



13th European Research Vessels Operators Meeting (ERVO)

10 – 11 May 2011

**Institute for Coastal Marine Environment
National Research Council of Italy (CNR)
Oristano, Italy**

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The 13th **ERVO (European Research Vessels Operators) Meeting (ERVO 2011)** was organised by the National Research Council of Italy (CNR) and held at the Oristano section of the CNR Institute for Coastal Marine Environment (IAMC), on the island of Sardinia, from Tuesday the 10th of May to Wednesday the 11th of May.

The meeting was attended by 29 representatives from 20 organisations and 13 countries were represented at the meeting.

Monday 9th May 2011

1. Evening Welcome Dinner

Giuseppe Magnifico, National Research Council, Italy

The Welcome Dinner for delegates and guests took place from 8 p.m. in the internal garden of Hotel Mariano IV, where a finger buffet and refreshments were available.

During dinner a conference pack was distributed to the delegates with inside:

- the agenda of the meeting (*Annex 1*),
- the minutes of the past ERVO meeting,
- the attendance list (*Annex 2*),
- the draft of the ERVO Terms of Reference (*Annex 3*),
- the draft of a possible TOR for ERVO WG to make recommendations on evolution of ERVO-EUROFLEETS relationship (*Annex 4*),
- the EurOcean services proposal for the ERVO Group (*Annex 5*),
- some practical information (pick up times, gala dinner, wireless connection in the meeting room, addresses and phone numbers, and so on),
- a block notes,
- the annual report of the oceanographic activity carried out by CNR during 2010, the first of a series planned to be produced every year in order to update about the CNR activities in the oceanographic field.

Along with the folder three gifts were distributed in order to thank delegates for coming to the meeting: one from CNR (a pen specifically made for the meeting), one kindly provided by the Director of the Marine Protected Area of the Oristano Province (a mug in memory of the meeting) and one from Sopromar, the private shipping company owner of the main CNR RV *Urania* (a pen drive with the logo of the company).

Tuesday 10th May 2011

Bus pick up time was at the reception desk of the Hotel Mariano IV around 8:00 a.m. Four shuttle buses carried the delegates from the Hotel to the Oristano section of the CNR Institute for Coastal Marine Environment (IAMC).

2. Welcome & practical arrangements

Giuseppe Magnifico, National Research Council, Italy

The participants to the 13th ERVO Meeting were welcomed and some practical arrangements were provided (coffee breaks and lunches, gala dinner, wireless connection in the meeting room, pick up times, and so on).

Angelo Perilli, Head of the Oristano Section of the CNR Institute for Coastal Marine Environment (IAMC), gave a brief talk about the Institute.

The Institute for Coastal Marine Environment (IAMC) is one of the two main CNR Institutes that work on marine sciences. It is composed by six territorial sections: Naples, Oristano, Messina, Capo Granitola, Mazara del Vallo and Taranto.

The mission of the Oristano section is to conduct a multidisciplinary research in transitional, coastal and open ocean environment with the objective to describe, understand and predict the processes that regulate the marine dynamics. That is achieved by means of an integrated approach, based on 3 components: monitoring, experiments in laboratory and numerical modelling. The outcome of this integrated approach is finalized to provide previsions and management tools for policy makers and public administrations and in particular to the decision makers.

3. Introduction & Hand-over of chair

André Cattrijsse, Flanders Marine Institute (VLIZ), Belgium

As outgoing ERVO Chair, André Cattrijsse welcomed the participants to the 13th ERVO Meeting and gave a brief talk about ERVO's future, its character ("tea-party" meetings vs. "pro-active" forum) and its relationship with IRSO (International Research Ship Operators) and EUROFLEETS project.

4. Opening of ERVO 2011, Round Table & Approval of ERVO 2010 minutes

Juanjo Dañobeitia, Spanish National Research Council (CSIC), Spain

As incoming ERVO Chair, Juanjo Dañobeitia opened the 13th ERVO Meeting and thanked André Cattrijsse for his contribution during the last two years as previous ERVO Chair.

Each ERVO participant provided a brief personal introduction at the meeting.

Apart the remarks made by André Pollentier (*MUMM - Royal Belgian Institute of Natural Sciences, Belgium*) and André Cattrijsse, to be introduced in the final version, the minutes of ERVO 2010 were approved.

5. New vice-chair

Juanjo Dañobeitia, Spanish National Research Council (CSIC), Spain

As proposed by Juanjo Dañobeitia and accepted by all participants, Giuseppe Magnifico from the National Research Council (CNR) of Italy was appointed as incoming vice-chair.

6. Ad-hoc group on ERVO: results + adoption of Terms of Reference

Michael Gillooly, Marine Institute, Ireland

The draft of the ERVO Terms of Reference was presented (*Annex 3*). It reports the outcomes of a small working group, chaired by Per Nieuwejaar (*Institute of Marine Research, Norway*) and established at the last ERVO meeting in Southampton bearing in mind the challenges and issues that ERVO was facing at that time and to some extent still faces.

The document is divided into 8 sections with some text highlighted in order to pull out some of the changes in the way ERVO may operate going forward.

The objectives of the ERVO Group and the opportunities arising from being a member of it were illustrated. Particular attention was placed on the fact that ERVO, with its broad membership of research vessel operators representing the majority of European nations who have their own fleet of research vessels, is the ideal focal point for any organization in Europe looking for ways to communicate directly with the experts on research vessels and associated instruments and

equipment, and should therefore as a group and as individual members take every opportunity to promote the collective expertise and knowledge that ERVO represents.

Since its creation in 1999 as an initiative of the European Science Foundation - Marine Board (ESF/MB) for the co-ordination of small to medium sized research vessel operators in Europe as a complement to the Ocean Fleets Exchange Group (OFEG) established a few years earlier, the ERVO Group has successfully grown as evidenced by the number of participating countries risen from 7 to 19.

The ERVO membership (open to all European research vessel operators, both from government or private research vessel operator organizations/companies) and organization were therefore introduced.

One of the new changes suggested was that each member can pay an annual membership fee to cover the running cost of ERVO, such as maintaining a web site, producing leaflets and other promotional materials, etc. In addition each member can pay a conference fee when attending ERVO meetings. The size of the membership fee and conference fee is agreed on at every annual ERVO meeting.

Another new key point was that the ERVO chair also has the right to arrange “government only” sessions during ERVO meetings or create “government only” working groups/workshops if required by members in order to discuss topics that are competition sensitive and therefore not open to commercial companies.

Particular attention was placed on the fact that ERVO is an open, member driven, non-profit group of European research vessel operators, and therefore the group does not report to any other group, organization or authority. ERVO is a forum or network which is entirely driven by participation of a broad group of RV operators and their need to optimize their operation, rather than a Commission priority or commercial driver. ERVO is a very useful independent network and one of its strengths is that its activity is decided by participants who are not ‘biased’ by ERVO being funded by the Commission or other specific interests.

The tasks of the chair and vice-chair were then described. They are elected by simple majority (more than 50% of the votes); the vote can be either written or by raise of hands. The hosting of the annual ERVO meeting is always a voluntary task for the members of ERVO.

The cooperation with EurOcean (ERVO web site, maintenance of the ERVO membership register, dissemination activities, development and maintenance of ERVO’s graphical profile, production of posters, leaflets and other promotional material according to a negotiated agreement between ERVO and EurOcean) was discussed in some details in the next presentation given by Sandra de Oliveira e Sá (*EurOcean Foundation, Portugal*).

In terms of meetings it was proposed to continue with the annual ERVO plenary meeting, and in addition special workshops and ad-hoc meetings arranged as necessary. To make it possible for all members to host such meeting, a conference fee can be agreed on before the meeting.

A new key proposal was that when the IRSO have their annual meeting in Europe, ERVO should explore the possibility to arrange a joint meeting between the two groups since the two groups have a number of common members and the two groups also have overlapping objectives and tasks.

Another proposal was that, if the ERVO plenary meeting so desire or if the ERVO chair by correspondence proposes it, a workshop, ad-hoc working group or study group to work on a particular issue or problem, such activities can be initiated and the group then reports back to the next ERVO plenary meeting.

Important is that ERVO makes efforts to maintain and improve relationships with the following organizations for the benefit of both parties: ESF/MB, IRSO, OFEG, RVOC (Research Vessel Operator's Committee) and EUROFLEETS.

A group discussion followed:

- EUROFLEETS is a EU project, time limited, not an organization or a group, there are lots of overlaps between OFEG and EUROFLEETS (*Klaus Von Bröckel, IFM - GEOMAR - Leibniz Institute of Marine Sciences at Kiel University, Germany*);
- EUROFLEETS has a finite life, 4 years, a new proposal is in preparation (EUROFLEETS 2), considering both the projects there are 8 years of activities, after these projects no other contracts for research ships, so these two limited but funded projects must be seen as opportunities for ERVO and having EUROFLEETS in the ToR document is a sort of signal given, the main objective is not to double any initiative with ERVO, but reinforce absent initiatives, OFEG takes care of ocean vessels (OFEG has a limited membership and is 'restricted' in flexibility and may not be seen as particularly relevant to small coastal RV operators) while EUROFLEETS tries to put the emphasis on the regional vessels (*Jacques Binot, IFREMER - French Research Institute for Exploration of the Sea, France*);
- there are many different organisation with some overlapping of course, but with different tasks, ERVO is more regional than OFEG which is more overlapped with IRSO, maybe EUROFLEETS needs input from the people who manage the European fleet and most of them are in ERVO, so ERVO could be useful to EUROFLEETS in bringing new ideas and programmes related with the fleet, ERVO will remain after the EUROFLEETS project (*Juanjo Dañobeitia, CSIC - Spanish National Research Council, Spain*);
- ERVO could be the place where some activities started with EUROFLEETS can find a continuation (*André Cattrijsse, VLIZ - Flanders Marine Institute, Belgium*);
- informality of ERVO: the difficulties in electing a vice-chair in the last years, the need to give ERVO more body, important that authorities and other groups know the competences and the capacities within the ERVO Group (*André Cattrijsse, VLIZ - Flanders Marine Institute, Belgium*);
- two signatures at the end of the document: even better a list of organizations in order to give more body to the Group, each new member should be invited to sign the Terms of Reference (*André Pollentier, MUMM - Royal Belgian Institute of Natural Sciences, Belgium*);
- the possibility of having working groups for specific actions for a specific period, with a deadline (*Juanjo Dañobeitia, CSIC - Spanish National Research Council, Spain*);
- to establish a working group (for 3 to 6 months period) to look at the possibility of a relationship/association/strategic inclusion/alignment of ERVO Group with EUROFLEETS (how ERVO can achieve this sort of recognition maybe remaining independent as a group and working in parallel in a constructive way with EUROFEELTS and OFEG as well); it is also important to decide how to align ERVO with the EUROFLEETS 2 project in preparation (ad hoc informal advisory group, an independent group of technical experts within EUROFLEETS or similar structure and ERVO can ultimately act as the successor to EUROFLEETS) (*Michael Gillooly, Marine Institute, Ireland*);
- regarding relationship with EUROFLEETS, no alignment and no strategic inclusion, while it could be more acceptable for ERVO to be a permanent invitee; ERVO could be the depository of the works of EUROFLEETS; ERVO could also be a sort of "market" where people who want to share something could come and present their wishes or ideas in order to share investment costs, running costs, deployment teams and so on; this approach is perfectly running for the OFEG system; ERVO could be more involved in operational tasks; ERVO could also attract people from the non-European Mediterranean countries and initiate some cooperation with them (*Jacques Binot, IFREMER - French Research Institute for Exploration of the Sea, France*);

- ERVO is the perfect place to enhance cooperation because ERVO members deal with daily problems of their research fleets (direct information on what's going on, problems, needs and so on); of course there are some overlaps with OFEG; ERVO could not only exchange ideas but also solutions to problems in order to reduce the costs of investments (co-founding systems) and optimise resources; cooperation between ERVO and EUROFLEETS could take bilateral benefits (*Juanjo Dañobeitia, CSIC - Spanish National Research Council, Spain*).

A second document on evolution of ERVO-EUROFLEETS relationship was then presented (*Annex 4*). Two options were considered:

- retain ERVO under current arrangements
- incorporate or associate ERVO into/with EUROFLEETS
 - entirely,
 - partially so that it retains independence and can decide on specific areas it wishes to address. This could be done by inviting non EUROFLEETS RV Operators to the annual EUROFLEETS GA-meetings in the fall every year, so those who are interested can learn about what is going on in EUROFLEETS, keep in touch with the EUROFLEETS members and maybe arrange some kind of “side meeting” for ERVO during the GA, or just before or after the GA.

In this context it was suggested that ERVO could establish a WG to work with EUROFLEETS and OFEG to determine its future focus and relationship to EUROFLEETS and OFEG and IRSO (?). ToR could include:

- consideration of ERVO acting in a Independent Technical advisory Capacity as Expert Group and/or representative Group for European RV operators feeding into EUROFLEETS 1 & 2;
- the WG to develop a joint plan for alignment and ‘succession’ plan for ERVO to sustain main outputs from EUROFLEETS and EUROFLEETS 2 including standards, reports and other services and tools that contribute to RV operations in Europe;
- review options for EUROFLEETS providing support funding for those new ERVO members attending ERVO meetings or other activities aligned with EUROFLEETS programme;
- Alignment of ERVO with(in) EUROFLEETS 2 – should it remain entirely ‘independent’?

It was pointed out again that association of ERVO with EUROFLEETS can take benefits for ERVO in terms of reinforcing ERVO (after EUROFLEETS 2 ERVO will be stronger than before), both partners have to get benefits; a WP in EUROFLEETS 2 could be created to really better work together within various organisations coping with research vessels in Europe, probably having a single appointment every year (for example during EUROFLEETS 2 GA); EurOcean is also very important in this context (reinforcement of EurOcean databases) (*Jacques Binot, IFREMER - French Research Institute for Exploration of the Sea, France*).

In conclusion, the ERVO Terms of Reference proposal was approved taking into consideration the suggestion of André Pollentier (*MUMM - Royal Belgian Institute of Natural Sciences, Belgium*) to have not two signatures at the end of the document (Chair and Vice-chair) but a list of the ERVO members organizations.

7. Ad-hoc group on ERVO: functioning and co-operation with EurOcean

Sandra de Oliveira e Sá, EurOcean Foundation, Portugal

Firstly a brief presentation on some EurOcean updates was given:

- release of a new on-line searchable InfoBase on European Aquaculture Experimental and Research Facilities (EurOcean_AF),
- update of the European Research Vessels Infobase (EurOcean_RV) with 28 Russian Vessels,
- integration by the end of 2011 of the Large Exchangeable Instrument Infobase (EurOcean_LEXI) and the European Underwater Vehicles Infobase (EurOcean_UV), as requested by EUROFLEETS and EurOcean members,
- release by the end of 2011 of a new database on European Degrees and Post-doctoral positions.

Quick information on traffic statistics on EurOcean databases was also provided. It is worthy of note the significant increase of the number of visits for the EurOcean_RV, which had in 2010 a raise of 64.01% on the visits compared with 2009, probably due to the EUROFLEETS project.

The EurOcean services proposal for the ERVO Group was then presented (*Annex 5*). It consists in four services, independent from each other and developable and acquirable individually according to the needs of ERVO Group:

- hosting and maintenance of the website (mainly the service that EurOcean is currently providing to ERVO),
- EurOcean's membership (ERVO could become a member of EurOcean and then it can have influence on the EurOcean work programme suggesting activities),
- start packages,
- all the services that can be provided by EurOcean.

