Titlul proiectului:

New operational steps towards an alliance of European research fleets

Acronim: EUROFLEETS2

Durata: 48 luni

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1. Obiectiv general:

Dezvoltarea unei structuri pan-europene distribuite, bazata pe o viziune comuna si un acces coordonat la navele si echipamentele destinate cercetarii marine.

2. Obiectivele fazei de executie:

WP2. Activitati de diseminare (publicatii, conferinte, workshops, websites/applications etc) si upgrade pentru informatia electronica (portal EurOcean): webpage Eurofleets 2 in limba româna (http://intranet.geoecomar.ro/eurofleets2/), cu link spre agina oficiala a proiectului; prezentarea proiectului Eurofleets 2 in cadrul 2nd Workshop of the IGCP UNESCO 609 Project, respective Salonul Inventica din cadrul TIB 2014 de la Bucuresti;

WP4. Romania are in dotare nava de cercetari marine multidisciplinare “R/V Mare Nigrum”, operata de INCD GeoEcoMar. Incepand cu 2004 R/V Mare Nigrum a devenit principal component a infrastructurii de cercetare marina din România, fiind inclusa in categoria “instalatiilor special de interes national”. Nava si-a desfasurat activitatea atat in programe nationale cat si europene (FP5 - FP7: Assemblage, Sesame, Hypox, Eurofleets, Coconet, Perseus, etc).

Participarea reprezentantilor din INCD GeoEcoMar la reuniunile oficiale ale proiectului (ex. General Assembly, Rome, Italy, March 31 – April 2, 2014.

WP8. Efectuarea de operatiuni de calcul in vederea estimarii costurilor de acces la nava Mare Nigrum pentru asa numitul “acces transnational”.Acest cost estimeaza: costuri eligibile directe, fara costuri de personal, costuri de personal accesibile in perioada proiectului;

WP11. “Design pentru navele de cercetare regionale”- Implementarea unor noi concept de design aplicabile navelor care vor fi construite in viitor, si care vor lucre atat pentru Marea Neagra cat si pentru alte mari;

3. Rezumatul fazei

Proiectul FP7 – Eurofeets2 - New operational steps towards an alliance of European research fleets", a devenit operational la 1 Martie, 2013. Acesta este un proiect de colaborare si coordonare a unor actiuni suport pentru integrarea unor activitati specifice navelor de cercetare marina. Proiectul trebuie sa-si atinga obiectivul principal (dezvoltarea unei unei structure pan-europene distribuite, bazata pe o viziune comuna si un acces coordonat la navele si echipamentele destinate cercetarii marine), dar si pe cele specifice, pana pe 28 Februarie 2017.

Proiectul reuneste 31 de institutii europene din 20 de tari.

Un obiectiv important al proiectului este furnizarea accesului cercetatorilor europeni, inclusiv a paratenerilor lor din industrie, la cercetarea marina de excelenta, cu accent pe mediu si protectia biodiversitatii, managementul zonelor de coasta, geodinamica si schimbari climatice.

Incepand cu 2014 si incheind cu 2017, pe baza unor propuneri de proiecte, ca sunt evaluate de experti la nivel European, se poate aloca “timp de nava” pe nave oceanografice si regionale. In functie de specificul proiectului propus se pot solicita echipamente specializate (ex. ROV, AUV, camera ED HDTV, , etc).

INCD GeoEcoMar , ca partener nr. 7 in proiect, este angrenat in urmatoarele pachete de lucru:

WP2 - NA1: Viziune strategica asupra flotelor europene de cercetare si coordonare international -Task 2.4 : Comunicare si progress; Sub Task 2.4.2 Strucutura informationala electronica EUROFLEETS2;

WP4 - NA3 : Initiative catre integrare si activitati operationale cost-beneficiu: Task 4.4: Catre o flota de cercetare pan-europeana regional;

WP8 - TNA1 : Acces la navele de cercetare europene: Activitati specifice: INCD GeoEcoMar pune la dispozitia proiectului nava de cercetari marine *Mare Nigrum*. Timpul de nava alocat este prevazut in programul anual al navei

WP9 - TNA2 : Super-integrare (experiment multiplatforma): Activitati specifice: Activitate valabila pentru toate navele de cercetare inscrise in proiect;

WP11 - JRA1 : Orientari in utilizarea navelor regionale de cercetare si modele generice:

Task 11.3 : Design inovativ al navelor de cercetare regional; Task 11.3 D11.5. Report on innovative basic designs of RRVs - Part 2: Including design study, drawing, arrangement and equipment specification.

4. Descriere stiintifica si tehnica

Pentru perioada de raportare INCD GeoEcoMar a avut urmatoarele contributii, descrise in capitolele de mai jos:

WP2. Activitati de diseminare (conferinte, targuri si expozitii, etc) precum si up-grade pe portalul dedicate proiectului (EurOcean portal): elaborarea paginii web pentru proiect in limba romana (http://intranet.geoecomar.ro/eurofleets2/), cu link-uri catre pagina web a proiectului (www.eurofleets.eu) ;

WP 4. Romania opereaza nava de cercetari marine multidisciplinare “Mare Nigrum”, pusa la dispozitia proiectului Eurofleets2. Nava poate fi angrenata in proiecte internationale si nationale si poate raspunde solicitarilor din proiect.

