Action on Short Sea Shipping started of April 1, 1996. The action itself was predeceased by three preparatory ‘expert meetings’ hold in Brussels, of which the first took place June 30, 1995, followed by two additional meetings (on November 24, 1995 and on February 23, 1996).

Work within the three expert meetings laid the foundation for the later concerted action, but also for the waterborne transport research programme in FP4 in general.

The action held a total of 12 meetings, as follows (all in Brussels unless otherwise noted):

- June 4, 1996
- June 22, 1996 (Bergen, Norway)
- November 8, 1996
- January 27, 1997
- June 13-14, 1997 (Piraeus, Greece)
- December 3, 1997
- April 7, 1998
- June 8, 1998 (Lisbon, Portugal)
- December 9, 1998
- May 20, 1999 (Kavala, Greece)
- September 16-17, 1999 (Gothenburg, Sweden)
- March 30-31, 2000.

The meetings in Bergen, Piraeus, Lisbon, and Gothenburg and the final meeting in Brussels were in a workshop format, with broader industrial participation.

In addition, the SSS statistics group had 4 meetings, as follows (all in Brussels unless otherwise noted):

- December 8, 1998
- April 22, 1999
- September 16, 1999 (Gothenburg, Sweden)
- March 3, 2000.

In our opinion, the main accomplishments of this concerted action have been the following:

4.2 State of the art study and database

Volumes 2 and 3 of this Public Final Report provide more information on this subject. The SSS state of the art study was produced by NTUA with specialized input from

partners ISL and WEGEMT and from all participants of the action and several other sources (conferences, the Commission, etc.). It catalogues some 467 entries relating to projects, studies, papers, reports, or articles in the area of shortsea shipping.

In order to facilitate the compilation of the study, and in the process of collecting this information, a computerized tool was developed by NTUA so as to handle the extensive input that was provided from all these sources. The creation of an integrated dBase program became indispensable, in order to enter, update, and retrieve easily the collected data and extract statistics and reports fast and securely.

It was decided that the package should fulfill the following criteria:

- compatibility with as many as possible other software packages, and capability of data interchange among several software environments;
- friendly and smart interface between the user and the machine;
- capability of upgrade from time to time, so all this information can be useful in the future.

Based on the above, it was decided to use Microsoft's Visual FoxPro v3.0™ because of previous experience with this package and FoxPro's ability to provide communication with all major operating environments: Windows, DOS, UNIX and Macintosh. The database is formatted and constructed in a way that allows the user to import data of another format and retrieve it via its own interfaces.

The interface allows the user with a variety of options, and is essentially structured in two levels. Level I provides bibliographical information on each entry (title, author, type, sponsor, country, status, language). Level II provides a matrix-type description, where the columns indicate the object(s) under investigation (ships, ports, cargo, networks, telematics) and rows indicate the methodological disciplines (engineering, economics, regulatory, safety). The interface also has buttons which allow the user to perform the following functions:

- enter a new entry
- preview an existing entry
- edit an existing entry
- print ready-to-use reports
- search the database

All this proved a very helpful means to produce the deliverable of the state of the art study. Specifically, all Level I information was included in Volume 2, and all Level II information was included in Volume 3.

From a contractual perspective, it is important to point out that the development of such software and database was *not* foreseen at the time the Technical Annex of the SSS-CA contract was finalized (December 27, 1995). The need for such development was realized afterwards, and actually much of this development (although not all) was realized before the official start of the SSS-CA contract (April 1, 1996).

This was the first such development to take place within the other concerted actions on waterborne transport. With the encouragement of the DGVII there was talk between the

SSS concerted action and others (mainly the ones on VTMISS and inland waterway) to adopt a similar approach.

Another related parallel and perhaps more important development concerns the use of the internet. NTUA Maritime Transport has been working independently since late 1995 to develop a set of web pages describing its educational and research activities. These pages are now operational on the WWW, and SSS-CA (as well as all other Commission projects) are prominently featured in them. The user can surf these pages and obtain up-to-date information on the action. He or she can even download the state of the art study by remotely logging in the NTUA web site (www.maritime.deslab.naval.ntua.gr).

Links to the web sites of AMRIE, ISL, and INRETS have also been established.

