



**15th European Research Vessels Operators (ERVO)
Annual Meeting**

4-6 June 2013

***Ifremer* Brittany Research Center
Plouzané (France)**

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15th ERVO Minutes

11.35 - New EurOcean infobase on MRI's + EurOcean/ERVO AGREEMENTS (Sandra Sà) ([annex 19 - 19 bis](#))23

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The 15th ERVO (European Research Vessels Operators) Annual Meeting was organized by the Ifremer Brittany Research Center – Plouzané – France from Tuesday the 4th to Thursday the 6th of June 2013.

26 representatives attended the meeting from 16 organizations and 9 European countries ([Annex 1 – attended list](#))

Tuesday 4th June 2013

Icebreaker on board R/V *Thalassa* (Brest harbour) offered by Ifremer where a finger buffet and refreshments were available.

Wednesday 5th June 2013

Welcome and practical arrangements: registration – posters installation – coffee breaks, wireless connection in the meeting room by Olivier Quedec

9.00 - Welcome address by Ifremer Brittany center director (Antoine Dosdat)

Antoine Dosdat congratulated everybody saying how pleased he was to host this 15th ERVO meeting, he explained that Ifremer Brittany center was the most important center in France and represented 40% of the overall Ifremer financial resources. The Main laboratories are also located here.

In any case this marine research center is certainly one of the most important in Europe.

He then set out the main activities of Ifremer Brittany center: ([Annex 2](#))

Ifremer's missions are to conduct and promote basic and applied research, make expert assessment reports and take action for technological and industrial development aiming to:

- identify, evaluate and enhance marine resources and enable their sustainable exploitation
- improve methods of monitoring, forecasting trends, protecting and enhancing marine and coastal environments
- encourage the economic development of maritime activities
- Applied research, initiated by the societal demand or by scientific needs
- Monitoring and expertise for public interest
- Managing large facilities and developing technology

Delivered through 4 scientific departments:

- Biological resources and environment
- Physical resources and deep sea ecosystems
- Oceanography and ecosystem dynamics
- Marine and digital infrastructure

Physical oceanography, remote sensing

Dynamics of coastal environment Information technology and marine data

Marine Biotechnologies

Deep sea ecosystems

Marine geosciences

Physiology of marine organisms
Fisheries science and technology
Marine Economics
Testing and technology research
Monitoring systems
Research vessels, on board systems

Ocean Research Fleet:

Ifremer manages a large part of the French ocean research fleet for the benefit of the French scientific community

4 blue ocean vessels:

- *L'Atalante* (Commissioned in 1990 / Length : 84,6 m)
- *Thalassa* (1996 / 73,65 m)
- *Le Suroît* (1975 / modernisation in 1999, 56,34 m)
- *Pourquoi pas ?* (2005 / 107 m)

Underwater systems:

Ifremer has an entire range of underwater systems operational for the scientific community:

- *Nautile* (manned submersible, commissioned in 1984)*Victor 6000* (remotely operated vehicle, commissioned in 1999)*Aster* (2 autonomous AUV, commissioned in 2004)

Finally, Antoine Dosdat said that due to the economic circumstances, the exchange of views are getting more and more necessary, exchanging becomes very important and for that reason, ERVO represents a real opportunity.

Opening of ERVO 2013, round table and approval of ERVO 2012 minutes

The minutes of ERVO 2012 organized by the IMAR/DOP were approved without comment.

9.30 - Introduction ERVO meeting – hand over of chair (J.J Danobeitia)

It is difficult to speak about marine economy, if you compare with China. In Europe, we are 18 different organizations from 15 countries. We are getting through a difficult phase; the economic situation is acting against us. We thus have to increase our cooperation. Eurofleets leads to an incredible useful amount of information – focused on regional vessels, ERVO meeting shows to be profitable.

He then gave the floor to Giuseppe Magnifico - NRC Italy - who is taking over the chair of this group, Giuseppe Magnifico personally thanked and showed his enthusiasm for the group. He also thanked Olivier Quedec and his staff, saying that he had been proud to be the ERVO vice chair for the past years. He made no secret of the fact that he was worried about this task and felt the responsibility.

The discussions will focus on the future of the group, the character, the relationship. As for Giuseppe, it was important to initiate a discussion about opportunities, perspectives, especially for the ERVO Group which meets once a year.

How we can manage the economic difficulties in the future? He highlighted the importance to discuss, including the Eurofleets debates on this project.

Round table: each ERVO participant provided a brief personal introduction at the meeting.

10.15 - New vice-chair

Giuseppe Magnifico looked for a candidate for the position of the new vice chair. Olivier Quedec was candidate because he has participated for 8 years to the ERVO's meeting. He explained that his main motivation was to help ERVO grow up "from a teenager to an adult".

10.30 - Coffee break and national update posters - (Annex 3 – posters photos 1 - 11)

11.00 - New build RV *Sonne* (K. Lackschewitz, Geomar) - (Annex 4)

Klass was presenting the replacement process of RV *Sonne*, illustrating his comment by a power point.