Group discussion:

- it is important to mention that EurOcean has already done something for the ERVO Group (the ERVO website hosted and maintained, the list of members), the Group can't receive that for free in the future, so each member can pay a conference fee when attending ERVO meetings and the money can be used to cover the running costs of ERVO, such as maintaining a web site, producing leaflets and other promotional materials, courtesy, gifts, mail expenses etc. (*André Cattrijsse, VLIZ - Flanders Marine Institute, Belgium*).

8. Coffee break & national update posters

All

Coffee break was held in the garden outside the Institute, where the national updates were presented with a poster session.

9. Oral presentation of vessel/operations by new members

Kazimierz Szeffler, Maritime Institute in Gdańsk, Poland

The multi-role shallow water survey and ROV support vessel IMOR and its scientific equipment were presented.

The vessel is configured and capable of performing a range of tasks such as hydrographical and geophysical operations, bottom and pipeline inspection, and others. The investigations and research services are realised based on contracts with a wide range of Polish and foreign enterprises: from the maritime sector (port industry, shipbuilding, port-related business), energy and telecommunications, mining and sea bottom exploration, design, consulting, construction and other companies realising their activities in the coastal zone.

The scientific equipment consists in an underwater positioning system, a Multi-beam echosounder, a Single-beam echosounder, a vibrocorer, a Side-scan sonar and magnetometer, a Remotely Operated Vehicle, a Global Positioning System, an Environment monitoring platform and subbottom profiler.

The vessel's features include a 120 kN/10m jig crane, a 30 kN A-frame (aft), a 40 kN cable winch, a Moon pool for MBES Reson 8125, a DP – System class 1, 8 single and 4 double man cabins, a mess room, a galley placed in deckhouse (all fully air-conditioned), stores/general use compartments in both hulls, a diesel-electric propulsion system (1 Volvo - Penta 415 kVA generator set, 1 Volvo - Penta 401 kVA generator set, 1 Volvo - Penta 180 kVA generator set), thrusters (2 dual azipod aft active rudder – propellers SCHOTTEL - STP 200 unit 2x300kW, 2 waterjet bow thrusters type SCHOTTEL - SPJ 22 unit 2x75 kW).

The floating laboratory IMOR was also presented consisting in a middle size survey motorboat (IMOROS 2) and 2 small survey boats, IMOS LM 4 (LM2) and IMOS LM 4.

Ola Björlin, The Sven Lovén Centre for Marine Sciences - University of Göteborg, Sweden

Firstly an introduction about the Sven Lovén Centre for Marine Sciences within the University of Göteborg and its facilities was given.

The Centre integrates the research capacities of two very well established marine research stations and several research vessels. Both marine stations are situated on the Swedish west coast, one at Kristineberg (former Kristineberg Marine Research Station) about 100 km north of Göteborg and the other at Tjärnö (former Tjärnö Marine Biological Laboratory) 160 km north of Göteborg.

The research station at Kristineberg is situated on the Gullmarsfjord, the largest and only true fjord in Sweden. The fjord is 30 km long with a maximum depth of 118 m and has been a natural reserve since 1983. Key features that make this important marine environment unique in Europe are (i) the excellent water quality with two rather distinct water-masses; brackish surface water originating from the Baltic and oceanic water from the North Sea at greater depths, (ii) a large number of different habitats including steep rocks, deep basin sediments, sand and mud flats, sea grass beds, and exposed and protected shores, resulting in (iii) a very high biodiversity and a unique fauna.

Specific facilities include:

- laboratories and climate control rooms, including ocean acidification facilities,
- research vessels and their research equipment: 39 m R/V Skagerrak, 12 m R/V Oscar von Sydow, 15 m R/V Nereus and 12 m R/V Lophelia,
- Sperre SubFighter ROV (700 m depth capability, manipulator, sample storage, CTD, video- and still photography)
- 6 platforms (4 at Tjärnö and 2 at Kristineberg).

10. New Builds

Ennio Marsella, National Research Council, Italy

Firstly the RITMARE project was briefly presented. The project, with an estimated cost of € 450,000,000 for 5 years, covered by FOE (Ordinary Fund for Research Institutions), proposes a scientific and technological research devoted to the sea and all its problems with the following key objectives:

- maritime technologies;
- technologies for sustainable fisheries;

- technologies for the sustainable management of coastal areas;
- establishment of an international network of laboratories around the Mediterranean;
- adaptation of national research infrastructure including a rationalization of the national fleet of oceanographic research vessels through refitting.

The PARFAMAR constellation was then presented. The constellation, strengthening of the research and training on the marine environment in Southern Italy, groups together 6 projects founded under the Italian Operational Programme “Research and Competitiveness” 2007-2013.

The first two projects (PITAM and STIGEAC) are able to build a ship; however the other 4 projects are very linked with the first two.

PITAM (Technological Platform for Geophysical and Environmental Marine Surveys) project was described with information on:

- project partners and sub-contractors,
- preliminary vessel drawing and general features (accommodation arrangement, tanks capacity, working area, main diesel generators, propulsion, A-frames and so on);
- integrated systems onboard (K-Bridge, K-Pos, K-Trust, K-Chief, K-Safe),
- positioning system (HiPAP® 500 - High Precision Acoustic Position),
- Multibeam System (EM710), Multibeam System (EM122), Multibeam EM 120 Transducer,
- platform connectivity and VOIP Service & Vessel Tracking.

STIGEAC (Integrated Systems and Technologies for geophysical and environmental monitoring in coastal-marine areas) project was then presented. It foresees the creation of:

- an integrated system for the acquisition of morphological data with fixed cable instruments SSS, magnetometer, multi-parametrical drill, vibro-core barrel;
- an integrated system for the acquisition of very high definition seismic data (2D+1, 3D): analysis aimed at innovation of the launching, control and recovery of hydrophones; the air gun shot and acquisition system;
- an integrated system for the launching and recovery of a cable instrument for deep water: analysis for the innovation of the cabling system and data transmission.

Bernardo Patti, National Research Council, Italy

Firstly a brief introduction was given about CNR Institutes for Coastal Marine Environment and its territorial section of Capo Granitola in Sicily.

An overview on recent research initiatives was also given:

- oceanographic and ichthyoplanktonic surveys carried out aboard the RV Urania since 1998 in the Strait of Sicily;
- biology and ecology of small pelagic fish: anchovy egg and larval distribution;
- applied hydroacoustics for the evaluation of small pelagic fish resources aboard the RV Dallaporta in the framework of the EU project MEDIAS;
- analysis on the influence of sea water circulation on fish distribution patterns.

The main topic of the presentation was about the possibility of using fisheries vessels as an environmental sensor in order to collect information in situ contributing to sustainable fisheries in the Mediterranean Sea. Details were given about:

- an undergoing CNR research activity, with information about a fishery observing system used (logbook electronic touch screen and GPS antenna, dedicated software on which to type kind, quantity and size of fish catch, and T/P sensor applied to the fishing net);
- the ICT-E3 project, with information about the installation of ICT-KIT aboard fisheries vessel “Aristeus” (Mazara del Vallo bottom trawl fishery).

Future developments of fishery information devices were then presented:

- use of a new generation of sensors that can collect various environmental parameters relating to the water column (e.g., temperature, pressure, conductivity and fluorescence) and forward them to the modular system at the end of each fishing haul;
- Extension of installations on Italian fishing vessels, creation of a network for the monitoring of marine environment.

In this respect, a project (Decision support system for sustainable management of fisheries in the regions of Southern Italy) will be carried out. Its general objectives are:

- to study the dynamics of fishing resources in terms of abundance, demography and spatial distribution, depending on the ecological conditions of the environment (water column, bottom and biotic communities) and of removal from fishing;
- to provide knowledge to the industry, to optimize the catch processes, reducing negative environmental impacts and improving the economic performance of fishing activities;
- to provide technical and scientific advice to the management authorities (Ministry of Agriculture, Food and Forestry Departments and local counterparts) and supervisory control (Coastal Guard) for effective management of fishing effort and activities.

11. Lunch

All

Lunch was held in the garden outside the Institute.

12. New Builds

André Pollentier, MUMM - Royal Belgian Institute of Natural Sciences, Belgium

The replacement process of the RV Belgica (built in 1984) was illustrated:

- feasibility study (1st approach) in 2009: major refit of the present Belgica or new build taking into account the outcome of the science missions inquiry; outcome of this feasibility study is clearly in favour of new build;
- outcomes of the analysis carried out for the determination of the science missions requirements for the next decade(s) in a national and international context: multidisciplinary research vessel (fisheries, acoustics, oceanography, environmental monitoring, geophysics, biology, hydrography, etc.), more accommodation for scientists/marine technicians, more laboratory spaces and some specialised spaces, much larger IT room, storage of specialised ISO containers, ROV handling including ROV workshop, command unit, etc., pelagic fishing and more space for handling and freezing capacity; sediment coring, Dynamic Position (DP1-Green DP), silent ship (ICES 209), larger autonomy, maybe Ice class 1;
- preliminary technical specifications: general characteristics, propulsion/energy system, crew and scientific complement, scientific facilities, common facilities, containers, deck equipment;
- estimated cost: € 50.000.000,00

André Cattrijsse, Flanders Marine Institute - VLIZ, Belgium

RV Zeeleeuw replacement was presented:

- tender published in June 2009;
- contract signed with DAMEN, August 2010;
- to be delivered May 2012;
- first scientific campaigns planned for autumn 2012;
- LOA 36 m, beam 9.4 m, draught 3.5 m, 11 Kn;
- ship equipped with DP, Kongsberg EM2040 multibeam, ADCP, Diesel electric propulsion (silent operations);
- 5 m workboat
- 8 crew, 10 scientists

Ben Wigham, Dove Marine Laboratory - School of Marine Science and Technology - Newcastle University, UK

The replacement of RV Bernicia (1973-2009) was illustrated:

- main required duties: conventional surface, mid-water and bottom trawling; use of static fishing gear; plankton sampling; water sampling at depths up to 200 m; soft sediment sampling and sea floor coring; sea floor photography and imaging; marine mammal and bird surveys (visual and acoustic); undergraduate teaching facility; platform for wide variety of research programmes; charter for government and commercial organisations;
- primary design requisites: good stability, sea-keeping, manoeuvring and efficiency; flexible speed; engineered with a sound environmental ethos for sustainability; ability to take to the ground when required; large deck space; internal areas for teaching/lab-work to accommodate 12 passengers; overnight accommodation for 4 crew;
- “in-house” design: results of “in-house” studies identified the deep-vee hullform as an ideal candidate as it exhibits excellent seakeeping and speed characteristics; the use of a catamaran hull for the new research vessel was an obvious choice; it fulfils the requirements of shallow draft, large deck space, excellent stability and good speed potential;
- innovative features: anti-slamming bow (using local knowledge), bulbous bow (improved power and efficiency), anti-slamming bulb (ASB), tunnel stern and cut-up, unconventional skeg, an integrated performance monitoring system recording real-time data (shaft torque and thrust, engine speed, fuel consumption, wind speed and direction, ship speed, trim and draft, ship motions, rudder angle, water depth);
- efficient hull form design: proven efficiency of the new hull form shows up to a 40% saving in power (and therefore energy) when compared to existing hullforms of similar dimensions;
- two model testing programs were used: 1) Large scale model testing at ITU in Istanbul (1/5th scale 3.5m model) and 2) Small scale model testing at UNEW facility (1/12th scale 1.5m model);
- principal specifications: length, beam, draft, payload, max speed and so on;
- new inshore research vessel to be delivered by June 2011.

Daniel Rolland, Alion Science and Technology Corporation, USA

CSIRO (Commonwealth Scientific and Industrial Research Organization) R/V INVESTIGATOR was presented:

- ship particulars, deck arrangements, Sonar arrangements, overboard handling systems, CTD handling system;
- tools to be employed at each design stage to reduce bubble sweepdown: concept design (hull features to avoid known causes of bubbles, transducers located in gondola and drop keel), preliminary design (CFD analysis of flowlines around hull and sonar appendages to confirm that flow lines originating at stem do not cross transducer faces, flow origination points varied below even keel DWL to simulate pitching), contract design (physical model testing for flow visualization);
- AC-DC propulsion study: AC motor technology has matured significantly and is now the main choice for electric propulsion (motors are smaller and lighter, power conversion equipment is heavier than DC, overall an AC system is lighter and usually less expensive, saves space in the ship, less maintenance overall); based on existing vessel data and manufacturer predictions it appears possible that AC propulsion can support ICES 209 or Silent R.

An update of the US Ocean Class AGOR Program was then given:

- class of 2 mid size, general purpose, mono hull research vessels;
- vessel is approximately 70 meters long;
- budget is ~ 70M USD each;
- funded by US Navy, operated by UNOLS Academic Institutions;
- concept design, requirements development performed during 2008/2009;
- design awarded to two shipyards January 2010 (Dakota Creek Industries and Marinette Marine Corporation);
- design competition completed in Feb 2011;
- selection of shipyard and start of construction for first ship expected in Sept 2011;
- delivery of both ships planned in 2014;
- Ocean class science mission requirement highlights: length (70 meters), displacement (3,000 tonnes), accommodations (25 Scientists, 21 Crew), range (10,800 NM at optimal cruising speed, ≈10 Kt), speed (12 Knots), science load (200 Tons), acoustics (EM122 - 2 deg, EM710, SBP 120), handling systems (full suite of winches, cranes and overboard gear), design (ABS Classed, USCG inspected, SOLAS compliant), laboratories (2,000 Sq Ft), working deck (2,000 Sq Ft), vans (carry 3 standard 20 Ft ISO containers);
- Ocean class Sonar systems: EM122 1 x 2 Deg Multibeam, EM710 0.5 x 1 Deg Multibeam, EA-600 Single Beam Echosounders - 12, 30 120, KHz, HiPAP 500 - Acoustic Positioning System, SBP 120 6 x 6 Subbottom Profiler, ADCP - 38, 150, 300 KHz.

13. Designing green & silent RVs***Emilio Campana, National Research Council, Italy***

Firstly a brief presentation of the Italian Maritime Research Centre (INSEAN) was given:

- joined CNR in March 2011,
- involved in numerical/experimental research on naval hydrodynamic and marine engineering, tests of new marine vessels, renewable energy devices, propellers, etc.,

- a staff of 130 people (45 researchers & res. Engineers + 15 temporary positions),
- strong partnership with universities, research labs and industries;
- ONR (USA DoD) funding since 1999,
- stage programs for graduate, PhD and post-docs from all-over the world,
- scientific support to the Italian and European Navies,
- large experimental facilities (two towing tanks, two circulating water channels, Lases Doppler or Particle Image Velocimetry etc., water flume, prototype/model factory, sloshing lab).

A brief overview on underwater noise was given with details on sources of marine noise, ship noise and sea life interactions, propeller noise and so on.

Quieting the new RVs is important in order to:

- reinforce the public commitment to mitigate the threat to marine wildlife posed by maritime noise by avoiding that research activities may contribute to the increasing level of noise in the oceans;
- reinforce the public commitment, employing this design chance to develop new technologies/use existing technologies in noise reduction;
- reduce the possibility that, while operating in marine protected areas and critical habitats, RV's might contribute to noise pollution themselves. *From the ERVO ToR: "Identify methods to minimize the impact of the operations of RVs ... on the environment"*;
- ensure that marine wildlife natural behaviour is not altered as the vessel approaches, and prevent the noise from being integrated a signal.

New designs/retrofitting options for vessel-quieting were also presented (Source: IMO - MEPC 60/18, 2009).

