



**14th European Research Vessels Operators (ERVO)
Annual Meeting**

8 – 9 May 2012

**IMAR/DOP – University of Azores
Horta – Faial Island - Portugal**

INDEX

Monday 7th May 2012	3
1. Evening Welcome Dinner	3
Tuesday 8th May 2012	3
2. Welcome & practical arrangements (<i>E. Isidro, UAç, Portugal</i>)	3
3. Opening of ERVO 2012, Round Table & Approval of ERVO 2011 minutes (<i>J. Dañobeitia, CSIC, Spain</i>)	3
4. DOP and their research vessels: past, present and future (<i>E. Isidro, UAç, Portugal</i>)	3
5. New Builds: Simon Stevin - lessons learned from designing a RRV (<i>A. Cattrijsse, VLIZ, Belgium</i>)	4
6. Coffee break & national update posters	5
7. New Builds: RV SONNE (<i>K. Von Bröcke, IFM – GEOMAR, Germany</i>)	5
8. New Builds: RV Elisabeth Mann Borgese (<i>L. Meinders, Schiffahrts GmbH & Co. KG, Germany</i>)	7
9. Fuel price rises: a challenge for RV operators? (<i>A. Fitzgerald, MI, Ireland</i>)	7
10. Lunch	8
11. Eurofleets: main results after 3 years (<i>J. Binot, Ifremer, France</i>)	8
12. Update on Eurofleets Interoperability workpackage (<i>A. Fitzgerald, MI, Ireland</i>)	8
13. Eurofleets greening the RV fleet: results and way forward (<i>A. Cattrijsse, VLIZ, Belgium</i>)	10
14. Eurofleets Fleet Evolution Group: RRVs foreseeable evolution (<i>G. Magnifico, CNR, Italy</i>)	12
15. Coffee break & national update posters	13
16. Eurofleets2 project (<i>J. Binot, Ifremer, France</i>)	13
17. INMARTECH 2012 (<i>E. Koning, NIOZ, The Netherlands</i>)	13
18. End Meeting	14
19. Gala Dinner	14
Wednesday 9th May 2012	14
20. Toward a Mediterranean Research Fleet: a contribution to an integrated maritime policy in the Mediterranean Sea-basin (<i>G. Magnifico, CNR, Italy</i>)	14
21. A new French fleet organisation (<i>O. Quédec, IFREMER, France</i>)	16
22. Coffee break & national update posters	17
23. Discussion on ERVO’s future (<i>All</i>)	17
24. Other business (<i>J. Dañobeitia, CSIC, Spain</i>)	18
25. Topics, date & place ERVO 2013 (<i>J. Dañobeitia, CSIC, Spain</i>)	18
26. Closing of ERVO 2012	18
27. Lunch	18

The **14th ERVO (European Research Vessels Operators) Annual Meeting** was organised by the Department of Oceanography and Fisheries of the University of Azores (Faial Island, Azores, Portugal) from Tuesday the 8th to Wednesday the 9th of May 2012.

22 representatives attended the meeting from 17 organisations and 11 European countries (*Annex 1 – Attendance list*).

Monday 7th May 2012

1. Evening Welcome Dinner

The Welcome Dinner for delegates and guests was kindly offered by the City Mayor and occurred from 7:30 p.m. at the Noble Saloon of the Council House, where a finger buffet and refreshments were available.

Tuesday 8th May 2012

2. Welcome & practical arrangements

Eduardo Isidro, UAç, Portugal

The participants to the 14th ERVO meeting were welcomed and some practical arrangements were provided (coffee breaks and lunches, gala dinner, wireless connection in the meeting room and so on).

3. Opening of ERVO 2012, Round Table & Approval of ERVO 2011 minutes

Juanjo Dañobeitia, CSIC, Spain

The ERVO chairman welcomed all the participants to the 14th ERVO meeting, thanked the local organizing committee and opened officially the meeting (*Annex 2 – Agenda of the meeting*).

Each ERVO participant provided a brief personal introduction at the meeting. The minutes of ERVO 2011 meeting, organised by the National Research Council of Italy from Tuesday the 10th to Wednesday the 11th of May 2011, were approved without comments.

4. DOP and their research vessels: past, present and future

Eduardo Isidro, UAç, Portugal

The Department of Oceanography and Fisheries of the University of Azores, its resources (human and oceanographic infrastructures) and the research activities carried out were presented:

- Created in 1976, member of IMAR (the Institute of Marine Research, a non-profit private organisation) since 1991 and member of ISR (Institute for Systems and Robotics) since 2001
- Human resources: 30% permanent positions and 70% not permanent positions
- More recent research projects: CORALFISH, MEFEPO, MADE, CAREX, HERMIONE, CONDOR and MARPOF
- Oceanographic infrastructures: R/V “Arquipélago” (26 m multipurpose RV for fisheries and oceanography), L/I “Águas Vivas” (11 m RV for coastal work) and 4 rubber boats for coastal work (Maré Alta, Zífió, Arion and Pintado)
- Operational areas: Azores, Madeira and Cape Verde