- 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 (250 days/year). Finally in July 2011 the contract was signed. Construction was taking place within the German Meyer Shipyard company in Papenburg (famous for huge cruise liners) at the Neptun shipyard in Warnemünde Germany.
- Ship operator will be the Reedereigemeinschaft Forschungsschiffahrt (RF) in Bremen (owner of the old RV "Sonne").

Ship yard's schedule:

- 12th April 2012 : keel laying
- 13th September 2013 : floating
- Feb 2014 : first sea trials

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 modernization
- Work area : mainly Pacific and Indic 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 with the main technical features (length, width, draught, displacement, speed and so on) between the old and the new RV *Sonne* was made.

Glass gave an overview of the new RV *Sonne*.

length:	116,0 m	
width:	20,6 m	14,2 m
draught:	6,4 m	6,8 m
displacement:	about 9.000 t	
speed:	15 kn	12,5 kn
crew:	32 pers.	25 pers.
scientists:	40 pers.	

propulsion:	diesel-electric	diesel-electric
endurance:	50 days	50 days
cables + wires:	max. 12.000 m	
scientific rooms:	550 m ²	450 m ²
working deck area:	700 m ²	
20'-container:	25 (4 inside)	
scientific store room:	150 m ²	50 m ²

General arrangement of the decks was also presented as well as some technical details on the hull design.

Echo sounders requirements:

- many different echo sounders and transducers
- largest transducers for deep sea
- multi beam echo sounders Kongsberg EM122 (0.5° x 1°)

Echo sounder challenges:

- Hull design has to rule out air bubble, sweep down from water surface.
- Hull design, special design
- Final solutions: hull with an integrated gondola, an optimized “dent” an optimized, slightly different bow-form.

A frame folding:

- 30 t every position (in the future deployment of the new MEBO)
- height : 10 m
- width : 7.5 m
- range : 7.4

Cranes:

4 cranes cover the overall working deck area
in shore SUL : 12 T
offshore SWL 7 T

Large sliding beam

Installation at the front part of the working deck with crane function to load containers.

- SDL : 7 T
- Height : CA 5 m
- Range : 4 m in board to 4 m outboard
- Yard arm
- Bridge house on starboard side for a good view.

- Hydrophones : 4 installed underneath the hull
- Photos : : low part in dry dock hall
- Box for EM 122 transducer
- Seismic compressors already in place.
- 2 bow parts (upside down) with dent visible
- off part : stern with sliding gate.

More information was available on posters: CA: 124 millions of euros.

Questions/Answers:

Per was impressed by the production time, Klas replied that they started last year

Per also pointed out the contract time (24-28 months)

Klas : regarding the construction organization, every man has to go to the computer to see what's on ? Which Per asked if they could make any prearranged changes, Klas replied that it was impossible to change anything.

11.30 - A new IMR polar RV and the replacement vessel for RV (Dr Fridtjof Nansen)

A new IMR polar RV (Annex 5)

Nowadays, the Norwegian fleet includes 11 research vessels; half of them are operated by IMR.

Norwegian ice going research vessel project

2006 – National study renewal of the fleet 1st polar vessel

1st stage: the need for the vessel – the social economic impact (race for the access to the resources in the North and in the South) – political – high level political support – it corresponds to a scientific need supported by the Minister of Foreign Affairs.

The land board: antarctica/arctica

2009-2012: was a difficult period as the ministries wanted to develop the vessel, finally, they got the funding in 2013.

Project organization

- Ministry of Fisheries : project owner
- Ministry group
- Institute of Marine Research
- Steering committee
- Project manager

The new research vessel will be owned by the Norwegian Polar Institute in Tromsø, but operated by the shipping department of the Institute of Marine Research (IMR) in Bergen. The University of Tromsø is a third partner to use the vessel in its research work in the High North.

Technical specifications:

- Length over all (LOA): 100,0m
- Breadth: 21,0m
 - Draft approx. 8,0m Gross tonnage approx. 9000GT
 - Machinery Diesel/electric (A/C) 10MW thruster effect
 - Two azimuth thrusters (Z-drives) aft
 - Two tunnel thrusters forward
 - Accommodation for 55 persons in 38 cabins (15 crew and 40 scientists & technicians)
 - Helicopter capacity for two small helicopters

- Emergency towing and fire fighting of other vessels
- Diving facilities & mobile pressure chamber
- Loading capacity: 22 x 20 'containers
- DNV-Class: PC-3 Icebreaker Maximum cruising range approx. 15.000nm = Tromsø-Antarctica and back Endurance 65 days

The replacement vessel for Dr Fridtjof Nansen (Annex 6)

The Government of Norway has allocated around NOK 440 million to procure a new research vessel to replace *Dr Fridtjof Nansen*, which has provided support for surveys of the fish resources off the coasts of more than 60 poor countries for 21 years.

The work to procure the new vessel will begin in 2013, and it is expected to be completed in 2016.