Participarea echipei de proiect la reuniunile programate (ex. adunari generale, workshop-uri), precum Adunarea Generala de la Roma (31 Martie –2 Aprile, 2014).

WP 8. Estimarea unitatii de cost pentru accesul transnational la nava de cercetare Mare Nigrum ca si costuri directe, costuri de personal, etc.

WP 11. “Design general pentru o nava regional de cercetare”- Avand in vedere necesitatea de schimbare a actualei nave de cercetare Mare Nigrum (construita in 1971) INCD GeoEcoMar tine cont de cerintele mondiale referitoare la construirea unor nave dedicate, asa cum sunt cele destinate cercetarii marine.
De aceea se au in vedere aspect precum:

- pozitionarea dinamica;
- reducerea nivelului zgomotului si vibratiilor;
- consumuri reduse;
- implementarea conceptului de “green technologies”.

In afara contributiilor amintite INCD GeoEcoMar a raspuns si altor solicitari necesare in proiectul Eurofleets2, indeplinindu-si toate obiectivele contractuale.

Activitatea derulata de INCD GeoEcoMar a avut in vedere urmatoarele aspecte:

Statutul actual al vehiculelor care opereaza sub apa (Under Water Vehicles - UWV):

- Roadmap-urile nationale, care includ nave de cercetare si echipamente asociate – Romania nu are un astfel de roadmap, care sa includa elementele mentionate. In viitorul apropiat va fi foarte util sa existe un asemenea document !

- Inlocuirea navei Mare Nigrum cu una noua : INCD GeoEcoMar are un studiu de pre-fezabilitate care detaliaza o astfel de actiune, inclusiv o schema de finantare, care cuprinde diferite variante de lucru: finantare public & public sau public & privat, parteneriate, etc;

Experti din INCD GeoEcoMar au evaluat propuneri de proiecte, in vederea utilizarii navelor din Eurofleets2. Call 2014 pentru Marea Neagra a fost publicat in 04.11.2014 pe site-ul oficial al proiectului Eurofleets2.

Participarea reprezentantilor din INCD GeoEcoMar la Adunarea Generala a proiectului Eurofleets2 la Roma (Italia)

Participanti din partea GeoEcoMar: 31 martie – 2 aprilie, 2014

- Prof. dr. N. Panin
- Manager proiecte si marketing Daniela Vasile
- Ing. nave St. Florescu

Activitati desfăşurate in timpul reuniunii

- intalnirile de lucru ale partenerilor din pachetele de lucru in care activeaza si GeoEcoMar, respectiv NA1 meeting - WP2, TransNationalAccess meeting, NA3 meeting - WP4.
- sedinta anuala a partenerilor din proiect; s-a luat nota de prezentarile sustinute de leaderii de pachete de activitati;
- intalnirea partenerilor din JRA1 „Regional RV guidelines and generic designs";
- vizitarea facilitatilor de modelare si testare a navelor de la INSEAN.

Concluziile si prevederile reuniunii / Elemente de urmarit din partea INCD GeoEcoMar, ca partener in proiect:

- Urmatoarea intalnire generala a consortiului proiectului Eurofleets 2 se va organiza in Copenhaga, in perioada 23-25 Martie 2015 sau 8-10 aprilie 2015;
- In cadrul NA1 – se va organiza o intalnire in luna Mai 2015 la Paris;
- Incepand cu cea de-a doua perioada de raportare a proiectului Eurofleets 2, coordonarea proiectului va fi inmanata de catre Jaques Binot lui Valerie Mazauric;
- In Iunie 2014 – se va lansa apelul pentru proiecte pentru Marea Mediterana, Marea Rosie si Marea Neagra. Acesta se va inchide in luna august 2014;
- Inca nu s-a finalizat raportul final al proiectului Eurofleets 1, datorita intarzierilor in raportare si a erorilor aparute;
- Toate documentele legate de proiect vor fi incarcate in site-ul collaborativ deschis pe platofrma IFREMER
- Discutie cu Valerie Mazauric, ofiter prooiect Eurofleets 2, referitor la bugetul pentru Access Cost transmis inca din faza de propunere, respectiv referitor la procentul de

50% aplicat valorii totale; s-a recomandat sa asteptam reactia CE fata de raportarea Access Cost in Eurofleets 1 si fata de auditul ce a avut loc la GeoEcoMar in 2013;