- Scientific equipment: CTD/Rosette, ADCP, oceanographic moorings, Bongo plankton nets, tucker trawl, echosounding systems (Multibeam sonar Reson 8160 - 50kHz beam-forming system, Multibeam sonar Reson 8125 beam-forming system, interferometric swath sonar SEA Swathplus - 117 kHz phase-measuring system), imaging systems (Drop-down Cameras, ROVs, AUV)
- Cooperative missions: *LabHorta* – Large Scale Facility for experimental studies on deep-sea organisms
- The near future: conversion of a small fishing vessel into a research vessel
- Perspectives: replacement of RVs “Arquipélago” (by a 35 m long RV) and “Águas Vivas”

5. New Builds: Simon Stevin - lessons learned from designing a RRV

André Cattrijse, VLIZ, Belgium

The replacement process of the RV “Zeeleeuw” with the new coastal RV “Simon Stevin” and the lessons learned from designing the vessel were presented.

Firstly, some information on RV “Zeeleeuw” was provided:

- Refit Pilottender
- Coastal Zone
- Daytrips, short time scheduling
- 150 days at sea

The first idea of the new coastal RV was presented:

- Approx. 30-35m, draught max 3m
- 10 (8) scientists + 10 crew
- 20 passengers for daytrips
- Mainly daytrips, max 5 days at sea
- Near coastal area Belgium – Southern Bight NS
- Comfortable seakeeping behaviour up to 2m Hs
- Multibeam, ADPC on drop keel or mount
- usbl on retractable mount
- DP, silent, 12Kn
- Main winches below deck = plus
- Work deck 8x8m
- Wet, dry & survey lab
- Carry lab container(s)
- Workboat for work in shallow water (<7m)

The replacement process was then illustrated:

- Cost estimated at 12M € (VAT incl.)
- Tender published June, closed September 2009
- Offers received from Damen (NL) & Larsnes (N), both rejected
- Bilateral negotiations during spring 2010
- Contract signed August 2010
- Detailed design September 2010-March 2011
- First steel cutting 1 April 2011
- Delivery 25 May 2012
- First science campaigns August-September 2012

The main features of the new coastal RV “Simon Stevin” were shown:

- Breadth 9.4m , draught 3.5m , L36m
- 10 scientists + 10 crew: two cabins less = more lab/deckspace

- 20 passengers for daytrips
- Mainly daytrips, max 5days at sea
- Near coastal area Belgium – Southern Bight NS
- Comfortable seakeeping behaviour up to 2m rolling <10°
- Multibeam, ADPC on blister, no hull mounted usbl
- DP0, ICES209 up to 9Kn, 11Kn
- Main winches below deck but wiring demanded extra space on deck
- Work deck 8x4 m
- Wet, dry & survey lab
- Carry 20ft & 10ft lab containers
- Workboat for work in shallow water is also FRQboat

Other information on the new coastal RV “Simon Stevin” was given:

- Not enough storage space
- Spacious engine room but workshop cramped with electric boards
- Sci & nav wiring not well anticipated
- Blister & bubble sweepdown still to be evaluated
- Aft work deck is relatively tight
- Workboat for work in shallow water is also FRQboat

Finally, lessons learned were presented:

- Write tender with much care
- Know the national/European law on public tendering and its capacities
- Price is not necessarily the only parameter in final judgement
- Talk heavily with yard, then discuss some more
- Try to get informed on all consequences of certain decisions/options
- Talk even more with RV operators
- Expert panel - Interoperability
- Feedback to scientists why not honoured requests
- Buying off the shelf is feasible – dedicated yard necessary
- Go green

6. Coffee break & national update posters

The national updates were presented with a poster session.

7. New Builds: RV SONNE

Klaus Von Bröckel, IFM – GEOMAR, Germany

The replacement process of RV “Sonne” was illustrated:

- Tendering procedure started in 2009. For the first time the tender was for the construction as well as for the operation of the ship for 10 years. That is for a consortium consisting of a shipyard and a shipping company.
- Four consortiums submitted an offer. Then, the whole process of negotiating (with several offers and tenders) took nearly 1.5 years. Finally, in July 2011 the contract was signed for the construction of the ship as well as for operating the ship for 10 years.
- Construction is taking place within the Meyer Shipyard company in Papenburg (famous for huge cruise liners) at the Neptun shipyard in Warnemünde.

- Ship operator will be the Reedereigemeinschaft Forschungsschiffahrt (RF) in Bremen (owner of the old RV “Sonne”).

A short history of the old RV “Sonne” was presented:

- 1969: built as stern-trawler
- 1977: conversion into a global multidisciplinary research vessel
- 1991: extension and modernisation
- Work area: mainly Pacific and Indian Ocean
- Field of work: mainly geophysics and multidisciplinary oceanography
- Chartered by Federal Ministry of Education and Research for 250 days per year
- Owner: RF-GmbH, Bremen

A comparison of the main technical features (length, width, draught, displacement, speed and so on) between the old and the new RV “Sonne” was made.