The research vessel is part of the EAF-Nansen Programme. So far, more than 60 countries in Africa, Asia and Latin America have received assistance to survey and monitor their marine resources, as well as training and help to improve the management of these resources. The research also focuses on climate change and on environment in African waters.

The vessel *Dr Fridtjof Nansen* has been of continuous use for almost 20 years. It no longer meets all the scientific requirements of the EAF-Nansen Programme. The estimated cost of a new vessel is around NOK 440 million, at today's value. These costs will be spread over four years. NOK 45 million has been allocated in the budget proposal for 2013 to cover the costs of concluding a contract.

Technical details

- | | | | | | |
|----------------------------------|---------|---------|---------|-------|--------|
| - Loa | 70,10 m | Breadth | 18,00 m | Draft | 6,40 m |
| - No. of cabins | 2 | | | | |
| - No. of beds | 45 | | | | |
| - Engine power | 4500kW | | | | |
| - No. of laboratories | 7 | | | | |
| - Auditorium | Yes | | | | |
| - ICES 209 (URN) compatible | Yes | | | | |
| - Dynamic positioning | Yes | | | | |
| - Work boat | Yes | | | | |
| - Fish stock assessment | | | | | |
| - Marine Biodiversity | | | | | |
| - Bottom contour mapping | | | | | |
| - Benthos og sediments | | | | | |
| - Climate effects | | | | | |
| - Pollution : offshore petroleum | | | | | |
| - Training and education | | | | | |

12.00 - New hull-mounted instrumentation on RV *Urania* (F. Trincardi) - (Annex 7)

How can we reach the strategic objectives for Italian waters, considering that we are going through heavy economic problems ?

According to F. Trincardi, the objective was the following one: how can we install two complementary multibeam systems and how to make these two systems co-exist and be complementary ?

- High resolution in shallow water (< 1000 m)
- Full Mediterranean depth (down to 3500 m)

The problem: RV *Urania* is a medium-size vessel (63m) with limited hull space, After a thorough study, the best technical answer was to fit a detached blister on the hull.

F. Tricardi used a power-point to give us more technical details and results.

R/VG Dallaporta blister upgrade

F. Trincardi uses a second power point to explain the upgrade of The R/V G Dallaporta transducers (the previous system being not very performing and of poor use). The new configuration in the blister has four transducers pointing downward (38, 70, 120 and 200 kHz), so that it is now possible to generate four acoustic beams in the water column and one (120 kHz) pointing starboard side.

Question:

Per Nieuwejaar : Quid of the impact on fuel consumption resulting from blisters installation ?

F. Trincardi : reply

12.30 – Lunch at Ifremer salon de la Rade

13.30 – National French fleet evolution plan (Olivier Lefort) – (Annex 8)

Global and regional vessels

Projection in 2021 (analyse conducted in march 2013) :

Very small inflection of the number of day at sea for research: + 100/+150 days

Reduction of public service campaigns of around 50 days

A Global increase of around 100 days (to be compared to 1540 days of activity in 2012)

Geographical repartition should stay the same with a small inflection in Mediterranean sea.

Based on 330 days of activity per vessel and per year the fleet could theoretically be reduced to 4 vessels, and *Le Suroît* could retire. But :

There are huge differences of mission profile between *Marion Dufresne* (long coring), *Thalassa* (fishery stock assessments), *Pourquoi pas ?* (deployment of submersibles), ...

Three vessels are geographically blocked at fixed dates (*Marion Dufresne* around TAAF, *Thalassa* in North Atlantic (DCF), *Pourquoi pas ?* in Atlantic (Navy),

We should not have any more flexibility to accommodate charter with short delay.

When considering the daily cost of *Le Suroît* compare to *Thalassa* there is no real economy when transferring *Le Suroît* activity on *Thalassa*.

Suppression of the existing old 5th ocean vessel has no interest economically or operationally, at the actual level of activity.

Coastal vessels

Projection in 2021:

Request from MFSD, maritime protected areas should increase. But there is no evidence of more budgets to realize those new campaigns and activities.

Due to the new station vessels (less than 15 m) that should enter in service in the gulf of Bisquay, the number of day at sea should be reduced of 100/150 days of resarch for the coastal vessels.

A Global decrease of around 250 days (to be compared to 2430 days of activity in 2012) is expected.

On metropolitan coasts, the needs should be covered by 4 vessels and *Haliotis* oceanographic motorboat.

Two vessels in bay of Bisquay and channel: a new 35 m vessel and Côtes de la Manche (jumboisation of 5 m)

Two vessels in Mediterranean sea: *Thetys* and *L'Europe*

In West Pacific and French Polynesia: *Alis* or his successor **Projects:**

Two main refit projects forthcoming concerning French global and ocean vessels:

- IPEV R/V *Marion Dufresne* modernization (2015 ?) + giant Calypso coring system
- Ifremer R/V *Thalassa* modernization in 2015 - 2016 (MBES installation - coring capacity)

The third and last main project concern the replacement of the Ifremer heavy multichannel seismic system

Le Suroit is an old lady (built 1975 – refitted 1999) but well equipped and cheap vessel. She should be maintained up to 2021.