One of the features of the presence of SSS-CA on the internet is the ability of the user to download reports produced by the action. This can be done either by following on-line instructions at the SSS-CA web site, or by directly logging in at the NTUA web site. All reports of the action are available for download (all are Word 6.0/7.0 documents):

Another implemented feature has been the development of a "Search Engine" that allows the user to search the state of the art database and submit entries via the internet. The user can do so either by filling in a form that can be submitted electronically, or by submitting a Word document by e-mail. NTUA then looks at the submission, and, if relevant, adds it to the SSS database.

4.3 Terms of reference for pilot projects

Volume 4 of this Public Final Report provides more details on this subject. The process for the formulation of the terms of reference for pilot projects and demonstrators in the area of shortsea shipping (which began in the spring of 1996, continued with a specialized workshop in Bergen in June 1996, and culminated with a discussion of a draft report among the participants of the action in the fall of 1996) ended with the delivery of the final version of a report to the Commission in December 1996.

The report on the terms of reference for pilot projects (which was launched in the third call for proposals) reflected *the Concerted Action's views* on this subject, and did not intend to replace the terms of reference officially stipulated in Commission documents dealing with general information on the Transport Research Programme, or with more specific information on Waterborne Transport Research. Any terms of reference or other guidelines for proposal preparation, evaluation and selection (either general or specific) stipulated in such documents are assumed to be valid in all cases.

Given that the spectrum of possible projects ranging from the level of a feasibility study all the way to the level of full scale implementation (such as for instance opening a new SSS line) is extremely broad, it became clear that a number of issues had to be resolved before one could proceed with more thematic discussions. These issues included the following:

- Project size
- Scope/ kinds of projects
- Validation criteria

On the basis of all the discussions among concerted action participants and the Commission about pilot projects, the following general principles constitute *a minimum common basis of consensus* regarding the scope of a pilot project:

- A pilot project should have a substantial real-world content, with significant end-user participation.
- The demonstration phase is the main vehicle for testing and validating the results of a pilot project.
- Any approach that is used is expected to be technically sound and rigorous in the reflection of the assumptions, parameters, or other data used, as well as in the criteria and process for project validation.
- No specific technical approach (such as simulation or other) can be a priori encouraged or discouraged.

The list of validation criteria for pilot projects is really open ended. The following is a non-exhaustive sample. Pilot projects in SSS should clearly demonstrate one or more of the following:

- compliance with the broad objectives of the Common Transport Policy
- removal of bottlenecks or other obstacles that hamper logistical efficiency
- relief of land-based networks from congestion
- promotion of European trade competitiveness
- technologies, policies and/or procedures that improve interoperability
- cost-effective scenarios by which cargoes can be shifted from land to sea
- measurable improvements in logistical efficiency (properly defined)
- enhancement of connectivity and cohesion of peripheral and less developed regions
- sustained mobility
- achievement of higher safety and/or environmental friendliness

As all public deliverables of the action, this report is available to the public via download from the NTUA web site.

4.4 SSS flow statistics

Volumes 5 and 6 of this Public Final Report provide more details on this subject. The issue of maritime statistics, and specifically, SSS-related statistics has occupied the attention of the action since the Bergen meeting. The main problems that have been identified in that regard have been lack of homogeneity, lack of quality, and, in most cases, lack of appropriate data. Since then, a draft document has been prepared by Prof. M. Zachcial of ISL Bremen identifying the problems and proposing the formation of a small group of experts that would produce the terms of reference of what needs to be done to overcome problems in this area. This document was discussed in the two meetings of the action within the reporting period, and most extensively in the January 1997 meeting.

The discussion on SSS statistics that had started at that time and continued extensively in the previous reporting period was finalized, and a concrete technical description of the relevant workpackages was produced.

The DGVII Transport Research Committee (TRC) endorsed an amendment to the contract of this concerted action specifically to tackle this problem, with a budget increase of 150 keCU.

Discussions held during the SSS-CA meetings in Brussels (27/1/97) and Piraeus (14/6/97) concluded the finding that there was an urgent need for valid and reliable data concerning freight flows information along the whole transport chain including mixed/combined land/sea movements. This also includes the wide variety of ferry and ro/ro traffic from/to the Continent. Several attempts have been undertaken to create consistent data on this topic. In most cases, individual trading areas have been analyzed. A full – scale consistent approach, however, did not yet exist. For several reasons the use of these data causes substantial methodological problems.