- Fiecare partener va trebui sa se implice in raportarea intermediara (in cadrul intalnirii generale de anul viitor va fi invitat ofiterul de proiect de la CE, care va analiza implementarea proiectului);
- In cadrul WP2, Task 2.4 - Comunicare, subtask 2.4.2, s-a discutat cu Sandra Se' de la EurOcean, leader al acestui task impreuna cu Thelmo Carvalho. Vor fi trimise flyere si materiale promotionale pentru a le disemina proiectul in cadrul unor evenimente regionale;
- In cadrul WP4 – a fost prezentat felul in care putem atinge obiectivul acestui pachet („o flota comuna"), respectiv prin:
    - co-finantare – cand doua sau mai multe institutii cofinanteaza si folosesc aceeasi infrastructura si impart atat nava cat si costurile de intretinere (exemple: nava de cercetare *Thalassa*, constuctie co-finantata de IFREMER si IEO din Spania; Nava *Alliance* cofinantare a mai multor state membe NATO, colaborari cu Marina nationala; Franta si Italia, prin proiectul RITMARE; constructia unei echipe transnationale intre NOCS (UK) si CSIC (Spania);
    - „flota virtuala" – atunci cand o institutie sau un grup de institutii decid sa dea acces unei flote de nave de cercetare, operata si detinuta de diverse institutii (exemple: in USA guvernul, prin NSF, „cumpara" timp de nava (inchiriaza) prin UNOLS de la un numar de proprietari de nave de cercetare privati sau de stat si apoi il pune la dispozitia deifertelor croaziere stiintifice propuse de diferite institute de cercetare sau universitati; in Franta, cei 4 operatori de nave: IFREMER, CNRS, IRD, IPEV, proprietari ai navelor de cercetare si a echipamentelor, sunt finantati de ministerul cercetarii sa dea access cercetatorilor stiintifici la navele lor printr-un apel comun si unic de propuneri, singura conditie fiint excelenta;
    - INCD GeoEcoMar va incerca sa ofere informatii referitoare fie la „flota comuna" sau la „flota virtuala" in Marea Neagra (vase din UE si Non-UE ce coopereaza in Marea Neagra) – exista? Cine? Cum?;
- In cadrul WP7, se vor organiza in vara anului 2014 urmatoarele evenimente:
    - Curs la bordul navei URANIA, 5-8 July, plecare si sosire – Messina, Sicilia – Italia – apelul se va publica pe 7 aprilie;
    - Curs la bordul Navei SLAME, 17-21 August 2014, Marea Baltica, Golful Finlandei – apelul se va publica pe 7 aprilie 2014.
- JRA 1 meeting a fost organizata in cea de-a treia zi a evenimentelor, la sediul INSEAN. In cadrul subtaskului 11.2.1 a fost pregatit deja raportul ce va fi transmis apoi tuturor partenerilor implicati in task pentru feedback. S-a reiterat idea ca e nevoie de construirea unei nave care sa nu produca zgomot (silent ship) pentru a obtine o nava performanta, fara vibratii, care sa ofere un mediu e lucru propice atat pentru cercetatori cat si pentru echipaj. INSEAN, WP leader-ul, a fost implicat in proiectul

SILENT unde au abordat problema „zgomotului" la nave de pasageri. Din 2013 au fost introduse noi reguli in ceea ce priveste zgomotul/poluare fonica.

- INCD GeoEcoMar va transmite informatii referitoare la designul vaporului, fie ca atare, fie ca raspuns la intrebarile task leaderilor sau a chestionarelor pregatite de acestia. Se vor proiecta 2 noi: cu bulb si fara bulb, se vor crea 2 modele si 2 machete si se va efectua o simulare pentru calcularea curentilor creati.
- Se va intocmi un ghid de bune practici pentru designerii de nave de cercetare

In cadrul proiectului Eurofleets2 INCD GeoEcoMar a mai luat parte la diferite activitati precum:

- Informare la nivel national in ceea ce priveste experienta proprie trecuta, prezenta si actiuni de viitor, cu referire la colaborari, cooperare, inchirieri si barter in contextual infrastructurilor de cercetare marina (Cap. 3);
- Constituirea unui Grup de Rionierat (Pioneering Group) care sa poata fi folosit in cadrul cooperarilor transnationale in vederea implementarii unui cadru general de management (Cap. 5);
- Up-grade al informatiilor privitoare la nava Mare Nigrum, dar si la echipamentele din dotarea acesteia. Sunt mentionate reparatiile capital majore prin care a trecut nava (2002, 2013);
- R/V Mare Nigrum, a fost utilizata ca si component de baza a infrastructurii de cercetare martina a României, in conditiile respecatrii regulilor de lucru din domeniul marin in ceea ce priveste operarea in apropierea unor cabluri si conducte submarine, in zona de lucru a platformelor de foraj marin (limita de securitate 500 m);
- Asigurarea campaniilor pe mare mai ales in cadrul unor proiecte europene (FP 7);
- Integrarea navei Mare Nigrum in programul de lucru al "The Black Sea Security System - an Early-Warning to Marine Geohazards System" (Cross-border Co-operation Program Romania-Bulgaria 2007 – 2013), prima infrastructura din Marea Neagra de acest fel, care, in momentul de fata este integrate in alte retele europene (ex. EMSO, EPOS, Jerico, JRC). Timpul de nava necesar operarii in cadrul proiectului mentionat a fost, este si va fi sustinut din fondurile proiectului (inclus in categoria "instalatiilor special de interes national";
- Nava Mare Nigrum a derulat o serie de misiuni pentru mediul privat (ca si conexiuni cu industria, asa cum se cere in proiectul Eurofleets2), mai ales cu firme din domeniul energetic, pe baza de contract sau comanda, de fiecare data activitatea de cercetare propriu-zisa fiind asigurata de cercetatorii din INCD GeoEcoMar;
- In contextual "Pioneering Group" INCD GeoEcoMar si nava de cercetari marine Mare Nigrum pot intra ca si mambri care sa asigure cadrul de lucru pentru o mare regional