Question regarding its replacement: no budget until 2017.

Regarding *Nautile* submersible: future questions : replace floating form and develop a new front face. The question of the future of the submarine is open (stop or not?). It is under discussion at the moment. The final decision will probably be at the prime minister level.

L. Naudts: *Nautile* utilization : how many days a year ?

O. Lefort: average 1 campaign a year. Resulting of that low activity, nowadays we have an issue concerning the training of young and new pilots.

13.50 - AC/VS DC motors for RVs (P. Nieuwejaar) - (Annex 9)

Underwater Radioled noise (URN)

Per noticed that at this stage, regarding AC vs DC, not a lot of arguments were available. Concerning the rules, it was a jungle. He however reminded us requirements and standards.

- Reduce risk for fish avoidance (1Hz – 1 KHz)
- Improve signal to noise ratio 1 KH2 – 100 Kh2
- Above 100 kh2 the URN is regarded to be so low not that it cannot disturb the hydro acoustic system.

These different standards exist:

- ICES 209 CRN
- DNV silent
- Other?

The Current Hydroacoustic system frequencies on RV's are: Fisheries echo sounders : 18, 38, 70, 120, 200 and 333 kHz

- ADCP : 38, 75 and 150 kHz
- Sonars : 10 – 120 kHz
- Multibeam echo sounders : 12 – 400kHz
- Sub Bottom Profilers: 0,5 - 100kHz

On this basis, Per presented us an exhaustive and an interesting power point presentation based on the following plan:

Explanation frequency ranges

- details of the URN sources and measurement methods
- comparison between several RV's
- standard propulsion system
- AC motors and/or pods
- AC motors vs Z drive
- New RV Investigator, why AC?
- synthesis board, conclusion : AC or DC ?

14.10 - The maritime labour convention (MLC) – code (Per Nieuwejaar) - (Annex 10)

Per Nieuwejaar presented us the IMR experience and implementation of MLC.

The International labour organization was the 4th pillar of international maritime law and embodies “all up to date standards of existing international maritime labour convention”. MLC convention was ratified by 35 states and will come into force on 20th August 2013.

Per precised that the ISM code did the minimum. He mentioned the differences between seafarers and workers at sea.

Based on a power point, Per Nieuwejaar told us:

presentation of MLC convention

- MLC areas of application
- MLC contents
- IMR starting point
- MLC certification process
- Existing ISM code documents that complied with the MLC
- Existing ISM code document which required minor changes
- DMLC status for IMR
- MLC for new vessels

14.50 : OFEG updating progress on Ocean/Global RVs (Erika Koning) - (Annex 11)

She reminded us the OFEG rules: exchange of ship time without money and later also some equipment. It's a barter system based on reporting points. Each ship has a points daily rate, overall goal in the long run is the point balance. The aim is the efficiency and the cost reduction by avoiding long transit time.

She outlined the deployment of OFEG research ships in 2013 and for 2014 adding that OFEG members continue to talk about harmonizing procedures, such as medical and trainings, increasing activity in joint cruises. She mentioned that 2 or 3 countries had shared ship time equipment and technicians.

A focus about OFEG-TECH has been done. The aim was set up to provide the forum for the required communication and networking to support the development of major equipment barterers and to improve cooperation between the OFEG partners

Focus on technical aspects:

- interoperability being able to use each other's equipment;
- joint training cruises
- piston coring

She ended by a road map presentation of renewal of OFEG Ocean and Global class R/V fleet 2010-2030.

On this matter, Klas Lackschewitz indicated the utilization of a German ROV on a UK ship further to the ROV *Isis* crash

15:00 - coffee break and national update posters (cf annex 3)

15.30 – Guarantee claims of new building coastal RV (A. Cattrijsse) - (Annex 12)

Andre Cattrijsse commented about the VLIZ new build, RV *Simon Stevin*

She armed in Ostend on 25th May 2012 and sailed. After a year of utilization, several technical problems occurred. Andre listed them in detail:

- Fast Rescue & Workboat Cooling of switchboard, bridge console & server racks
- Vibrations 10KnEM2040 issues

Andre explained that resulting from the important part of shallow waters in the Belgium waters, a small work boat must be deployed from *Simon Steven* for different works (small nets, sampling...). In the *Simon Steven* project, it was planned that the rescue boat could be used as a work boat.

Regarding the utilization of a rescue boat as a work boat, Per Nieuwejaar said that it was not allowed regarding the legislation to combine both of them. It brought a matter to discussion with the conclusion that different countries, different rules.

Andre Cattrijsse said that they have now improved the cooling systems, for instance the bridge console and switchboards, in order to avoid electronic problems.

About MBES EM2040, they have replaced the transducers and now everything is working properly.

Ifremer staff specialized on sensors installation on RV's is planned to visit the *Simon Steven* as soon as possible.

Questions/answers

Per Nieuwejaar wondered if VLIZ had gotten a one year guarantee? and if so did you ask for more ?

