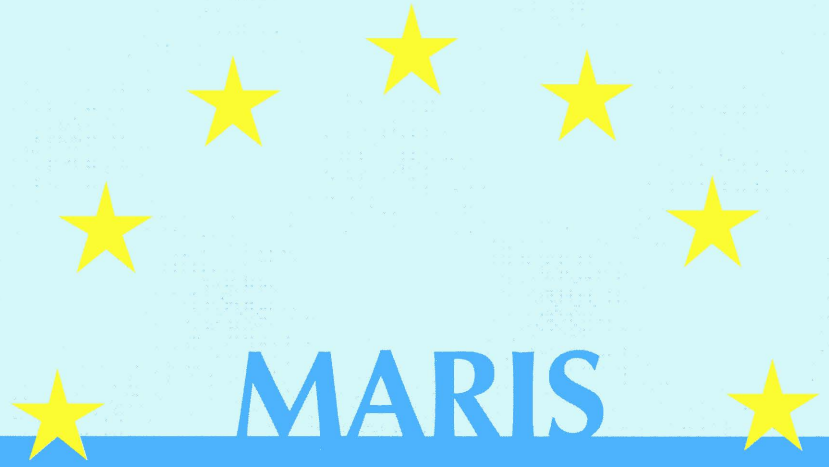


MARIS

Maritime Information Society

Message from Commissioner Martin BANGEMANN

It is a particular pleasure for me to introduce this brochure which sets out the background to the creation and initial development of the Maritime Information Society - MARIS. The following pages outline the global context and European perspective for projects which will be of direct use and relevance to enterprises involved throughout the maritime sector.

MARIS forms part of the wider Information Society - a growing feature of all our lives and something which, effectively managed, can be a force for good in the world. The potential impact of this social revolution has increasingly concerned world governments and recently the G-7 members have devoted one of their meetings to address this issue. That meeting was held in Brussels in February 1995 and Europe participated significantly in those discussions.

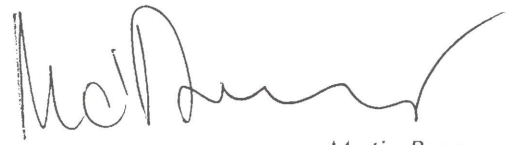
The result was that eleven projects were adopted by the G-7, to be developed over the next few years, with the initial proposals being placed before the G-7 Heads of State at their Summit in Halifax, Canada, in June 1995.

Among those eleven projects was MARIS, for which it was agreed that the European Union and Canada should lead the project. I am especially pleased that this should be so, since Europe has such strong and enduring links not only in the maritime world but also in the development of new technologies and systems for communication. It is important also that the citizens of Europe - throughout its maritime regions and within its maritime industries - should play a full part in building the Maritime Information Society and should see the benefits that MARIS can bring.

The Maritime Industries Forum and the Alliance of Maritime Regional Interests in Europe are both supporting the MARIS initiative and are closely involved in its implementation.

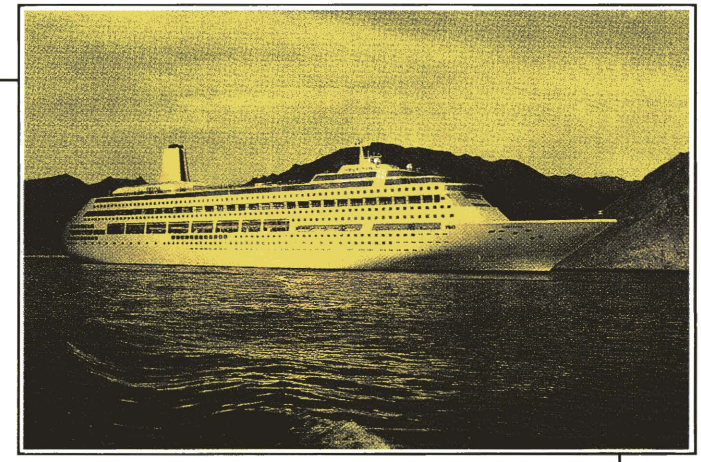
This brochure provides the first opportunity to present MARIS to a wider audience, to provide information on its initial sub-projects and the contact points relating to their management, as well as to stimulate and encourage greater involvement in all aspects of MARIS and its long term development.