New mathematical models and experimental methods can play an important role to establish new design tools and technologies for greener and quieter ships with:

- reduction of the underwater noise,
- improvement of comfort and safety of navigation,
- improvement of energy efficiency and consequence reduction of pollution,
- decrease of ship weight (light but reliable structures).

Mathematical modelling of ship underwater noise was then illustrated in order to estimate the hydroacoustic behaviour of a ship at the design stage.

Integration of designs tools, simulation tools and I&C Technology was therefore considered very important in order to have a better ship design.

14. Scientific requirements RV

Arturo Castellón Masalles, CSIC - Spanish National Research Council, Spain

Taking into account the example of the CSIC experience on a regional multipurpose vessel of about 50 m in length, common procedure for building a RV is composed of:

1. basic specifications from the research community,
2. public tender for conceptual design and complete technical specifications (4-5 months),
3. public tender for construction.

Considering the public tender for conceptual design and complete technical specifications, the following points have come out:

- not enough time for good definition (it's sometimes preferred to modify old design),
- need for advisors, experienced people in R/V design,
- some shipyards with no experience or knowledge in these type of ships,
- users are the experts, they know what they need (from captain and bosun to technicians and researchers),
- fighting with shipyard during construction.

Regarding the design procedures, the following aspects must be considered:

- budget (also operation budget),
- from the equipment/operation definition, ship design is obtained,
- depth range of operation is also the starting point,
- both will define the ship in a 70%,
- some equipment recommendations and operations definitions should be considered.

An example of equipment types and services for multipurpose RV could include:

- deployed equipment: all equipment deployed with cables or autonomous,
- hull mounted equipment: all equipment fixed to the ship, from hull to mast and antennas,
- deck operations: all equipment for deploying (cranes, frames, winches and deck facilities),
- laboratory equipment: all equipment used in labs, experimental, analytical,
- services: fresh water, sea water, distilled water, shared data, air, gases, Ethernet, DAS etc.,
- mobile equipment: containers, mobile winches etc.
- “new” scientific equipment requirements and new missions for ROV's, AUV's, submarine, gliders, support seafloor laboratories, cambling.

A (common) definition of specifications for multipurpose vessel design could consider:

- sharing specifications between countries/organisms
- reduce costs in conceptual design bill/Equipment?
- evolution of design, adaptable, not a serial construction? Different shipyards
- mid size (~50 m) as “European Research Vessel”? EUROFLEET 2?
- interest in defining equipment, performance and service and operations?
- interoperability?
- evolution of propulsion and construction standards will not affect design of operations and equipment?
- experience (culture) inside ERVO members? Not inside shipyards?

A group discussion followed:

- ERVO could produce some design recommendations/guidelines for those who want to build new research vessels (*Arturo Castellón Masalles, CSIC - Spanish National Research Council, Spain*);
- it could be useful to have a working group on this topic, it is also very important interoperability between research vessels and large equipment and instruments, it must be noted that there are not any shipyards specific for research vessels but as operators we have the experience because we are the users so we have to produce strong recommendations (*Juanjo Dañobeitia, CSIC - Spanish National Research Council, Spain*);
- it is very important to share specifications between countries/organisms (*Klaus Von Bröckel, IFM - GEOMAR - Leibniz Institute of Marine Sciences at Kiel University, Germany*);

- when we talk about regional vessels, it is very important to define the “core mission” of a new research vessel, it is not possible to do everything with our vessels otherwise it could be very expensive to build them (*Jacques Binot, IFREMER - French Research Institute for Exploration of the Sea, France*).

15. Coffee break & national update posters

All

Coffee break was held in the garden outside the Institute, where the national updates were presented with a poster session.

16. Italian oceanographic infrastructures: an overview

Fabio Trincardi, National Research Council, Italy

Firstly a brief presentation of the National Research Council of Italy (CNR) was given. CNR is the largest public research structure in Italy (107 Institutes, located in about 300 different sites around the country; 11 Scientific Departments organized in 83 Research Programs). The scientific fields cover a variety of issues from Humanities to Nanotechnology.

There are two main Marine Science Institutes at CNR: the Institute for Coastal Marine Environment (IAMC - 6 Sections) and the Institute of Marine Sciences (ISMAR - 7 Sections). Other Institutes have teams working in remote sensing (ISAC), marine technologies (ISSIA), geologic hazard (IGAG), biogeochemistry (IBF) and water quality (IRSA).

Operative Programming Office manages CNR’s oceanic research infrastructures:

- it coordinates the evaluation of oceanographic cruise proposals for the cruise scheduling and foresees the ship instrumentations;
- it coordinates national and international cooperation with other organizations;
- it coordinates the oceanographic observation system of platforms, buoys and long-term mooring stations.

The assessment process for oceanographic cruises was then illustrated. It consists of the following 4 steps:

- ship time proposal application,
- assessment of proposals,
- cruise planning,
- realization of planned cruises.

The following CNR oceanographic infrastructures and their facilities were presented:

- 3 main Research Vessels in 2010 (Urania, Dallaporta e Maria Grazia),
- the Oceanographic Data Acquisition System (ODAS) “ITALIA 1” buoy,
- the Acqua Alta Oceanographic Tower,
- observation sites for long-term research (important is the role of the RVs in maintaining observation sites around Italy and in running repetitive surveys along fixed transects).

Worthy of note:

- the Automatic Weather Station BATOS II recently installed onboard RV Urania in the framework of an agreement between CNR and Meteo France;
- the MaGIC (Marine Geohazards along the Italian Coasts) project: a national project on geological hazard supported by the Italian Civil Protection Department.

Other Italian research vessels were also presented: Astrea, Universitatis, Italica, Explora, Andrea, Luigi Sanzo, Tecnopesca II, Cerruti, Vega and Trer.

It was pointed out that there are many Institutions dealing with coastal research in Italy, so there is a need of more coordination and sharing of facilities.

17. Research facilities for the Svalbard Archipelago

Einar Strønen, IMR - Institute of Marine Research, Norway

The preparatory phase of the FP 7 Project SIOS “Svalbard Integrated Arctic Earth Observing System” was presented:

- 3 years project (2010 – 2013);
- Norwegian Research Council is Project Coordinator;
- 27 partners from 14 countries: Norway, Germany, Poland, Italy, UK, Denmark, Finland, Netherlands, Sweden, Russia, China, South Korea and Japan;
- the aim of the project is to better coordinate the development and use of research infrastructure on land and at sea in the Svalbard (Spitzbergen) archipelago.

In particular, WP 5 – Logistics plan, Task 5.3 “Organisation of research vessels” was illustrated:

- to achieve an optimum coordination of research vessels available within the framework of SIOS;
- to identify existing potential and possibilities for the future (considering vessels under construction, expedition financial plans, international contracts and programs);
- to create a common ship owners’ agreement (a declaration of intent) regarding cooperative provision of help with supply transportation, and a simplification of scientist and passenger transport (e.g. unified medical tests, insurance etc.);
- to advice will be sought through establishing contact with EUROFLEETS;
- to create a vessels traffic database concept in the Svalbard area in order to fully exploit research cruise potential;
- to address sailing routes to the small islands included in the SIOS infrastructure (Bear Island, Hopen);

Task 5.3 will be coordinated by IMR which performs extensive monitoring cruises in the Norwegian waters including the Arctic on an annual basis, supported by all partners that intend to provide access to research vessels.

18. Genavir presentation

Rémy Balcon, GENAVIR, France

Genavir is a group of organizations for the management of oceanographical ships. Created in 1976, Genavir ensures the management of the ships, machines and equipment used within the framework of oceanographical research.

The members of the group are:

- Ifremer (French Institute of Research for the Exploitation of the SEA),
- CNRS (National Scientific Research Centre),
- IRD (Institute of Research and Development),
- SURFING (connects maritime BOURBON Group).

With manpower of 320 employees, Genavir provides the crews of the ships, the teams of technicians and engineers specialized in the placement of the machines and equipment. Genavir maintains all the Naval Means which are entrusted to him, carries out the program of the campaigns and ensures the acquisition and the validation of the data collected at sea. Genavir is a Sea company of certified Transport ISM (International Safety Management Codes), and adherent ISPS of the trade association of the French companies of maritime armament (Ship-owners of France).

Genavir operates 8 RVs owned by IFREMER, 2 RVs owned by IRD and oceanographic equipments and underwater vehicles.

19. End Meeting

Juanjo Dañobeitia, Spanish National Research Council, Spain

First meeting day closed at 5:00 p.m.

Then delegates were transferred to the Hotel by the shuttle buses.

20. Gala Dinner

Giuseppe Magnifico, National Research Council, Italy

Bus pick up time was at the reception desk of the Hotel Mariano IV around 7:00 p.m. The Gala Dinner took place at 8 p.m. in “La Peschiera Pontis”, a restaurant in the Cabras Lagoon managed by local fishermen. Before dinner, there was a brief visit of the place and, after dinner, a traditional Sardinian exhibition.

The evening ended at midnight and then delegates were transferred to the Hotel by the shuttle buses.

Wednesday 11th May 2011

Bus pick up time was at the reception desk of the Hotel Mariano IV around 8:00 a.m. 4 shuttle buses carried the delegates from the Hotel to the Oristano section of the CNR Institute for Coastal Marine Environment (IAMC).

21. Toward a Mediterranean network of observing systems

Fabio Trincardi, National Research Council, Italy

Four basic questions and possible answers were presented to the floor bearing in minds that, with specific reference to the Mediterranean basin, there is an increase in the number of seafloor long-term observation sites of any kind (mooring stations for oceanographic purposes, deep stations for geological studies, fixed buoys) and it is increasingly necessary a network of these systems.

How can oceanographic fleets contribute to maintaining distributed observing systems?

- with the increasing number of buoys and mooring sites and underwater stations deployed for multi-year intervals in all seas, it is important to optimise the use of ships that may happen to work in these areas even if for a totally different scientific purpose;
- need to bring onboard people expert in maintain the, and retrieve data from, observing systems;
- this effort can be made at national level or at larger scale among countries working in the same region for different purposes.

How can we optimise in a more cost-effective way the data gathering during scientific cruises?

- having on board multiple instrumentations and versatile technicians (it is possible that, for instance, during a coring cruise the night is spent to acquire multibeam bathymetry);
- some ships do not work much during the night (not enough embarked ship personnel) and this poses the problem of how to optimise the 24h cost with a little additional cost;
- in this view is it necessary to set simple rules and best practices on handling shared data bases among different teams?

Is it possible to optimize the use of expensive instrumentation through sharing among different teams?

- this can be done within the same fleet at national level, by sharing the same set of instrumentations among large and smaller ships (provided that some structural requirements are met in the small ships, of course);
- sharing among different countries may be difficult; but is it impossible or is it worth trying?
- in both cases, all instruments of some complexity are run by few “key” technicians that should travel with the instrument.

What is the best policy between research institutions and ship owners in quantifying and take into account in the contract payment possible prolonged down of a particular instrumentation or set of instruments?

- chief scientists optimise their own cruise by using different instrumentations while waiting for a replacement or fixing of a damaged instrument;
- however, this is cost effective only on a relatively small portion of the allocated ship time;
- prolonged downs of key instrumentation result in a cruise that cannot achieve the results for which it was funded (even if “new findings” are always guaranteed!).

A group discussion followed:

- in OFEG it is possible to have access to an e-mail list which can be used in case someone has problems with his moorings in a specific area of the sea and needs to know if any colleague has ships available in that area for recovering his moorings, it is important to make accessible information on observation sites using a dedicated website, it could be also useful to establish an ERVO working group on observing systems and related aspects (*Klas Lackschewitz, IFM - GEOMAR - Leibniz Institute of Marine Sciences at Kiel University, Germany*);
- in this respect rapid response has to be considered as a very important aspect, EUROFLEETS project is trying to face this key problem creating a contact list of people who can be mobilised in case of necessity on the model of OFEG (*Jacques Binot, IFREMER - French Research Institute for Exploration of the Sea, France*);
- maintaining an observing system costs a lot of money and requires a big operational and logistical effort, it is therefore increasingly important the creation of a seafloor observatories network within Europe but it is also important to be able as European research vessels operators to maintain these instrumentations with appropriate tools (*Juanjo Dañobeitia, CSIC - Spanish National Research Council, Spain*).

22. EUROFLEETS: main results after 2 years

Jacques Binot, IFREMER (French Research Institute for Exploration of the Sea), France

General information on EUROFLEETS projects was given:

- a Capacities I3 (integrated infrastructure initiative) project carried out by 24 marine institutes, universities, foundations from 16 countries (14 EU Member States –including 4

recent ones- and 2 associated countries) + 3 Associated Partners: IFM-GEOMAR, ESF Marine Board and DTU Aqua,

- from 1st of September 2009 for 4 years;
- EC FP7 contribution 7.2 M€ on a total budget of 9 M€;
- coordination carried out by Ifremer.

Details were given on Trans National Access calls:

- 2 calls in 2010: Global/Ocean and Regional1,
 - 38 eligible proposals received,
 - 23 (60%) Global/Ocean and 15 (40%) for Regional RV,
 - 25 (66%) geosciences, 10 (26%) biology and 3 (8%) oceanography,
 - 6 cruises funded o/b Global RVs for 77 days, 5 cruises funded o/b Regional RVs for 36.6 days,
- last call in 2011: Regional2 (12 Regional RV accessible)
 - 16 received proposals to take place o/b 9 Regional RVs,
- a single “real orphan” RV,
- funding decision (2012 to 2013) in November 2011.

Details were also given on advanced training and education carried out so far:

- 2 embarked schools for young students on Irish RV in 2010,
- 1 embarked school for technicians on Norwegian RV in 2011.

More to come regarding interoperability, RV greening, technological developments and innovation integration.

More information about EUROFLEETS at www.eurofleets.eu.

Finally, some details were given on the EUROFLEETS 2 proposal:

- with a widened partnership,
- scientific interest for European calls with bonus on young scientists and non equipped countries; good integrating impact,
- other networking aspects:
 - -virtual joint fleets within maritime regions,
 - -scientific evaluation sharing,
 - -polar research, in liaison with ERICON Aurora Borealis project,
- opening of the call in July, closing in November.

23. Results EUROFLEETS WP on existing fleets foreseeable evolution for the next 10 years

Gian Pietro Gasparini, National Research Council, Italy

First results of the EUROFLEETS WP on existing fleets foreseeable evolution for the next 10 years were presented.

The EUROFLEETS project and, more specifically, its WP1 (Strategic coordination vision) has the main objective to promote a European strategic view of research fleets and associated equipment. A key point is to define a “common procurement strategy” (Task 1.2).

The request to improve the ocean understanding is growing, while the rapid evolving of new technologies open to a novel vision of the ocean. In this scenario the ocean survey needs the development of new approaches, where research vessels and associated equipments have a central

role. A picture of the existing vessels and their short term foreseeable evolution is necessary to define an effective strategic view of European fleet.

All vessels with length ≥ 35 m and directly accessible to research were considered in this study. The vessel investigation examined class (Global, Ocean and Regional), age, major research activity (multipurpose, oceanography, fishery, other activities) and major technical facilities.

The main source of information was the European Research Vessel Infobase (<http://www.rvinfobase.eurocean.org/>) maintained by EurOcean.

The European fleets include 36 Global class, 22 Ocean class and 31 Regional class vessels which are run by 23 of the 27 European coastal states, all encompassing Member Organisations of the European Science Foundation. It was observed a significant presence of vessels in all different classes which well balance the need of global and regional interests.