A. Cattrijsse responded positively. Per specified that it was always possible to ask for more than the usual one year guarantee

15.45 - New solutions for improving stability for catamaran RV – Genavir (R. Balcon) - (Annex 13)

Remy Balcon, Genavir, head of operations, introduced us Loic Goulouzele, Genavir superintendant in charge of RV *Antea*. He presented us a complete study and installation of an hydrofoil on that catamaran.

- Presentation of the R/V ANTEAShip's initial behavior - Prior to studyStudy phases - Study results
 - The hydrofoil solution the hydrofoil design Manufacture and installationSea trials and results
- Conclusions**

The results were similar to the estimation/simulation, the efficiency started at 4 knots. That clearly offers new possibilities at sea for the ship.

Recently during a two weeks transit from Toulon to Dakar, the crew confirmed they have not observed any decreasing speed reduction of the vessel even with strong wind. As a result, a fishery survey campaign has been realized with a confirmed better ship behavior including during trawling operations.

Questions

Per Nieuwejaar : if there was an extra wind and waves coming from behind the ship, what will be happening then ? Mr Goulouzele said there would be no impact on direction

16.00 - Regional Vessels discussion in ERVO context (J.J Danobeitia) - (Annex 14)

J.J. Danobeitia considered ERVO a good place to raise discussion on proposals and viewpoints for an efficient development of a European strategic coordination mostly on RRV and associated equipment. Contributing to ensure maximum use/share of available infrastructure, and assisting in the development of standardized operational procedures, shared designs concepts and protocols for vessel operators:

- enhanced interoperability of large exchangeable equipment on existing and future RRV
- coordinated scheduling of activities
- standardization and harmonization of procedures
- towards a sustainable “low cost” common RRV design.

J.J. Danobeitia thought that we must improve our efficiency and be able to explain to the European commission that we are completely exchangeable and also that we are able to coordinate scheduled activities.

He showed the group the CSIC experience on a multipurpose vessel design.

He emphasized the following points:

- take enough time for a good project definition
- take care about shipyards with no experience on RV

- do not hesitate to use experts advices
- “to fight” with shipyards, use ERVO members experience.
- evolution of propulsion and construction standards will not affect design of operations and equipment.

And J.J. Danobeitia to add again that ERVO was definitively a good forum to share experience and to be more efficient.

There followed an animated discussion about that topic. Per Nieuwejaar asked : in practical terms, what can we do ? and added that he thought there was no way for design RRV in EU requirements. Things were different in every country.

J.J. Danobeitia replied that it could be a good step forward for the “new” EU countries, of course not for the “historical big European countries”. He continued to think that we must try, especially nowadays where money is missing.

We altogether agreed that we were still far from a scientific fleet under “European flag”. In conclusion Per Nieuwejaar said that Eurofleets 2 WP2 would be to write towards where we should go.

17h00 - End of meeting

20h00 - Dinner – restaurant “Aux Vieux Gréements”, Brest marina

Thursday 6th June 2013

9:00 - Practical arrangements and opening (Olivier Quedec)

9.05 - Eurofleets 1 - Eurofleets 2 (V. Mazauric) - (Annex 15)

The EUROFLEETS2 project has started in March 2013 for duration of 4 years. General information on the Consortium and the budget distribution per activity were given:

- An expanded consortium of 31 beneficiaries, with 12 new comers from Croatia, Denmark, Faroe Islands, France, Germany, Greenland, Spain, Sweden and Turkey; A negotiated EC contribution of 9M€, with an indicative project effort of 545 person.months; A budget distribution on the three connected and complementary activities of the project representing 3.8 M€ on TNA (43%), 2.7 M€ on NA (30%) and 1.8 M€ on JRA (20%).

The main objectives of the project were presented:

- The Trans National Access, with a higher number of European Research Vessels than in EUROFLEETS(1) (8 Global/Ocean and 14 Regional Research Vessels), and 5 equipment aiming at promoting exchanges of equipment and fostering a higher interoperability within Europe;
- The Networking Activity with i) the fostering of the industry involvement for an enhanced impact of Research Vessels on innovation, ii) several operational initiatives aiming to demonstrate the cost-effectiveness increase brought by a better coordination, iii) actions towards the training of the next generation of scientists, and iv) the continuation of coordination efforts (including Polar Research Vessels);
- The Joint Research Activity focused on the definition of generic designs of Regional Research Vessels, the development of innovative functions for underwater systems and the implementation of data acquisition systems in standardized formats contributing to a higher interoperability between Research Vessels.

More details were given on the innovative ship-time and equipment-time calls with:

- Regional “geographic” calls: the first Regional call focused on polar and sub-polar seas was opened in April 2013 and closed on 27th May 2013. The two next Regional calls will be organized in 2014;
- Super-integration call: Expressions of Interest were collected until mid-May 2013. The call will be opened on 14th June 2013, with an application deadline 16th September 2013;
- Equipment call: Call opening 14th June 2013 and application deadline 16th September 2013

More information about EUROFLEETS2 at www.eurofleets.eu

9.25 - Eurofleets 1 : WP3 outcomes (A. Cattrijsse) - (Annex 16)

Eco responsibility and eco design for existing and new research vessels.