I commend to you the concept of MARIS and wish success to all participants and to their endeavours.



Martin Bangemann
Member of the European Commission -
responsible for Industrial Affairs, Information Technologies and Telecommunications

Chairman of the High Level Panel of the Maritime Industries Forum
Honorary President of the Alliance of Maritime Regional Interests in Europe



CONTENTS

pages two and three: **MARIS** - ***Part of a World-wide Initiative***

pages four and five: **SAFEMAR** - ***Protection of the Environment***
- **Ship Reporting**
- **Electronic Chart Display and Information System**

page six: **MARTRANS** - ***Logistics and multimodal transport***

page seven: **MARSOURCE** - ***Managing resources for the Future***

page eight: **MARVEL** - ***Intelligent manufacturing systems, through global co-operation***

inside back cover: **CONTACT POINTS**

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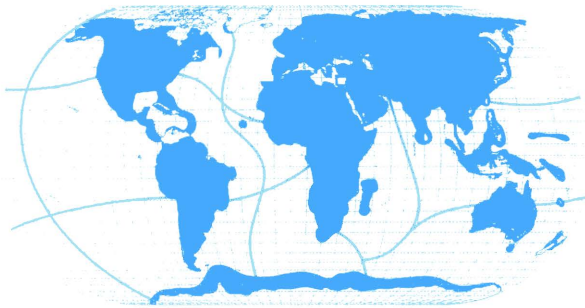


MARIS - Part of a World-wide Initiative

The guiding principles for the Global Information Society, envisaged by the G-7 partners, embrace high-level political objectives aiming to: promote dynamic competition, encourage private investment, define an adaptable regulatory framework, and provide open access to networks.

At the same time, these objectives should fulfil: universal provision of- and access to- such services, promotion of equal opportunity for the citizen, promotion of diversity of content (including cultural and linguistic), and recognition of world-wide co-operation - particularly towards less developed countries.

MARIS - The Maritime Information Society

The MARIS initiative is a framework under which sub-projects demonstrate the potential benefits of the information technologies and telematic applications for a broad range of maritime activities in the fields of:

- maritime safety and the protection of the maritime environment
- logistics and multimodal transport
- sharing knowledge with regard to the exploitation and protection of marine resources and in particular fisheries
- intelligent manufacturing through global co-operation

The objective of this initiative is to show the advantage of a global information system through setting up five specific applications. These will build on existing systems and promote inter-connectivity and inter-operability, which will stimulate a process of enhanced international co-operation to create new services on a global scale. The immediate results are foreseen to be:

- increased competitiveness of maritime industries
- improvement of maritime safety
- protection of the environment
- enhancement of logistics efficiency
- improvement of the inclusion of maritime transport in intermodal chain
- better management of marine resources.

The MARIS initiative counts on the active participation of the maritime industries, regions and public authorities. The five sub-projects of MARIS are described in the following pages.

Implementation plan

A successful implementation of the MARIS initiative requires a bottom-up approach with full involvement of all maritime industries as well as the participation of public authorities. The first phase for all sub-projects is a stock taking exercise to allow the definition of user requirements, on the basis of existing systems. In the five initial examples consortia are being set up and a work plan and methodology are being developed.