A general description of the new RV Sonne was given. General arrangement of the third deck (working deck), the second deck and the first deck was also presented.

Details on lifting devices (folding A-frame, multifunction cranes, beams and winch room) were given. In particular, a model of working deck (scale 1:50) with all lifting devices was illustrated: it allows to simulate all desired functions and helps to find weak points as well as necessary changes.

Some technical details on the hull design were also given:

- Echosounder challenge:
 - avoid bubble sweep-down
 - huge transducers for deep-sea multibeam echo-sounder (0.5° x 1° beam-opening total space - 16 m x 8 m)
- First solution: first drawing “dent” plus integrated gondola:
 - first tank tests resulted in max. speed of 15.3 kn (15 kn required)
 - shipyard put “cowcatcher” underneath (they called it “iron”)
 - following tank tests revealed: 20 to 25% more power needed to reach same speeds as without “cowcatcher”
 - a different bow-form and some small changes might have resulted in about 4 % less loss due to “cowcatcher”
- Final solution: hull with integrated gondola, an optimized “dent” and optimized, slightly different bow-form
- Computer simulations as well as tank tests show bubble sweep-down behind last cross-beam of hydroacoustic devices

Regarding the general design features, several suggestions were received from shipyard, controlling station and two design offices. Final solution is:

- Dark grey hull with German banderol
- White superstructure
- Red lifting gear and funnel
- “SCIENCE” label on both sides.

The RV will be ready to science by the end of 2014 for a total cost of € 112 millions.

8. New Builds: RV Elisabeth Mann Borgese

Lothar Meinders, Schiffahrts GmbH & Co. KG, Germany

The replacement process of the “Professor Albrecht Penck”, in service from 1951 to 2010, was presented.

After an analysis of the German RV fleet, due to budget limitations, it was decided to convert a navy multi-purpose vessel into a multidisciplinary vessel for Baltic research.

The following principal changes were made:

- New space:
 - omission of crew mess room, one cabin, duty office, hydraulic room
 - movement of hospital, toilet, paint store, CO₂ room, deck store, garbage room
- New benefits:
 - new central entrance
 - new area with fixed labs
 - hospital for extended cruises
 - mess room which could be used as presentation room

Some details were also given on CTD (launching arrangement and door), cranes in deck, clean water system, wet lab and sonar.

The new RV “Elisabeth Mann Borgese” of the Leibniz Institute is operative since 2011.

9. Fuel price rises: a challenge for RV operators?

Aodhan Fitzgerald, MI, Ireland

Firstly, a graph of the fuel (distillate fuel oil, residual fuel and natural gas) price projections through 2035 was presented (source: EIA Annual Energy Outlook - 2012 Delivered). It is clearly evident that the distillate fuel oil will double in the next 20 years.

The projected cost per litre marine gas oil to 2035 (based on last 3 years average costs) was also illustrated. The cost per litre of marine gas oil will double from 2012 to 2035.

Data on the current Marine Institute (MI) situation were presented:

- RV “Celtic Explorer” annual fuel (marine gas oil) consumption per year (2010, 2011 and 2012),
- RVs “Celtic Explorer” and “Celtic Voyager” usage of marine gas oil per year (2010, 2011 and 2012),
- Increased vessel activity - RVs “Celtic Explorer” and “Celtic Voyager” operating days per year (2010, 2011 and 2012)
- Recent large fuel cost increase - Irish RVs (Celtic Explorer + Celtic Voyager) – annual fuel usage (2010, 2011 and 2012)

On current projections the vessel fuel bill will be € 400,000 greater than 2011 and this will have a major impact on other areas, such as for example renewal of the equipment.

What MI did by dealing with the large fuel cost increase was presented:

- Budgeting:
 - it was used a realistic cost estimate when budgeting for fuel for the year

- e.g. est 55 cent for 2011, est 70 cent for 2012, estimated fuel usage based on survey type and days at sea
- Purchasing:
 - bulk purchases where possible and careful planning to avoid expensive bunkering locations
 - it was used a fuel procurement agency Lindsay Blee & Co Ltd (International Bunker Brokers) to secure the best price from all suppliers
- Consumption:
 - Celtic Explorer is strictly used in single engine silent mode for passage and survey work (with safety exception), any deviation from this mode requires permission from shore management
 - Vessel utilises 1.5 – 2 engines in DP mode, vessel now encouraged to use DP less e.g. anchor where possible rather than DP
 - Longer port calls vessel is powered using external generator (500kva) with lower fuel consumption
 - Ships officers encouraged to optimise routing to minimise fuel consumption

10. Lunch

11. Eurofleets: main results after 3 years

Jacques Binot, Ifremer, France

The achievements of the Eurofleets project after 3 years were briefly presented.