The distribution of vessels per country, partially related to their geographic position, seems mainly to be because of the individual countries interest in marine and maritime affairs on a global and/or regional scale. The larger vessel numbers are found in Germany with its balanced interest both on a global and a regional scale, and conversely for UK, but for France also, the main interest seems to be on a global scale. More balanced is the vessel distribution of other countries.

Concerning age distribution of European vessels, within all classes approximately half the vessels are more than 20 years old, with the regional reaching the 65.6%. Furthermore four ocean vessels and one global vessel are refitted. Vessel age appears to be a weakness of the European fleets and the replacing of older vessels (19 vessels are more than 30 years old) should be a top priority. The requirement to meet high standards in capabilities and equipment is crucial for research vessels, and an old vessel may hinder necessary innovation and limit the possibilities to do the necessary observations, monitoring and sample collection with the required quality that modern marine science is based on a cost effective manner.

Moving on to examining the prevalent activity, multipurpose research vessels accounts for 50% of the total vessel fleet and prevails in all three classes, followed by oceanographic vessels (22%) and fisheries research vessels (16%). Fisheries research is the second largest activity for the Regional vessels, while for Global vessels it is oceanography.

Going to examine the cost per day for the research vessels participating to EUROFLEETS (see EUROFLEETS DoW, pages 40 and 53), there is a concentration in the 5-10 Keuro range, which appears to be the typical running cost per day for a Regional vessel, while the typical cost for a Global vessel exceeds 20 Keuro per day. Nevertheless little is known about the cost composition, only generic information, but one of major/serious problems related to RV management is the continuous increase of operative ship costs. It may be estimated that maintaining and operating research vessels account for up to half of the costs of marine research.

In order to have complete information on European fleets for the next 10 years, a questionnaire was sent to each EUROFLEETS member asking for information about the existence of renewal fleet initiatives in each country. Positive news seems to come for the next future, because questionnaire answers indicated that 14 countries (approximately 50% of the European coastal states) are planning a fleet renewal. Twenty-seven projects are planned or are ongoing: twenty-two projects concerning construction of new vessels and five to refit existing vessels. From the planned projects, the 81% are new vessel projects, mainly Global and Regional class vessels. Among these projects, 10 are not replacement of existing vessels, but go to increase the number of vessels in the fleet. The remaining projects are vessel refits distributed between the three classes of vessels (Global/Ocean, Regional, Coastal). Both replacement and refit usually don't modify the previous vessels mission.

When we examine the country distribution, we may observe a prevalence of northern countries, but we may consider that France and Spain cover both the northern and Mediterranean regions. Concerning partnerships, several agreements are established between institutions inside the same country, but very few are formally established between different countries or at a regional level. Nevertheless, a large interest appears for country/regional agreements and we are confident that many of them will be reached in the next future.

Concerning capabilities, besides all basic supports for hydrography (CTD), current measurements (ADCP) and acoustic equipments, almost all new vessels will be able to receive mobile equipments (especially ROV and AUV). Other relevant characteristic is the attention given to low noise radiation and enhanced communication facilities.

The vessel scenario, for the next future, appears positive for the European fleets. We will have a vessel number reduction, but also a significant reduction of fleet age (50% of vessels will be less than 10 years old). The new research vessels will be more capable in terms of types and capabilities for the on board scientific equipment, number of scientist cabins, number of laboratories, vessel speed and endurance and reduced crew than the vessels they have replaced, leading to more science days produced per year and showing that a fleet renewal is often a more cost-efficient strategy than a fleet expansion.

In this situation, coordination and synergy between fleets will become prominent and joint initiatives and EU projects will play a key role, the EUROFLEETS project being one of them.

Two aspects need also to be considered:

- the increasing relevance of the ocean both for what concerns its exploitation and the understanding of the human impact on the environment;
- the rapid evolving new technologies, which permits a novel vision of the ocean.

Marine research is critically dependent on advanced technologies, becoming the beneficiary of several emerging technologies (e.g. nanotechnology, biotechnology, robotic):

- the novel miniature sensors favour the development of automatic and continuous observation of a large spectra of parameters;
- the development of unmanned integrated marine observatories of the water column and of the sea bottom;
- the enhanced robotic capabilities to conduct remote marine operations more and more sophisticated.

Today, fleets are approaching a crisis in that their role is changing, but the research vessel remains an essential infrastructure in support of marine research. While previously RVs were the primary platform for data collection, the new technologies are modifying their function. The new ship will have the role of deploy and service mobile and enduring assets and act as a nexus for the aggregation of acquired information. Their investigation activity will be mainly devoted toward complex and innovative non standard experiments or when heavy operations are necessary.

A more efficient use of fleets at different levels:

- optimize single vessel and country fleet operability;
- operate for a Regional and European coordination by enlarge vessel access through transnational projects, foster exchanges of shiptime, scientific equipment's, scientists and technicians, and favour coordinated plans for new vessels on a regional level.

In conclusion, well known weaknesses of the European marine research are the deficient joint approach, the imbalance in research and technological capacities among regions, few contact with marine industry. Research vessels may play a key role to reduce the fragmentation of the European ocean research through a more efficient use of the existing vessels and by improving co-operation and co-ordination of European fleets at a regional level. Good opportunities are, besides the existing

collaboration groups (e.g. OFEG), the new vessels, where an effort has to be done for joint vessels or for establishing concrete coordination.

A group discussion followed:

- it is very important to maintain the EurOcean Infobase updated in order to have a more complete knowledge of the European fleet, this is also very useful for the European Commission (*Jacques Binot, IFREMER - French Research Institute for Exploration of the Sea, France*);
- it could be very important to gather information about the efficiency of European research vessels, e.g. info about how often ships are used (*Juanjo Dañobeitia, CSIC - Spanish National Research Council, Spain*);
- it could be also very useful to have figures on available ship time in order to know what to share (*Marius Hirsekorn, IFM - GEOMAR - Leibniz Institute of Marine Sciences at Kiel University, Germany*).

24. Coffee break & national update posters

All

Coffee break was held in the garden outside the Institute, where the national updates were exposed with a poster session.

25. Results EUROFLEETS WP Greening of RV Fleet: current status

André Catruijsse, Flanders Marine Institute (VLIZ), Belgium

First results of the EUROFLEETS WP3 on Eco-Responsibility and Eco-design for existing and new research vessels were presented.

WP3 consists of four major tasks:

- Task 3.1: Research Vessel – Life Cycle Assessment,
- Task 3.2: Research Vessel – Environmental Management Plan,
- Task 3.3: Research Vessel – Environmental Management System,
- Task 3.4: Guidelines towards future new buildings and innovative eco-design for Regional vessels:
 - Subtask 3.4.1: Description of current vessel performances,
 - Subtask 3.4.2: Request on vessel operational eco-performances,
 - Subtask 3.4.3: Establishment of guidelines for Regional vessel eco-design.

Details were given on the results obtained in Subtask 3.4.1:

- regional vessel: operations outside national waters/EEZ,
- “green”: beyond MARPOL and other regulations,
- questionnaire on operational and technical environmental issues related to RV, sent to approximately 150 RV operators (EurOcean DB).

Content of Questionnaire:

- MARPOL Annex I – Pollution by Oil,
- MARPOL Annex IV – Pollution by Sewage,
- MARPOL Annex V – Pollution by Garbage,
- MARPOL Annex VI – Air Pollution,
- IMO Convention on Control of Harmful Anti-Fouling Systems,

- IMO Convention for the Control & Mgmt of ships' Ballast Water,
- Hazardous materials for usage in science,
- Underwater Radiated Noise,
- Conduct of Marine Science,
- Environmental related Management by RV Operators.

General outcomes:

- RV operators generally follow international conventions,
- “Greening” often applied for older conventions,
- margin for growth,
- environmental awareness.

A group discussion followed:

- these preliminary results seem to show that it is possible to go beyond the MARPOL requirements, the experience of others is really important to convince people to do something extra, the outcomes of this WP should also be seen as a legacy from the EUROFLEETS project to the ERVO Group which should go on working on it in order to reach an ever clearer knowledge of this topic (*Jacques Binot, IFREMER - French Research Institute for Exploration of the Sea, France*);
- for the ERVO Group it could be useful to list what can be done or which technologies are available in the near or in the far future that could be applied to small vessels in order to do more than what is needed for complying with the MARPOL regulation, this list could circulate among ERVO members who could go through it just marking what they consider good or bad in this regards, information should be also collected among ERVO members on how important environmental issues are considered in the design of their research vessels (*André Cattrijsse, VLIZ - Flanders Marine Institute, Belgium*).

26. Education/outreach onboard RV's

André Cattrijsse, Flanders Marine Institute (VLIZ), Belgium

An overview of what was done in the past years in the Flanders Marine Institute for sea-education and science communication (brochures, study days, etc.) using RV Zeeleeuw was given.

Some figures of the “RV Zeeleeuw-impact” were presented: researchers (approx. 1000), learning projects (5000 2nd grade pupils), first grade pupils (ca 4000) and public events (ca 5000).

Digital learning project (“Expedition Zeeleeuw” 2005 – 2007):

- a learning platform for 15-18 year pupils (ca 5000 pupils involved),
- a true expedition onboard RV Zeeleeuw,
- since 2008 “Expedition Zeeleeuw” project was extended in a new project called “Planet sea”;
- 10% of shiptime provided for science education,
- 70% media attention vessel, 5-10 media hits/yr.

In conclusion, the following questions were presented to the floor: How much shiptime do/can you devote to education/outreach? What level of education (master, bachelor, 2nd, 1st grade, other) How do you organise this? Co-operation?

A group discussion followed:

- some examples of education/outreach activities carried out in their institutions were given by delegates;
- safety and insurance aspects when a research vessel is used for educational purposes were also discussed.

27. Other business

Juanjo Dañobeitia, Spanish National Research Council, Spain

Any other business.

28. Topics, date & place ERVO 2012

Juanjo Dañobeitia, Spanish National Research Council (CSIC), Spain

Next ERVO meeting (14th): 8 - 9 May, Department of Oceanography and Fisheries of the University of Azores (DOP/UAç)

Proposed topics for the next EVO meeting:

- working groups in ERVO (*Klas Lackshewitz, IFM - GEOMAR - Leibniz Institute of Marine Sciences at Kiel University, Germany*),
- Observing Systems (*Jacques Binot, IFREMER - French Research Institute for Exploration of the Sea, France*),
- OFEG overview (*Klas Lackshewitz, IFM - GEOMAR - Leibniz Institute of Marine Sciences at Kiel University, Germany*).

29. Closing of ERVO 2011

Juanjo Dañobeitia, Spanish National Research Council, Spain

Meeting closed at 12:30 a.m.

30. Lunch

All

Lunch was held in the garden outside the Institute.

31. Visit of RV Urania

Giuseppe Magnifico, National Research Council, Italy

After lunch, delegates were transferred to the harbour for the visit on-board the CNR RV Urania and a brief trip off the coast of Oristano.

The CNR's biggest RV, Urania, is approximately 61 metres long and is equipped with extremely sophisticated instruments for the study of physical and chemical water quality parameters, and several laboratories for the on-site study of biological populations and for the analysis of marine sediments. The ship was built in 1992, has an endurance of 45 days and can accommodate up to 36 people, counting both scientists and crew members. Oceanographic studies are the main research activities carried out by this vessel, which can operate all around the world. The speed range for continuous measurement is 1.5 to 11 knots. The propulsion system consists of two variable-pitch propellers driven by two 1000-KW engines and by a 220-KW front propeller. The ship is equipped with a Simrad dynamic positioning system for precision manoeuvres. It has laboratories for analysis and geological sampling, chemical and radiological laboratories and enables the processing of

navigation and geophysical data as well as data acquired using the ROV (Remotely Operated Vehicle) and the multi-parameter probe. Its geophysical instruments include a Chirp Datasonics profiler, a Sparker, a 3.5-KHz sub-bottom profiler, a Uniboom, a 100-500 KHz side-scan sonar and a magnetometer. With regard to sampling systems (operating up to the maximum depths of the Mediterranean), piston- and gravity-based samplers are available, along with box corers, grabs (Shipek and Van Veen) and dredges. It is also possible to use multi-parameter probes and multi-samplers, CTDs, devices for biological analyses and ROVs.

Back to the harbour (around 5 p.m.), delegates were transferred to the Hotel by the shuttle buses.

Presentations and posters of the 2011 ERVO meeting are available on the EurOcean website (<http://www.eurocean.org/np4/63>).



10 – 11 May 2011
Institute for Coastal Marine Environment – CNR
Oristano, Italy

AGENDA

Monday 9th May 2011		
20:00	Icebreaker	G. Magnifico
Tuesday 10th May 2011		
9:00	Welcome + practical arrangements	G. Magnifico A. Perilli
9:10	Introduction Hand-over of chair	A. Cattrijsse
9:20	Opening of ERVO 2011, Round Table, Approval of ERVO 2010 minutes	J. Dañobeitia A. Castellón
9:45	New vice-chair	J. Dañobeitia A. Castellón
10:00	Ad-hoc group on ERVO: results + adoption of Terms of Reference	M. Gillooly
10:30	Ad-hoc group on ERVO: functioning and co-operation with EurOcean	S. Sá
11:00	Coffee break & national update posters	
11:30	Oral presentation of vessel/operations by new members (Poland and Sweden)	K. Szeffler O. Björlin
12:00	New Builds: Italy	E. Marsella B. Patti
12:30	Lunch	
13:30	New Builds: Belgium	A. Pollentier A. Cattrijsse
14:00	New Builds : UK	B. Wigham
14:15	New Builds : USA & Australia	D. Rolland
14:45	Designing green & silent RVs	E. Campana
15:15	Scientific Requirements RV	J. Dañobeitia
15:45	Coffee break & national update posters	
16:20	Italian oceanographic infrastructures: an overview	F. Trincardi
16:40	Research facilities for the Svalbard Archipelago	E. Strønen
16:50	Genavir presentation	R. Balcon
17:00	End Meeting	
20:00	Dinner	G. Magnifico
Wednesday 11th May 2011		
9:00	Toward a Mediterranean network of observing systems	F. Trincardi Group discussion
9:45	Eurofleets : main results after 2 yrs	J. Binot
10:00	Results EUROFLEETS WP on existing fleets foreseeable evolution for the next 10 years	G.P. Gasparini
10:30	Coffee break & national update posters	
11:00	Results EUROFLEETS WP Greening of RV Fleet: current status	A. Cattrijsse
11:15	Education/outreach onboard RV's	A. Cattrijsse Group discussion
12:15	Other business	J. Dañobeitia A. Castellón
12:20	Topics, date & place ERVO 2012	J. Dañobeitia A. Castellón
12:30	Closing of ERVO 2011	
12:30	Lunch	
13:30	Visit of RV Urania	G. Magnifico