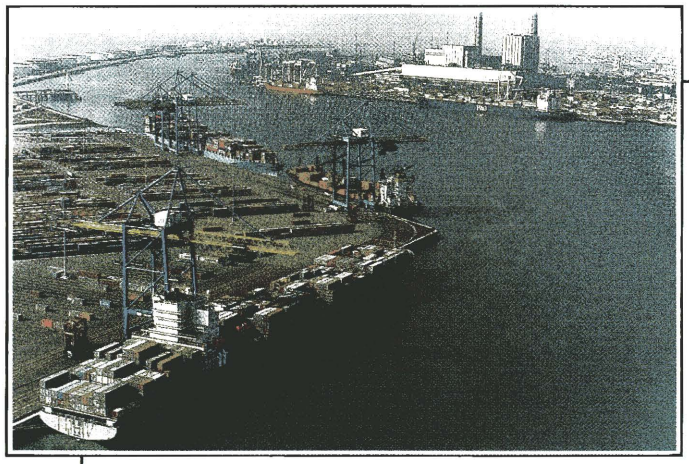
The second phase develops prospects for further international co-operation and the enlargement of existing consortia is foreseen. Data modelling and standardisation for inter-connections, inter-operability and possibly new services, will then be developed and first practical trials will be undertaken. In the third phase further tests will take place, aiming at achieving the first concrete results.

In all three phases there will be close inter-action between the various sub-projects, to achieve cohesion and avoid duplication. A broad timetable has been established, with the three phases, successively, taking until then end of 1995, '96 and '97. The culmination will be the presentation of all results at the World Expo '98 in Lisbon, the theme for which is "The Oceans: A Heritage of the Future."

Currently, the implementation of the first phase is under way in Europe. The G-7 partners are being kept informed on a regular basis on the progress made, to allow further involvement at any time.

KEY POINTS

- ***MARIS*** **is an open project framework, building on existing activity, and is user-driven**
- ***MARIS*** **will improve competitiveness of maritime industry**
- ***MARIS*** **will enhance maritime safety, protection of the environment and marine resources**
- ***MARIS*** **will bring benefits for the maritime regions**



SAFEMAR - Protection of the Environment

The consequences to the environment, and local economies, when maritime disasters such as the Exxon Valdez and the Amoco Cadiz occur, are enormous, so there is a global need to improve accident prevention capabilities, as well as fast access to vital information on ships and noxious or polluting cargoes to limit the consequences of these disasters. At the same time, the efficiency of maritime transportation is crucial in a very competitive marketplace and there is a need to balance efficiency with the need for global environmental protection and safety of navigation. The SAFEMAR project seeks to fulfil this objective and does so through two sub-projects - (a) concerning Ship Reporting and (b) involving Electronic Chart Displays.

Ship Reporting Sub-Project

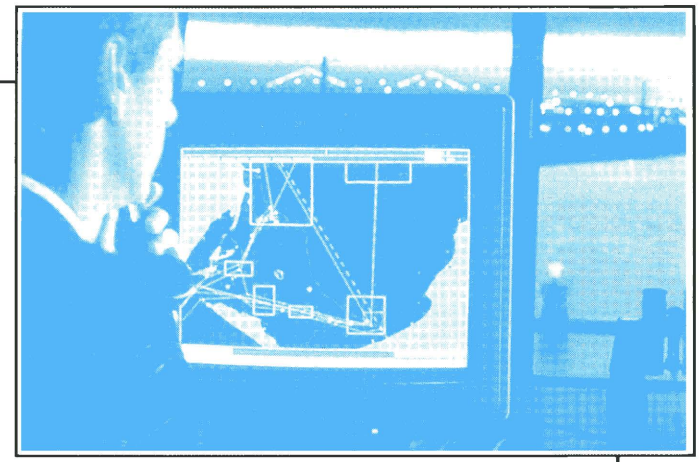
The SHIP REPORTING Project aims at developing an information system for the enhancement of safety in maritime traffic and the protection of the environment. This system would be based on the requirements for ship-to-ship, ship-to-shore and infrastructure communication for both operation and implementation of international conventions or resolutions and Euopean legislation.