Even the quality of overall foreign trade data among European countries and also between these and countries overseas reveal remarkable inconsistencies. This is particularly true for land/sea trade flows. Adequate shipping statistics are lacking. Therefore seaborne foreign trade and its separation from land transport must predominantly be elaborated from foreign trade statistics.

OECD trade statistics (after certain refinements) can be used as key data supplemented by EU external trade statistics by mode of transport. The mode of transport used relates to the moment when the goods cross borders into or out of importing or exporting countries. The foreign trade transport data are available since 1989 or intra and extra community trades. There are several national data sources available concerning trade, transport, ports and ferry/ro-ro operations. They show, however, substantially different levels of quality, validity, and reliability. Figures of OECD, and this is also true for EU external trade statistics are not identical with regards to the importing and exporting countries. In some cases there exist substantial differences between figures of import recorded by an importing country and figures of export recorded by the relevant exporting country.

Recent research activities show that in view of the Intra-EU trades, in more than 400 cases there have been discrepancies of at least 50,000 t between import and export

figures. The analysis indicates further that differences are to a large degree attributable to UK related trades due to the Kingdom's definition of seaborne foreign trade.

There is no doubt that the only way to set up a more or less acceptable data base of foreign trade data among the European countries and especially among them and others is to balance out discrepancies by assessment of algorithms based upon functional relationships and matrix operations. Respective results have then to be cross-checked against other data source of national and regional information.

The work had to be based on all reliable statistical data available on a national level. This means usage of:

- Foreign trade data (sources: OECD, Eurostat, individual countries)
- Transit statistics from individual countries (Netherlands, Germany, Belgium, etc) including country of origin/ destination.
- transport statistics by modes (rail, road, inland waterways) for Netherlands, Germany, Belgium, France, Spain, Portugal and others to be identified).
- Port statistics from individual ports concentrating on the major ones and then going down to the minor ones (samples); cooperation with ESPO required.

The regional pattern of origin/destination flows would have to be established by using all existing traffic information on the regional level in combination with a restricted number of the determinants of demand for transport (population, gross domestic product by economic sectors and/or sectoral employment). Moreover, whenever international O/D flows are not available, domestic traffic volumes can be used as proxies for simulation of the generation of international flows.

The split of freight flows by modes requires some computer modelling which has been applied successfully in previous studies.

In order to identify European shipping flows it was necessary to use port related information as well as data from shipping lines. These data would be raised for the identification of transshipment cargo as well as for route choice considerations. This approach has been applied as part of a recent large-scale study on freight flows between Scandinavia and the Continent.

The matrices to be established should be used as a comprehensive framework for market studies as well as a basis for the evaluation of certain policy measures.

The main objective is to monitor the developments and trends within the short sea market and its submarkets on a valid basis. However, it would not be possible to repeat the whole exercise every year.

In order to derive developments and trends within the short sea market on a permanent and actual basis, well-defined samples of cargo movements would have to be drawn.

In parallel to the O/D matrices generation, a representative sample of major ports (spread over the Mediterranean, the Atlantic Arc, North Sea and Baltic Sea) would be

selected which would report at regular intervals on cargo handled in these ports and carried by short sea vessels.

Time series beginning with 1992 data would be delivered for selected key variables with respect to short sea shipping markets.

The scope of work could only be carried out in close cooperation among leading institutions within this specific topic. Accordingly, those institutions would bring their particular experience and data bases into the co-operative work, thereby providing considerable added value to the action. In parallel, a group of nominated national statistical experts was formed and was used as a resource in order to provide data and other necessary information.

Implementation met the following timetable:

- step 1 start of work (month 0)
- step 2 analysis of existing data and merging of data files being already processed
- step 3 establishment of country- by country trade data by mode and loading categories including transshipment considerations (interim report, month 6)
- step 3 state of regionalisation of national data according to the zoning system defined
- step 5 derivation of preliminary outcomes on a sampling basis (month 8)
- step 6 draft final report (month 10)
- step 7 final report (month 12)

Three workpackages, H, I, and J, were added to the amended work program of the concerted action (see Section 3 above).

The four statistics subcontracts that were signed by Partner No. 1 were with the following subcontractors:

- ISL (Germany)
- MDS Transmodal (UK)
- NEA (the Netherlands) and
- Cetena SpA (Italy).