10 – 11 May 2011
Institute for Coastal Marine Environment – CNR
Oristano, Italy

ATTENDANCE LIST

Name	Organization	Country
André Cattrijsse	VLIZ - Flanders Marine Institute	Belgium
Lieven Naudts	MUMM - Royal Belgian Institute of Natural Sciences	Belgium
André Pollentier	MUMM - Royal Belgian Institute of Natural Sciences	Belgium
Jacques Binot	IFREMER - French Research Institute for Exploration of the Sea	France
Rémy Balcon	GENAVIR	France
Marius Hirsekorn	AWI - Alfred-Wegener-Institut für Polar und Meeresforschung in der Helmholtz-Gemeinschaft	Germany
Klaus Von Bröckel	IFM - GEOMAR - Leibniz Institute of Marine Sciences at Kiel University	Germany
Klas Lackshewitz	IFM - GEOMAR - Leibniz Institute of Marine Sciences at Kiel University	Germany
Thomas Liebe	RF Forschungsschiffahrt Bremen	Germany
Matthias Günther	Briese Schifffahrts GmbH & Co. KG - Research Department	Germany
Michael Gillooly	Marine Institute	Ireland
Giuseppe Magnifico	CNR - Operations Planning Office	Italy
Gian Pietro Gasparini	CNR - Research Institute	Italy
Bernardo Patti	CNR - Research Institute	Italy
Fabio Trincardi	CNR - Research Institute	Italy
Ennio Marsella	CNR - Research Institute	Italy
Emilio Campana	CNR - Research Institute	Italy
Einar Strønen	IMR - Institute of Marine Research	Norway
Kazimierz Szeffler	Maritime Institutein Gdansk	Poland
Sandra de Oliveira e Sá	EurOcean Foundation	Portugal
Luís Menezes Pinheiro	University of Aveiro / Department of Geosciences and CESAM	Portugal
Stefan Florescu	GEOECOMAR - National Research and Development Institute for Marine Geology and Geoecology	Romania
Dan Secieru	GEOECOMAR - National Research and Development Institute for Marine Geology and Geoecology	Romania
Arturo Castellón Masalles	CSIC - Spanish National Research Council	Spain
Juanjo Dañobeitia	CSIC - Spanish National Research Council	Spain
Ola Björlin	The Sven Lovén Centre for Marine Sciences - University of Gothenburg	Sweden
William Clarke	Agri-Food and Biosciences Institute	UK
Ben Wigham	Dove Marine Laboratory - School of Marine Science and Technology - Newcastle University	UK
Daniel Rolland	Alion Science and Technology Corporation	USA

European Research Vessel Operators (ERVO) - Terms of Reference

1. Objectives

The objective of the ERVO members is to create and maintain a forum for European research vessel operators, with special focus on research vessels and associated equipment and/or instruments, which will give the members the following opportunities:

- Attend ERVO meetings where common technical, operational, safety, environmental and legal issues/problems are identified and discussed, and possible solutions presented,
- Contribute to the development within Europe of best practice in the operation of research vessels and associated equipment,
- Learn about developments and plans for procurement of new research vessels, equipment and instruments, and upgrades of existing research vessels, equipment and/or instruments.
- Be a member of a pan-European network of research vessel operators which presents opportunities for:
 - exchange of information and best practices,
 - exchange of ship time, personnel, instruments and equipment (barter arrangements),
 - co-funding and co-ownership of vessel, instruments and/or equipment, participation in benchmarking exercises to look for the most cost efficient ways to man and operate research vessels and equipment.
- Identify methods and ways to minimize the impact of the operations of research vessels and associated instruments and equipment on the environment and marine life.
- Develop and maintain a strategy for the future growth of ERVO in terms of membership, and the development in topics and activities that ERVO will take an interest in to stay relevant and useful for European research vessel operators in particular and the European Marine science community and its stakeholders in general.

ERVO, with its broad membership of research vessel operators representing the majority of European nations who has their own fleet of research vessels, is the ideal focal point for any organization in Europe looking for ways to communicate directly with the experts on research vessels and associated instruments and equipment, and should therefore as a group and as individual members take every opportunity to promote the collective expertise and knowledge that ERVO represents.

2. Background

In 1999, the European Science Foundation Marine Board (ESF/MB) decided to initiate an action to promote the co-ordination of small to medium sized research vessel operators in Europe as a complement to the Ocean Fleets Exchange Group which was established a few years earlier.

This led to the first ERVO meeting being held in Roscoff, France, in December 1999 and since then an annual ERVO meeting has been held in different European countries and today the ERVO group is concerned with all sizes of research vessels, from coastal to global.

3. Membership

ERVO membership is open to all European research vessel operators, both from government or private research vessel operator organizations/companies. New members will be formally accepted at the annual ERVO meetings.

Each member pays an annual membership fee to cover the running cost of ERVO, such as maintaining a web site, producing leaflets and other promotional materials, courtesy, gifts, mail expenses etc. In addition each member pays a conference fee when attending ERVO

meetings. The size of the membership fee and conference fee is agreed on at every annual ERVO meeting.

A member list will be maintained by EurOcean and will be available on the ERVO web site.

Non-members, such as industrial representatives, scientists, policymakers, stakeholders and other can attend all or part of ERVO meetings and/or ERVO organized working groups/workshops by invitation of the ERVO chair.

The ERVO chair also has the right to arrange “government only” sessions during ERVO meetings or create “government only” working groups/workshops if required by members in order to discuss topics that are competition sensitive and therefore not open to commercial companies.

4. ERVO organization

ERVO is an open, member driven, non-profit group of European research vessel operators, and therefore the group does not report to any other group, organization or authority. The members elect a chairperson and a vice-chair every two years at the annual ERVO meetings, and all members present at the meeting has the right to vote for the acceptance or rejection of the proposed candidates. The election is done by simple majority (more than 50% of the votes). The vote can be either written or by raise of hands.

The chair is elected for two years and his or her primary tasks are to:

- work out the agenda for the annual meeting in cooperation with the vice-chair and the host of the meeting
- conduct the annual ERVO meetings
- establish working groups and/or workshops as deemed necessary and beneficial
- act as the formal ERVO representative to other groups and organizations
- promote ERVO and recruiting of new members.

The chair period starts at the end of the annual meeting where the election took place, and formally ends at the end of the second meeting after the election when hand over to the new chair takes place at the end of the meeting.

The vice-chair’s main responsibility is the production of minutes of meetings and to support the chair as necessary. Draft minutes of meeting shall be circulated among the meeting participants no later than two calendar months after the meeting and final minutes shall be circulated among the participants and be posted on the ERVO web site, no later than four calendar months after the meeting. Minutes of meetings shall also be distributed to the following groups:

- European Science Foundation/Marine board
- International Research Ship Operators (IRSO)
- Ocean Fleet Exchange Group (OFEG)

In addition, the vice-chair, in cooperation with EurOcean, shall produce a press release which sums up the results of the annual meeting and distribute it through ERVO members, ERVO web site and EurOcean newsletter. Normally the vice-chair will be the primary candidate to be the next chair of the ERVO, if he or she is willing and able to take on the task.

The hosting of the annual ERVO meeting is a voluntary task for the members of ERVO, and the meeting host is responsible for all local arrangements at the meeting site and to help the meeting attendees as necessary with travel arrangements, accommodation etc. The host is also welcome to

arrange local tours/presentations of relevant infrastructure, in particular research vessels, equipment and land based facilities. The host is also encouraged to invite local/national speakers or experts with special relevance to the ERVO group areas of interest, for example classification societies, maritime authorities, science groups, policy makers or stakeholders.

5. Cooperation with EurOCean

The European information center for marine science and technology, EurOcean, is responsible for the ERVO web site as part of the EurOcean web portal, see www.eurocean.org for more details, and EurOcean is also responsible for the maintenance of the ERVO membership register, dissemination activities, development and maintenance of ERVO's graphical profile, and the production of posters, leaflets and other promotional material according to a negotiated agreement between ERVO and EurOcean, see Annex I for more details..

6. Meetings

As a minimum, an annual ERVO plenary meeting should be arranged, and in addition special workshops and ad-hoc meetings can be arranged as necessary. An ERVO plenary meeting will normally have a two days agenda, but in special cases where there are a number of local facilities to visit an extra day will be added if necessary. To make it possible for all members to host such meeting, a conference fee can be agreed on before the meeting.

When the International Research Ship Operators (IRSO) have their annual meeting in Europe, ERVO should explore the possibility to arrange a joint meeting between the two groups since the two groups have a number of common members and the two groups also have overlapping objectives and tasks.

7. Workshops, ad hoc working groups and study groups

If the ERVO plenary meeting so desire, or if the ERVO chair by correspondence proposes it, a work shop, ad-hoc working group or study group to work on a particular issue or problem, such activities can be initiated and the group then reports back to the next ERVO plenary meeting. If ESF, European Commission or other groups requests specific inputs from ERVO this will also be done through the establishment of a Ad hoc working or study group (requested via the Chair

8. Relations to other groups and organizations

ERVO will make efforts to maintain and improve relationships with the following organizations for the benefit of both parties:

- European Science Foundation/Marine Board (ESF/MB)
- International Research Ship Operators (IRSO)
- OFEG (Ocean Facilities Exchange Group)
- Research Vessel Operator Committee (RVOC) in USA

These groups shall receive a formal invitation to attend the annual ERVO meetings as observers.

Date and place,

Sign.

ERVO chair

Date and place,

Sign.

ERVO vice-chair

Annexes:

Annex I – EurOcean service agreement

Evolution of ERVO
Possible TOR for ERVO WG to make recommendations on
evolution of ERVO-EUROFLEETS relationship

With the expansion of OFEG membership and most particularly the launch of the EUROFLEETS project 2009- 2013 which is a good network for RV operators, many of the previous activities of ERVO have been incorporated into these projects with a consequent reduction in commitment to ERVO.

EUROFLEETS (and perhaps EUROFLEETS 2) has a finite life and OFEG has a limited membership and both are 'restricted' in flexibility and may not be seen as particularly relevant to small coastal RV operators.

ERVO is a forum or network which was/is entirely driven by participation by a broad group of RV operators and their need to optimize their operation, rather than a Commission priority or commercial driver.

However there are many overlaps with EUROFLEETS and OFEG and also IRSO and many ERVO members also participate in 1, 2 or all of these fora. There is a real risk of marginalization of ERVO and a perception that it has limited usefulness - hence the attempt to revise the ERVO TOR and revitalise the forum.

There are 2 options we should consider:

- 1. Retain ERVO under current arrangements**
- 2. Incorporate or associate ERVO into/with EUROFLEETS**
 - a. Entirely**
 - b. Partially so that it retains independence and can decide on specific areas it wishes to address. This could be done by inviting non Eurofleets RV Operators to the annual Eurofleets GA-meetings in the fall every year, so those who are interested can learn about what is going on in Eurofleets, keep in touch with the Eurofleets members and maybe arrange some kind of "side meeting" for ERVO during the GA, or just before or after the GA.**

There is scope in the discussions have commenced on EUROFLEETS 2 to consider a strategic inclusion/association of ERVO

ERVO is a very useful independent network and one of its strengths is that its activity is decided by participants who are not 'biased' by ERVO being funded by the Commission or other specific interests. However it might better function as a 'independent advisory committee' within EUROFLEETS or similar structure and ultimately act as the successor to EUROFLEETS.

In this context it is suggested that ERVO establish a WG to work with EUROFLEETS and OFEG to determine its future focus and relationship to EUROFLEETS and OFEG and IRSO(?). TORS could include:

- **Consideration of ERVO acting in a Independent Technical advisory Capacity as Expert Group and/or representative Group for European RV operators feeding into EUROFLEETS 1 & 2**
- **The WG to develop a joint plan for alignment and 'succession' plan for ERVO to sustain main outputs from EUROFLEETS and EUROFLEETS 2 including standards, reports and other services and tools that contribute to RV operations in Europe**
- **Review options for EUROFLEETS providing support funding for those new ERVO members attending ERVO meetings or other activities aligned with EUROFLEETS programme**
- **Alignment of ERVO with(in) EUROFLEETS 2 – should it remain entirely 'independent'?**

EurOcean services proposal for the ERVO Group – European Research Vessels Operators



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2. Background

The objective of the **ERVO** members is to create and maintain a forum for European research vessel operators, with special focus on research vessels and associated equipment and/or instruments, which will give the members the following opportunities:

- Attend **ERVO** meetings where common technical, operational, safety, environmental and legal issues/problems are identified and discussed, and possible solutions presented;
- Contribute to the development within Europe of best practice in the operation of research vessels and associated equipment;
- Learn about developments and plans for procurement of new research vessels, equipment and instruments, and upgrades of existing research vessels, equipment and/or instruments;
- Be a member of a pan-European network of research vessel operators which presents opportunities for:
 - exchange of information and best practices,
 - exchange of ship time, personnel, instruments and equipment (barter arrangements),
 - co-funding and co-ownership of vessel, instruments and/or equipment,
 - participation in benchmarking exercises to look for the most cost efficient ways to man and
 - operate research vessels and equipment.
- Identify methods and ways to minimize the impact of the operations of research vessels and associated instruments and equipment on the environment and marine life;
- Develop and maintain a strategy for the future growth of **ERVO** in terms of membership, and the development in topics and activities that **ERVO** will take an interest in to stay relevant and useful for European research vessel operators in particular and the European Marine science community and its stakeholders in general.

ERVO, with its broad membership of research vessel operators representing the majority of European nations who has their own fleet of research vessels, is the ideal focal point for any organization in Europe looking for ways to communicate directly with the experts on research vessels and associated instruments and equipment, and should therefore as a Group and as individual members take every opportunity to promote the collective expertise and knowledge that **ERVO** represents.

EurOcean – The European Centre for Information on Marine Science and Technology – was created in 2002, and has presently 12 Members from 8 European countries and aims to be a focal point for information on marine science and technology in Europe. Through its “Internet Portal” (www.eurocean.org) **EurOcean** gathers, manages and provides information on topics

related to marine science and technology in Europe, as for example marine national and European information and marine research infrastructures. In addition, **EurOcean** contributes to initiatives aiming to implement a Marine European Research Area and a European Maritime Policy.

As an Information Centre, **EurOcean** collects, aggregates and manages information on Marine Science and Technology, does statistical and policy analysis and develops dissemination products for researchers, policy makers and general public.

In what concerns dissemination products, **EurOcean** has a large experience in developing, hosting and updating public websites and edition areas and extranet modules as well as developing electronic newsletters and printable materials (see Portfolio), not only for the Centre but also for the European projects and initiatives in which it's involved or supporting.

3. Foreword

The key aspect of this document will be to serve as 'practical first step' in the initiation of a formal cooperation between EurOcean and the ERVO Group. Given the long-lasting cooperation it would be a good opportunity to discuss potential mutual beneficial opportunities both to EurOcean and the ERVO Group.

4. Proposals Description

The following mentioned proposals are independent from each other and can be developed and acquired individually according with the ERVO needs. The proposals are separated in four main categories:

- 1) Hosting and Maintenance of the website;
- 2) EurOcean's Membership;
- 3) Start packages;
- 4) All the services requested by the ERVO's Group Chairman.

4.1 Proposal I - Hosting and Maintenance of the current "Public Website"

The Website will be hosted in the EurOcean's server. Maintenance and content update will be performed, when necessary, upon the request of the ERVO Chairman or the ERVO's Group Members, one hour of maintenance by month will be dedicated to ERVO website.

ERVO's member list will be updated upon request of the chairman and information emails will be sent by the EurOcean's Office on behalf of the ERVO Chairman. The associated cost to this proposal is 2500€ by year (for details please see Annex I).

4.2 Proposal II - EurOcean's Membership

The Members of EurOcean are part of a unique network in Europe aiming to create synergy through sharing information between all actors with an interest in marine RTD, tackling gaps for information at European level and, when appropriate, at national level on marine science and technology.

The Members are encouraged to be actively involved in the development of the activities of EurOcean:

- The Members can propose tasks for and decide on the work programme of EurOcean.
- Depending on their expertise and on their domain of interests, the Members can take in charge tasks of the work programme which will be carried out in close cooperation with the EurOcean Office.

If the ERVO Group decides to embrace this Membership EurOcean is willing to provide the ERVO Group with an upgraded version of the current ERVO "Public Website" (for instance insertion of new categories and contents that the ERVO Group identifies as necessary), a more detailed member list, continuous technical and contents maintenance will be provided, the development of a Logo for the Group and an individual domain address (e.g. ERVO.eu).