This project will result in the creation of a wide Vessel Traffic Management and Information System where nodes of different types will be users and providers of information. The ship itself will be an important node of the system. This Vessel Traffic Management and Information System will provide a mechanism for better:

- monitoring of ship compliance with international regulations
- control of marine incidents and pollution
- monitoring movements of ships, dangerous goods or polluting cargoes
- conservation of marine and coastal environments

As such, it is fully complementary to the second sub-project on Electronic Chart Systems.

In the Community, the data required and the sources and the receivers of such data are clearly identified in European Directives, in particular the Directive 93/75/EEC on the reporting of information on the movement of hazardous material by sea requires ships carrying dangerous or polluting cargoes to inform the competent authorities of the Members States before entering or leaving EU ports. National solutions are under development but offer only a partial solution to these requirements.



Research and Development projects and studies have demonstrated the importance and the feasibility of flexible information management and electronic data interchange systems being inter-operable and inter-connectable to suit user needs. The Ship Reporting sub-project aims to meet these requirements.

Since the implementation of the directive is laid down for late 1995, the project should be developed rapidly and the first practical results to be available by 1996.

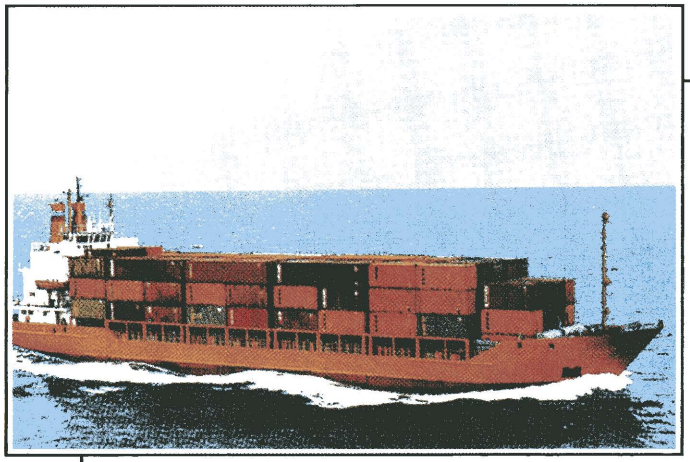
Electronic Chart Display and Information System Sub-Project

The contribution to improving maritime safety from this project will be through making widely available a range of inter-operable navigational data originating from different countries. It combines accurate real-time positioning with up-to-date chart, radar, tidal, water level, and ship-system information, to warn of dangers and assist seafarers to navigate safely and efficiently.

Two organisations, the International Hydrographic Organisation (IHO) and the International Maritime Organisation (IMO) are already engaged on the development of a world-wide consistent hydrographic information system by developing enabling tools such as data and performance standards for Electronic Navigation Charts (ENC). All these contributions will support the development of an Electronic Chart Display and Information System (ECDIS). The process of reaching consensus on specifications for electronic navigation charts has already produced a number of international projects, to test such factors as computerised graphics and database management systems, and to define standards for systems and quality assurance for both hardware and software.

The SAFEMAR project will be based on existing technologies such as cellular telephones, INMARSAT, marine radios and wide-area communications networks. At the same time, new electronic high-speed options will be investigated for co-operative acquisition and dissemination of data. The initial participants in this project include the European Commission through its focal point COST 326 and the Hydrographic Offices of Canada and the U.S.A. COST 326 research action draws together input from public authorities, hydrographic bodies, universities and industries from 15 European countries (France, Germany, United Kingdom, Italy, Greece, The Netherlands, Spain Portugal, Ireland, Belgium, Finland, Sweden, Denmark and Norway and Estonia as non-EU member States.

The timetable for an initial demonstration of ECDIS will be by the end of 1995; the period for further implementation of the project is estimated to be a further 3-4 years.



MARTRANS - Logistics and multimodal transport

Real time information and efficient logistics organisation enable consignees to consider cargoes as part of their inventory which not only leads to a substantial reduction of stocks, but also allows operators to establish an accurate planning for cargo and vessel handling, yielding a reduction of waiting time and a better use of equipment.