(Marea neagra), care are un statut special, atat din punct de vedere politic, commercial, dar si stiintific.

5. Concluzii

Integrarea unei viziuni comune asupra cercetarilor polare, efectuarea de experimente prin super-integrarea mai multor nave de cercetare pe baza unei inter-operabilitati ridicate, implicarea industriei in activitati specifice, atat ca utilizator cat si ca suport financiar, pregatirea unei propuneri pentru EFSRI roadmap, reprezinta obiective vizate in cadrul proiectului EUROFLEETS2.

La nivel national INCD GeoEcoMar, ca si partener in proiectul mentionat, a urmarit indeplinirea obiectivelor de mai jos, conform schemei de realizate pentru anul 2014:

- Participarea la reuniunile organizate in cadrul proiectului;
- Prezentarea proiectului in cadrul unor expozitii sau conferinte;
- Promovare pe pagina web in limba româna;
- Asigurarea accesului transnational la nava Mare Nigrum;
- Analize de tip cost-beneficiu pentru acces transnational;
- Cooperare extinsa pe baza unui system de management derulat prin “pioneering groups” (propunere);
- Pregatirea de documentatii sau raspunsuri trimise echipei de management al proiectului, la solicitarea acestora;
- INCD GeoEcoMar si-a adus propriile contributii si in task-urile destinate tuturor partenerilor din proiect.

ANEXE GRAFICE

Anexa 1. Poster prezentare proiect la manifestari stiintifice, targuri si expozitii

Anexa 2. Fisa de prezentare a proiectului

EUROFLEETS2: New operational steps towards an alliance of European research fleets

Project Name: New operational steps towards an alliance of European research fleets
Project acronym: EUROFLEETS2
Funding scheme (FP7): Combination of Collaborative project and Coordination and Support Actions for Integrating Activities
EU financial contribution: €9 million
EU project officer: Agnès Robin
Duration: 48 months
Start date: 01 March 2013
Completion date: 28 February 2017
Coordinator: Jacques Binot, Ifremer - French Research Institute for Exploitation of the Sea, jacques.binot@ifremer.fr
Website: http://www.eurofleets.eu

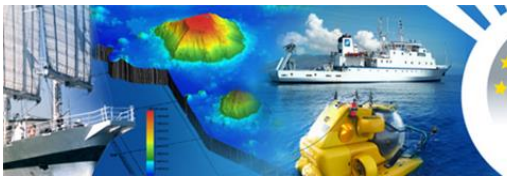
The marine environment is a major source of economic growth that should be harnessed. The maritime economy accounts for 5% of European economic activity and the EU's maritime regions account for almost 40% of its GDP (Gross Domestic Product). As a research arena, the ocean is costly to access requiring various complementing Research Vessels (RVs) and related mobile equipment. Because of the increasing complexity of societal demands and the profound influence on our daily lives, marine research and technology should be addressed in a consistent, holistic and coherent way.