Firstly, general information on Eurofleets project 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

Some details were also given on Trans National Access calls:

- 3 calls in 2010 and 2011: Global/Ocean (1) and Regional (2)
- 6 cruises funded o/b Global RVs for 77 days and 12 cruises funded o/b Regional RVs for 101.6 da
- Total funded budget > 2.7 million euro
- 3 “cruiseless” RVs
- A lot of cruises already successfully carried out; 2 planned for 2013

More information about the Eurofleets project can be found at www.eurofleets.eu.

12. Update on Eurofleets Interoperability workpackage

Aodhan Fitzgerald, MI, Ireland

An update on the Eurofleets Task 4.1 “Interoperability” (Workpackage 4: Operational issue – contribution to operational fluidity within European research fleets) was given.

The main aim of the sub package 4.1 is to examine the potential for interoperability of large scale European equipment on European research vessels under several headings, including technical considerations, technical support, insurance, transport & logistics, payloads and cost.

Task leaders went beyond what was required in the DoW including all LEXI on the EurOcean database and including all Global and Oceanic class RV's with the potential to exchange equipment.

The following equipment types were considered in the analysis: ROV, AUV, Seismic, Submersibles, Deepwater drop and towed camera, Towed bodies (Sidescan sonar, sub bottom profiler, other), Deep water multibeam, corers, other.

The methodology used in the analysis was presented:

- For each piece of equipment, the owner/operator was asked to complete a set of technical and logistical criteria
- The second phase of the task involved looking at the technical specifications received for the LEXI's and assessing whether they were capable of deployment on the European RV fleet
- The list of appropriate or available RVs for this exercise was whittled down to 39 Global and Ocean class vessels
- A matrix diagram was developed with the RVs owned by Eurofleets partners or Member States on one side and LEXI on the other
- A colour coding was used to identify three categories or designations for each piece of equipment (capacity to deploy, possible deployment on with minor modifications, cannot deploy, vessel not capable e.g. no D.P.) and each of the 39 RVs
- Once a colour code/designation was initially assigned to each RV, the collated questionnaires for all of the LEXI and the matrix diagram were re-issued to the RV operators to ask them to check our preliminary assessment
- 13 of the 39 RV categories with the vessel operators were confirmed
- The assumption that these equipment are the primary, or the only, operation on board the vessel at any one time was made

Task 4.1 within NA4 of Eurofleets has succeeded in completing nearly 900 individual interoperability assessments for Large Exchangeable Instruments across the entire European RV fleet.

Table of the interoperability across the European RV fleet for Large Exchangeable Equipment was illustrated and discussed. Graph of maximum number of containers required to transport equipment to and from RVs, graph of maximum weight of transporting equipment to and from RVs and graph of maximum mobilisation and demobilisation days on board RVs were also presented.

Concluding remarks were then given:

- Structured exchange programme for technicians to facilitate training on other systems would be very useful
- Eurofleets and/or OFEG could consider group insurance for LEXI's being bartered or chartered through exchanges. Alternative is legal agreement setting out mutual liability regime
- Customs and excise not an issue
- Potential to "pool" high cost spares
- Commonality for items like specialised sampling equipment (suction samplers etc)
- Draft protocol for exchange of instruments been set out

- Recommend specifically identifying in Eurocean database which equipment is available for barter or charter

13. Eurofleets greening the RV fleet: results and way forward

André Cattrijse, VLIZ, Belgium

A short introduction of the Eurofleets WP3 on Eco-Responsibility and Eco-design for existing and new research vessels was given. 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

Firstly, the current status of the environmental performance of the European regional research vessel fleet was presented:

- Operators generally follow the international conventions
- In case of the older MARPOL annexes (I, IV & V) extra efforts are being made by some operators to minimize the impact of vessel and science operations at sea beyond those international laws, i.e. to green their operations and vessels
- It seems that for the more recent conventions, the majority of operators stick to simple compliance with the rules
- The vessel operating community adapts, maybe slowly, but surely to a environmentally more friendly activity
- When operators choose for greening it occurs equally for smaller and larger vessels (< 400GRT)
- There is still quite some “margin for growth”, while all operators consider the environment important enough to consolidate an environmental policy into management systems that are even often certified, the overall tendency seems to adopt what is legally asked for
- Some operators indicate absence of compliance with international regulations

Technologies or operational measures improving a ship’s environmental impact beyond the legal requisites of international conventions were defined as “green”. All efforts aiming at meeting the legal requirements were not considered “green” even though they are implemented to make a vessel and/or its activities environmentally friendlier. It was pointed out that “green” is a fashionable phrase, but the “green ship” does not exist and a total environmental impact free vessel is yet to be build. The term “greener” ship is probably a better wording. The continuous development and improvement of technologies to evolve into better performing versions gradually narrows the definition of the word “green”.

Applying whatever sweep of green technologies on-board a vessel does also not suffice. Creating environmental awareness amongst shore staff and crew by continued training and follow-up is paramount.