This proposal is subject to the annual membership fee of 5000€ a year.

4.3 Proposal III – Start Packages

a) Corporate Image and Graphic Line, Hosting and Maintenance of the current “Public Website”

A new graphical identity for the ERVO Group will be created. EurOcean proposes to send one or two proposals of a logo for the ERVO member’s approval and comments; this will facilitate the work of developing an identity set for the Group, because all the graphical principles and colors will be defined in accordance with the logo.

To further develop and promote the corporate image of the ERVO Group EurOcean proposes, at this stage, the development of the following Materials:

- 1) Ervo’s Logo;
- 2) Institutional Poster;
- 3) Institutional Leaflet.

The hosting service will be provided as in **Proposal I** and the Logo will be incorporated on the current website. The total amount for these services will be 4.114€ plus hosting fee of 2.500€ by year (for details please see Annex I).

b) Corporate Image and Graphic Line, Developing, Hosting, and Maintenance of a New Public Website, Edition Module and Electronic Newsletter.

The proposed specifications for a new ERVO “Public Website”, “Edition Module” and Electronic newsletter can be seen on Annex II. A new graphical identity will be also created in accordance with the **Proposal III a)**.

Due to the technical specifications of a new “Internet Portal” the maintenance hours for the new “public website” will substantially increase. The total amount of these services will be 11.737,00€ plus hosting and maintenance fee of 8.525€ by year (for details please see Annex I).

4.4 Proposal IV – All the services requested by the ERVO’s Group Chairman

Taking into account the identified tasks by the ERVO Group Chairman, EurOcean proposes the following services:

- 1) Development of a Corporate Image and Graphic Line
 - 1.1) Logo and banner
 - 1.2) Business cards
- 2) Development of the Public Website, Edition Module and Electronic Newsletter
 - 2.1) Public website
 - 2.2) Edition module and electronic newsletter
- 3) Development of a Intranet/Extranet Facility
- 4) Web Hosting
- 5) Development of a Questionnaire
- 6) Development of a new Database/InfoBase with georeferenced position of the European homeports
- 7) Development of a Dissemination/Promotion Tool-Kit
 - 7.1) Poster
 - 7.2) Pens
 - 7.3) Pins
 - 7.4) Leaflet
- 8) Technical Support

All of these services will be described below. Please note that all the services can be acquired individually and the financial breakdown for each service can be consulted in the Annex I.

a) Corporate Image/Graphic Line and Dissemination/Promotion Tool-Kit

A new graphical identity for the ERVO Group will be created. EurOcean proposes to send one or two proposals of a logo for the ERVO member’s approval and comments; this will facilitate the work of developing an identity set for the Group, because the graphical principles and colors will be defined in accordance with the logo.

To further develop and promote the corporate image of the ERVO Group EurOcean proposes the development of four types of materials (see Annex III for details on previous materials developed by EurOcean):

- 1 – ERVO Leaflet – a product where the basic objectives of the Group can be described and easily circulate;
- 2 – An Institutional Poster emphasizing the Graphic line and main objective of the Group;
- 3 – Personalized pens and pins;
- 4 – Personalized business cards.

The total amount of these services will be 4.701,00€ (for details please see Annex I).

b) Development of a New Public Website, Edition Module, Electronic Newsletter and Development of a Intranet/Extranet Facility

A new “Internet Portal” will be created for ERVO Group considering that the ERVO “Internet Portal” has an important role as the main tool for communicating and disseminating the ERVO activities and information.

The “Internet Portal” will consist in three main components:

- A public access website: that will have one domain (URL) chosen by the ERVO Group (suggested domains: ervo.eu - Available, ervo.org –Waiting List);
- An administration/editing area to allow the input and editing of information as well as the management (deletion, creation, changes) of the page structures if necessary;
- An Extranet/Intranet area that is a “private office” that uses internet technology and public telecommunication systems to securely share information that should be only available for the ERVO active members.

Please see the proposed specifications on the Annex II.

The total amount of these services will be 33.275,00€ plus hosting and maintenance fee of 8.525€ by year (for details please see Annex I).

c) Development of a new Database/InfoBase with georeferenced position of the European homeports

Presently a tool for search information on coastal research vessels developed by EurOcean in cooperation with the Institute of Oceanology of the Polish Academy of Sciences, which intends to facilitate the access to information on the coastal research vessels operating around the European seas, is online. For the ERVO Group it would be interesting to open up that information to all the European research vessels. What EurOcean proposes is to develop a new database following the user-friendly principles already developed for other InfoBases (Annex III).

The total amount of this service will be 10.000€ (for details please see Annex I).

d) Development of a Questionnaire

Development of forms to conduct surveys or questionnaires those are useful for the ERVO Group.

The total amount of this service will be 15.000€ (for details please see Annex I).

e) Web Hosting and Technical Support

The Website will be hosted in the EurOcean's Server. Maintenance will be performed, when necessary, upon the request of the ERVO Chairman or the ERVO's Group Members and due to the technical specifications of the new "Internet Portal" the maintenance hours will substantially increase.

It will also be acquired a new domain for the "Public Website" that will have one URL chosen by the ERVO Group (suggested domains: ervo.eu - Available, ervo.org –Waiting List).

The total amount of these services will be 8.525€ by year (for details please see Annex I).

Annexes

Annex I - EurOcean's financial proposal

The present document includes the associated costs for each package described.

Table 1. Financial proposal.

Service	Quantity	Amount (€)	VAT (21%*)	Amount (€; incl. VAT*)
Corporate Image and Graphic Line		2.200	462	2.662
Logo and banner	1	2.000	420	2.420
1 Business cards (high quality)	100	200	42	242
Public Website, Edition Module and Electronic Newsletter		7.500	1.575	9.075
Public website	1	3.750	788	4.538
Edition module and electronic newsletter	1	3.750	788	4.538
Intranet/Extranet Facility	1	20.000	4.200	24.200
Hosting (by year)		2.087	438	2.525
Questionnaire	1	12.397	2.603	15.000
Database/Infobase	1	8.264	1.736	10.000
Dissemination/Promotion Tool-Kit		1.885	395,85	2.281
Poster	100	800	168	968
Pens	500	230	48,3	278,3
Pins	250	255	53,55	309
Leaflet	500	600	126	726
Technical Support - 50€ hour; 10h/months; 12 months		4.959	1.041,32	6.000,00

Annex II - Specifications of a New ERVO “Internet Portal”: Structure and Functionalities and Technical approach

Should the ERVO Group decides upon the development of a new “Internet Portal” EurOcean proposes the following features.

Part I – Specifications of the ERVO “Internet Portal”: Structure and Functionalities

Main specifications of the ERVO “Internet Portal”

The ERVO “Internet Portal” has an important role to play in the ERVO Group, as the main tool for communicating and disseminating the ERVO activities and information.

1) Principles to be considered for the definition of the specifications of the “Internet Portal” are as follows:

- To be the focal point of information and dissemination of the activities/products of the ERVO Group;
- To build up a structure with two main functionalities: dissemination of information with open access, and as a corner stone of the “Internet Portal” of the ERVO Group that will give access to the working area of restricted access to the active members of the Group;
- To be a high quality “Internet Portal” in terms of easiness and velocity of access to information, and in terms of quality of the on-line information;
- Implementation of the public website according to the rules for “accessibility” of the W3C organisation, (institution that sets the world accessibility standards), which allows citizens with some degree of disability to have access to the Information Society technologies.

2) The “Internet Portal” will consist in three main components:

- A public access website: that will have one domain (URL) chosen by the ERVO Group (suggested domains: ervo.eu - Available, ervo.org –Waiting List);
- An administration/editing area to allow the input and editing of information as well as the management (deletion, creation, changes) of the page structures if necessary;
- An Extranet/Intranet area that is a “private office” that uses internet technology and public telecommunication systems to securely share information that should be only available for the ERVO active members.

The public website of the ERVO Group “Internet Portal” will have a print option that will allow the print out of information in a preformatted form.

3) The “knowledge objects” of the “Internet Portal” includes: html contents, files and links.

4) The graphical guidelines to the ERVO Group design will be developed taking into account the ERVO members suggestions. The “Internet Portal” must be optimised for the most used versions of the most used browsers. The language of the portal is English.

5) EurOcean will ensure the hosting and technical maintenance of the “Internet Portal” throughout the duration agreed by the two parts.

Structure of the web pages of the public website of the ERVO Group “Internet Portal”

The structure of the web pages of the public version of the “Internet Portal” will consist of: category navigation, a global navigation and a content area.

- The category navigation is a “thematic navigation” which reflects the main inputs and outputs intended by the ERVO Group. Each category will represent the main thematic areas defined by the Group.
- The global navigation is a Group of functionalities that will be inserted in the portal front page in order to increase usability.
- The content area contains all knowledge objects (html contents, files, images...).

Description of the three components/modules of the ERVO Group “Internet Portal”

Administration/Editing module

The “Internet Portal” should have an administration/editing area to allow the administrator(s) to manage the page structure and contents. The editing access will be restricted to the management team of the “Internet Portal”.

The features of this administration/editing module should include the following functionalities:

- Insert, deactivate and delete contents (HTML, files, images). All contents must receive automatically a date of insertion on-line or of update;
- Insert, deactivate and delete News, Events, and insert info in the Banner of the Homepage;
- Manage an Electronic Newsletter. This functionality will consist of a preformatted email tool. The content of this newsletter may be a selection of pre-existing contents on the public website or a specific content created for a specific edition.

Table 2. “Internet Portal” users and privileges.

Areas	Portal Users	Rights and Permissions
Public access area	All end users	Read-only rights: navigation and access to all information available in the public website. No input of information. Mailing registration.
Administration/Editing area	Administrators of the ERVO Group “Internet Portal”	Full rights on all the web pages of the public access area of the “Internet Portal”.
Extranet/Intranet	Administrators and ERVO Members	Upload, Delete and Download Documents.

Public Website

Content area of the homepage of the public website of the “Internet Portal”

The content area of the homepage will include:

- A short introductory text that briefly describes the ERVO Group for those users who are not familiar with it;
- A section for the latest ERVO news headlines, with links to the respective news article;
- Advertising banner where any information of special interest for ERVO can be advertised;
- Interactive Calendar to display events/deadlines related to ERVO interests and upcoming ERVO meetings;
- ERVO member’s logos with links to the respective webpage;
- ERVO logo or banner.

Category navigation

It is mainly through this area that users will navigate across the public website and consequently access the majority of contents:

- **Homepage**
- **About ERVO** (general information about ERVO Group)
 - Background
 - Group objectives

- Workplan
- Structure
- Expected results and impacts of the ERVO Group

- **Meetings** (general information about ERVO meetings with the meetings documents and presentations)

- **Reports** (reports produced by the ERVO Group)

- **Working Groups** (Description of the workGroups and their outcomes)

- **Members** (list of members with their country of origin, logo, contacts and website address)

- **Surveys** (forms to perform surveys with interest for the ERVO Group)

- **Database** (geographical representation of vessels/homeports)

- **FAQ** (frequently asked questions on the ERVO Group)

The order and the names of the categories can be changed at any time during the design and implementation phases or after that, through the administration/editing area.

Global navigation

- **Sitemap**

- Sitemap is a page with an index of the pages of the public website.

- The pages can be accessed by clicking on the headlines in the list; the list also shows the public website structure.

- **Search**

- This search functionality will be a plug-in of the Google search facility for the ERVO Group public website.

- **Events**

- List of forthcoming events.

- Events can be added/modified/delete by authorised administrators.

- Both start and end dates of the event to be shown in the list, as well as the title of the event.

- Events will be presented in an interactive calendar format with the option to remove it at any time.

- **News**

- o List of news items containing: headlines and publishing dates.
- o Each of the news will be seen on one screen by clicking the headline.
- o News can be added/modified/deleted by authorised administrators.
- o Attachment files can be added to the news items.

- **Mailing registration**

- o Registration form, where any visitor can record its e-mail address in order to receive the latest updates or electronic newsletter of the ERVO Group. This functionality has to be an editorial choice (it is up to the ERVO Group to decide the appropriate moment to send messages to registered users) and not automatically.

- **Contact us**

- o One form to contact the ERVO Group Chairman.
- o One form to contact the website administrators.

- **Link Extranet/Intranet**

- o Link to the ERVO Extranet/Intranet.

- **Disclaimer**

- o Rules regarding the usage of the information of the ERVO Group public website.

Extranet/Intranet

The Extranet/Intranet will have the appearance and feel of a website, but with levels of security to prevent unwanted viewers from accessing private data (password access). An Extranet/Intranet - a private Internet for people inside an organization or Group - will widen the scope to privileged users to be defined by the Group (for examples see the EurOcean portfolio on extranets already developed). The name of each category/folder and the respective organisation will be defined in accordance with the ERVO Group.

Hosting the “Internet Portal”

The “Internet Portal” will be hosted in the EurOcean’s Server.

Part II – ERVO “Internet Portal” – Technical approach

Introduction and requirements

According to the specifications, the “Internet Portal” is organised in three key areas: a public website for the diffusion of public documents and other knowledge artifacts to act as corner stone of the “Internet Portal” of the ERVO Group, an Administration/Edition area where all the public website (structure and contents) and e-newsletters are managed and one working area of restricted access to the ERVO active members.

Common to the three areas are the following requirements:

- **Usability** – the user interface must be straightforward and easy to understand;
- **Speed** - from download speed to finding the information you seek, this is a major issue that should be measured and cared;
- **Quality** – quality of the information must be accompanied by technical quality of the system and graphical quality of the interface;
- **Reliability** – all users must be able to depend on the “Internet Portal”: uptime over 99.5%;
- **Open standards compliance** – all structural solutions should be open to change and preferably adopt open-source or independent standards.

Functionality

The architecture, content and navigation of the “Internet Portal” will focus on the specific functionality that arises.

On the public website, there is a basic structure and navigational controls / tools (*italic*):

- About ERVO
- Meetings
- Reports
- Working Groups
- Members
- Surveys
- Database

- [FAQ](#)
- [Sitemap](#)
- [Search](#)
- [Events](#)
- [News](#)
- [Mailing registration](#)
- [Contact us](#)
- [Link Extranet/Intranet](#)
- [Disclaimer](#)

The homepage has contents like news, calendar, banner and introduction. Structural/category pages can have sub-categories and have specific content. On these pages a hierarchical navigational mechanism should be displayed (“bread crumbs”) that clearly show where users are and where they can go. It could use a folding structure of the categories (like windows explorer) highlighting the “current” category.

“Contact us”, “disclaimer” and “sitemap” are regular navigational areas without any “special” features.

Extranet/Intranet link connects with the private area allowing the access of that area to the ERVO Group members.

“Events” and “News” should be database driven modules. The adoption of a standard web-application named nPublisher 4.0 for the management of these areas is proposed.

“Mailing registration” will be implemented by a contact collection component. Collected contacts will be integrated with the mailing/notification (e-newsletter tool) manager available on the administration/editing area.

Search tool is currently a rather difficult choice because Internet users are becoming increasingly familiar with very powerful search tools like Yahoo, AltaVista or Google. This kind of technology is not available for integration for a reasonable price and the available solutions can be frustrating to users. EurOcean believes that for general site search (as wanted) the best solution is to adopt “Google site search” this means that when users do a “site search” it is conducted in the Google engine and Google results are shown, directing the user to the ERVO website again. On the other hand, specific searches should be available on database driven components like the news area.