● The need for a sustainable coordinated approach in marine research vessels

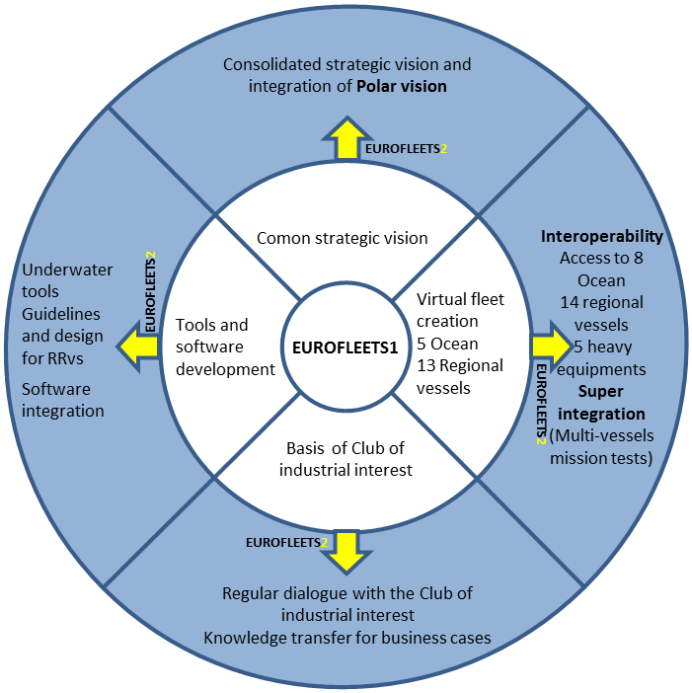
Fragmentation is still a weakness of European marine research. Despite this, European marine research is still at the forefront. To maintain and possibly strengthen this position, the move towards strategic leadership and a coordinated approach to investments and use of large facilities is essential. It will allow Europe to carry on delivering world-class science using facilities which are integrated, networked and accessible to all research teams across Europe. The present crisis period reinforces the essential character of progressing in such a shared cost effective approach.
The development and funding of marine research infrastructures under a common strategic framework is a crucial issue. European research fleets could all together be considered as a distributed Research Infrastructure (RI) really competitive with its international counterparts as the US one. RVs represent very expensive nationally funded assets with high development, investment, operation, maintenance and implementation costs. RVs are necessary for marine science to maintain observation systems (biogeochemistry, physics…), to monitor oceanographic parameters, to deploy sophisticated equipments in the deep sea, to carry out specific observation missions and to collect rare and sensitive biological samples. Their role is expanding with the development of in situ operational observation (moorings, floats, gliders, seabed observatories…). They might be particularly useful to respond to some MSFD (Marine Strategy Framework Directive) obligations.
A high availability of research fleets and associated equipment, a shared strategic vision and coordinated access to facilities are essential for a high quality of the research at sea. A pan-European distributed Regional RVs Infrastructure with a common strategy and development plan could help to provide European researchers and industries with world level marine research facilities and user services. The objective should be the significant improvement of marine research, related tools and technologies for marine resource observation, exploration and development and the convergence on common scientific and technical standards in marine research.

● The need to complete EUROFLEETS1 efforts

More than 4 years are needed to:
• Consolidate the common strategic vision of the infrastructure and the coordination of European research fleets capacities, taking into account both the pan-European and pan-regional dimensions to address properly the ocean challenge and to foster cooperation at the adequate level;
• Consolidate a common strategic vision for all RVs with special focus on Regional ones. The polar RVs were not included in EUROFLEETS1 but have an important role to play within crucial Arctic ocean issues: they will be included in this strategic vision;
• Provide marine researchers with easy RV access and particular those from countries with limited or no access;
• Implement common procedures and large operational interoperability in marine research tools and equipment;
• Equip a larger number of RVs with inter operable tools;
• Create sustainable mechanisms of easier and larger marine research results transfer to industrials and other stakeholders in order to enlarge the impact of marine research;
• Promote a distributed Research Infrastructure (RI) concerning RRVs which could be inserted in the ESFRI roadmap



The objectives of EUROFLEETS2



EUROFLEETS2 will enhance integration through specific actions aimed at consolidating the organization, methodology and tools initiated during EUROFLEETS1 and through operational initiatives towards more integrated, interoperable and cost effective European fleets for the benefit of academic, industrial and operational marine research.

More specifically the objectives of EUROFLEETS2 can be summarized as follows:

- Promote a larger integration of European RVs. In fact in EUROFLEETS2 a higher participation of RVs is expected: 8 Ocean/Global; 14 regional RVs and 6 mobile equipment pieces not accessible on their usual national support vessel;
- Integrate a common polar vision in the strategic vision of the European marine research fleets;
- Promote exchanges of movable equipment on board European RVs and in doing so fostering high operational interoperability within Europe;
- Further integrate the European RVs by coordinating multi-vessels experiments (super-integration) for larger and ambitious marine research missions;
- Initiate operational initiatives demonstrating the higher interoperability of European fleets;
- Enhance the impact of research infrastructures on innovation by fostering the involvement of industry with specific activities, both as a user and as a supplier of such facilities;
- Make an important step towards a sustainable European Regional RVs Infrastructure and prepare its possible insertion into the ESFRI roadmap.

Partners:

AWI - Alfred Wegener Institute for Polar and Marine Research, Germany
CNR - National Research Council, Italy
CSIC - Spanish National Research Council, Spain
DFKI - German Research Centre for Artificial Intelligence, Germany
DTU-AQUA - Technical University of Denmark, Denmark
IOPAS - Institute of Oceanology of the Polish Academy of Sciences, Poland
IPEV - French Polar Institute Paul-Emile Victor, France
MARIS - Marine Information Service, The Netherlands
MARUM - University Bremen - Center for Marine Environmental Sciences, Germany
MI - Marine Institute, Ireland
OGS - National Institute of Oceanography and Experimental Geophysics, Italy
PROLLION - Prollion, France
RBINS - Royal Belgian Institute of Natural Sciences, Belgium
SHIPS - Ship Studio SARL, France
SPRS - Swedish Polar Research Secretariat, Sweden
TÜBITAK - Scientific and Technological Research Council, Turkey
TUT - Tallinn University of Technology, Estonia
UdG - University of Girona, Spain
UNIZG-FER - Faculty of Electrical Engineering and Computing, University of Zagreb, Croatia
ESF - European Science Foundation, France
EurOcean - EurOcean Foundation, Portugal
FAMRI - Faroe Marine Research Institute, Faroe Islands
GeoEcoMar - National Institute of Marine Geology and Geo-ecology, Romania
GINR - Greenland Institute of Natural Resources, Greenland
HCMR - Hellenic Center for Marine Research, Greece
IEO - Spanish Institute of Oceanography, Spain
Ifremer - French Research Institute for Exploitation of the Sea, France
IMR - Institute for Marine Research, Norway
IO-BAS - Institute of Oceanology - Bulgarian Academy of Science, Bulgaria
IOF - Institute of Oceanography and Fisheries

, Croatia
VLIZ - Flanders Marine Institute, Belgium

EUROFLEETS2 is a Research Infrastructures project under the 7th Framework Programme of the European Commission.

Anexa 3. Prezentarea proiectului Eurofleets2 in cadrul Salonului cercetarii de la TIB 2014

Anexa 4 – Contributii INCD GeoecoMar la subtask 11.3.2.

EUROFLEET II

Subtask 11.3.2

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Date :	27.05.14
Doc ref	SP752-TA01
version	0

Generic basic design of Regional Research Vessel
Element of Ship
Specifications

Item		Answer
Region of operation		Black Sea. Mediteranean Sea
Duration of cruise		Max. 1 month
Mission scenarii	*Please provide an array with different scenarii (colums) and operated systems (lines), to define each scenario.*	
Offshore and coastal hydrography and oceanographic missions	*specify % of time*	75%
Fishery survey	*specify % of time*	
Seismeic survey	*specify % of time*	10%
Operating submarine systems	*specify % of time*	5%
Other	*specify % of time*	
Transit	*specify % of time*	10%
Harbour	*specify % of time*	5%
Multiple scenarii cruise	*Please specify combinations of scenarii in a single cruise, if any*	
Main dimensions		
Lenght overall	*Approx and/or specify limitations*	75m
Beam	*Approx and/or specify limitations*	15m
Draft	*Approx and/or specify limitations*	6,5m
People onboard		
Number of crew	*Approx and/or specify limitations*	18
Number of scientists	*Approx and/or specify limitations*	30
Number of passengers	*Approx and/or specify limitations*	
Accomodation		
Single cabins	*%*	24

Double cabins	*%*	12
Quadruple cabins	*%*	
Mess / lunch rooms	*Please specify segregation of public, if any*	1
Science and mission spaces		
Science control room	*Please specify approx target surface, etc*	20 sq.m
Dry laboratories	*Please specify number of labs, approx target surface, etc*	8; 160 sq.p
Wet laboratories	*Please specify number of labs, approx target surface, etc*	2;40 sq.m
Dry stores	*Please specify approx target surface, etc*	scientific store room =100 sq.m; hangar=90 sq.m
Refrigerated stores	*Please specify approx target surface, etc*	20 sq.m
Performances		
Transit speed	*Approx and/or specify limitations*	12 knots
Noise and vibration performances	*please specify standard*	silent class
Bubble sweep performances	*please specify standard*	standard
Dynamic positionning	*please specify notation*	DP1
Sea keeping	*please specify max target sea state*	8-Jan
Propulsion		
Type	*electrical or mechanical*	electrical
Number of shaft lines	*1 or 2 or not an issue*	2
Number of gensets	*2, 3, 4 or not an issue*	4
Class		GL
mandatory notation	*please specify notation*	
optional notation	*please specify notation / not an issue*	
Equipment options		
Drop keel	*mandatory/prefered/keep choice open*	
Gondola	*mandatory/prefered/keep choice open*	prefered
Blister	*mandatory/prefered/keep choice open*	
Tube TVO	*mandatory/prefered/keep choice open*	
Aft A frame	*mandatory/prefered/keep choice open*	prefered
Aft crane	*mandatory/prefered/keep choice open*	prefered
Modularity by ISO containers: equipments, labs, etc	*Please specify if mandatory or prefered, functions to include in modularity, experiences, etc*	4x 20 ". 2x 10"
Passive tank	*mandatory/optional/not an issue*	

General arrangement		
To do!	*please specify what to focus on, from your experience*	
Not to do!	*please specify what is not working, from your experience*	
aft deck	*please specify function, surface, ideas, etc*	Aft deck: Aprox 400 sq.m. Aft deck surface must be open; all equipment (winches) located inside (hangar, under main deck).On the main deck - only the equipments for lifting and loading operations, container places.
lateral deck	*please specify function, surface, ideas, etc*	