The European Marine Equipment Council (EMEC) has identified seven topics where currently existing green technologies can when integrated make today’s ships 15-20% cleaner. EMEC

anticipates that if these technologies could be further developed in the near future, ships could even be made 30% more eco-friendly (Green Ship Technology Book, 2010).

The seven issues that according to EMEC should be taken into account to reduce the environmental impact of ships are:

- Reduction of air emissions
- Ship waste disposal
- Bilge water treatment
- Black water treatment
- Grey water treatment
- Ballast water treatment
- Anti-fouling systems

A list of available “green” ship designs was presented as a result of a recent and on-going discussion on the LinkedIn forum “Green Ship Technology” and further searches in open sources. Some of these designs have effectively been realised while some only exist on paper. Yet, some of these designs have been approved by classification bureau’s (DNV, NYK, BV, LR and GL) and are therefore quite real. Other designs do exist but owners often keep their information hidden or strongly limit details for economic reasons.

The list exemplifies that most existing green ship designs are not totally relevant for research vessels. All designs concern larger merchant vessels (especially tankers and container vessels). Some aspects can be incorporated into (regional) research vessels while only a few designs for smaller ships are available.

Each green/clean ship design focuses on a number of environmentally friendly technologies. Decreasing fuel consumption features as the most prominent aspect. Reducing fuel consumption can be obtained through various ways and hull optimisation and propeller design appear to be an almost constant aspect. Wind aided navigation and air lubrication are also often applied in the designs to further decrease fuel consumption and thus engine exhaust gases. Heat recovery systems and optimisation of auxiliary machinery (cooling systems) are also promising to aid in this respect.

Other techniques include ballast free ship designs and ballast water treatment systems, hybrid power generation (wind, solar power, batteries & fuel cells), gas exhaust cleaning systems to comply with MARPOL Annex VI. LNG as a new maritime fuel is receiving increasing attention and ships operating on LNG are being taken into operation relatively frequently.

Two research vessels have been designed to be environmentally better performing than conventional vessels:

- The University of New Castle is replacing the RV *Bernicia* with a vessel with an improved hull design that makes it 40% more power efficient compared to existing hulls
- Canadian universities and BMT Fleet Technology are currently outfitting the former Canadian Coastguard vessel ‘*Tsekoa II*’ with a hybrid propulsion after which the vessel will serve as a coastal research ship

The NOAA research centre of the Great Lakes (GLERL) achieved a total petroleum free operation of its three smaller research boats/ships in 2006 via the Green Ship Initiative. It took NOAA 5 years from effective start to accomplish.

Yet, even traditional ship designs are nowadays often equipped with a number of green technologies that have become almost standard in the ship building:

- The RV “Simon Stevin”, a 2012 new build for VLIZ, will be equipped with waste heat recovery, vacuum toilets, silicone based and active anti-fouling. The vessel will be ISO14001 accredited
- The Norwegian IMR is currently building a larger arctic research vessel that will be able to run on LNG for limited periods of time
- The Spanish RV “Ramòn Margalef” also contains a number of green features: use of biocide free silicon hull paints, ozone treatment of ballast water, use bio-hydraulic oil, a power management system and a BV cleanship notation

By using a set of issues (including the relevant MARPOL annexes, IMO international conventions on biofouling and ballast water, the EC convention for low sulphur marine fuels, low underwater radiated noise, the code of conduct on marine science operations at sea, training of personnel and the available management tools), a list of new and available technologies to green vessels and their operations was presented. The applicability of each technology for greening research vessels was also discussed.

14. Eurofleets Fleet Evolution Group: RRVs foreseeable evolution

Giuseppe Magnifico, CNR, Italy

A description of the present situation of Regional Research Vessels (RRVs) and of the existing initiatives operating to a renovation of the European regional fleets was given.

As for as the present situation of RRVs, the data reported have been gathered through a survey conducted in 2010 in the framework of the Eurofleets project to describe the current status of the existing European Research Vessels (both the Global/Ocean and the Regional vessels, with length ≥ 35 m) and its long term foreseeable evolution (2011-2020), by using as a main source of information the EurOcean European Research Vessel Infobase.

Concerning the existing projects for new or refit European regional vessels, data have been collected through a questionnaire sent to each Eurofleets members asking for information about the existence of renewal fleet initiatives in each country.

RRVs present situation:

- 35% of the total European research vessels, 15 operating countries
- Homogeneous country distribution, though the northern Europe basins with a more complete coverage than the Mediterranean and Black Seas
- Mostly multipurpose with fisheries research as the second largest activity
- Running costs generally less than 10 K€ per day
- 65% more than 20 years old

This picture clearly evidences that the replacing of older vessels should be a top priority.