The work of the subcontractors was to synthesize the data submitted by the national experts, in line with the work described in the amended contract.

4.5 Various dissemination/exploitation activities

In addition to the regular meetings of the action, SSS-CA activities were disseminated and well received in various other fora throughout the duration of the action. These included the following:

1. A publication of the state of the art study in the proceedings of the European roundtable conference on SSS in Bergen, Norway, June 1996.
2. A demo of the SSS-CA database at the BOPCOM project kickoff meeting in Luebeck, Germany, November 1996.

3. An invited SSS-CA presentation within the Maritime Task Force (DGIII) meeting in Dublin, Ireland, November 1996.
4. A paper by O. Schinas and H. Psaraftis entitled “New Frontiers Through Shortsea Shipping”, presented at the annual Society of Naval Architects and Marine Engineers (SNAME) meeting in Ottawa, Canada, in October 1997. The paper was refereed and appeared in the SNAME Transactions.
5. An invited SSS-CA presentation within a DGVII RTD-industry event in Rotterdam, the Netherlands, in March 1999.
6. An invited SSS-CA presentation within “International Maritime Forum”, an event organized by the DGIII and the Greek Ministry for Development in Kavala, Greece, in May 1999.

In addition to the above, a brochure on SSS-CA has been prepared. All public material on the action will be written on a CD-ROM, which will be distributed by the EU.

All material produced by the action is also available for browsing and download at NTUA’s web site, www.maritime.deslab.naval.ntua.gr.

Plans for the future include the further dissemination of the results of this concerted action within industry circles.

5. Conclusions

Although from a contractual viewpoint the Concerted Action on Shortsea Shipping started on April 1, 1996, from a substantive viewpoint it started with the kickoff meeting in Brussels on June 30, 1995. So for all practical purposes it spanned almost 5 years.

It is fair to say that quite a lot was accomplished during these 5 years, not only in terms of fulfilling all formal contractual obligations of the Consortium toward the European Commission, but also in terms of providing additional material, much useful toward the objectives of the programme.

A prime example of this has been the development of the SSS database (both PC-based and Web-based), something that was not foreseen in the action's Contract, but was developed on an ad-hoc basis as a result of input received for the state-of-the-art study and also in parallel within the Neptune network. We consider this as one of the most important outputs of the Concerted Action.

Of course, updating the database on an ongoing basis is something that should receive special attention, so that it does not become obsolete in the future.

The terms of reference for pilot projects, discussed in detail within SSS-CA, were also a significant output, setting the stage for some important SSS projects in the 3rd call of the 4th FP, with significant industry participation.

The work on SSS statistics, resulting from an amendment to the initial contract, is also one of the most important deliverables of the action, by providing for the first time a picture of European intermodal trade flows, and of the various methodological issues associated with developing such a picture. We believe that this work, which was conducted on a pilot basis, should continue in the future.

Monitoring a wide spectrum of SSS-related RTD projects, both within and outside the DGVII, provided a lively forum of information exchange and cross-project interaction. We believe that now that this work is over, there should be aggressive dissemination of the relevant results, exploitation of those ideas and concepts that have an industrial value, and exploration of the potential policy ramifications of all this work. It was actually stressed at the last workshop that RTD and policy should be closely linked.

Looking back in the 5 years of the action, we view the issue of industrial participation crucial and as an area for future improvement. The most interesting meetings of the action were the various workshops in which the SSS shipping industry participated: Bergen (1996), Piraeus (1997), Lisbon (1998), Gothenburg (1999) and finally Brussels (2000). This should serve as a model for future action in this area, in related Thematic Networks and other related activities.

6. Acknowledgments

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The regular nominated representatives of the 14 countries who participated in SSS-CA, the nominated experts of the 11 countries who participated in the statistics exercise, along with regular observers such as ECSA (Herman de Meester) and ESPO (Pamela Le Garrec) provided important input and contributed to the success of the project.

The same should be said of the representatives of the various RTD consortia, who came to the SSS-CA meetings on a regular basis so as to update the action on their activities.

Last but not least, credit should be paid to the other members of the team at NTUA, and especially to Orestis Schinas, Jerry Dokos, and Dimitris Lyridis, for their motivation and overall effort.