Proposed platform

The software base system is:

- VMWare ESXi 4.0 virtualization platform;
- Debian 5 Linux OS virtual machine;
- Apache web server for security management and load balancing;
- Caucho Resin Web/Application Server;
- Sun Java JDK EE 1.6;
- PostgreSQL 8 object-relational database management system.

The supporting hardware is:

- 1U Rack Server 1 TB Disk on RAID 5;
- 16GB RAM;
- 2x4 Core 64 bit Intel processors (2.0GHz);
- Gigabit Internet connectivity via FCTs Wide Band Network.



Figure 3. ERVO public web-site.

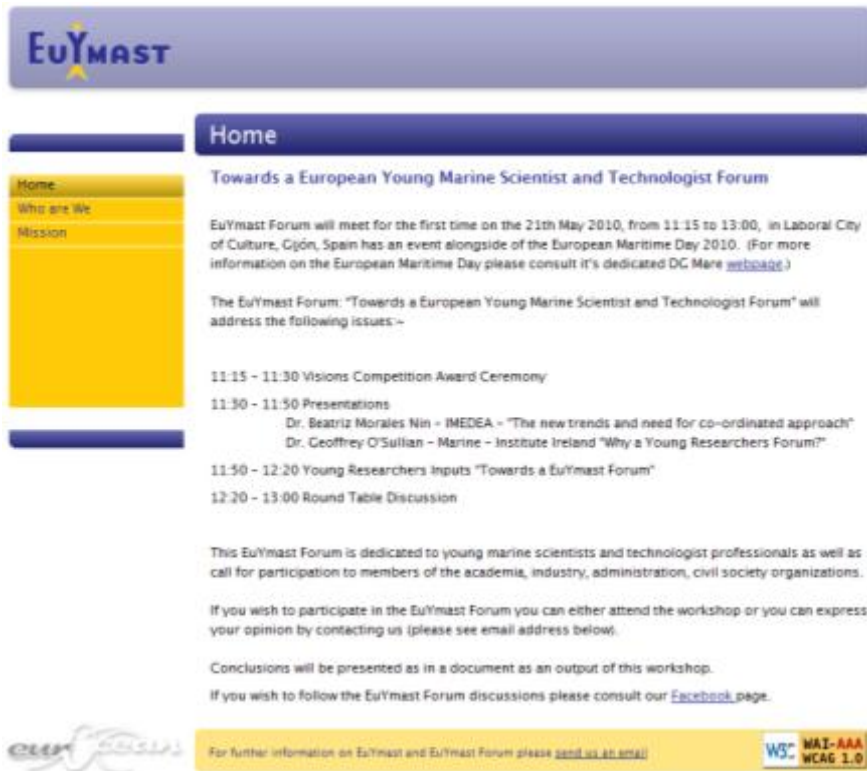


Figure 4. EuYmast public web-site.

The screenshot shows the MarinERA public website interface. At the top, there is a navigation menu with links: [Extranet >](#), [About MarinERA](#), [Marine Infrastructures](#), [National RTD Programmes](#), [European RTD Programmes](#), and [Dissemination](#). On the right, there is a search bar and a list of links: [Home](#), [Events](#), [News](#), [Registration](#), [Contact us](#), [Search / Map](#), and [Portals](#). The main content area features a blue sidebar with the text "MarinERA The MarinERA Project's Legacy". To the right of the sidebar is a map of Europe titled "MarinERA Partners" with several countries highlighted in blue. Further right is a text block explaining that MarinERA is a project funded by the EU FP6 ERA-NET Scheme (2004-2008) and is a partnership of leading Marine RTD Funding Organisations in 13 European Member States. Below this is a calendar for the month of July 2009, showing dates from 01 to 31. A red button labeled "MarinERA Technical Reports" is positioned below the map. At the bottom left, there are two news items: one dated July 27, 2009, titled "The Legacy of MarinERA Publication released", and another dated July 27, 2009, titled "Collaborative Projects Funded under the MarinERA Trans-National Call". Below these is a news item dated June 23, 2009, titled "The last MarinERA Report No. 10: A Marine RTD Infrastructure Strategy for Member States is available for download". At the bottom right, there is a link for "International Events" and a "Print this page" option. The footer contains logos for the European Union and the project acronym "W3-W4-4A W4A4.1.0".

Figure 5. MarinERA public web-site.

1. InfoBases/Databases

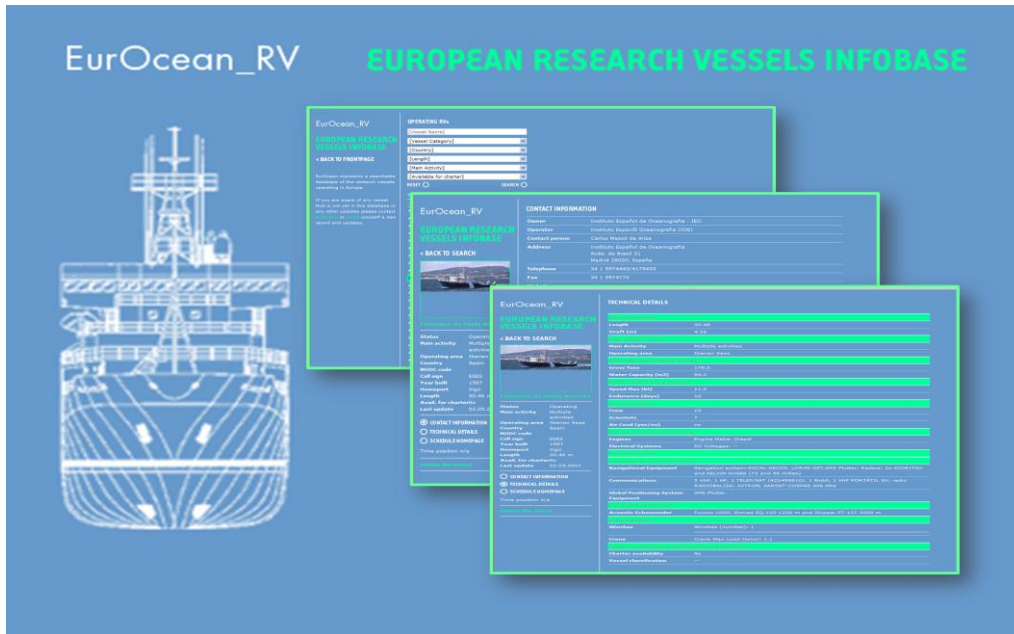


Figure 6. Search and result pages from the EurOcean_RV InfoBase.

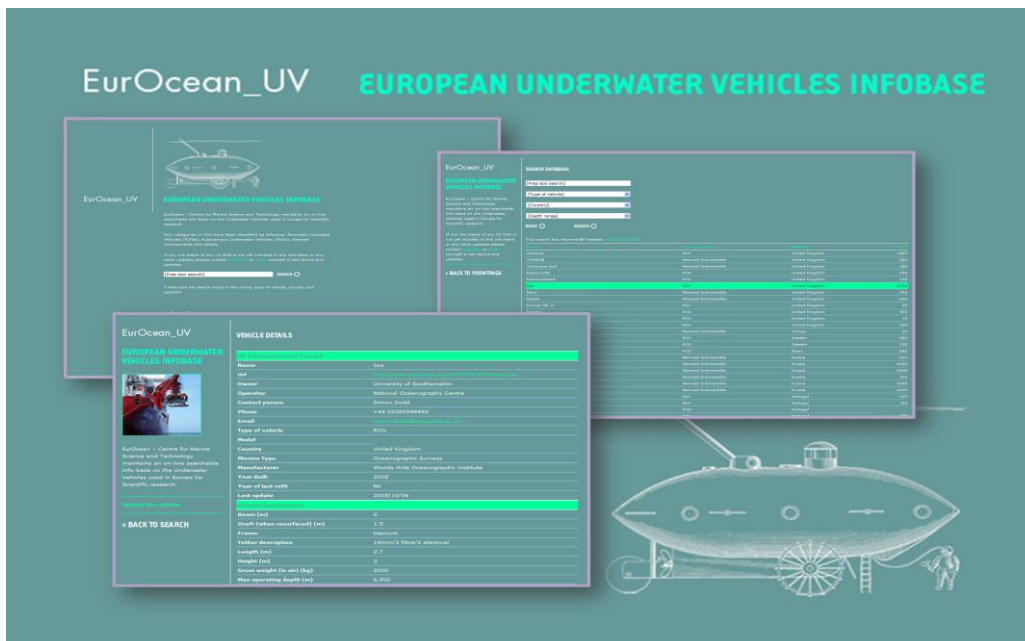


Figure 7. Search and result pages from the EurOcean_UV InfoBase.



Figure 8. Search and result pages from the EurOcean_LEXI InfoBase.

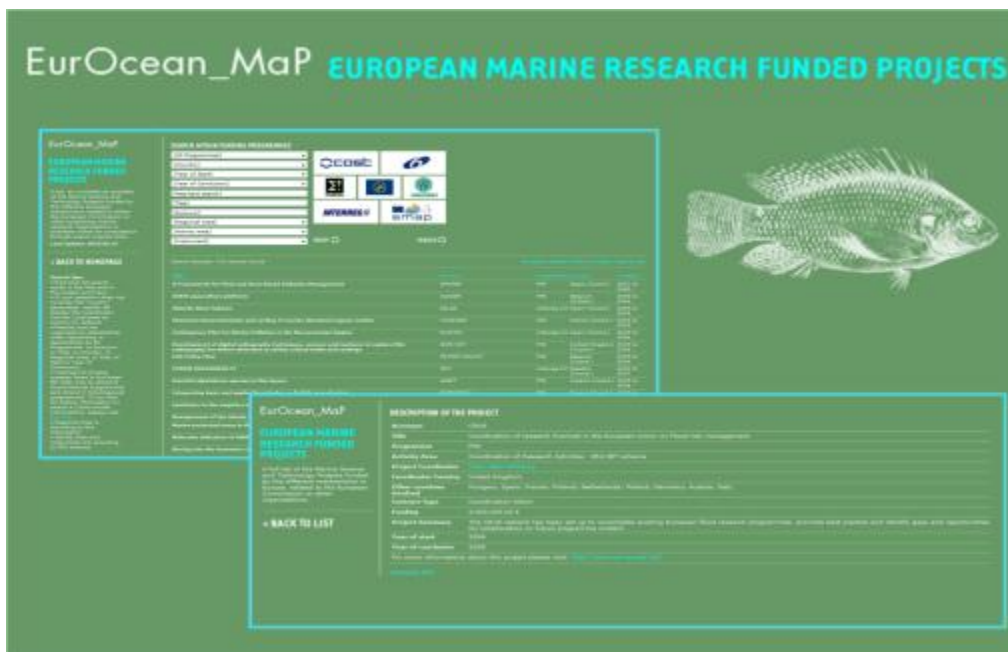


Figure 9. Search and result pages from the EurOcean_MaP InfoBase.



Figure 10. Search and result pages from the AMPERA Database.



Figure 11. Search and result pages from the MariFish Database.

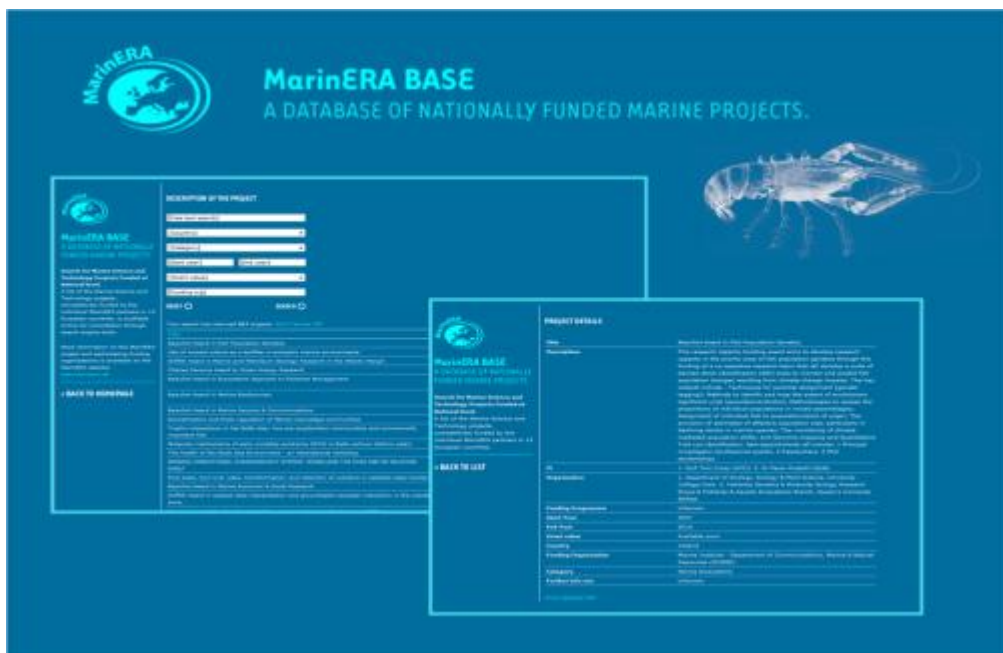


Figure 12. Search and result pages from the MarinERA Database.

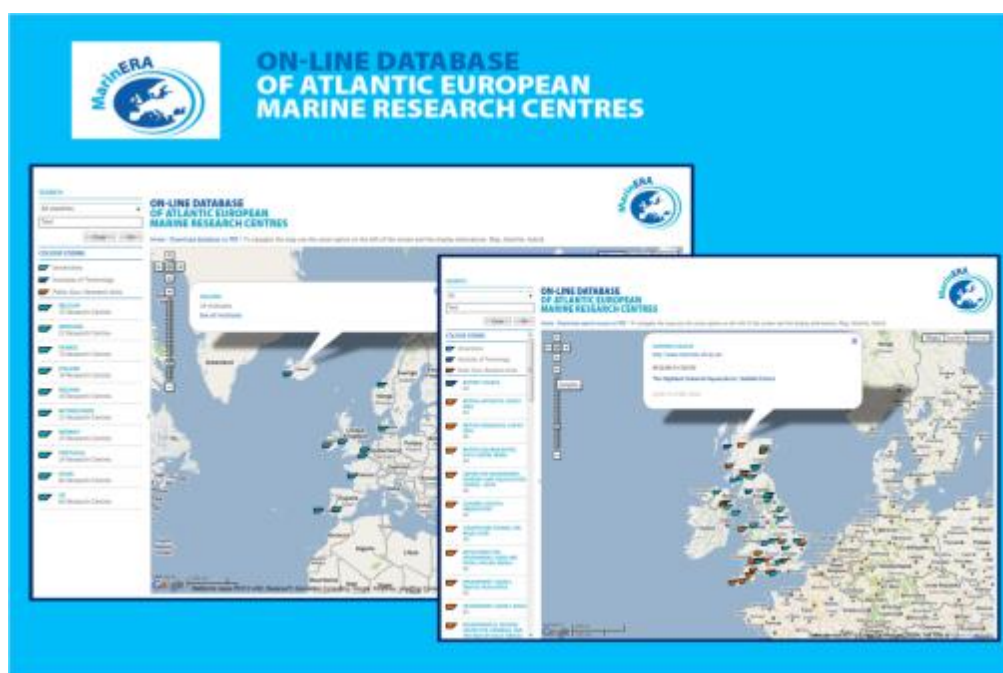


Figure 13. Search and result pages from the Online Geo-referenced Database of Atlantic European Marine Research Centres.



Figure 14. EUROFLEETS European Vessels Database.