Andre Cattrijsse underlined the objectives:

Work Package 3 (WP3) is a NA which was due to complete in the middle of 2013.

The WP has been divided into two themes.

The first theme entitled '*Eco-responsibility*' (NOC Southampton)

Task 3.1 – Research Vessel – Life Cycle Assessment (RVLCA)

Task 3.2 – Research Vessel Environmental Management Plan (RVEMP)

Task 3.3 – Research Vessel Environmental Management System (RVEMS)

Task WP3.1 - Conclusions

Growing complexity of the nature of marine scientific research. One single LCA is not an appropriate approach and a three inventory approach would be more suitable.

That due to the variability of vessels, research equipment and research operations RVLCA inventory templates.

That the scale of the applicable environmental legislation and how EU Member States vary in how they enact and enforce that legislation will mean that the development of any EUROFLEETS research vessel environmental management plans and environmental management systems will have to be generic in approach.

IRSO/ERVO Code of Practice as the basis of a EUROFLEETS equivalent code.

Any subsequent phases of the EUROFLEETS programme considered the development of a tailored LCA training programme for Consortium members **Task WP3.2 - Conclusions**

The future RVEMS will be based on the use of either the ISM code or ISO 14001.

Environmental Operational Procedures for RO and RE are limited or in certain cases non existent.

The 'Traditional' MSR delivery model format for the allocation of Environmental Responsibilities does not work when applied to the 'Autonomous' MSR delivery model as both the RV and its master may not be present during the delivery and subsequent operation of the autonomous capability.

The future RVEMS will be based on the use of either the ISM code or ISO 14001.

Task WP3.3 - conclusions

NA3 - Work Package (WP) 3 – Eco-Responsibility and Eco-Design for existing and new Research Vessels (RV) The second theme is entitled '*Vessel Eco-design*' which is made up of one task broken down into three subtasks.

Task 3.4 – Guidelines towards future new buildings and innovative eco-design for Regional Vessels.

Task 3.4.1 – Description of current vessel performance

Task 3.4.2 – Current vessel eco-performance = listing available tools

Task 3.4.3 – Establishment of guidelines for Regional vessel eco-design

Andre emphasized the growing complexity of the nature of marine scientific research.

Finally, Andre showed up an article they published in "the journal Ocean Technology" resulting from that task.

9.45 – Eurofleets 1 – Training activity (WP6) (Sandra. Sà) - (Annex 17)

Sandra showed us a concrete and successful example of training activities: introduction to the research of the ocean and seabed on board of the Caravel *Vera Cruz*

Cruise realized in Tagus estuary from 13th to 15th May 2013 under the responsibility of Prof Luis Menedes Pinheiro.

Organization: implementation of selected best practices, explain what a research vessel was?

Activities on board:

- Safety Rules on board;
- Introduction to the history of the "Vera Cruz" Caravel and its importance in the Portuguese discoveries;
- The importance / necessity of Research vessels in Marine Science;
- Introductory concepts of Navigation and Positioning Systems;
- Importance of the study of the Seabed Geology and Sub-surface, in particular what concerns the study of mineral and energy resources, the plate tectonics and geological risks, and archaeological heritage;
- Importance of Physical Oceanography for the study of the physical properties of the ocean, in particular, currents, temperature and salinity, and their implications for ocean-atmosphere interaction;
- Explanation of the geophysical methods, mainly Side Scan Sonar and reflection profiles of High-Resolution seismic - Chirp Sonar;
- Presentation of the methods used in Physical Oceanography to measure the temperature and salinity of the water column (CTD) and currents (current meter).

A Visit to the *Lisboa* navy museum was also organized.

Several materials were developed: flag, educational quiz, brochure/research vessel...

Sandra underlined the importance of the differences between education and training

Questions/answers

Andre Catrijsse: What about the preparation ?

Sandra Sà: A meeting with the student's teachers was scheduled several weeks before the cruise.

Per Nieuwejaar ended by saying that it was a very good initiative and contribute to write the future.

10.05 – Coffee break – end of posters session (annex 3)

10.35 – Eurofleets fleet evolution group meeting (V. Mazauric, Ifremer, France et A. Vetrano, CNR, Italy) - (Annex 18 -1, 18-2 , 18-3, 18 -4, 18-5)

The EUROFLEETS(1) project, and more specifically its WP1 (Strategic coordination vision) aims at promoting a European strategic view of research fleets and associated equipment. Ongoing actions for the preparation of the three following WP1 Deliverables have been presented:

- (D1.4) Report on perspectives for underwater equipment new investment and on framework for the co-funding and co-operation of new major underwater equipment (CNR and IMR);
- (D1.5) Database aggregating strategic views of fleet managers, innovative ship funding, innovation applicable to research vessels and major underwater equipment (Ifremer);
- (D1.6) Report on diffusion of e-access on research vessels (Ifremer).