Anexa 5. Contributia INCD GeoEcoMar in livrabilul D 5.1. (vezi pozitia 28)

	Present status of major Under Water Vehicles (UWV) operated by Research organisations					New RVs or UWVs and renewal plans
	1	**Autonomous Underwater Vehicles (AUVs)** Name(depth/year built/Owner/Operator) **with max. depths > 1000 m**	**Human Occupied Vehicles (HOVs)** Name(depth/year built/Owner/Operator)	**Remotely Operated Vehicles (ROVs)** Name(depth/year built/Owner/Operator) **with max. depths > 1000 m**	**Towed sensors and camera systems** Name(depth/year built/Owner/Operator)	
	2			* (1) Genesis (1600m/2006/VLIZ/VLIZ)		
	3		* (1) PC-8B (250m/1987/IO-BAS/IO-BAS)		* (1) Klein model 3000 digital side scan sonar (1500m/2009/IO-BAS/IO-BAS/Towed side scan sonars)	*** Renewal of R/V *Belgica* :** Budget study in 2013, preliminary design study in 2014, tendering for final design and building in 2015-2017 at the earliest. **Waiting for funding.**
	4					

	5					
	6					*** New Regional research vessel** : Exploring work under progress on the feasibility of building a 45-50 meter vessel that can perform fish monitoring as well as other MSFD relevant work. **Waiting for funding.**
	7					*** Renewal of R/V *Salme*** : Preliminary plan 2010 – New regional Baltic Sea research vessel included in the Estonian Research Infrastructures Roadmap 2011-2014 – Planning phase to define research vessel users and management, principles of access and funding. 2015-2019 – Design phase to define functionality of the research vessel, design, heavy equipment, possible funding schemes for construction. 2020-... – Construction
	8					
	9	* (1) ASTERx (3000m/-/Ifremer/Genavir) * (2) IDEFx (3000m/-/Ifremer/Genavir)	* (1) Nautile (6000m/1984/Ifremer/Genavir)	* (3) Victor 6000 (6000m/2000/Ifremer/Genavir)	* (2) 3D HDTV Camera (-/-/Ifremer/Ifremer/Towed camera systems * (3) SCAMPI (6000m/-/Ifremer/Genavir/Towed camera systems)	
	10					*** New Hybrid ROV (2500m)** : Deployable from costal RVs without dynamic positioning. Construction underway, delivery to science **in 2015**

						*** Renewal of R/V *Le Suroit*** : multipurpose Regional RV. Construction in 2018-2019 and operational for research in 2020. **Waiting for funding.** *** New deep water AUV (6000m)** : construction in 2016-2017. **Waiting for funding**
	11	* (1) ABYSS (6000m/2008/ GEOMAR/GEOMAR) * (2) Bluefin 21 (3000m/2003/ AWI/AWI) * (3) SEAL (5000m/2006/ MARUM/MARUM)	* (1) JAGO (400m/1989/GEOMAR/GEOMAR)	* (1) Cherokee (6000m/-/MARUM/Research Center Ocean Margins) * (2) Kiel 6000 (6000m/2007/GEOMAR/GEOMAR) * (3) Quest 5 (4000m/2003/MARUM/Research Center Ocean Margins) * (4) PHOCA (3000m/2010/GEOMAR/GEOMAR)	* (1) AWI-OFOS (-/-/AWI/AWI/Ocean Floor Observation System) (Towed camera systems) * (2) Towed body VD500-E (2000m/Towed vehicles with payload)	
	12					*** R/V *Sonne* (106 m)** : Contract for the construction signed in July 2011, construction underway and delivery to science planned October 2014 *** R/V *Polarstern II* (ice breaker)** : Scientific-technical expert committee (WTF) recently set up to define the scientific requirements of the Polarstern II, follow its implementation during the design and construction phase. A moonpool of the size 4 * 4 m shall be the main technical innovation, to deploy sensitive devices directly under the ice (including deep-sea drilling in ice-covered waters by a removable drilling rig). Planned timeline: - May 2013: opening of a tender for the future ship operator and

						assignments for tender beginning of 2014; - Beginning of 2015: opening of a European tender for the final design and construction of the vessel; - Commissioning planned for mid of 2019, with first research expeditions end of 2019. - March 2015: assignments for tender; - Calculated time to construct the vessel : 3 years;
	13					
	14		* (1) Thetis (610m/-/HCMR/HCMR)	* (1) Max Rover (2000m/-/HCMR/HCMR) * (2) Mitos (2000m/1999/HCMR/HCMR) * (3) Super Achilles (1000m/-/HCMR/HCMR)		
	15					
	16	* (1) Gavia (2000m/2002/Hafmynd/Hafmynd)				
	17			* (1) Holland I (3000m/2008/MI/MI) * (2) ROVlatis (1000m/2009/University of Limerick/Mobile & Marine Robotics Research Centre)		
	18	* (1) SARA (1000m/2002/Ente per le Nuove Tecnologie, l'Energia e l'Ambiente (ENEA)/ENEA)				
	19					The RVs related investments required