Against this background, the MARTRANS project will set up a logistics information network for real-time information on cargo and vessels by interconnecting existing EDI-Port Community Systems and implementing new EDI-systems in non-automated ports based on common building blocks. MARTRANS will also develop tracing and tracking functions for cargoes and vessels.

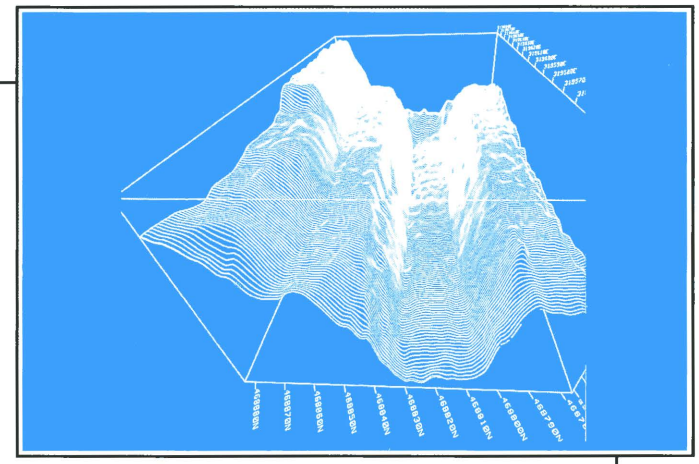
Better logistics management will lead to improved efficiency, which in turn will lower costs of goods both for suppliers and consumers. It will facilitate the implementation of new logistics concepts by optimization of routing and cargo handling and will enhance the promotion of intermodal transport.

The provision of real-time information will also contribute to a higher safety level in the carriage of goods bringing down-stream benefits of reduced insurance rates and lower losses.

The work will be based on existing systems and will build on proven technology. The final goal is the development of an international logistics network interconnecting port-based community systems, and making them inter-operable.

A three phase implementation strategy has been defined. The first phase will consist of stock-taking of user requirements and preparing the field for implementation. The second phase will mainly be devoted to experimentation with inter-connectivity inter-operability and development of tracing and tracking functions. The final phase will be one of demonstration.

MARSOURCE - Managing resources for the Future



The Oceans are, and will increasingly be, of major importance for the supply of natural resources in the future. However, the Fishing sector suffers at present world-wide from an over exploitation of most important fish stocks, an over-capacity of the fishing fleet and from unstable prices of fish products. Greater understanding is needed particularly of the impact of the fishing fleet on marine resources and the measures necessary to conserve them.

The MARSOURCE project will form the basis of an instrument for co-ordination of information and communications technologies for marine resources, fleet and for relevant market data with a view to improving transparency in the fisheries sector to the benefit of all public bodies and private operators concerned.

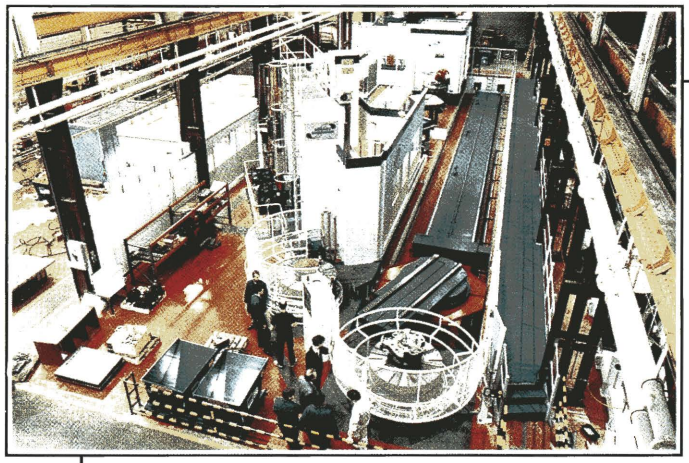
This project's main objective is to create a framework for linking existing databases into a world-wide fisheries and ocean information network together with activities promoted through SAFEMAR and there will be a positive impact of improved understanding of the oceans, as well as the conservation of fish resources.