Renewal fleet initiatives:

- 20 new or refit vessels available during the next 10 years with a significant rejuvenation of the regional fleet (4 refits of existing vessels, 6 replacements of old with new vessels and 10 new vessels)
- Well country/area distribution of the new/refit RRVs projects
- Approximately only less than 40% in an advanced phase (order placed or finalised design), while a significant percentage still at the pre-design phase
- The progression of the new vessel availability shows that approximately the 74% of vessels would be ready in 2015

The future prospective appears positive if we consider that new vessels are more capable than the vessels they have replaced for what concerns on board scientific equipment, number of scientist cabins, number of laboratories, vessel speed and endurance. A fleet renewal is in general a more cost-efficient strategy than a fleet expansion.

A list of the principal features of new vessels:

- Length roughly uniformly distributed, with a certain prevalence of length greater than 40m
- More than the 70% of vessels may host scientific teams of 10-20 units, usually a suitable size also for multidisciplinary cruises
- Almost all vessels assign special efforts to reduce radiated noise and vibration and to install the dynamic positioning
- Beside the most traditional equipment, both ADCP and multibeam are frequently installed on board
- ROV and AUV of reduced dimension may operate in almost all vessels

After a general discussion, it has been decided to send the raw data table of the new/refit RRVs projects to all the attendees in order to receive any useful additional information to get an updated picture of the European RRVs foreseeable evolution, paramount to define an effective strategic view of European Regional fleets.

15. Coffee break & national update posters

The national updates were presented with a poster session.

16. Eurofleets2 project

Jacques Binot, Ifremer, France

Some details on the Eurofleets2 project proposal were given:

- 31 marine institutes, universities, foundations and SMEs from 20 European countries (member states with 4 recent ones, 4 associated countries and 1 OCT - Overseas Countries and Territories) agree to propose together their research vessels and their heavy equipment, and their know-how within the Eurofleets2 I3 project
- A significant group of key European marine research actors, covering the totality of the eco-regions
- 12 Work Packages: Networking Activities (6 WPs), Trans National Access Activities (3 WPs) and Joint Research Activities (3 WPs), under the coordination of Ifremer, France

The preliminary planning was also presented:

- Proposal submission: 23 Nov. 2011
- Negotiation period: July 2012 to December 2012, Expected EC contribution: 9 M€ (-5% / original proposal)
- Project starting date: beginning 2013
- Kick-off meeting: March 2013 to be confirmed

17. INMARTECH 2012

Erica Koning, NIOZ, The Netherlands

Firstly, some details on the INMARTECH meetings were given:

- Earlier meetings in Southampton (UK); SCRIPPS, San Diego, (USA); NIOZ, Texel (The Netherlands); JAMSTEC, Yokosuka (Japan); BAS, Cambridge (UK); WHOI, Woodshole (USA); and by Ifremer, Toulouse, (France)
- Initiated, and coordinated, by the annual International Research Ship Operators meetings (IRSO, formerly ISOM)
- The main purpose of INMARTECH is to provide a forum for (operational) marine technicians to meet other technicians and talk about operations at sea
- Aimed to exchange knowledge and experiences, to improve equipment performance, deployment and operational techniques during scientific cruises on research vessels

The 8th INMARTECH meeting was then presented:

- Date and place: 25 – 28 September 2012, NIOZ, Texel, The Netherlands
- Registrations received so far from 13 countries: Australia, Belgium, Canada, Denmark, France, Germany, The Netherlands, New Zealand, Norway, South Africa, Spain, UK and USA
- The meeting format will be different from “normal” meetings like ERVO, low profile because of the type of people attending
- On Thursday afternoon a cruise on RV “Pelagia” with demonstrations of equipment and a dinner on board

The preliminary programme was also presented:

- 5 Sessions: 1) In Situ Observations (Moorings, Landers, ROV/AUV), 2) Coring (Coring, Cooperation, Cables and winches), 3) Seismics (Multibeam, Cooperation, Innovation), 4) Shipboard session (Containers, Handling of equipment, ISIS) and 5) Open session (all other topics that are of interest to the INMARTECH audience)
- In all sessions: Interoperability and Innovation, Lessons learned/ tips and tricks
- Most of the presentation will be “Show and Tell” sessions where participants talk about their own organisation, show their equipment and talk about their marine operations and share their good and, more importantly, their not-so-good experiences
- New RV builds with a poster session

18. End Meeting

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

19. Gala Dinner

The Gala Dinner took place at 8 p.m. in the restaurant “O Barão”. After dinner, a traditional local exhibition took place.

Wednesday 9th May 2012

20. Toward a Mediterranean Research Fleet: a contribution to an integrated maritime policy in the Mediterranean Sea-basin

Giuseppe Magnifico, CNR, Italy

The actions carried out by the European Commission to improve cooperation and governance in the Mediterranean Sea basin were presented and some potential contributions that the ERVO Group could give to the implementation of the European Integrated Maritime Policy in the Mediterranean

Sea-basin were proposed.

In 2007 the European Commission presented its vision for the Integrated Maritime Policy (IMP) for the European Union, which seeks to provide a more coherent approach to maritime issues, with increased coordination between different policy areas. Five specific policies are covered: Marine data and knowledge, Integrated maritime surveillance, Maritime spatial planning, Blue growth and Sea basin strategies.