						in a 10-year period and described in the under-construction roadmap are based on : * the short term refit of R/V *OGS-Explora* (Mediterranean and Oceanic-polar area) and *Urania* (Mediterranean area);
	20					* the exploitation of a **new research vessel with polar capacity described in the RITMARE flagship project and to be constructed in collaboration with the Italian Navy**.
	21		* (1) C-Explorer (100m/-/U-Boat Worx submersibles/ =)			
	22	* (1) Hugin 3000 (3000m/2008/ Norwegian Defence Research Establishment and IMR/=)		* (1) Aglantha (2000m/1998/University of Bergen (UIB)/UIB)	* (1) MESSOR (3000m/-/IMR/IMR/Towed vehicles with payload) * (2) Deep Water Camera (CAMPOD) (3000m/-/IMR/IMR/towed camera systems) * (3) Towed body VD500-E (1500m/-/IMR/IMR/Towed vehicles with payload)	
	23					*** R/V *Kronprins Haakon* (Polar 10 Icebreaker, 100.00 m):** Ownership and usage of the new Polar RV (multipurpose with ice breaking capacity) will be shared between the Norwegian Polar Institute (30%), the University of Tromsoe (20%) and IMR (50%). The shipyard selection is planned in September 2015 and the RV *Lance* will be phased out when the new icegoing vessel is operational. *** R/V *Dr. Fridtjof***

						Nansen (working on foreign aid programs in Africa, Asia and Latin-America) : Design on-going and yard contracting planned end 2013. This new vessel is expected to be operational in 2016. * **Replacement of R/V *Hakon Mosby*** *:* process started to seek funding for the replacement. Start of the replacement project in 2014 at the earliest, with a new vessel in operation in 2018-19 at the earliest.
	24					
	25					* **Deep water ROV NORMAR** included in the roadmap for research infrastructure managed by the Norwegian Research Council. **Waiting for funding**.
	26					The deep water ROV NORMAR will be a national infrastructure which will be designed such that it can operate in deep waters from the large vessels such as RVs *G.O. Sars* and *Kronprins Haakon*, but also to be modular such that it can be reconfigured in a lighter version to be used in shallow waters from smaller vessels such as RVs Johan Hjort and Håkon Mosby. The applicant is University of Bergen, and IMR and the University of Bergen together will have technical support for the ROV.

	27		* (1) LULA1000 (1000m/2012/ Rebikoff-Niggeler Foundation/=)	* (1) Luso (6000m/2008/Ministry of Defense/EMEPC))		
	28			* (1) ROV Vector M5 (1000m/-/GeoEcomar/GeoEcomar)	1. Sercel 2D Marine Seismic Acqusition System. Sercel SeaProNav, Seal 428, GPS - Fugro DGPS, Mainberg M300 MRS, Geospace Birds Singlebeam - Deso 35,Heading Sensor - IXSEA, 2 x Sercel GI-Gun 355, Sercel Sentinel solid streame, SQCPro seismic QC software, penetration up to 2000m 2. 5 x Ocean Bottom Seismometer for deep water up to 2000m	**Replacement of R/V *Mare Nigrum*** : Pre-feasibility study made for a new RV building (Global/Ocean class) and **funding scheme to be defined in the near future (public or public & private partnership)**.
	29		* (1) Argus (600m/1975/RAS/RAS) * (2) MIR 1 (6000m/1987/RAS/RAS) * (3) MIR 2 (6000m/1987/RAS/RAS) * (4) Osmotr (200m/1982/RAS/RAS) * (5) Pisces IX (2000m/1976/RAS/RAS) * (6) Pisces VII (2000m/1975/RAS/RAS)			
	30			* (1) Liropus 2000 (2000m/-/IEO/IEO)		
	31					

	32		* (1) CAROLYN (50m/2000/Institute of Nautical Archaeology/=)			
	33					
		* (1) Autosub 3 (1600m/1996/NOCS/=) * (2) Autosub6000 (6000m/2007/NOCS/=) * (3) Autosub Long Range (6000m/2007/NOCS/=) * (4) HyBIS (6000m/-/NOCS/=)		* (1) Isis (6500m/2003/SPRI/=) * (2) Saab Seaeye Falcon (1000m/Plymouth University's Marine Istitute/=)	* (1) SHRIMP (6000m/-/NOCS/=/Towed camera systems) * (2) Bridget (600m/-/NOCS/=/Towed vehicles with payload) * (3) TOBI (6000m/-/NOCS/=/Towed side scan sonars)	*** New R/V *Discovery (99,7 m)*** *:* Designed by Skipsteknisk AS, this new ship will operate worldwide, with more modern facilities and in higher sea-states, than the previous RV *Discovery*. The ship was delivered to NERC in July 2013 by builders CNP Freire, SA from Vigo in Spain. Currently undergoing sea trials with scientific research due to start in 2014.