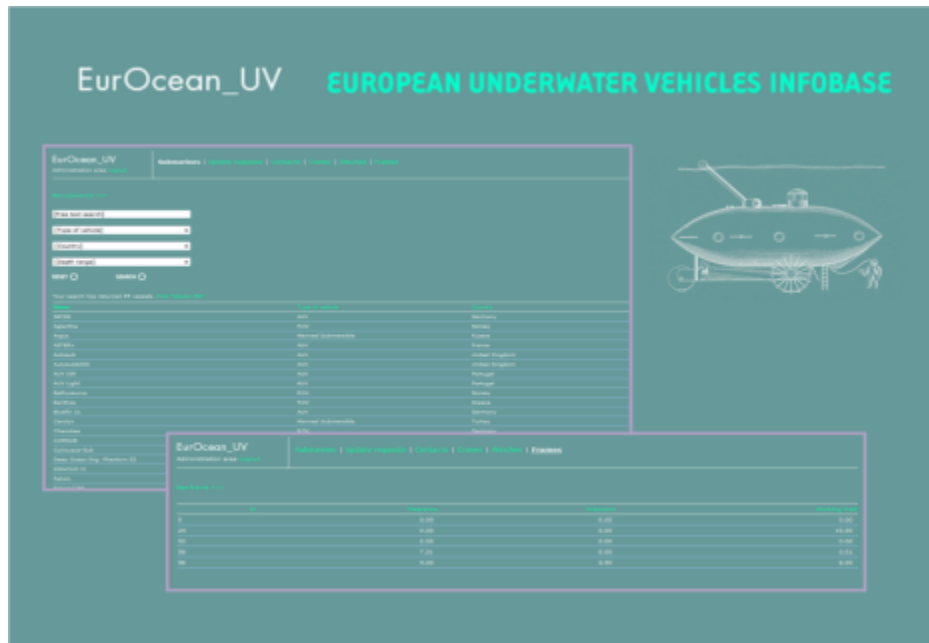


Figure 17. Some pages of the EurOcean_UV InfoBase's edition module.



Figure 18. Some pages of the EurOcean_LEXI InfoBase's edition module.

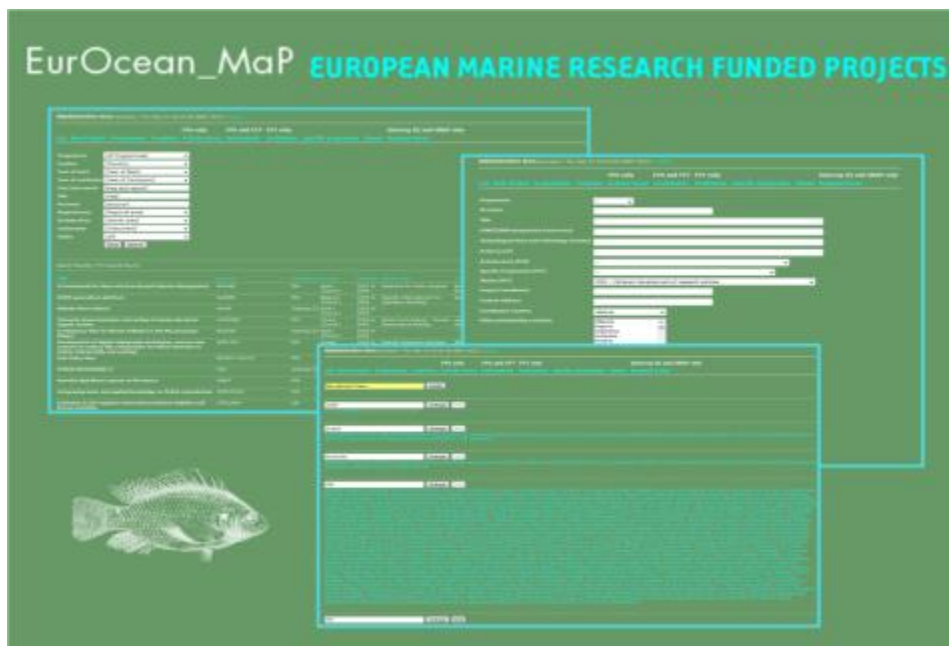


Figure 19. Some pages of the EurOcean_MaP InfoBase's edition module.

3. Extranet module



Figure 20. Some pages of the EurOcean's extranet module.



Figure 21. Some pages of the MarinEra's extranet module.

4. Electronic newsletters



Figure 22. Example of the EurOcean electronic newsletter.



Eurofleets

Towards an Alliance
of European Research Fleets



Call Open

Launch of the EUROFLEETS Ship-time "Ocean" and "Regional 1" 2010 Call

Invitation to the PhD course in Sea-truthing for calibration and validation of satellite ocean colour imagery of coastal zone and lakes 16th-23rd of May at Askö Marine Laboratory, Sweden

Forthcoming call for EUROFLEETS multidisciplinary marine science ship-based training courses for postgraduate students of marine-related sciences

ECRI2010 - European Conference Research Infrastructures

EUROFLEETS will be presented at the ECRI2010 in Barcelona on the 23rd March 2010 through the Spanish Beneficiary CSIC.

IMDIS 2010 - International Conference on Marine Data and Information Systems International Conference on Marine Data and Information Systems (IMDIS 2010)

EUROFLEETS will be presented at the IMDIS2010 in Paris on the 29th March 2010 through the French Beneficiary Ifremer.

EUROFLEETS stand on the 2010 European Maritime Day

EUROFLEETS will present promotional materials at the 2010 European Maritime Day to be held in Gijon on the 19th May 2010.

Figure 23. Example of the EUROFLEETS electronic newsletter.

5. Posters



Figure 24. EurOcean’s institutional poster.



Figure 25. European Research Fleet statistical poster.



Figure 26. European Underwater Vehicles statistical poster.

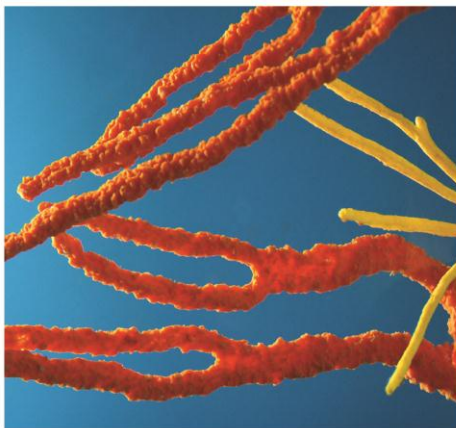
6. Leaflets

EurOcean is a focal point for information on marine science and technology in Europe and its Internet portal is aiming to provide information on topics related to marine science and technology in Europe with a priority given to two main domains: **marine research infrastructures** and **European research, technology and development information**. EurOcean contributes to the initiatives aiming to implement a Marine European Research Area and a European maritime policy.

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European Centre for Information on Marine Science and Technology

**Bridging
European
Marine Information**



COLLECT AND AGGREGATE

High priority has been given to facilitate access to information about **Marine Research Infrastructures** and **Marine Research Projects** funded at European level.

ANALYSE

Online updated indicators on the European Operating Research Vessels.
Statistics on the marine research projects funded under the 6th Framework Programme of the EC.

NETWORK AND DISSEMINATE

An Electronic platform of communication for all users with interest in European marine science and technology. Technical harmonization and common search tools for various infobases.



Figure 29. EurOcean’s institutional leaflet.

EUROFLEETS BENEFACTORIES

- French Research Institute for Exploitation of the Sea (IFREMER), France
- Alfred Wegener Institute for Polar and Marine Research (AWI), Germany
- National Institute of Oceanography and Experimental Geophysics (INOG), Italy
- Spanish Institute of Oceanography (CSIC), Spain
- Hebrew Center for Marine Research (HCMR), Greece
- United Environment Research Council (UERC), UK
- Foundation for Science and Technology (FCT), Portugal
- Max Planck Institute for Marine Microbiology (MPIMM), Germany
- National Research Council (CNR), Italy
- Institute of Marine Sciences - Middle East Technical University Turkey (METSU), Turkey
- National Institute of Marine Geology and Geo-ecology (GEO/MAR), Slovenia
- Marine Institute (MI), Ireland
- Institute for Marine Research & Research Studies (IMARS), Netherlands
- Spanish National Research Council (CSIC), Spain
- Royal Belgian Institute of Natural Sciences (RIBINS-IMARES), Belgium
- Institute of Oceanography of the Polish Academy of Sciences (IOPAS), Poland
- French Polar Institute Paul Strubbe (IPVF), France
- Institute of Oceanography - Bulgarian Academy of Science (IO-BAAS), Bulgaria
- Helmholtz Zentrum - Center for Marine Environmental Sciences (HZM/MER), Germany
- Marine Information Service (MARIS), Netherlands
- Instituto Fundacion Barcelonaa, Portugal
- Tallinn University of Technology (TUT), Estonia
- Flemish Marine Institute (VIZI), Belgium
- Institute of Marine Research (IMR), Norway

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<http://www.eurofleets.eu>

EUROFLEETS is a European Union 7th Framework Programme (FP7) Research Infrastructures project, involving 24 marine research institutes, universities, foundations and Small/Medium Enterprises (SME) from 14 European and 2 Associated Countries, covering all sea-regions.

EUROFLEETS overall objective is to bring together the European Research Fleets, operators and/or owners, to enhance the coordination and cost-effective use of the vessels and equipment in order to support the most efficient provision of essential research support services for the monitoring and sustainable management of the ocean, and enhance access to the European research vessel fleets for all European marine scientists.

EUROFLEETS aims, through its three activities - Networking Activities, Trans National Access and Joint Research Activities, to:

- Define a common strategic vision for European research fleets and associated heavy equipment (e.g. underwater vehicles as ROV and AUV);
- Promote a more cost-efficient use of the existing European Ocean/Global and Regional class research vessels and develop their interoperability capacities;
- Facilitate sharing of knowledge and technologies across fields, and between academia and industry;
- Promote "greener" and more sustainable research vessel operations;
- Provide all European scientists with access to high performing research vessels and equipment on sole condition of scientific excellence;
- Foster joint and coordinated development of European research vessel fleets in terms of capacity and capabilities.

Goal: Aiming at bringing together the European research fleets to enhance their coordination and promote the cost-effective use of their facilities.
Project acronym: EUROFLEETS
Funding scheme (FP7): Integrating Activities (IA)
EU financial contribution: 7.2 M. Euro
Start date: 1 September 2009
End date: 31 August 2013
Project Coordinator: Jacques RIBOT, Ifremer
Number of Countries: 16
Number of Beneficiaries: 24 Institutions
Number of Vessels: 18

<http://www.eurofleets.eu>

Figure 30. EUROFLEETS' institutional leaflet.

7. Statistical reports



By observing the charts below (see figure 22), it is clear that Individual driven actions were the most favoured by the FPA, amounting to 37% (105) of all the Marine Core Actions devoted to marine research, however these actions only gathered 27% of the funds attributed to the total Marine Core Actions of marine related research. In the perspective of the funding awarded to the first-driven actions that gathered more funds, specially the networks for Early-stage training (20%) and research training networks (20%) that represent the larger investment, considering the large amount of funding available for such actions and the small number of grants awarded.

Figure 22. Distribution of marine funded projects on Marine Research and M&DT, by funding instruments in number and in funds.

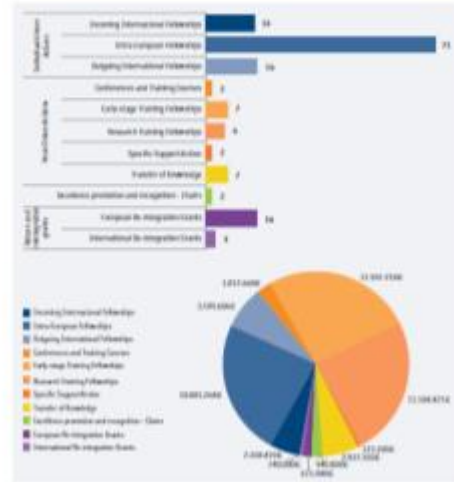


Figure 31. EurOcean’s statistical report on the marine science and technology projects funded under the 6th Framework Programme of the European Community.

8. Educational brochures

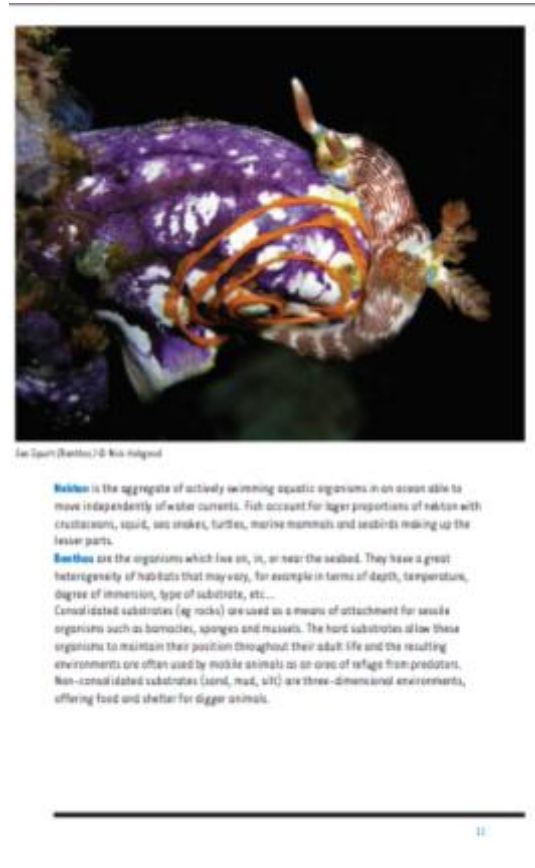
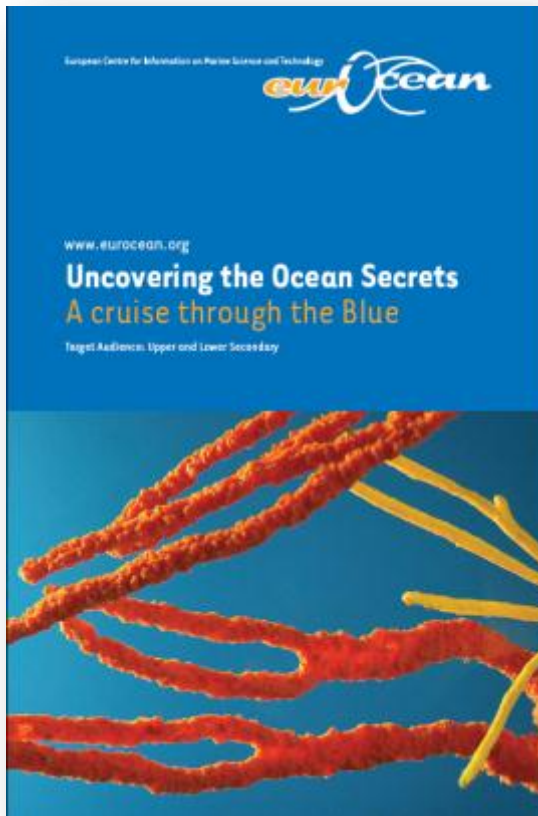


Figure 32. EurOcean’s educational brochure for upper and lower secondary students entitled “Uncovering the Ocean Secrets – A cruise through the Blue”.

9. Logos



Figure 33. EurOcean's logo.



Figure 34. Seas-ERA project's logo.



Figure 35. EuYmast Forum's logo.

10. Office Materials



Figure 36. EurOcean’s institutional folder.



Figure 37. EurOcean’s institutional cards.