With specific reference to the Sea basin strategies, six Sea regions have been recognized in Europe: Baltic Sea, Black Sea, Mediterranean Sea, North Sea, Atlantic Ocean and Arctic Ocean. All these sea regions bring both growth and jobs, but only good governance and integrated management may secure their sustainable exploitation.

The Mediterranean Sea-basin is the largest European sea region. It is a unique ecosystem. Although it covers only 0.7% of the worldwide marine surface area, it holds 9% of its biodiversity. The countries surrounding the Mediterranean Sea belong to three different continents: Africa, Asia and Europe. Over twenty different coastal states (of which only 7 are EU Member States) share one marine space hosting diverse and intensive maritime activity and at the same time facing problems which cannot be solved by States or industries acting alone.

The specificities of the Mediterranean sea-basin call for a joint effort to improve maritime governance in the basin. To face that, in 2009 the European Commission presented a strategy aimed at countering the various maritime challenges in the Mediterranean Sea basin for a more sustainable growth in the region. The geographical scope of the initiative is not limited solely to the seven EU Member States bordering the basin, i.e. Spain, France, Italy, Greece, Slovenia, Cyprus and Malta, but naturally seeks to include all other coastal states in the process.

The implementation of the strategy carried out by the European Commission in the Mediterranean Sea-basin is facilitated by the following actions:

- Working Group for the Integrated Maritime Policy in the Mediterranean, to develop common approaches to the maritime policy in the Mediterranean
- Tripartite cooperation initiative together with the European Investment Bank and the International Maritime Organisation, under the Facility for Euro-Mediterranean Investment and Partnership (FEMIP)
- Awareness-raising on maritime affairs, EU funding opportunities, and the benefits of integrated policy-making under the European Neighbourhood Policy South programme

The Mediterranean dimension of the Integrated Maritime Policy focuses on improved cooperation and governance in the Mediterranean, to foster a sustainable growth in the region. However, the development of sustainable maritime economies and effective coastal management requires built on foundations of best available scientific knowledge. A proper understanding of marine ecosystem function demands marine research and marine research requires access to expensive and technologically complex research equipment and infrastructures.

Marine research infrastructures are essential tools for understanding, using and protecting the oceans at global, European, national and, especially, regional levels. Research vessels, fundamental to furthering marine research, represent very expensive assets with high development and implementation costs. They are necessary to marine science to maintain observation system, to monitor oceanographic parameters, to implement sophisticated equipment into the deep sea, to collect rare and sensitive biological samples.

The availability of marine research fleets, and associated marine equipment, therefore is essential for research at sea. The optimization of vessel usage is one of the biggest challenges due to its impact on the ocean research budget, especially considering the present decrease of available resources.

The Mediterranean research fleet is characterized by a lack of a common strategic vision in the way these facilities are managed and therefore a coherent approach to enhance their coordination and promote their cost-effective use is required in order to support the efficient provision of essential research services for monitoring and sustainable management of the Mediterranean Sea-basin.

Some actions were proposed to be developed by the ERVO Group in order to contribute to a more coordination of the Mediterranean research vessels as a contribution to the implementation of the Integrated Maritime Policy in the Mediterranean Sea-basin:

- To set up an ad-hoc MEDFLEET working group or a study group to work on this issue, reporting back to the next ERVO plenary annual meeting; members of this WG should be not only the Mediterranean members of the ERVO Group but also anyone else with research vessels operating in the Mediterranean Sea-basin or involved in similar initiative (e.g. BONUS project, which brings together different actors to address the major challenges faced by the Baltic Sea region)
- To organise a workshop open to European and non European Mediterranean RVs owners and/or operators to foster exchange information on their current and future activities
- To foster interaction with groups/organisations (IMP WG, CPMR, CIESM, UNEP/MAP, RAC/SPA, MedGOOS, MOON etc.) and projects/activities/initiatives (FEMIP, ENP, UfM, IMP-MED, ESFRI projects, FP7 projects etc.) with Mediterranean components by inviting their representatives to attend ERVO meetings or participating in their meeting as observer

As a first step towards a better coordination of Mediterranean European and non-European research vessels and large-scale equipment, it's extremely important to have an updated description of the existing Mediterranean research vessels and large exchangeable equipment operated by each Mediterranean countries, not only in terms of technical information but also in terms of management processes and existing partnerships.

To this regard, the first work that the future potential MEDFLEET WG could do is to set up a study which aims:

- To carry out an extensive survey of the existing Mediterranean research vessels and large exchangeable equipment, including their present status and their foreseeable evolution in the next 5 to 10 years
- To describe the current management processes, including application for and granting of ship-time procedures with their timing, referee and ranking procedures, funding procedures, scheduling procedures and deadlines, technical support before and during research cruises, post-cruise assessment, plans for procurement of new research vessels, equipment and instruments and upgrades of existing ones, equipment pools
- To describe the existing partnerships within the Mediterranean Sea-basin and their respective advantages and limitations (shared investments, common cruises, exchange of ship-time or equipment and instruments, chartering, joint projects/programmes)

After a general discussion, it was decided to start with a small group of RV operators (Portugal, Spain and Italy) in order to make a first analysis of the potential Mediterranean research fleet.