Report on major underwater equipment

Anna Vetrano, CNR, Italy and Per Nieuwejaar, IMR, Norway

The purpose of the EUROFLEETS D1.4 is to give an indication about the current status of the major exchangeable underwater research equipment used by European research vessel fleets and to describe perspectives for the upkeep and expansion of this “equipment pool”.

The results of the survey undertaken to report on the current status of the major underwater equipment (UWE) used for marine research purposes in Europe have been presented. The identified UWEs covered by this survey have been included in the five categories listed below. Geological equipment such as seismic systems and giant piston corers are not included in the report because they cannot be properly considered as vehicles. In addition, only equipment operating at depths larger or equal to 1000m, except for Human Occupied Vehicles (HOVs), has been considered.

1. Autonomous Underwater Vehicles (AUVs)
2. Gliders
3. Human Occupied Vehicles (HOVs)
4. Remotely Operated Vehicles (ROVs)
5. Towed sensor and camera systems

Despite the variety of sources used for this report, it has to be emphasized that a number of equipment may not be included, mostly because of the difficulties in getting direct, reliable, and updated information from the equipment owners. This report therefore provides the most accurate picture possible, within the limits imposed by the mechanisms available to find the information.

The present status and distribution per country have been given for the 5 UWE categories, giving:

- 12 AUVs : France (2), Germany (3), Iceland (1), Italy (1), Norway (1) and UK (4);
- 58 gliders: France (13), Germany (13), Italy (1), Norway (2), Spain (11) and UK (18)
- 14 HOVs : Bulgaria (1), France (2), Germany (1), Greece (1), Netherlands (1), Portugal (1), Russia (6) and Turkey (1);
- ROVs (19) : Belgium (1), France (3), Germany (4), Greece (3), Ireland (2), Norway (1), Portugal (1), Romania (1), Spain (1) and UK (2);
- 11 towed bodies: Bulgaria (1), France (3), Germany (2), Norway (2) and UK (3).

Development trends for UWEs and perspectives in terms of cooperation with industry and joint design of scientific instruments and equipment have been presented.

Some of the equipment types are also used for industrial purposes, e.g. AUVs, ROVs and seismic instruments, and other equipment types are typical scientific in nature such as towed sensor and camera systems and giant piston corers. Both the scientific and industrial needs for underwater equipment are moving towards missions in larger water depths, using more sophisticated and capable instruments and sensors.

The continuous technological developments of underwater research equipment and instruments, both in industry and research institutions, are therefore necessary in order to meet the increasing demands for more capable underwater research equipment. It has also resulted in requirements for larger and more powerful winches, with sophisticated cables or ropes to deploy, power and control the instruments, and to transmit collected data and images from the instruments to the vessel carrying the winch, either via fiber optical or electrical signals. It has also resulted in sophisticated and complex Launch And Recovery Systems (LARS) for the handling of the instruments during deployment, operation and recovery, which means larger and more capable vessels equipped with dynamic positioning system (DP), and with large A-frames, cranes or instrument specific LARS installed.

ROVs and AUVs are heavily used by industry and marine science organizations, but they are also very expensive to develop, use and maintain. With more “operating hours“ on their equipment, the industry is often a more demanding customer than the marine science community, and joint ownership of UWEs between government organizations and industry could therefore be difficult due to different planning cycles (months vs weeks) and insurance (self insurance vs insurance policy). It is therefore a question if the marine research community should play a secondary role in this field and let the industry take the lead regarding technology development, ownership, services etc, and primarily rent from commercial companies when an UWE is needed for a cruise? Design and development of major underwater research equipment should then only be initiated if there are no industrial standard products available on the market which could meet the scientific user needs for a reasonable cost and/or with a limited amount of modifications. However, to ensure that industrial products can meet the marine research expectations, it is crucial for research institutions to precisely describe the technical and scientific needs, in order to not be considered of less interest by industry. It is therefore important that the industry and public institutions are able to, motivated for, and given opportunities to seek cooperation and joint developments to make the best possible use of their combined knowledge and ideas.

The functional lifetime of marine research instruments and equipment can be from decades for mechanical equipment such as trawls, grabs, box corers, plankton nets etc to just a few years for hydro acoustical systems such as sonars, multi beam echo sounders, towed vehicles, ROV tools, landers, oceanographic instruments etc. It is therefore crucially important that there are a very strong and close international cooperation between marine research institutions and/or industry regarding design, development and testing of new marine research instruments and tools in order to maintain the necessary innovation and development of such instruments. The biggest challenge for this is probably the public procurement rules and regulations which require competition, transparency etc which potentially could “scare away” the industrial partners from participating in conceptual designs, prototyping etc since that could exclude them from the production contract at a later stage. Finally, due to high investment and operating cost, combined with short functional lifetime for ever more sophisticated equipment and instruments, national and international joint development and

ownership of equipment is likely to be more common in the future. An increased establishment of national and international barter clubs for vessels and/or equipment should also be the future trend.