The information network would cover existing data bases, mainly of the EU, EUROSTAT, ICES, OECD, FAO and would ensure a co-ordinated approach. Co-ordinating and sharing of this information on a global basis adds value to individual databases and enhances effective conservation and management of fish resources. The data will be available on the INTERNET or by other direct, high speed options (under investigation) in order to obtain suitable world-wide dissemination of information.

The MARSOURCE global network could be of assistance to governments from both developed and developing countries, in making policy decisions concerning fish conservation. It could even provide all bodies involved in the fishing industry, including individual fishermen and consumers, with the up-to-date, global status of fisheries.

The initial participants will be the European Commission, the Canadian Department of Fishery and Oceans, and the U.S. National Ocean Service and National Marine Fisheries Service, together with other public authorities.

The project is driven by public authorities and is in the initial phase of identification of partners and defining the framework for co-operation. The overall scope and the work programme, to cover the next 3-4 years, have yet to be specified.



MARVEL - Intelligent manufacturing systems, through global co-operation

The growing importance of the information society for industries will make trans-national and intercontinental connection equally important for industrial production and engineering. An increasing use of information technologies is essential for the shipbuilding and equipment manufacturing industries. Production units involved in the construction of ships are tending to be spread throughout different geographical areas.

The trend is towards increased out-sourcing of manufacturing processes and work-sharing between producers and suppliers. Real-time information is essential for such global co-operation in manufacturing.

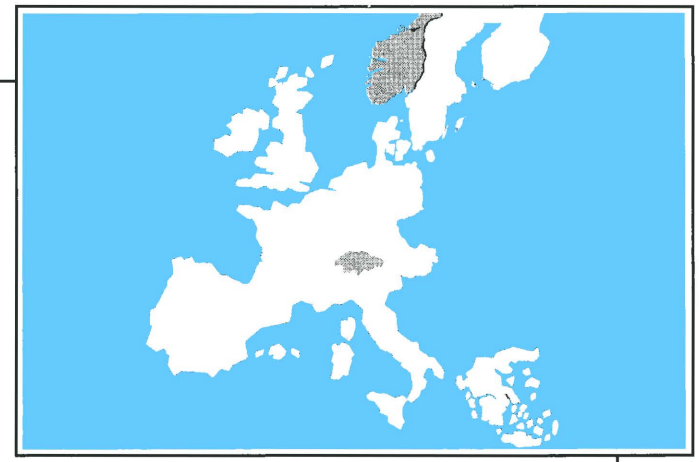
The MARVEL project will provide a user-orientated project for intelligent manufacturing of ships, inter-linking of shipyards and their closer integration with suppliers and customers, into a common network.

Especially the network for shipyards is an important factor for the industry, as ships traditionally are built individually or in a small series. In the future, shipyards and their suppliers will tend more towards co-operation - designing and developing new products for the market. Each enterprise would be an independent entity and would remain a centre of excellence - the objective is to create an inter-operable system. This allows the industry to act faster and to produce a higher quality product better able to meet customers' specific requirements.

The MARVEL project will embrace within the scope of Computer Supported Co-operative Working (CSCW): interactive computer aided design; manufacturing systems; and exchanging information on designs. The main contributors will be shipbuilders, offshore constructors, marine equipment suppliers and research organisations. They will cover the fields of:

- Information Technology for products and processes, development and data modelling (Yardnetwork) and Logistics in the maritime enterprise
- Intelligent production systems and equipment in shipbuilding and supply industry
- Quality Management through classification regulations and ISO 9000 certification

The project is mainly pre-competitive with further developments in the commercial domain and envisages world-wide co-operation of companies and research institutes.



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