21. A new French fleet organisation

Olivier Quédec, Ifremer, France

The previous and the new French fleet organisations were presented.

In the previous situation there were 4 owners and 4 operators:

- Ifremer (French Research Institute for Exploration of the Sea): 4 ocean class vessels, 4 coastal vessels, a completed panel of submarine and seismic equipment

- INSU (National Institute of Sciences of the Universe): 2 coastal vessels
- IPEV (French Polar Institute): 2 ocean class vessels
- IRD (Institute of Research for Development): 2 regional class vessels

In 2008, the Ministry of Scientific Research supported the creation of the Fleet Strategic and Technical Committee (CSTF), charged mainly with updating the strategy on maritime assets for oceanographic research.

As part of the continuation of a state-sponsored modernisation audit carried out in April 2006 and the conclusions of the CSTF presented in March 2010 and marked by efforts to respond to needs to control the costs of oceanic exploration, the four operators of the fleet decided to create a single fleet administration entity in the form of a *Unité Mixte de Service* (combined service unit - UMS). The UMS has been created on March 03rd 2011.

The new French Oceanographic Fleet aims:

- Integrated scheduling of vessels and equipment (reduce transit time, optimize equipment and teams inter-operability,...)
- Co-ordination of investment policies of the four members in order to avoid redundant investment
- Ability to propose a plan of concerted evolution of the national fleet

In 2014, the work carried out by the UMS will be evaluated in order to audit the benefits of this new French fleet organisation.

Finally, the French oceanographic fleet schedules (years 2011 and 2012) were presented and discussed.

22. Coffee break & national update posters

The national updates were presented with a poster session.

23. Discussion on ERVO's future

All

ERVO meetings were confirmed to be a very important event because they provide an opportunity for research vessel managers to exchange information on their national fleets, highlighting trends in the requirements for sea-going vessels and new technological developments for research vessel operations.

ERVO meetings address common technical, operational, safety, environmental and legal issues/problems that affect research vessel operators for the purpose of identifying solutions for improving services to the scientific community and developing best practice in the operation of research vessels and associated equipment and/or instruments.

ERVO is considered a very useful independent network and one of its strengths is that its activity is entirely driven by participants.

The discussion was then focused on the services currently provided by the EurOcean Office to the ERVO Group. They consist of hosting and maintaining the present ERVO web site in the EurOcean web portal, maintenance of the ERVO membership register, information emails sent by the EurOcean Office on behalf of the ERVO chairman and so on.

During the 13th ERVO annual meeting (10 – 11 May 2011, Oristano, Italy), EurOcean presented and discussed a service proposal prepared for the ERVO Group. Presently EurOcean is still waiting for a formal reply to the proposal.

To this regard, Erica Koning (NIOZ, The Netherlands) presented the new OFEG (Ocean Facilities Exchange Group) website (<http://www.ofeg.org>), developed and maintained by the EurOcean Office.

The current ERVO website (<http://www.eurocean.org/np4/63>), hosted and maintained by EurOcean, was also presented.

At the end of the discussion, the participants decided to establish a small annual membership fee (€ 300) to cover the cost of the services currently provided by the EurOcean Office to the ERVO Group.

E-mail will be sent on behalf of the ERVO chairman to the ERVO members in order to communicate this decision.

A new EurOcean's service proposal, which will focus on the hosting and maintenance of the current website as well as in the acquisition of an independent ERVO domain, will be sent to the ERVO Group by the EurOcean Office.

From an operational point of view, André Catrijsse (VLIZ, Belgium) volunteered to collect the membership fees so as to send the money collected to the EurOcean Office with only one banking transaction.

Finally, it was decided to accept Eduardo Isidro, representing the University of Azores, as a full member of the ERVO Group. The Group considered very important his experience in managing small Research Vessels in the Atlantic. The ERVO chairman will send an official invitation letter to Eduardo.

24. Other business

Aodhan Fitzgerald (MI, Ireland) suggested to identify two or three strong topics of interest for the ERVO members to be discussed in the next ERVO meeting. About three months before the meeting, ERVO members should be invited to reflect on the chosen topics.

25. Topics, date & place ERVO 2013

Next ERVO meeting (15th): 5-6 June 2013, IFREMER, Brest, France

Candidate to host the 16th ERVO meeting in 2014: IFM – GEOMAR, Germany.

26. Closing of ERVO 2012

Meeting closed at 12:30 a.m.

27. Lunch

After lunch, a small trip to visit Caldeira and Capelinhos took place.

Presentations and posters of the 2012 ERVO meeting are available on the EurOcean website (<http://www.eurocean.org/np4/2553.html>).