Database aggregating strategic views of European fleets operators

Valérie Mazauric, Ifremer, France

The EUROFLEETS D1.5 mainly aims at giving an overview of existing national roadmaps or renewal plans of European Research Vessels and associated equipment. In addition to information gathered for the preparation of the report on existing fleets foreseeable evolution for the next 10 years, a survey for up-to-date information has been launched in April 2013 to EUROFLEETS(1) and EUROFLEETS2 beneficiaries.

16 answers from 13 countries have been received so far, what gives the following status for national roadmaps including Research Vessels and major underwater equipment:

- 5 countries have national roadmaps completed and issued : Denmark, Germany, Italy, Norway and Poland;
- 2 countries have national roadmaps under construction: Spain and Turkey;
- 6 countries have no roadmaps: Belgium, Greece, Ireland, Portugal, Romania and Sweden.

The consolidation of data collected during this survey is still under way. The resulting database will be issued at the end of August 2013 and will be kept up-to-date in EUROFLEETS2 in liaison with EurOcean.

Report on e-access

Olivier Soubigou, Ifremer, France

The EUROFLEETS Task 1.4 aims at promoting e-access generalization for cost efficiency purpose, further enlargement of scientific parties, increase of cruises impact towards students and young scientists, and dissemination towards schools and more generally towards Society.

The work plan implemented for this task has been presented, and it has been based on:

- i) a preliminary on-line survey to investigate equipment and services available on board research vessels in Europe, North America and Asia,
- ii) a questionnaire sent to the EUROFLEETS beneficiaries and associated partners in order to describe for each institute, each vessel or class of vessel (Global/Regional), equipment and services available on board, who can access these services, and also services on shore, and sea/shore interactions.

Results from the on-line survey and answers to the questionnaire will be compiled in the D1.6 report to be issued in August 2013. They will allow us to assess best practices within European research fleets and develop standard user cases using information technologies at sea, including:

- Remote science or telescience
- Remote administration of scientific equipment
- Support to cruise management and crew welfare
- Dissemination towards schools and society;

11.35 - New EurOcean infobase on MRI's + EurOcean/ERVO AGREEMENTS (Sandra Sà) (annex 19 - 19 bis)

a/ new EurOcean infobase

Sandra talked about the cooperation between EUROCEAN and ERVO in the scope of the following initiatives :

- Proposals for specifications
- Structure of the infobase
- Marine research infrastructures database

She presented the types of facilities to be displayed and possible home pages design

She informed that the first draft will be ready by the end of July

Question : which fields of info ?

That needs to be precise

O.Lefort asks : do we intend to have national checks ?

Answer : national checks will certainly be the best way to obtain a basis of reference

b/ EurOcean/ERVO agreements :

Sandra sets up a state of the financial contributions. She reminds us proposal of services :

- **hosting**
- maintenance
- individual domain ,

The creation of the ERVO logo, the redesign of the website and the development of institutional brochures were talked about.

Question:

O. Lefort: what message do you intend to put on that brochure ?

G. Magnifico moved on to the question of the new version of the agreement

The question was who can sign the agreement with EurOcean. ERVO does not have any legal status. One possibility could be that each institute member of ERVO signs the agreement with EurOcean. Olivier Quédec will discuss this issue with the Ifremer legal department and will revert to the chairman with a proposition.

12.15 - Fostering coordination activity of regional seas – the Mediterranean Sea basin - (Giuseppe Magnifico) - (annex 20)

Giuseppe proposed a European sea regions approach

He said that the Mediterranean Sea basin is a unique eco system.

He presented the key figures on the Mediterranean sea basin:

- approximately 45000 kms of coastline, of which 19000 km represent island coastlines
- 150 million people on the coasts
- 450 ports
- Huge tourism activity

A focus was done on Mediterranean marine research, actual and possible regional associations, international programs, European projects.

A presentation of “Mediterranean” research fleet was done.

A suggestion could be to go towards operational optimization of that naval facilities.

This could be part of the discussions during Eurofleets 2 project (WP2)

Concerning information on the French fleet presentation, Olivier Lefort is surprised, the presentation shows that 15% of the activity of French global vessels is located in Med. That does not reflect the reality. Olivier Quédec proposes to replace 15% of the French global vessels activity in Med by 15% including possible cruises undertaken in Med

12.55 - Date and place ERVO meeting 2014 (Giuseppe Magnifico)

Jointly Giuseppe Magnifico, Juanjo Danobeitia and Klas Lackshewitz proposed to hold the next meeting in Las Palmas Canaries Islands in May or June 2014 during a call of the new RV *Sonne*. Furthermore, the vessel will be located in this area at this period for trials at sea. Giuseppe Magnifico and Olivier Quedec will get in touch with Klaus Von Brocken in order to know the possible dates of call of the ship in Las Palmas harbour.

13.00 - Close or ERVO 2013 meeting (Giuseppe Magnifico)

Giuseppe thanked everybody for the good job done during this meeting and reminded that the next annual meeting will be concluded for the ERVO future. For instance, the preparation of the Eurofleets project legacy will be an important point to be discussed.